



SPEC® Stock Springs and Washers PRODUCT CATALOG 13

SUPERIOR SOLUTIONS



In addition to the products described in this catalog, ASRaymond—
a worldwide leader in the design, manufacture and sale of springs — also offers a full line of struts, hardware, tool & die components:

SPD Division

Struts and hardware catalog

**SPEC Precision Engineered
Components**

Stock springs, spring washers & retaining rings

Die Springs

Inch dimensions & US standard

Die Springs

Manufactured to ISO 10243 specification

Die Springs

Manufactured to JIS B 5012 specification

Die Springs “D” Line

Manufactured to ISO 10243 specification

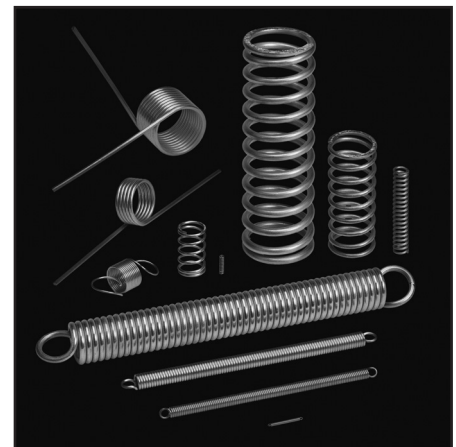
**CALL US AT 1-800-228-1156 FOR TECHNICAL ASSISTANCE OR TO RECEIVE
OUR COMPLETE CATALOGS OF SPECIFICATIONS.**

**New in our SPEC Catalog: Extension and Torsion Springs in 316 Stainless Steel
Compression Springs in Inconel® X750
Expanded Gas Strut lines**

ASRaymond now offers complete lines of 316 Stainless Steel Extension and Torsion springs, and a range of Compression Springs in Inconel X750. Both materials offer superior temperature and corrosion resistance, which make them particularly suitable for:

- Medical, surgical, veterinary and pharmaceutical applications
- Food and food preparation machinery and equipment
- Aircraft, aerospace and nuclear reactor uses
- Gas turbines and pressure vessel applications
- Harsh environment projects

Our Gas Strut lines now include expanded Black Nitride offerings as well as new Welded Blade Ends and Damper units.



Put America's largest spring maker at your service.

What is SPEC?

SPEC offers the world's largest inventory of stock springs and spring washers, with over 100 million compression, extension, torsion and constant-force springs, as well as belleville, finger, wave and curved spring washers. You can choose from over 17,000 part numbers, all designed and produced to the highest standards.

SPEC grew out of our experience in designing, making and handling millions of spring parts over the years. As a result, each part is precision engineered, manufactured using the finest quality materials and meets the tightest quality requirements. But SPEC also consists entirely of "off-the-shelf" parts – easily identified, compared, selected and ordered and always readily available for shipment. Switch to "just-in-time" deliveries of zero-defect parts directly from stock with SPEC, and be certain you will receive ASRaymond's world class service every time.

Why use SPEC?

1. **Save design work:** you do not have to design a spring for your application. Simply use the SPEC catalog to identify the part required.
2. **Save delivery time:** all our parts are stock items. Your order is processed and shipped quickly, usually within 24 hours.
3. **Save money:** no setup or tooling charges are involved, because each item is standard.
4. **Efficiency:** ordering from the catalog is fast and easy. On-line buying at www.asraymond.com (available in the US) is even easier.
5. **Repeatability:** again and again our parts will meet the same quality requirement, because the specifications are standard.

When use SPEC?

1. **Prototype and development work:** when precise specifications are difficult to establish, order small quantities of several items and determine the best one by trial – at a very low cost. We have even created packaged assortments of our most popular sizes (see page 224) for your convenience.
2. **Maintenance and repair:** down time is expensive. Keeping a variety of SPEC parts on hand helps you get equipment back in operation fast. Our packaged assortments come in handy here as well.
3. **Small production runs:** standard springs and washers are usually much cheaper than specials. They are produced in large volumes, and their tooling costs have been amortized over millions of units.
4. **Emergency production use:** as all our parts are stock items and readily available, they can be shipped immediately in order to keep production lines running and downtime to a minimum.
5. **Model shops:** having a wide assortment of springs and washers available is a good practice for those demanding projects and unexpected situations.

Special Order Services

Our Special Order Departments handle orders for one to thousands of custom springs and metal parts. If you are looking for a special spring that you cannot find in the following pages, let us know, and we'll design it for you. Same thing, should you need a specific process or finish for your SPEC part (see page 312). We welcome experimental and prototype orders because we know that if a starter order of springs helps you early in the development stage of your product, and your product is successful, our springs are successful too. This is an excellent way to put our size, resources, experience and expertise as America's largest spring maker at your service. When you deal with ASRaymond for starter and small orders at prototype time, you have confidence that we can follow you right into production, supplying consistent quality parts to your delivery requirements.

A note about this catalog

You will find the SPEC catalog a fast and easy source for components. Throughout this catalog, all SPEC Part Numbers are listed sequentially and the imperial (inches) and metric measurements are listed side by side to make selecting the right components easier.

HOW TO ORDER YOUR SPEC ITEMS

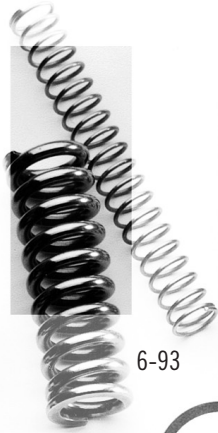
- 1 Call SRaymond to help you **define your needs**
- 2 We'll help you **establish your exact specifications**
- 3 We'll help you **match your specs with the catalog listings** on the following pages
- 4 Subsequent orders may be **phoned, faxed or mailed.**
- 5 You can order on-line at www.asraymond.com (in the US only).

See back cover for addresses.



We are also
ISO/TS 16949:2009
Certified

104-111



6-93



112-161

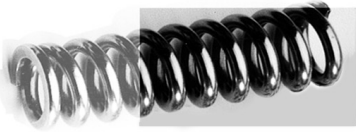


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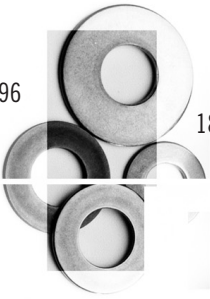
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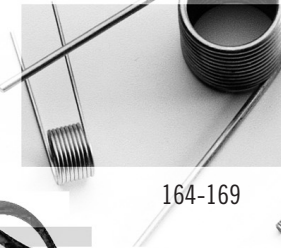
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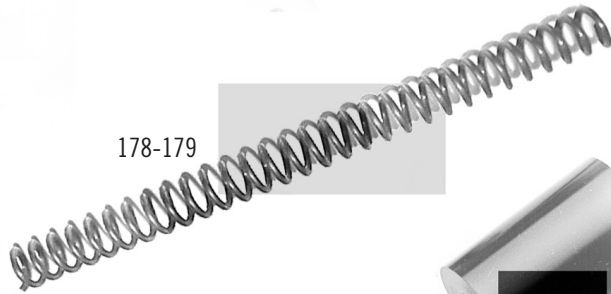


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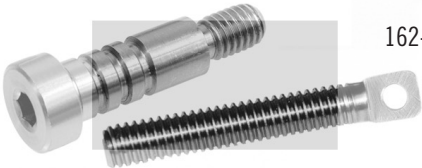


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**NOW AVAILABLE
IN DIFFERENT
MATERIALS**



CloverSpring
Customized Spring Washers

A New Product

COMPRESSION SPRINGS



Stock sizes in music wire and stainless steel

ASRaymond provides design engineers, draftsmen, production and maintenance departments with a broad variety of precision-engineered helical compression springs. They are reliable, inexpensive and efficient – the right combination for general-purpose use throughout industry.

Materials

Part numbers starting with **C** in the following pages:

Music Wire: ASTM A228 or AMS 5112

Stainless Steel: Type 302 per ASTM A313 or AMS 5688 spring temper (Chemical and Physical only)

Part numbers starting with **D** in the following pages:

Music Wire: DIN 17223 or EN 10270-1 or JIS G4314 SWP-A/B or AMS 5112

Stainless Steel: Type 301, 302 or 304 per DIN 17224 or EN 10270-3 or JIS G4314 SUS 302/304 or AMS 5688 spring temper (chemical and physical only)

For specific D part number look up, please see page 45.

Music wire will be furnished unless stainless steel is specified. When inquiring or ordering, please use letter "M" or letter "S" as suffix to designate music wire or stainless steel, respectively.

Music wire springs are not recommended for applications where the temperature exceeds 121 degrees C. (250 degrees F.). Stainless steel is not recommended above 260 degrees C. (500 degrees F.).

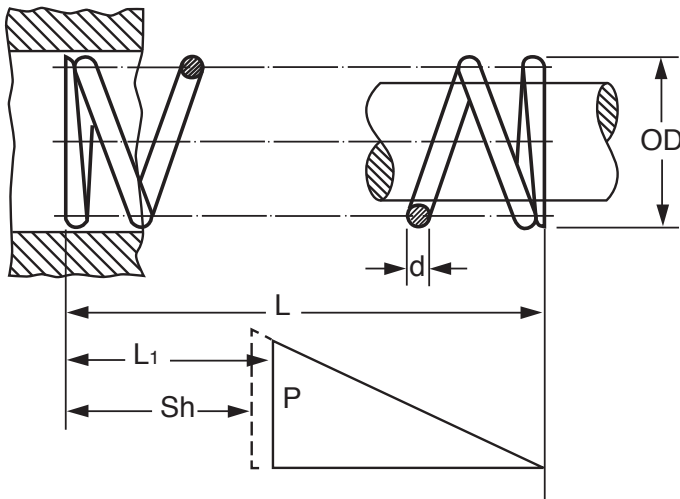
Stainless steel is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not effect the function of the part.

Wire diameter is prior to forming.

No charge for certificate of compliance when requested; certificate of chemical analysis available only for part numbers starting with **C** in the following pages (an additional charge applies).

Coil Direction (helix)

Right hand. Coil count is for reference only.



Free Length

Free length is reference only.

Ends

Part numbers starting with **C** in the following pages:

O.D. sizes from 0.057-0.088in (1.45-2.24mm): squared not ground.

O.D. sizes from 0.120-1.937in (3.05-49.20mm): squared and ground.

However springs with wire diameter 0.020" (.5mm) may be squared not ground.

Part numbers starting with **D** in the following pages:

Wire up to and including 0.8mm (0.031in): squared and not ground.

Wire greater than 0.8mm (0.031in): squared and ground.

Tolerances

Part numbers starting with **C** in the following pages:

O.D. (English)	O.D. (Metric)
0.057 to 0.119" +/- 0.003"	1.45 to 3.02 mm +/- 0.08 mm
0.120 to 0.240" +/- 0.005"	3.05 to 6.10 mm +/- 0.13 mm
0.241 to 0.500" +/- 0.008"	6.12 to 12.70 mm +/- 0.20 mm
0.501 to 1.000" +/- 0.015"	12.73 to 25.40 mm +/- 0.38 mm
1.001 to 1.225" +/- 0.020"	25.43 to 31.12 mm +/- 0.51 mm
1.226 to 1.460" +/- 0.030"	31.14 to 37.08 mm +/- 0.76 mm
1.461 to 2.000" +/- 0.040"	37.11 to 50.80 mm +/- 1.02 mm

Part numbers starting with **D** in the following pages:

All dimensions, loads and rates listed are to DIN 2095 (Grade 2).

Loads & Spring Rate

Load and rate values are shown for both music wire and stainless steel in their respective columns.

Load P at L₁ and spring rate R are +/- 10.0% – load at any other point is for reference only.

For normal service, springs should not be compressed below L₁ (may take set beyond L₁). Load values at lengths other than L₁ can be approximated by multiplying the proposed deflection by the rate R. $P = (L - L_x) \times R$ where L_x is the new load height. Load at L_x should be reference only. Contact our engineering department if more stringent requirements are needed.

Surface Finish

Music Wire: oil

Stainless steel: Only part numbers starting with C on the following pages are passivated. All others are plain wire.

Special finishes available upon request. See page 312 for alternative finishes.

Packaging

Parts are bulk-packed. Due to physical characteristics, tangling can occur during transit on wire sizes under .035" (.89mm). Please inquire about special packaging when ordering.

OD = Outside diameter

L = Free length (reference use only)

d = Wire diameter

L₁ = Loaded length (minimum working length)

Sh = Approx Solid Height

P = Load at L₁

SPEC Compression springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D10100					0.079	2.00	0.055	1.40	0.051	1.30			28.0	4.910	D20100	0.055	1.4			23.35	4.09
D10110					0.106	2.70	0.075	1.90	0.067	1.70			17.8	3.120	D20110	0.075	1.91			14.84	2.60
D10120	0.047	1.20			0.154	3.90	0.102	2.60	0.091	2.30	0.58	2.57	11.6	2.030	D20120	0.102	2.59	0.48	2.14	9.66	1.69
D10130					0.217	5.50	0.142	3.60	0.122	3.10			7.9	1.380	D20130	0.142	3.61			6.56	1.15
D10140			0.008	0.20	0.307	7.80	0.197	5.00	0.169	4.30			5.3	0.920	D20140	0.197	5			4.38	0.77
D10150					0.091	2.30	0.059	1.50	0.051	1.30			16.2	2.830	D20150	0.059	1.5			13.46	2.36
D10160					0.126	3.20	0.075	1.90	0.067	1.70			10.3	1.810	D20160	0.075	1.91			8.61	1.51
D10170	0.055	1.40			0.181	4.60	0.106	2.70	0.091	2.30	0.51	2.27	6.6	1.160	D20170	0.106	2.69	0.43	1.91	5.52	0.97
D10180					0.256	6.50	0.146	3.70	0.122	3.10			4.6	0.800	D20180	0.146	3.71			3.81	0.67
D10190					0.366	9.30	0.201	5.10	0.169	4.30			3.1	0.540	D20190	0.201	5.11			2.57	0.45
C0057-006-0120-M					0.120	3.05	0.059	1.50	0.044	1.12			3.8	0.665	C0057-006-0120-S	0.076	1.93			3.17	0.55
C0057-006-0190-M					0.190	4.83	0.085	2.16	0.060	1.52			2.2	0.385	C0057-006-0190-S	0.115	2.92			1.83	0.32
C0057-006-0250-M					0.250	6.35	0.106	2.69	0.075	1.91			1.6	0.280	C0057-006-0250-S	0.146	3.71			1.33	0.23
C0057-006-0310-M					0.310	7.87	0.133	3.38	0.088	2.24			1.3	0.228	C0057-006-0310-S	0.182	4.62			1.08	0.19
C0057-006-0380-M			0.006	0.15	0.380	9.65	0.171	4.34	0.100	2.54	0.23	1.02	1.1	0.193	C0057-006-0380-S	0.229	5.82	0.14	0.62	0.92	0.16
C0057-006-0440-M					0.440	11.18	0.184	4.67	0.118	3.00			0.9	0.158	C0057-006-0440-S	0.255	6.48			0.75	0.13
C0057-006-0500-M					0.500	12.70	0.213	5.41	0.130	3.30			0.8	0.140	C0057-006-0500-S	0.292	7.42			0.67	0.12
C0057-006-0560-M					0.560	14.22	0.273	6.93	0.129	3.28			0.8	0.140	C0057-006-0560-S	0.352	8.94			0.67	0.12
C0057-006-0620-M					0.620	15.75	0.291	7.39	0.142	3.61			0.7	0.123	C0057-006-0620-S	0.383	9.73			0.58	0.10
C0057-007-0120-M					0.120	3.05	0.066	1.68	0.053	1.35			7.0	1.226	C0057-007-0120-S	0.083	2.11			5.83	1.02
C0057-007-0190-M					0.190	4.83	0.095	2.41	0.074	1.88			4.0	0.700	C0057-007-0190-S	0.125	3.18			3.33	0.58
C0057-007-0250-M					0.250	6.35	0.127	3.23	0.089	2.26			3.1	0.543	C0057-007-0250-S	0.166	4.22			2.58	0.45
C0057-007-0310-M					0.310	7.87	0.152	3.86	0.108	2.74			2.4	0.420	C0057-007-0310-S	0.201	5.11			2.00	0.35
C0057-007-0380-M			0.007	0.18	0.380	9.65	0.180	4.57	0.130	3.30	0.38	1.69	1.9	0.333	C0057-007-0380-S	0.243	6.17	0.22	0.98	1.58	0.28
C0057-007-0440-M					0.440	11.18	0.216	5.49	0.143	3.63			1.7	0.298	C0057-007-0440-S	0.286	7.26			1.42	0.25
C0057-007-0500-M	0.057	1.45			0.500	12.70	0.247	6.27	0.158	4.01			1.5	0.263	C0057-007-0500-S	0.326	8.28			1.25	0.22
C0057-007-0560-M					0.560	14.22	0.266	6.76	0.179	4.55			1.3	0.228	C0057-007-0560-S	0.359	9.12			1.08	0.19
C0057-007-0620-M					0.620	15.75	0.303	7.70	0.188	4.78			1.2	0.210	C0057-007-0620-S	0.403	10.24			1.00	0.17
C0057-008-0120-M					0.120	3.05	0.072	1.83	0.061	1.55			12.5	2.190	C0057-008-0120-S	0.089	2.26			10.41	1.82
C0057-008-0190-M					0.190	4.83	0.107	2.72	0.086	2.18			7.2	1.261	C0057-008-0190-S	0.136	3.45			6.00	1.05
C0057-008-0250-M					0.250	6.35	0.137	3.48	0.106	2.69			5.3	0.928	C0057-008-0250-S	0.177	4.5			4.41	0.77
C0057-008-0310-M					0.310	7.87	0.167	4.24	0.127	3.23			4.2	0.735	C0057-008-0310-S	0.218	5.54			3.50	0.61
C0057-008-0380-M			0.008	0.20	0.380	9.65	0.203	5.16	0.150	3.81	0.60	2.67	3.4	0.595	C0057-008-0380-S	0.267	6.78	0.32	1.42	2.83	0.50
C0057-008-0440-M					0.440	11.18	0.233	5.92	0.172	4.37			2.9	0.508	C0057-008-0440-S	0.307	7.8			2.42	0.42
C0057-008-0500-M					0.500	12.70	0.260	6.60	0.195	4.95			2.5	0.438	C0057-008-0500-S	0.346	8.79			2.08	0.36
C0057-008-0560-M					0.560	14.22	0.287	7.29	0.217	5.51			2.2	0.385	C0057-008-0560-S	0.385	9.78			1.83	0.32
C0057-008-0620-M					0.620	15.75	0.320	8.13	0.224	5.69			2.0	0.350	C0057-008-0620-S	0.427	10.85			1.67	0.29
D10350					0.094	2.40	0.071	1.80	0.064	1.63			39.7	6.950	D20350	0.071	1.8			33.06	5.79
D10360					0.130	3.30	0.094	2.40	0.084	2.13			25.2	4.420	D20360	0.094	2.39			21.02	3.68
D10370			0.010	0.25	0.185	4.70	0.130	3.30	0.113	2.88	0.92	4.11	16.3	2.860	D20370	0.13	3.3	0.77	3.42	13.60	2.38
D10380					0.260	6.60	0.177	4.50	0.153	3.88			11.1	1.940	D20380	0.177	4.5			9.23	1.62
D10390					0.370	9.40	0.248	6.30	0.212	5.38			7.5	1.320	D20390	0.248	6.3			6.28	1.10
D10200					0.118	3.00	0.059	1.50	0.051	1.30			6.9	1.200	D20200	0.059	1.5			5.71	1.00
D10210					0.173	4.40	0.079	2.00	0.067	1.70			4.4	0.770	D20210	0.079	2.01			3.66	0.64
D10220	0.071	1.80	0.008	0.20	0.252	6.40	0.110	2.80	0.091	2.30	0.40	1.80	2.8	0.490	D20220	0.11	2.79	0.34	1.51	2.33	0.41
D10230					0.362	9.20	0.150	3.80	0.122	3.10			1.9	0.340	D20230	0.15	3.81			1.62	0.28
D10240					0.524	13.30	0.209	5.30	0.169	4.30			1.3	0.230	D20240	0.209	5.31			1.09	0.19
D10400					0.118	3.00	0.071	1.80	0.064	1.63			16.7	2.930	D20400	0.071	1.8			13.94	2.44
D10410					0.169	4.30	0.094	2.40	0.084	2.13			10.6	1.860	D20410	0.094	2.39			8.85	1.55
D10420	0.073	1.85	0.010	0.25	0.244	6.20	0.134	3.40	0.113	2.88	0.76	3.37	6.9	1.200	D20420	0.134	3.4	0.63	2.8	5.71	1.00
D10430					0.343	8.70	0.181	4.60	0.153	3.88			4.7	0.830	D20430	0.181	4.6			3.95	0.69
D10440					0.492	12.50	0.256	6.50	0.212	5.38			3.1	0.550	D20440	0.256	6.5			2.62	0.46
D10600					0.122	3.10	0.091	2.30	0.082	2.08			44.9	7.860	D20600	0.091	2.31			37.39	6.55
D10610					0.173	4.40	0.122	3.10	0.107	2.72			28.6	5.000	D20610	0.122	3.1			23.78	4.17
D10620	0.076	1.92	0.013	0.32	0.248	6.30	0.165	4.20	0.145	3.68	1.48	6.57	18.5	3.240	D20620	0.165	4.19	1.23	5.47	15.41	2.70
D10630					0.343	8.70	0.228	5.80	0.195	4.96			12.6	2.200	D20630	0.228	5.79			10.46	1.83
D10640					0.492	12.50	0.319	8.10	0.271	6.88			8.5	1.490	D20640	0.319	8.1			7.09	1.24
D10250					0.157	4.00	0.059	1.50	0.051	1.30			3.5	0.610	D20250	0.059	1.5			2.90	0.51
D10260					0.232	5.90	0.083	2.10	0.067	1.70			2.2	0.380	D20260	0.083	2.11			1.81	0.32
D10270					0.343	8.70	0.114	2.90	0.091	2.30	0.33	1.49	1.4	0.250	D20270	0.114	2.9			1.19	0.21
D10280	0.087	2.20	0.008	0.20	0.496	12.60	0.157	4.00	0.122	3.10			1.0	0.180	D20280	0.157	3.99	0.28	1.25	0.86	0.15
D10290					0.720	18.30	0.220	5.60	0.169	4.30			0.7	0.120	D20290	0.22	5.59			0.57	0.10
C0088-008-0120-M					0.120	3.05	0.060	1.52	0.043	1.09			6.3	1.103	C0088-008-0120-S	0.073	1.85			5.25	0.92
C0088-008-0190-M					0.190	4.83	0.081	2.06	0.055	1.40	0.38	1.69	3.5	0.613	C0088-008-0190-S	0.117	2.97			2.92	0.51



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0088-008-0250-M					0.250	6.35	0.104	2.64	0.064	1.63			2.6	0.455	C0088-008-0250-S	0.151	3.84			2.17	0.38
C0088-008-0310-M					0.310	7.87	0.129	3.28	0.073	1.85			2.1	0.368	C0088-008-0310-S	0.188	4.78			1.75	0.31
C0088-008-0380-M					0.380	9.65	0.156	3.96	0.084	2.13			1.7	0.298	C0088-008-0380-S	0.229	5.82			1.42	0.25
C0088-008-0440-M			0.008	0.20	0.440	11.18	0.187	4.75	0.092	2.34	0.38	1.69	1.5	0.263	C0088-008-0440-S	0.269	6.83	0.21	0.93	1.25	0.22
C0088-008-0500-M					0.500	12.70	0.208	5.28	0.101	2.57			1.3	0.228	C0088-008-0500-S	0.302	7.67			1.08	0.19
C0088-008-0560-M					0.560	14.22	0.215	5.46	0.115	2.92			1.1	0.193	C0088-008-0560-S	0.326	8.28			0.92	0.16
C0088-008-0620-M					0.620	15.75	0.240	6.10	0.119	3.02			1.0	0.175	C0088-008-0620-S	0.363	9.22			0.83	0.15
C0088-010-0120-M					0.120	3.05	0.071	1.80	0.060	1.52			12.3	2.150	C0088-010-0120-S	0.081	2.06			10.25	1.79
C0088-010-0190-M					0.190	4.83	0.102	2.59	0.081	2.06			6.8	1.191	C0088-010-0190-S	0.119	3.02			5.66	0.99
C0088-010-0250-M					0.250	6.35	0.130	3.30	0.098	2.49			5.0	0.876	C0088-010-0250-S	0.153	3.89			4.17	0.73
C0088-010-0310-M					0.310	7.87	0.152	3.86	0.118	3.00			3.8	0.665	C0088-010-0310-S	0.182	4.62			3.17	0.55
C0088-010-0380-M					0.380	9.65	0.198	5.03	0.130	3.30			3.3	0.578	C0088-010-0380-S	0.233	5.92			2.75	0.48
C0088-010-0440-M			0.010	0.25	0.440	11.18	0.226	5.74	0.147	3.73	0.60	2.67	2.8	0.490	C0088-010-0440-S	0.267	6.78	0.4	1.78	2.33	0.41
C0088-010-0500-M					0.500	12.70	0.239	6.07	0.172	4.37			2.3	0.403	C0088-010-0500-S	0.289	7.34			1.92	0.34
C0088-010-0560-M	0.088	2.24			0.560	14.22	0.274	6.96	0.185	4.70			2.1	0.368	C0088-010-0560-S	0.329	8.36			1.75	0.31
C0088-010-0620-M					0.620	15.75	0.304	7.72	0.201	5.11			1.9	0.333	C0088-010-0620-S	0.365	9.27			1.58	0.28
C0088-010-0690-M					0.690	17.53	0.337	8.56	0.213	5.41			1.7	0.298	C0088-010-0690-S	0.405	10.29			1.42	0.25
C0088-010-0750-M					0.750	19.05	0.375	9.53	0.228	5.79			1.6	0.280	C0088-010-0750-S	0.447	11.35			1.33	0.23
C0088-012-0120-M					0.120	3.05	0.077	1.96	0.075	1.91			24.6	4.310	C0088-012-0120-S	0.087	2.21			20.49	3.59
C0088-012-0190-M					0.190	4.83	0.116	2.95	0.100	2.54			14.5	2.540	C0088-012-0190-S	0.134	3.4			12.08	2.12
C0088-012-0250-M					0.250	6.35	0.148	3.76	0.123	3.12			10.5	1.839	C0088-012-0250-S	0.172	4.37			8.75	1.53
C0088-012-0310-M					0.310	7.87	0.176	4.47	0.148	3.76			8.0	1.401	C0088-012-0310-S	0.208	5.28			6.66	1.17
C0088-012-0380-M					0.380	9.65	0.216	5.49	0.172	4.37			6.5	1.138	C0088-012-0380-S	0.254	6.45			5.41	0.95
C0088-012-0440-M			0.012	0.30	0.440	11.18	0.252	6.40	0.191	4.85	1.07	4.76	5.7	0.998	C0088-012-0440-S	0.297	7.54	0.68	3.02	4.75	0.83
C0088-012-0500-M					0.500	12.70	0.282	7.16	0.215	5.46			4.9	0.858	C0088-012-0500-S	0.334	8.48			4.08	0.71
C0088-012-0560-M					0.560	14.22	0.317	8.05	0.235	5.97			4.4	0.770	C0088-012-0560-S	0.375	9.53			3.67	0.64
C0088-012-0620-M					0.620	15.75	0.338	8.59	0.265	6.73			3.8	0.665	C0088-012-0620-S	0.405	10.29			3.17	0.55
C0088-012-0690-M					0.690	17.53	0.384	9.75	0.266	6.76			3.5	0.613	C0088-012-0690-S	0.457	11.61			2.92	0.51
C0088-012-0750-M					0.750	19.05	0.416	10.57	0.293	7.44			3.2	0.560	C0088-012-0750-S	0.495	12.57			2.67	0.47
D10450					0.146	3.70	0.075	1.90	0.064	1.63			8.6	1.500	D20450	0.075	1.91			7.13	1.25
D10460					0.217	5.50	0.098	2.50	0.084	2.13			5.4	0.950	D20460	0.098	2.49			4.51	0.79
D10470	0.089	2.25	0.010	0.25	0.315	8.00	0.138	3.50	0.113	2.88	0.63	2.81	3.5	0.610	D20470	0.138	3.51	0.53	2.36	2.91	0.51
D10480					0.449	11.40	0.185	4.70	0.153	3.88			2.4	0.420	D20480	0.185	4.7			2.00	0.35
D10490					0.654	16.60	0.264	6.70	0.212	5.38			1.7	0.290	D20490	0.264	6.71			1.37	0.24
D10650					0.146	3.70	0.091	2.30	0.082	2.08			23.0	4.020	D20650	0.091	2.31			19.13	3.35
D10660					0.209	5.30	0.122	3.10	0.107	2.72			14.7	2.570	D20660	0.122	3.1			12.22	2.14
D10670	0.091	2.32	0.013	0.32	0.303	7.70	0.169	4.30	0.145	3.68	1.27	5.63	9.5	1.660	D20670	0.169	4.29	1.06	4.71	7.88	1.38
D10680					0.429	10.90	0.232	5.90	0.195	4.96			6.5	1.130	D20680	0.232	5.89			5.37	0.94
D10690					0.614	15.60	0.323	8.20	0.271	6.88			4.4	0.770	D20690	0.323	8.2			3.65	0.64
D10850					0.138	3.50	0.106	2.70	0.102	2.60			53.2	9.310	D20850	0.106	2.69			44.31	7.76
D10860					0.197	5.00	0.146	3.70	0.134	3.40			33.6	5.880	D20860	0.146	3.71			27.98	4.90
D10870	0.094	2.40	0.016	0.40	0.276	7.00	0.201	5.10	0.181	4.60	1.67	7.45	21.9	3.830	D20870	0.201	5.11	1.4	6.23	18.21	3.19
D10880					0.394	10.00	0.276	7.00	0.244	6.20			14.9	2.610	D20880	0.276	7.01			12.39	2.17
D10890					0.551	14.00	0.390	9.90	0.339	8.60			10.0	1.760	D20890	0.39	9.91			8.39	1.47
D10300					0.213	5.40	0.063	1.60	0.051	1.30			1.8	0.310	D20300	0.063	1.6			1.48	0.26
D10310					0.323	8.20	0.087	2.20	0.067	1.70			1.1	0.200	D20310	0.087	2.21			0.97	0.17
D10320	0.106	2.70	0.008	0.20	0.488	12.40	0.122	3.10	0.091	2.30	0.27	1.20	0.7	0.130	D20320	0.122	3.1	0.22	0.98	0.63	0.11
D10330					0.705	17.90	0.165	4.20	0.122	3.10			0.5	0.080	D20330	0.165	4.19			0.40	0.07
D10340					1.031	26.20	0.232	5.90	0.169	4.30			0.3	0.060	D20340	0.232	5.89			0.29	0.05
D10500					0.193	4.90	0.075	1.90	0.064	1.63			4.4	0.770	D20500	0.075	1.91			3.65	0.64
D10510					0.287	7.30	0.102	2.60	0.084	2.13			2.8	0.490	D20510	0.102	2.59			2.34	0.41
D10520	0.108	2.75	0.010	0.25	0.429	10.90	0.142	3.60	0.113	2.88	0.52	2.31	1.8	0.310	D20520	0.142	3.61	0.43	1.91	1.48	0.26
D10530					0.618	15.70	0.197	5.00	0.153	3.88			1.3	0.220	D20530	0.197	5			1.03	0.18
D10540					0.902	22.90	0.276	7.00	0.212	5.38			0.8	0.140	D20540	0.276	7.01			0.69	0.12
D10700					0.185	4.70	0.094	2.40	0.082	2.08			11.8	2.060	D20700	0.094	2.39			9.82	1.72
D10710					0.268	6.80	0.126	3.20	0.107	2.72			7.5	1.310	D20710	0.126	3.2			6.22	1.09
D10720	0.111	2.82	0.013	0.32	0.394	10.00	0.173	4.40	0.145	3.68	1.05	4.69	4.9	0.850	D20720	0.173	4.39	0.88	3.91	4.05	0.71
D10730					0.559	14.20	0.240	6.10	0.195	4.96			3.3	0.580	D20730	0.24	6.1			2.74	0.48
D10740					0.811	20.60	0.335	8.50	0.271	6.88			2.2	0.380	D20740	0.335	8.51			1.83	0.32
D10900					0.169	4.30	0.110	2.80	0.102	2.60			27.2	4.770	D20900	0.11	2.79			22.67	3.97
D10910					0.248	6.30	0.154	3.90	0.134	3.40			17.4	3.040	D20910	0.154	3.91			14.45	2.53
D10920	0.114	2.90	0.016	0.40	0.358	9.10	0.213	5.40	0.181	4.60	1.61	7.16	11.2	1.960	D20920	0.213	5.41	1.34	5.96	9.31	1.63
D10930					0.512	13.00	0.295	7.50	0.244	6.20			7.6	1.330	D20930	0.295	7.49			6.34	1.11
D10940					0.728	18.50	0.417	10.60	0.339	8.60			5.1	0.900	D20940	0.417	10.59			4.28	0.75

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D11100					0.173	4.40	0.138	3.50	0.128	3.25			66.1	11.580	D21100	0.138	3.51			55.10	9.65
D11110					0.240	6.10	0.185	4.70	0.167	4.25			42.4	7.420	D21110	0.185	4.7			35.29	6.18
D11120	0.118	3.00	0.020	0.50	0.343	8.70	0.256	6.50	0.226	5.75	2.34	10.40	27.4	4.800	D21120	0.256	6.5	1.95	8.67	22.84	4.00
D11130					0.472	12.00	0.354	9.00	0.305	7.75			18.7	3.270	D21130	0.354	8.99			15.53	2.72
D11140					0.689	17.50	0.504	12.80	0.423	10.75			12.6	2.210	D21140	0.504	12.8			10.51	1.84
C0120-010-0250-M					0.250	6.35	0.101	2.57	0.064	1.63			3.2	0.560	C0120-010-0250-S	0.137	3.48			2.67	0.47
C0120-010-0310-M					0.310	7.87	0.118	3.00	0.073	1.85			2.5	0.438	C0120-010-0310-S	0.165	4.19			2.08	0.36
C0120-010-0380-M					0.380	9.65	0.140	3.56	0.083	2.11			2.0	0.350	C0120-010-0380-S	0.199	5.05			1.67	0.29
C0120-010-0440-M					0.440	11.18	0.158	4.01	0.092	2.34			1.7	0.298	C0120-010-0440-S	0.227	5.77			1.42	0.25
C0120-010-0500-M					0.500	12.70	0.180	4.57	0.101	2.57			1.5	0.263	C0120-010-0500-S	0.259	6.58			1.25	0.22
C0120-010-0560-M					0.560	14.22	0.217	5.51	0.109	2.77			1.4	0.245	C0120-010-0560-S	0.302	7.67			1.17	0.20
C0120-010-0620-M					0.620	15.75	0.220	5.59	0.118	3.00			1.2	0.210	C0120-010-0620-S	0.319	8.1			1.00	0.17
C0120-010-0690-M			0.010	0.25	0.690	17.53	0.256	6.50	0.129	3.28	0.48	2.14	1.1	0.193	C0120-010-0690-S	0.361	9.17	0.3	1.33	0.92	0.16
C0120-010-0750-M					0.750	19.05	0.270	6.86	0.137	3.48			1.0	0.175	C0120-010-0750-S	0.388	9.86			0.83	0.15
C0120-010-0810-M					0.810	20.57	0.277	7.04	0.146	3.71			0.9	0.158	C0120-010-0810-S	0.408	10.36			0.75	0.13
C0120-010-0880-M					0.880	22.35	0.347	8.81	0.156	3.96			0.9	0.158	C0120-010-0880-S	0.478	12.14			0.75	0.13
C0120-010-0940-M					0.940	23.88	0.343	8.71	0.165	4.19			0.8	0.140	C0120-010-0940-S	0.488	12.4			0.67	0.12
C0120-010-1000-M					1.000	25.40	0.314	7.98	0.174	4.42			0.7	0.123	C0120-010-1000-S	0.484	12.29			0.58	0.10
C0120-010-1120-M					1.120	28.45	0.434	11.02	0.192	4.88			0.7	0.123	C0120-010-1120-S	0.604	15.34			0.58	0.10
C0120-010-1250-M					1.250	31.75	0.452	11.48	0.211	5.36			0.6	0.105	C0120-010-1250-S	0.647	16.43			0.50	0.09
C0120-010-1500-M					1.500	38.10	0.540	13.72	0.248	6.30			0.5	0.088	C0120-010-1500-S	0.777	19.74			0.42	0.07
C0120-012-0250-M					0.250	6.35	0.124	3.15	0.081	2.06			6.3	1.103	C0120-012-0250-S	0.153	3.89			5.25	0.92
C0120-012-0310-M					0.310	7.87	0.152	3.86	0.093	2.36			5.0	0.876	C0120-012-0310-S	0.188	4.78			4.17	0.73
C0120-012-0380-M					0.380	9.65	0.181	4.60	0.107	2.72			4.0	0.700	C0120-012-0380-S	0.227	5.77			3.33	0.58
C0120-012-0440-M					0.440	11.18	0.207	5.26	0.119	3.02			3.4	0.595	C0120-012-0440-S	0.26	6.6			2.83	0.50
C0120-012-0500-M					0.500	12.70	0.237	6.02	0.131	3.33			3.0	0.525	C0120-012-0500-S	0.296	7.52			2.50	0.44
C0120-012-0560-M					0.560	14.22	0.256	6.50	0.143	3.63			2.6	0.455	C0120-012-0560-S	0.325	8.26			2.17	0.38
C0120-012-0620-M					0.620	15.75	0.291	7.39	0.155	3.94			2.4	0.420	C0120-012-0620-S	0.365	9.27			2.00	0.35
C0120-012-0690-M			0.012	0.30	0.690	17.53	0.317	8.05	0.169	4.29	0.79	3.51	2.1	0.368	C0120-012-0690-S	0.399	10.13	0.51	2.27	1.75	0.31
C0120-012-0750-M					0.750	19.05	0.355	9.02	0.181	4.60			2.0	0.350	C0120-012-0750-S	0.444	11.28			1.67	0.29
C0120-012-0810-M					0.810	20.57	0.370	9.40	0.193	4.90			1.8	0.315	C0120-012-0810-S	0.47	11.94			1.50	0.26
C0120-012-0880-M					0.880	22.35	0.415	10.54	0.207	5.26			1.7	0.298	C0120-012-0880-S	0.52	13.21			1.42	0.25
C0120-012-0940-M	0.12	3.05			0.940	23.88	0.413	10.49	0.219	5.56			1.5	0.263	C0120-012-0940-S	0.532	13.51			1.25	0.22
C0120-012-1000-M					1.000	25.40	0.473	12.01	0.231	5.87			1.5	0.263	C0120-012-1000-S	0.592	15.04			1.25	0.22
C0120-012-1120-M					1.120	28.45	0.507	12.88	0.255	6.48			1.3	0.228	C0120-012-1120-S	0.65	16.51			1.08	0.19
C0120-012-1250-M					1.250	31.75	0.592	15.04	0.281	7.14			1.2	0.210	C0120-012-1250-S	0.74	18.8			1.00	0.17
C0120-012-1500-M					1.500	38.10	0.710	18.03	0.331	8.41			1.0	0.175	C0120-012-1500-S	0.889	22.58			0.83	0.15
C0120-014-0250-M					0.250	6.35	0.138	3.51	0.101	2.57			11.0	1.926	C0120-014-0250-S	0.164	4.17			9.16	1.60
C0120-014-0310-M					0.310	7.87	0.167	4.24	0.117	2.97			8.6	1.506	C0120-014-0310-S	0.2	5.08			7.16	1.25
C0120-014-0380-M					0.380	9.65	0.202	5.13	0.136	3.45			6.9	1.208	C0120-014-0380-S	0.242	6.15			5.75	1.01
C0120-014-0440-M					0.440	11.18	0.232	5.89	0.152	3.86			5.9	1.033	C0120-014-0440-S	0.279	7.09			4.91	0.86
C0120-014-0500-M					0.500	12.70	0.263	6.68	0.168	4.27			5.2	0.911	C0120-014-0500-S	0.317	8.05			4.33	0.76
C0120-014-0560-M					0.560	14.22	0.291	7.39	0.184	4.67			4.6	0.805	C0120-014-0560-S	0.354	8.99			3.83	0.67
C0120-014-0620-M					0.620	15.75	0.320	8.13	0.200	5.08			4.1	0.718	C0120-014-0620-S	0.388	9.86			3.42	0.60
C0120-014-0690-M			0.014	0.36	0.690	17.53	0.355	9.02	0.219	5.56	1.23	5.47	3.7	0.648	C0120-014-0690-S	0.433	11	0.79	3.51	3.08	0.54
C0120-014-0750-M					0.750	19.05	0.385	9.78	0.235	5.97			3.4	0.595	C0120-014-0750-S	0.471	11.96			2.83	0.50
C0120-014-0810-M					0.810	20.57	0.414	10.52	0.251	6.38			3.1	0.543	C0120-014-0810-S	0.504	12.8			2.58	0.45
C0120-014-0880-M					0.880	22.35	0.456	11.58	0.269	6.83			2.9	0.508	C0120-014-0880-S	0.553	14.05			2.42	0.42
C0120-014-0940-M					0.940	23.88	0.484	12.29	0.285	7.24			2.7	0.473	C0120-014-0940-S	0.588	14.94			2.25	0.39
C0120-014-1000-M					1.000	25.40	0.508	12.90	0.301	7.65			2.5	0.438	C0120-014-1000-S	0.62	15.75			2.08	0.36
C0120-014-1120-M					1.120	28.45	0.561	14.25	0.333	8.46			2.2	0.385	C0120-014-1120-S	0.688	17.48			1.83	0.32
C0120-014-1250-M					1.250	31.75	0.632	16.05	0.368	9.35			2.0	0.350	C0120-014-1250-S	0.775	19.69			1.67	0.29
C0120-014-1500-M					1.500	38.10	0.776	19.71	0.434	11.02			1.7	0.298	C0120-014-1500-S	0.941	23.9			1.42	0.25
C0120-016-0190-M					0.190	4.83	0.118	3.00	0.101	2.57			25.6	4.480	C0120-016-0190-S	0.136	3.45			21.32	3.73
C0120-016-0250-M					0.250	6.35	0.145	3.68	0.119	3.02			17.5	3.060	C0120-016-0250-S	0.171	4.34			14.58	2.55
C0120-016-0310-M					0.310	7.87	0.179	4.55	0.139	3.53			14.0	2.450	C0120-016-0310-S	0.211	5.36			11.66	2.04
C0120-016-0380-M					0.380	9.65	0.217	5.51	0.163	4.14			11.3	1.979	C0120-016-0380-S	0.257	6.53			9.41	1.65
C0120-016-0440-M					0.440	11.18	0.246	6.25	0.187	4.75			9.5	1.663	C0120-016-0440-S	0.294	7.47			7.91	1.39
C0120-016-0500-M			0.016	0.41	0.500	12.70	0.280	7.11	0.208	5.28	1.84	8.18	8.3	1.453	C0120-016-0500-S	0.333	8.46	1.15	5.12	6.91	1.21
C0120-016-0560-M					0.560	14.22	0.308	7.82	0.231	5.87			7.3	1.278	C0120-016-0560-S	0.37	9.4			6.08	1.06
C0120-016-0620-M					0.620	15.75	0.342	8.69	0.251	6.38			6.6	1.156	C0120-016-0620-S	0.41	10.41			5.50	0.96
C0120-016-0690-M					0.690	17.53	0.375	9.53	0.281	7.14			5.8	1.016	C0120-016-0690-S	0.451	11.46			4.83	0.85
C0120-016-0750-M					0.750	19.05	0.404	10.26	0.303	7.70			5.3	0.928	C0120-016-0750-S	0.489	12.42	</			

COMPRESSION SPRINGS

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0120-016-1120-M					1.120	28.45	0.609	15.47	0.419	10.64			3.6	0.630	C0120-016-1120-S	0.735	18.67			3.00	0.52
C0120-016-1250-M			0.016	0.41	1.250	31.75	0.675	17.15	0.463	11.76	1.84	8.18	3.2	0.560	C0120-016-1250-S	0.817	20.75	1.15	5.12	2.67	0.47
C0120-016-1500-M					1.500	38.10	0.843	21.41	0.544	13.82			2.8	0.490	C0120-016-1500-S	1.005	25.53			2.33	0.41
C0120-018-0190-M					0.190	4.83	0.128	3.25	0.117	2.97			41.3	7.230	C0120-018-0190-S	0.144	3.66			34.40	6.02
C0120-018-0250-M					0.250	6.35	0.159	4.04	0.139	3.53			28.2	4.940	C0120-018-0250-S	0.182	4.62			23.49	4.12
C0120-018-0310-M					0.310	7.87	0.193	4.90	0.166	4.22			21.9	3.840	C0120-018-0310-S	0.223	5.66			18.24	3.20
C0120-018-0380-M					0.380	9.65	0.237	6.02	0.194	4.93			17.9	3.130	C0120-018-0380-S	0.273	6.93			14.91	2.61
C0120-018-0440-M					0.440	11.18	0.271	6.88	0.220	5.59			15.2	2.660	C0120-018-0440-S	0.314	7.98			12.66	2.22
C0120-018-0500-M					0.500	12.70	0.305	7.75	0.248	6.30			13.1	2.290	C0120-018-0500-S	0.354	8.99			10.91	1.91
C0120-018-0560-M			0.018	0.46	0.560	14.22	0.336	8.53	0.279	7.09	2.56	11.39	11.4	1.996	C0120-018-0560-S	0.392	9.96	1.59	7.07	9.50	1.66
C0120-018-0620-M					0.620	15.75	0.378	9.60	0.297	7.54			10.6	1.856	C0120-018-0620-S	0.44	11.18			8.83	1.55
C0120-018-0690-M					0.690	17.53	0.414	10.52	0.332	8.43			9.3	1.628	C0120-018-0690-S	0.484	12.29			7.75	1.36
C0120-018-0750-M					0.750	19.05	0.448	11.38	0.359	9.12			8.5	1.488	C0120-018-0750-S	0.525	13.34			7.08	1.24
C0120-018-1000-M					1.000	25.40	0.600	15.24	0.455	11.56			6.4	1.121	C0120-018-1000-S	0.701	17.81			5.33	0.93
C0120-018-1120-M					1.120	28.45	0.671	17.04	0.505	12.83			5.7	0.998	C0120-018-1120-S	0.785	19.94			4.75	0.83
C0120-018-1250-M					1.250	31.75	0.748	19.00	0.559	14.20			5.1	0.893	C0120-018-1250-S	0.875	22.23			4.25	0.74
C0120-018-1500-M					1.500	38.10	0.890	22.61	0.663	16.84			4.2	0.735	C0120-018-1500-S	1.045	26.54			3.50	0.61
C0120-020-0250-M					0.250	6.35	0.176	4.47	0.163	4.14			44.8	7.840	C0120-020-0250-S	0.193	4.9			37.32	6.53
C0120-020-0310-M					0.310	7.87	0.215	5.46	0.192	4.88			34.8	6.090	C0120-020-0310-S	0.237	6.02			28.99	5.07
C0120-020-0380-M					0.380	9.65	0.260	6.60	0.226	5.74			27.7	4.850	C0120-020-0380-S	0.288	7.32			23.07	4.04
C0120-020-0440-M					0.440	11.18	0.299	7.59	0.256	6.50			23.5	4.120	C0120-020-0440-S	0.331	8.41			19.58	3.43
C0120-020-0500-M					0.500	12.70	0.338	8.59	0.285	7.24			20.4	3.570	C0120-020-0500-S	0.375	9.53			16.99	2.97
C0120-020-0560-M					0.560	14.22	0.377	9.58	0.314	7.98			18.1	3.170	C0120-020-0560-S	0.419	10.64			15.08	2.64
C0120-020-0620-M					0.620	15.75	0.416	10.57	0.344	8.74			16.2	2.840	C0120-020-0620-S	0.462	11.73			13.49	2.37
C0120-020-0690-M			0.020	0.51	0.690	17.53	0.461	11.71	0.378	9.60	3.31	14.72	14.5	2.540	C0120-020-0690-S	0.514	13.06	2.13	9.47	12.08	2.12
C0120-020-0750-M					0.750	19.05	0.500	12.70	0.407	10.34			13.2	2.310	C0120-020-0750-S	0.556	14.12			11.00	1.92
C0120-020-0810-M					0.810	20.57	0.539	13.69	0.437	11.10			12.2	2.140	C0120-020-0810-S	0.601	15.27			10.16	1.78
C0120-020-0880-M					0.880	22.35	0.584	14.83	0.471	11.96			11.2	1.961	C0120-020-0880-S	0.652	16.56			9.33	1.63
C0120-020-0940-M					0.940	23.88	0.623	15.82	0.500	12.70			10.4	1.821	C0120-020-0940-S	0.694	17.63			8.66	1.52
C0120-020-1000-M					1.000	25.40	0.662	16.81	0.530	13.46			9.8	1.716	C0120-020-1000-S	0.739	18.77			8.16	1.43
C0120-020-1120-M	0.120	3.05			1.120	28.45	0.739	18.77	0.588	14.94			8.7	1.523	C0120-020-1120-S	0.826	20.98			7.25	1.27
C0120-020-1250-M					1.250	31.75	0.824	20.93	0.652	16.56			7.8	1.366	C0120-020-1250-S	0.922	23.42			6.50	1.14
C0120-020-1500-M					1.500	38.10	0.985	25.02	0.774	19.66			6.4	1.121	C0120-020-1500-S	1.101	27.97			5.33	0.93
C0120-022-0250-M					0.250	6.35	0.187	4.75	0.171	4.34			70.6	12.360	C0120-022-0250-S	0.203	5.16			58.81	10.30
C0120-022-0310-M					0.310	7.87	0.226	5.74	0.209	5.31			53.3	9.330	C0120-022-0310-S	0.248	6.3			44.40	7.77
C0120-022-0380-M					0.380	9.65	0.272	6.91	0.252	6.40			41.5	7.270	C0120-022-0380-S	0.3	7.62			34.57	6.06
C0120-022-0440-M					0.440	11.18	0.317	8.05	0.280	7.11			36.4	6.370	C0120-022-0440-S	0.349	8.86			30.32	5.31
C0120-022-0500-M					0.500	12.70	0.356	9.04	0.319	8.10			31.1	5.450	C0120-022-0500-S	0.394	10.01			25.91	4.54
C0120-022-0560-M					0.560	14.22	0.401	10.19	0.346	8.79			28.2	4.940	C0120-022-0560-S	0.443	11.25			23.49	4.12
C0120-022-0620-M					0.620	15.75	0.440	11.18	0.384	9.75			24.9	4.360	C0120-022-0620-S	0.487	12.37	2.76	12.28	20.74	3.63
C0120-022-0690-M			0.022	0.56	0.690	17.53	0.479	12.17	0.442	11.23	4.48	19.93	21.2	3.710	C0120-022-0690-S	0.534	13.56			17.66	3.09
C0120-022-0750-M					0.750	19.05	0.528	13.41	0.461	11.71			20.2	3.540	C0120-022-0750-S	0.586	14.88			16.83	2.95
C0120-022-0810-M					0.810	20.57	0.570	14.48	0.494	12.55			18.7	3.270	C0120-022-0810-S	0.633	16.08			15.58	2.72
C0120-022-0940-M					0.940	23.88	0.655	16.64	0.566	14.38			15.7	2.750	C0120-022-0940-S	0.729	18.52			13.08	2.29
C0120-022-1000-M					1.000	25.40	0.695	17.65	0.600	15.24			14.7	2.570	C0120-022-1000-S	0.775	19.69			12.25	2.14
C0120-022-1120-M					1.120	28.45	0.792	20.12	0.667	16.94			13.7	2.400	C0120-022-1120-S	0.878	22.3			11.41	2.00
C0120-022-1250-M					1.250	31.75	0.867	22.02	0.739	18.77			11.7	2.050	C0120-022-1250-S	0.967	24.56			9.75	1.71
C0120-022-1500-M					1.500	38.10	1.038	26.37	0.879	22.33			9.7	1.698	C0120-022-1500-S	1.159	29.44			8.08	1.41
C0120-024-0310-M					0.310	7.87	0.242	6.15	0.229	5.82			82.3	14.410	C0120-024-0310-S	0.259	6.58			68.56	12.00
C0120-024-0380-M					0.380	9.65	0.293	7.44	0.271	6.88			64.9	11.360	C0120-024-0380-S	0.315	8			54.06	9.46
C0120-024-0440-M					0.440	11.18	0.338	8.59	0.307	7.80			55.0	9.630	C0120-024-0440-S	0.363	9.22			45.82	8.02
C0120-024-0500-M					0.500	12.70	0.382	9.70	0.343	8.71			47.7	8.350	C0120-024-0500-S	0.411	10.44			39.73	6.96
C0120-024-0560-M					0.560	14.22	0.426	10.82	0.379	9.63			42.1	7.370	C0120-024-0560-S	0.46	11.68			35.07	6.14
C0120-024-0620-M					0.620	15.75	0.471	11.96	0.415	10.54			37.7	6.600	C0120-024-0620-S	0.508	12.9			31.40	5.50
C0120-024-0690-M					0.690	17.53	0.522	13.26	0.457	11.61			33.6	5.880	C0120-024-0690-S	0.564	14.33			27.99	4.90
C0120-024-0750-M			0.024	0.61	0.750	19.05	0.567	14.40	0.493	12.52	5.63	25.04	30.7	5.380	C0120-024-0750-S	0.612	15.54	3.52	15.66	25.57	4.48
C0120-024-0810-M					0.810	20.57	0.611	15.52	0.529	13.44			28.3	4.960	C0120-024-0810-S	0.661	16.79			23.57	4.13
C0120-024-0880-M					0.880	22.35	0.663	16.84	0.571	14.50			25.9	4.540	C0120-024-0880-S	0.717	18.21			21.57	3.78
C0120-024-0940-M					0.940	23.88	0.707	17.96	0.607	15.42			24.2	4.240	C0120-024-0940-S	0.766	19.46			20.16	3.53
C0120-024-1000-M					1.000	25.40	0.751	19.08	0.643	16.33			22.6	3.960	C0120-024-1000-S	0.813	20.65			18.83	3.30
C0120-024-1120-M					1.120	28.45	0.840	21.34	0.715	18.16			20.1	3.520	C0120-024-1120-S	0.91	23.11			16.74	2.93
C0120-024-1250-M					1.250	31.75</															

MUSIC WIRE											STAINLESS STEEL										
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D10560					0.421	10.70	0.110	2.80	0.084	2.13			1.4	0.240	D20560	0.11	2.79			1.14	0.20
D10570	0.136	3.45	0.010	0.25	0.634	16.10	0.150	3.80	0.113	2.88	0.41	1.84	0.9	0.160	D20570	0.15	3.81	0.34	1.51	0.76	0.13
D10580					0.917	23.30	0.209	5.30	0.153	3.88			0.6	0.110	D20580	0.209	5.31			0.52	0.09
D10590					1.343	34.10	0.295	7.50	0.212	5.38			0.4	0.070	D20590	0.295	7.49			0.33	0.06
D10750					0.248	6.30	0.098	2.50	0.082	2.08			5.5	0.970	D20750	0.098	2.49			4.61	0.81
D10760					0.370	9.40	0.130	3.30	0.107	2.72			3.5	0.620	D20760	0.13	3.3			2.95	0.52
D10770	0.139	3.52	0.013	0.32	0.551	14.00	0.181	4.60	0.145	3.68	0.85	3.79	2.3	0.400	D20770	0.181	4.6	0.71	3.16	1.90	0.33
D10780					0.791	20.10	0.248	6.30	0.195	4.96			1.6	0.280	D20780	0.248	6.3			1.33	0.23
D10790					1.154	29.30	0.350	8.90	0.271	6.88			1.1	0.190	D20790	0.35	8.89			0.90	0.16
D10950					0.220	5.60	0.110	2.80	0.102	2.60			13.0	2.280	D20950	0.11	2.79			10.84	1.90
D10960					0.327	8.30	0.154	3.90	0.134	3.40			8.3	1.450	D20960	0.154	3.91			6.90	1.21
D10970	0.142	3.60	0.016	0.40	0.472	12.00	0.213	5.40	0.181	4.60	1.43	6.37	5.4	0.940	D20970	0.213	5.41	1.19	5.29	4.47	0.78
D10980					0.689	17.50	0.295	7.50	0.244	6.20			3.7	0.640	D20980	0.295	7.49			3.04	0.53
D10990					1.004	25.50	0.417	10.60	0.339	8.60			2.5	0.430	D20990	0.417	10.59			2.05	0.36
D11150					0.217	5.50	0.146	3.70	0.128	3.25			31.8	5.570	D21150	0.146	3.71			26.49	4.64
D11160					0.311	7.90	0.201	5.10	0.167	4.25			20.2	3.530	D21160	0.201	5.11			16.79	2.94
D11170	0.146	3.70	0.020	0.50	0.453	11.50	0.280	7.10	0.226	5.75	2.25	10.00	13.0	2.280	D21170	0.28	7.11	1.87	8.32	10.84	1.90
D11180					0.630	16.00	0.386	9.80	0.305	7.75			8.9	1.560	D21180	0.386	9.8			7.42	1.30
D11190					0.925	23.50	0.551	14.00	0.423	10.75			6.0	1.050	D21190	0.551	14			4.99	0.87
C0148-021-0250-M					0.250	6.35	0.162	4.11	0.143	3.63			35.7	6.250	C0148-021-0250-S	0.182	4.62			29.74	5.21
C0148-021-0310-M					0.310	7.87	0.196	4.98	0.166	4.22			27.7	4.850	C0148-021-0310-S	0.222	5.64			23.07	4.04
C0148-021-0380-M					0.380	9.65	0.237	6.02	0.193	4.90			22.0	3.850	C0148-021-0380-S	0.269	6.83			18.33	3.21
C0148-021-0440-M					0.440	11.18	0.271	6.88	0.217	5.51			18.7	3.270	C0148-021-0440-S	0.309	7.85			15.58	2.72
C0148-021-0500-M					0.500	12.70	0.306	7.77	0.240	6.10			16.2	2.840	C0148-021-0500-S	0.349	8.86			13.49	2.37
C0148-021-0560-M					0.560	14.22	0.341	8.66	0.263	6.68			14.3	2.500	C0148-021-0560-S	0.389	9.88			11.91	2.08
C0148-021-0620-M					0.620	15.75	0.375	9.53	0.286	7.26			12.8	2.240	C0148-021-0620-S	0.429	10.9			10.66	1.87
C0148-021-0690-M					0.690	17.53	0.415	10.54	0.313	7.95	3.15	14.01	11.5	2.010	C0148-021-0690-S	0.478	12.14	2.03	9.03	9.58	1.67
C0148-021-0750-M			0.021	0.53	0.750	19.05	0.450	11.43	0.336	8.53			10.5	1.839	C0148-021-0750-S	0.517	13.13			8.75	1.53
C0148-021-0810-M					0.810	20.57	0.485	12.32	0.359	9.12			9.7	1.698	C0148-021-0810-S	0.558	14.17			8.08	1.41
C0148-021-0880-M					0.880	22.35	0.525	13.34	0.386	9.80			8.9	1.558	C0148-021-0880-S	0.606	15.39			7.41	1.30
C0148-021-0940-M					0.940	23.88	0.560	14.22	0.410	10.41			8.3	1.453	C0148-021-0940-S	0.646	16.41			6.91	1.21
C0148-021-1000-M					1.000	25.40	0.594	15.09	0.433	11.00			7.8	1.366	C0148-021-1000-S	0.687	17.45			6.50	1.14
C0148-021-1250-M					1.250	31.75	0.738	18.75	0.529	13.44			6.1	1.068	C0148-021-1250-S	0.85	21.59			5.08	0.89
C0148-021-1500-M					1.500	38.10	0.882	22.40	0.626	15.90			5.1	0.893	C0148-021-1500-S	1.021	25.93			4.25	0.74
C0148-023-0250-M	0.148	3.76			0.250	6.35	0.172	4.37	0.160	4.06			52.0	9.110	C0148-023-0250-S	0.19	4.83			43.32	7.59
C0148-023-0310-M					0.310	7.87	0.209	5.31	0.187	4.75			40.1	7.020	C0148-023-0310-S	0.232	5.89			33.40	5.85
C0148-023-0380-M					0.380	9.65	0.253	6.43	0.218	5.54			31.7	5.550	C0148-023-0380-S	0.281	7.14			26.41	4.62
C0148-023-0440-M					0.440	11.18	0.290	7.37	0.245	6.22			26.9	4.710	C0148-023-0440-S	0.323	8.2			22.41	3.92
C0148-023-0500-M					0.500	12.70	0.327	8.31	0.272	6.91			23.3	4.080	C0148-023-0500-S	0.365	9.27			19.41	3.40
C0148-023-0560-M					0.560	14.22	0.364	9.25	0.299	7.59			20.6	3.610	C0148-023-0560-S	0.408	10.36			17.16	3.01
C0148-023-0620-M					0.620	15.75	0.401	10.19	0.326	8.28			18.5	3.240	C0148-023-0620-S	0.451	11.46			15.41	2.70
C0148-023-0690-M			0.023	0.58	0.690	17.53	0.444	11.28	0.357	9.07	4.04	17.97	16.5	2.890	C0148-023-0690-S	0.5	12.7	2.61	11.61	13.74	2.41
C0148-023-0750-M					0.750	19.05	0.481	12.22	0.384	9.75			15.1	2.640	C0148-023-0750-S	0.542	13.77			12.58	2.20
C0148-023-0810-M					0.810	20.57	0.518	13.16	0.410	10.41			13.9	2.430	C0148-023-0810-S	0.584	14.83			11.58	2.02
C0148-023-0880-M					0.880	22.35	0.562	14.27	0.442	11.23			12.7	2.220	C0148-023-0880-S	0.633	16.08			10.58	1.85
C0148-023-0940-M					0.940	23.88	0.599	15.21	0.469	11.91			11.9	2.080	C0148-023-0940-S	0.677	17.2			9.91	1.73
C0148-023-1000-M					1.000	25.40	0.636	16.15	0.495	12.57			11.1	1.944	C0148-023-1000-S	0.718	18.24			9.25	1.62
C0148-023-1250-M					1.250	31.75	0.791	20.09	0.607	15.42			8.8	1.541	C0148-023-1250-S	0.894	22.71			7.33	1.28
C0148-023-1500-M					1.500	38.10	0.945	24.00	0.719	18.26			7.3	1.278	C0148-023-1500-S	1.071	27.2			6.08	1.06
D11350					0.217	5.50	0.157	4.00	0.161	4.10			80.1	14.020	D21350	0.157	3.99			66.69	11.68
D11360					0.307	7.80	0.213	5.40	0.211	5.36			50.8	8.900	D21360	0.213	5.41			42.33	7.41
D11370	0.151	3.83	0.025	0.63	0.433	11.00	0.295	7.50	0.285	7.25	4.72	20.99	32.9	5.770	D21370	0.295	7.49	3.93	17.48	27.44	4.81
D11380					0.610	15.50	0.406	10.30	0.385	9.77			22.4	3.930	D21380	0.406	10.31			18.69	3.27
D11390					0.886	22.50	0.579	14.70	0.533	13.55			15.1	2.650	D21390	0.579	14.71			12.60	2.21
D10800					0.343	8.70	0.102	2.60	0.082	2.08			2.9	0.500	D20800	0.102	2.59			2.38	0.42
D10810					0.516	13.10	0.138	3.50	0.107	2.72			1.8	0.310	D20810	0.138	3.51			1.47	0.26
D10820	0.170	4.32	0.013	0.32	0.780	19.80	0.193	4.90	0.145	3.68	0.69	3.09	1.3	0.220	D20820	0.193	4.9	0.58	2.58	1.05	0.18
D10830					1.126	28.60	0.264	6.70	0.195	4.96			0.8	0.140	D20830	0.264	6.71			0.67	0.12
D10840					1.650	41.90	0.374	9.50	0.271	6.88			0.6	0.100	D20840	0.374	9.5			0.48	0.08
D11000					0.295	7.50	0.118	3.00	0.102	2.60			6.7	1.170	D21000	0.118	3			5.57	0.97
D11010					0.433	11.00	0.161	4.10	0.134	3.40			4.2	0.740	D21010	0.161	4.09			3.52	0.62
D11020	0.173	4.40	0.016	0.40	0.650	16.50	0.228	5.80	0.181	4.60	1.18	5.25	2.7	0.480	D21020	0.228	5.79	0.98	4.36	2.28	0.40
D11030					0.945	24.00	0.315	8.00	0.244	6.20			1.8	0.320	D21030	0.315	8.0			1.52	0.27
D11040					1.398	35.50	0.449	11.40	0.339	8.60			1.3	0.220	D21040	0.449	11.4			1.05	0.18



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MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D11200					0.276	7.00	0.146	3.70	0.128	3.25			16.2	2.830	D21200	0.146	3.71			13.46	2.36
D11210					0.394	10.00	0.201	5.10	0.167	4.25			10.3	1.810	D21210	0.201	5.11			8.61	1.51
D11220	0.177	4.50	0.020	0.50	0.591	15.00	0.280	7.10	0.226	5.75	2.10	9.32	6.7	1.170	D21220	0.28	7.11	1.75	7.78	5.57	0.97
D11230					0.846	21.50	0.386	9.80	0.305	7.75			4.5	0.790	D21230	0.386	9.8			3.76	0.66
D11240					1.220	31.00	0.551	14.00	0.423	10.75			3.1	0.540	D21240	0.551	14			2.57	0.45
C0180-012-0250-M					0.250	6.35	0.101	2.57	0.057	1.45			3.6	0.630	C0180-012-0250-S	0.135	3.43			3.00	0.52
C0180-012-0310-M					0.310	7.87	0.124	3.15	0.062	1.57			2.9	0.508	C0180-012-0310-S	0.167	4.24			2.42	0.42
C0180-012-0380-M					0.380	9.65	0.145	3.68	0.069	1.75			2.3	0.403	C0180-012-0380-S	0.2	5.08			1.92	0.34
C0180-012-0440-M					0.440	11.18	0.170	4.32	0.074	1.88			2.0	0.350	C0180-012-0440-S	0.233	5.92			1.67	0.29
C0180-012-0500-M					0.500	12.70	0.182	4.62	0.080	2.03			1.7	0.298	C0180-012-0500-S	0.256	6.5			1.42	0.25
C0180-012-0560-M					0.560	14.22	0.200	5.08	0.085	2.16			1.5	0.263	C0180-012-0560-S	0.284	7.21			1.25	0.22
C0180-012-0620-M					0.620	15.75	0.234	5.94	0.091	2.31			1.4	0.245	C0180-012-0620-S	0.324	8.23			1.17	0.20
C0180-012-0690-M			0.012	0.30	0.690	17.53	0.240	6.10	0.097	2.46	0.54	2.40	1.2	0.210	C0180-012-0690-S	0.344	8.74	0.35	1.56	1.00	0.17
C0180-012-0750-M					0.750	19.05	0.259	6.58	0.103	2.62			1.1	0.193	C0180-012-0750-S	0.373	9.47			0.92	0.16
C0180-012-0810-M					0.810	20.57	0.270	6.86	0.109	2.77			1.0	0.175	C0180-012-0810-S	0.395	10.03			0.83	0.15
C0180-012-0880-M					0.880	22.35	0.340	8.64	0.115	2.92			1.0	0.175	C0180-012-0880-S	0.465	11.81			0.83	0.15
C0180-012-0940-M					0.940	23.88	0.336	8.53	0.121	3.07			0.9	0.158	C0180-012-0940-S	0.479	12.17			0.75	0.13
C0180-012-1000-M					1.000	25.40	0.325	8.26	0.126	3.20			0.8	0.140	C0180-012-1000-S	0.482	12.24			0.67	0.12
C0180-012-1250-M					1.250	31.75	0.479	12.17	0.149	3.78			0.7	0.123	C0180-012-1250-S	0.658	16.71			0.58	0.10
C0180-012-1500-M					1.500	38.10	0.600	15.24	0.172	4.37			0.6	0.105	C0180-012-1500-S	0.809	20.55			0.50	0.09
C0180-014-0250-M					0.250	6.35	0.115	2.92	0.069	1.75			6.2	1.086	C0180-014-0250-S	0.146	3.71			5.16	0.90
C0180-014-0310-M					0.310	7.87	0.139	3.53	0.076	1.93			4.9	0.858	C0180-014-0310-S	0.178	4.52			4.08	0.71
C0180-014-0380-M					0.380	9.65	0.165	4.19	0.085	2.16			3.9	0.683	C0180-014-0380-S	0.214	5.44			3.25	0.57
C0180-014-0440-M					0.440	11.18	0.193	4.90	0.092	2.34			3.4	0.595	C0180-014-0440-S	0.25	6.35			2.83	0.50
C0180-014-0500-M					0.500	12.70	0.210	5.33	0.100	2.54			2.9	0.508	C0180-014-0500-S	0.277	7.04			2.42	0.42
C0180-014-0560-M					0.560	14.22	0.238	6.05	0.107	2.72			2.6	0.455	C0180-014-0560-S	0.311	7.9			2.17	0.38
C0180-014-0620-M			0.014	0.36	0.620	15.75	0.255	6.48	0.114	2.90	0.84	3.74	2.3	0.403	C0180-014-0620-S	0.339	8.61	0.54	2.4	1.92	0.34
C0180-014-0690-M					0.690	17.53	0.289	7.34	0.123	3.12			2.1	0.368	C0180-014-0690-S	0.382	9.7			1.75	0.31
C0180-014-0750-M					0.750	19.05	0.308	7.82	0.130	3.30			1.9	0.333	C0180-014-0750-S	0.41	10.41			1.58	0.28
C0180-014-0880-M					0.880	22.35	0.355	9.02	0.146	3.71			1.6	0.280	C0180-014-0880-S	0.476	12.09			1.33	0.23
C0180-014-1000-M					1.000	25.40	0.400	10.16	0.161	4.09			1.4	0.245	C0180-014-1000-S	0.538	13.67			1.17	0.20
C0180-014-1250-M					1.250	31.75	0.486	12.34	0.191	4.85			1.1	0.193	C0180-014-1250-S	0.662	16.81			0.92	0.16
C0180-014-1380-M					1.380	35.05	0.540	13.72	0.207	5.26			1.0	0.175	C0180-014-1380-S	0.733	18.62			0.83	0.15
C0180-014-1500-M					1.500	38.10	0.567	14.40	0.222	5.64			0.9	0.158	C0180-014-1500-S	0.782	19.86			0.75	0.13
C0180-016-0250-M	0.180	4.57			0.250	6.35	0.109	2.77	0.080	2.03			8.9	1.558	C0180-016-0250-S	0.144	3.66			7.41	1.30
C0180-016-0310-M					0.310	7.87	0.143	3.63	0.087	2.21			7.5	1.313	C0180-016-0310-S	0.184	4.67			6.25	1.09
C0180-016-0380-M					0.380	9.65	0.169	4.29	0.100	2.54			5.9	1.033	C0180-016-0380-S	0.219	5.56			4.91	0.86
C0180-016-0440-M					0.440	11.18	0.187	4.75	0.112	2.84			4.9	0.858	C0180-016-0440-S	0.247	6.27			4.08	0.71
C0180-016-0500-M					0.500	12.70	0.205	5.21	0.124	3.15			4.2	0.735	C0180-016-0500-S	0.274	6.96			3.50	0.61
C0180-016-0560-M					0.560	14.22	0.223	5.66	0.136	3.45			3.7	0.648	C0180-016-0560-S	0.304	7.72			3.08	0.54
C0180-016-0620-M					0.620	15.75	0.254	6.45	0.144	3.66			3.4	0.595	C0180-016-0620-S	0.341	8.66			2.83	0.50
C0180-016-0690-M			0.016	0.41	0.690	17.53	0.283	7.19	0.155	3.94	1.25	5.56	3.1	0.543	C0180-016-0690-S	0.384	9.75	0.79	3.51	2.58	0.45
C0180-016-0750-M					0.750	19.05	0.300	7.62	0.167	4.24			2.8	0.490	C0180-016-0750-S	0.412	10.46			2.33	0.41
C0180-016-0880-M					0.880	22.35	0.380	9.65	0.185	4.70			2.5	0.438	C0180-016-0880-S	0.501	12.73			2.08	0.36
C0180-016-1000-M					1.000	25.40	0.432	10.97	0.204	5.18			2.2	0.385	C0180-016-1000-S	0.569	14.45			1.83	0.32
C0180-016-1250-M					1.250	31.75	0.515	13.08	0.245	6.22			1.7	0.298	C0180-016-1250-S	0.693	17.6			1.42	0.25
C0180-016-1380-M					1.380	35.05	0.600	15.24	0.266	6.76			1.6	0.280	C0180-016-1380-S	0.788	20.02			1.33	0.23
C0180-016-1500-M					1.500	38.10	0.607	15.42	0.285	7.24			1.4	0.245	C0180-016-1500-S	0.823	20.9			1.17	0.20
C0180-016-1750-M					1.750	44.45	0.708	17.98	0.326	8.28			1.2	0.210	C0180-016-1750-S	0.961	24.41			1.00	0.17
C0180-018-0250-M					0.250	6.35	0.120	3.05	0.094	2.39			13.5	2.360	C0180-018-0250-S	0.153	3.89			11.25	1.97
C0180-018-0310-M					0.310	7.87	0.156	3.96	0.103	2.62			11.4	1.996	C0180-018-0310-S	0.195	4.95			9.50	1.66
C0180-018-0380-M					0.380	9.65	0.190	4.83	0.116	2.95			9.3	1.628	C0180-018-0380-S	0.239	6.07			7.75	1.36
C0180-018-0440-M					0.440	11.18	0.215	5.46	0.130	3.30			7.8	1.366	C0180-018-0440-S	0.271	6.88			6.50	1.14
C0180-018-0500-M					0.500	12.70	0.239	6.07	0.144	3.66			6.7	1.173	C0180-018-0500-S	0.304	7.72			5.58	0.98
C0180-018-0560-M					0.560	14.22	0.252	6.40	0.162	4.11			5.7	0.998	C0180-018-0560-S	0.329	8.36			4.75	0.83
C0180-018-0620-M					0.620	15.75	0.276	7.01	0.175	4.45			5.1	0.893	C0180-018-0620-S	0.362	9.19			4.25	0.74
C0180-018-0690-M			0.018	0.46	0.690	17.53	0.310	7.87	0.189	4.80	1.76	7.83	4.6	0.805	C0180-018-0690-S	0.404	10.26	1.09	4.85	3.83	0.67
C0180-018-0750-M					0.750	19.05	0.323	8.20	0.207	5.26			4.1	0.718	C0180-018-0750-S	0.429	10.9			3.42	0.60
C0180-018-0880-M					0.880	22.35	0.404	10.26	0.227	5.77			3.7	0.648	C0180-018-0880-S	0.525	13.34			3.08	0.54
C0180-018-1000-M					1.000	25.40	0.450	11.43	0.252	6.40			3.2	0.560	C0180-018-1000-S	0.589	14.96			2.67	0.47
C0180-018-1250-M					1.250	31.75	0.573	14.55	0.303	7.70			2.6	0.455	C0180-018-1250-S	0.744	18.9			2.17	0.38
C0180-018-1380-M					1.380	35.05	0.615	15.62	0.330	8.38			2.3	0.403	C0180-018-1380-S	0.809	20.55			1.92	0.34
C0180-018-1500-M					1.500	38.10	0.662	16.81	0.355	9.02			2.1								

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0180-020-0250-M					0.250	6.35	0.142	3.61	0.113	2.87			21.2	3.710	C0180-020-0250-S	0.167	4.24			17.66	3.09
C0180-020-0310-M					0.310	7.87	0.171	4.34	0.128	3.25			16.5	2.890	C0180-020-0310-S	0.203	5.16			13.74	2.41
C0180-020-0380-M					0.380	9.65	0.205	5.21	0.146	3.71			13.1	2.290	C0180-020-0380-S	0.245	6.22			10.91	1.91
C0180-020-0440-M					0.440	11.18	0.234	5.94	0.161	4.09			11.1	1.944	C0180-020-0440-S	0.281	7.14			9.25	1.62
C0180-020-0500-M					0.500	12.70	0.263	6.68	0.176	4.47			9.7	1.698	C0180-020-0500-S	0.318	8.08			8.08	1.41
C0180-020-0560-M					0.560	14.22	0.292	7.42	0.191	4.85			8.6	1.506	C0180-020-0560-S	0.354	8.99			7.16	1.25
C0180-020-0620-M					0.620	15.75	0.321	8.15	0.207	5.26			7.7	1.348	C0180-020-0620-S	0.39	9.91			6.41	1.12
C0180-020-0690-M			0.020	0.51	0.690	17.53	0.355	9.02	0.224	5.69	2.29	10.19	6.8	1.191	C0180-020-0690-S	0.43	10.92	1.47	6.54	5.66	0.99
C0180-020-0750-M					0.750	19.05	0.384	9.75	0.239	6.07			6.3	1.103	C0180-020-0750-S	0.469	11.91			5.25	0.92
C0180-020-0880-M					0.880	22.35	0.447	11.35	0.272	6.91			5.3	0.928	C0180-020-0880-S	0.546	13.87			4.41	0.77
C0180-020-1000-M					1.000	25.40	0.505	12.83	0.302	7.67			4.6	0.805	C0180-020-1000-S	0.616	15.65			3.83	0.67
C0180-020-1250-M					1.250	31.75	0.626	15.90	0.366	9.30			3.7	0.648	C0180-020-1250-S	0.772	19.61			3.08	0.54
C0180-020-1380-M					1.380	35.05	0.689	17.50	0.398	10.11			3.3	0.578	C0180-020-1380-S	0.844	21.44			2.75	0.48
C0180-020-1500-M					1.500	38.10	0.737	18.72	0.429	10.90			3.0	0.525	C0180-020-1500-S	0.911	23.14			2.50	0.44
C0180-020-1750-M					1.750	44.45	0.868	22.05	0.492	12.50			2.6	0.455	C0180-020-1750-S	1.07	27.18			2.17	0.38
C0180-022-0250-M					0.250	6.35	0.144	3.66	0.121	3.07			29.6	5.180	C0180-022-0250-S	0.172	4.37			24.66	4.31
C0180-022-0310-M					0.310	7.87	0.178	4.52	0.137	3.48			23.7	4.150	C0180-022-0310-S	0.213	5.41			19.74	3.46
C0180-022-0380-M					0.380	9.65	0.222	5.64	0.154	3.91			19.8	3.470	C0180-022-0380-S	0.264	6.71			16.49	2.89
C0180-022-0440-M					0.440	11.18	0.255	6.48	0.170	4.32			16.9	2.960	C0180-022-0440-S	0.304	7.72			14.08	2.47
C0180-022-0500-M					0.500	12.70	0.280	7.11	0.192	4.88			14.2	2.490	C0180-022-0500-S	0.338	8.59			11.83	2.07
C0180-022-0560-M					0.560	14.22	0.296	7.52	0.219	5.56			11.9	2.080	C0180-022-0560-S	0.366	9.3			9.91	1.73
C0180-022-0620-M					0.620	15.75	0.322	8.18	0.241	6.12			10.5	1.839	C0180-022-0620-S	0.4	10.16			8.75	1.53
C0180-022-0690-M			0.022	0.56	0.690	17.53	0.365	9.27	0.259	6.58	3.13	13.92	9.6	1.681	C0180-022-0690-S	0.45	11.43	1.92	8.54	8.00	1.40
C0180-022-0750-M					0.750	19.05	0.389	9.88	0.280	7.11			8.7	1.523	C0180-022-0750-S	0.485	12.32			7.25	1.27
C0180-022-0810-M					0.810	20.57	0.405	10.29	0.309	7.85			7.7	1.348	C0180-022-0810-S	0.511	12.98			6.41	1.12
C0180-022-0940-M					0.940	23.88	0.486	12.34	0.337	8.56			6.9	1.208	C0180-022-0940-S	0.606	15.39			5.75	1.01
C0180-022-1000-M					1.000	25.40	0.518	13.16	0.355	9.02			6.5	1.138	C0180-022-1000-S	0.645	16.38			5.41	0.95
C0180-022-1120-M					1.120	28.45	0.580	14.73	0.391	9.93			5.8	1.016	C0180-022-1120-S	0.722	18.34			4.83	0.85
C0180-022-1250-M					1.250	31.75	0.648	16.46	0.430	10.92			5.2	0.911	C0180-022-1250-S	0.807	20.5			4.33	0.76
C0180-022-1500-M					1.500	38.10	0.772	19.61	0.506	12.85			4.3	0.753	C0180-022-1500-S	0.964	24.49			3.58	0.63
C0180-022-1750-M					1.750	44.45	0.929	23.60	0.550	13.97			3.8	0.665	C0180-022-1750-S	1.143	29.03			3.17	0.55
C0180-024-0250-M					0.250	6.35	0.160	4.06	0.143	3.63			42.3	7.410	C0180-024-0250-S	0.18	4.57			35.24	6.17
C0180-024-0310-M	0.180	4.57			0.310	7.87	0.193	4.90	0.164	4.17			32.6	5.710	C0180-024-0310-S	0.219	5.56			27.16	4.76
C0180-024-0380-M					0.380	9.65	0.232	5.89	0.189	4.80			25.7	4.500	C0180-024-0380-S	0.265	6.73			21.41	3.75
C0180-024-0440-M					0.440	11.18	0.265	6.73	0.210	5.33			21.8	3.820	C0180-024-0440-S	0.304	7.72			18.16	3.18
C0180-024-0500-M					0.500	12.70	0.298	7.57	0.232	5.89			18.9	3.310	C0180-024-0500-S	0.343	8.71			15.74	2.76
C0180-024-0560-M					0.560	14.22	0.331	8.41	0.253	6.43			16.7	2.920	C0180-024-0560-S	0.383	9.73			13.91	2.43
C0180-024-0620-M					0.620	15.75	0.365	9.27	0.274	6.96			14.9	2.610	C0180-024-0620-S	0.421	10.69			12.41	2.17
C0180-024-0750-M			0.024	0.61	0.750	19.05	0.437	11.10	0.320	8.13	3.81	16.95	12.2	2.140	C0180-024-0750-S	0.507	12.88	2.47	10.99	10.16	1.78
C0180-024-0880-M					0.880	22.35	0.509	12.93	0.366	9.30			10.3	1.804	C0180-024-0880-S	0.592	15.04			8.58	1.50
C0180-024-1000-M					1.000	25.40	0.575	14.61	0.408	10.36			9.0	1.576	C0180-024-1000-S	0.671	17.04			7.50	1.31
C0180-024-1120-M					1.120	28.45	0.641	16.28	0.450	11.43			8.0	1.401	C0180-024-1120-S	0.75	19.05			6.66	1.17
C0180-024-1250-M					1.250	31.75	0.713	18.11	0.496	12.60			7.1	1.243	C0180-024-1250-S	0.833	21.16			5.91	1.04
C0180-024-1500-M					1.500	38.10	0.852	21.64	0.585	14.86			5.9	1.033	C0180-024-1500-S	0.998	25.35			4.91	0.86
C0180-024-1750-M					1.750	44.45	0.990	25.15	0.673	17.09			5.0	0.876	C0180-024-1750-S	1.157	29.39			4.17	0.73
C0180-024-2000-M					2.000	50.80	1.129	28.68	0.761	19.33			4.4	0.770	C0180-024-2000-S	1.327	33.71			3.67	0.64
C0180-026-0250-M					0.250	6.35	0.163	4.14	0.149	3.78			57.8	10.120	C0180-026-0250-S	0.186	4.72			48.15	8.43
C0180-026-0310-M					0.310	7.87	0.203	5.16	0.168	4.27			47.0	8.230	C0180-026-0310-S	0.231	5.87			39.15	6.86
C0180-026-0380-M					0.380	9.65	0.246	6.25	0.195	4.95			37.5	6.570	C0180-026-0380-S	0.281	7.14			31.24	5.47
C0180-026-0440-M					0.440	11.18	0.279	7.09	0.221	5.61			31.2	5.460	C0180-026-0440-S	0.321	8.15			25.99	4.55
C0180-026-0500-M					0.500	12.70	0.312	7.92	0.247	6.27			26.8	4.690	C0180-026-0500-S	0.361	9.17			22.32	3.91
C0180-026-0560-M					0.560	14.22	0.346	8.79	0.272	6.91			23.5	4.120	C0180-026-0560-S	0.402	10.21			19.58	3.43
C0180-026-0620-M					0.620	15.75	0.379	9.63	0.298	7.57			20.9	3.660	C0180-026-0620-S	0.442	11.23			17.41	3.05
C0180-026-0690-M					0.690	17.53	0.422	10.72	0.324	8.23			18.8	3.290	C0180-026-0690-S	0.492	12.5			15.66	2.74
C0180-026-0750-M			0.026	0.66	0.750	19.05	0.455	11.56	0.352	8.94	5.03	22.38	17.0	2.980	C0180-026-0750-S	0.532	13.51	3.09	13.74	14.16	2.48
C0180-026-0810-M					0.810	20.57	0.488	12.40	0.377	9.58			15.6	2.730	C0180-026-0810-S	0.572	14.53			12.99	2.27
C0180-026-0880-M					0.880	22.35	0.532	13.51	0.403	10.24			14.4	2.520	C0180-026-0880-S	0.622	15.8			12.00	2.10
C0180-026-1000-M					1.000	25.40	0.588	14.94	0.461	11.71			12.2	2.140	C0180-026-1000-S	0.696	17.68			10.16	1.78
C0180-026-1120-M					1.120	28.45	0.654	16.61	0.509	12.93			10.8	1.891	C0180-026-1120-S	0.776	19.71			9.00	1.58
C0180-026-1250-M					1.250	31.75	0.731	18.57	0.562	14.27			9.7	1.698	C0180-026-1250-S	0.867	22.02			8.08	1.41
C0180-026-1500-M					1.500	38.10	0.871	22.12	0.663	16.84			8.0	1.401	C0180-026-1500-S	1.036	26.31			6.66	1.17
C0180-026-1750-M					1.750	44.45	1.010	25.65	0.764	19.41			6.8	1.191	C0180-026-1750-S	1.204	30.58			5.66	0.99
C0180-02																					

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0180-029-0310-M					0.310	7.87	0.219	5.56	0.208	5.28			71.0	12.430	C0180-029-0310-S	0.239	6.07			59.14	10.35
C0180-029-0380-M					0.380	9.65	0.264	6.71	0.241	6.12			55.5	9.720	C0180-029-0380-S	0.29	7.37			46.23	8.10
C0180-029-0440-M					0.440	11.18	0.303	7.70	0.270	6.86			46.8	8.200	C0180-029-0440-S	0.333	8.46			38.98	6.83
C0180-029-0500-M					0.500	12.70	0.341	8.66	0.299	7.59			40.5	7.090	C0180-029-0500-S	0.376	9.55			33.74	5.91
C0180-029-0560-M					0.560	14.22	0.380	9.65	0.327	8.31			35.6	6.230	C0180-029-0560-S	0.419	10.64			29.65	5.19
C0180-029-0620-M					0.620	15.75	0.418	10.62	0.356	9.04			31.8	5.570	C0180-029-0620-S	0.462	11.73			26.49	4.64
C0180-029-0690-M					0.690	17.53	0.463	11.76	0.390	9.91			28.3	4.960	C0180-029-0690-S	0.513	13.03			23.57	4.13
C0180-029-0750-M					0.750	19.05	0.501	12.73	0.418	10.62			25.8	4.520	C0180-029-0750-S	0.555	14.1			21.49	3.77
C0180-029-0810-M			0.029	0.74	0.810	20.57	0.540	13.72	0.447	11.35	6.43	28.60	23.8	4.170	C0180-029-0810-S	0.599	15.21	4.18	18.59	19.83	3.47
C0180-029-0880-M					0.880	22.35	0.584	14.83	0.481	12.22			21.8	3.820	C0180-029-0880-S	0.65	16.51			18.16	3.18
C0180-029-0940-M					0.940	23.88	0.623	15.82	0.509	12.93			20.3	3.560	C0180-029-0940-S	0.693	17.6			16.91	2.97
C0180-029-1000-M					1.000	25.40	0.661	16.79	0.538	13.67			19.0	3.330	C0180-029-1000-S	0.736	18.69			15.83	2.77
C0180-029-1120-M					1.120	28.45	0.738	18.75	0.596	15.14			16.8	2.940	C0180-029-1120-S	0.821	20.85			13.99	2.45
C0180-029-1250-M					1.250	31.75	0.821	20.85	0.658	16.71			15.0	2.630	C0180-029-1250-S	0.915	23.24			12.50	2.19
C0180-029-1380-M					1.380	35.05	0.905	22.99	0.720	18.29			13.5	2.360	C0180-029-1380-S	1.008	25.6			11.25	1.97
C0180-029-1500-M					1.500	38.10	0.982	24.94	0.778	19.76			12.4	2.170	C0180-029-1500-S	1.095	27.81			10.33	1.81
C0180-029-1750-M					1.750	44.45	1.142	29.01	0.897	22.78			10.6	1.856	C0180-029-1750-S	1.276	32.41			8.83	1.55
C0180-029-2000-M					2.000	50.80	1.302	33.07	1.017	25.83			9.2	1.611	C0180-029-2000-S	1.454	36.93			7.66	1.34
C0180-032-0310-M					0.310	7.87	0.238	6.05	0.206	5.23			122.7	21.490	C0180-032-0310-S	0.256	6.5			102.21	17.90
C0180-032-0380-M					0.380	9.65	0.289	7.34	0.240	6.10			97.0	16.990	C0180-032-0380-S	0.312	7.92			80.80	14.15
C0180-032-0440-M					0.440	11.18	0.326	8.28	0.280	7.11			77.5	13.570	C0180-032-0440-S	0.355	9.02			64.56	11.30
C0180-032-0500-M					0.500	12.70	0.364	9.25	0.319	8.10			64.9	11.360	C0180-032-0500-S	0.398	10.11			54.06	9.46
C0180-032-0560-M					0.560	14.22	0.410	10.41	0.343	8.71			58.9	10.310	C0180-032-0560-S	0.448	11.38			49.06	8.59
C0180-032-0620-M					0.620	15.75	0.448	11.38	0.382	9.70			51.3	8.980	C0180-032-0620-S	0.492	12.5			42.73	7.48
C0180-032-0690-M					0.690	17.53	0.504	12.80	0.406	10.31			47.5	8.320	C0180-032-0690-S	0.551	14			39.57	6.93
C0180-032-0750-M					0.750	19.05	0.536	13.61	0.456	11.58			41.3	7.230	C0180-032-0750-S	0.59	14.99			34.40	6.02
C0180-032-0810-M			0.032	0.81	0.810	20.57	0.573	14.55	0.496	12.60	8.83	39.28	37.3	6.530	C0180-032-0810-S	0.633	16.08	5.49	24.42	31.07	5.44
C0180-032-0880-M					0.880	22.35	0.616	15.65	0.543	13.79			33.5	5.870	C0180-032-0880-S	0.683	17.35			27.91	4.89
C0180-032-0940-M					0.940	23.88	0.658	16.71	0.576	14.63			31.3	5.480	C0180-032-0940-S	0.729	18.52			26.07	4.56
C0180-032-1000-M					1.000	25.40	0.700	17.78	0.608	15.44			29.4	5.150	C0180-032-1000-S	0.776	19.71			24.49	4.29
C0180-032-1120-M	0.180	4.57			1.120	28.45	0.775	19.69	0.677	17.20			25.6	4.480	C0180-032-1120-S	0.863	21.92			21.32	3.73
C0180-032-1250-M					1.250	31.75	0.863	21.92	0.748	19.00			22.8	3.990	C0180-032-1250-S	0.961	24.41			18.99	3.32
C0180-032-1380-M					1.380	35.05	0.951	24.16	0.819	20.80			20.6	3.610	C0180-032-1380-S	1.06	26.92			17.16	3.01
C0180-032-1500-M					1.500	38.10	1.030	26.16	0.885	22.48			18.8	3.290	C0180-032-1500-S	1.149	29.18			15.66	2.74
C0180-032-1750-M					1.750	44.45	1.202	30.53	1.023	25.98			16.1	2.820	C0180-032-1750-S	1.341	34.06			13.41	2.35
C0180-032-2000-M					2.000	50.80	1.369	34.77	1.160	29.46			14.0	2.450	C0180-032-2000-S	1.529	38.84			11.66	2.04
C0180-035-0380-M					0.380	9.65	0.302	7.67	0.286	7.26			137.0	23.990	C0180-035-0380-S	0.318	8.08			114.12	19.98
C0180-035-0440-M					0.440	11.18	0.346	8.79	0.321	8.15			114.7	20.080	C0180-035-0440-S	0.366	9.3			95.55	16.73
C0180-035-0500-M					0.500	12.70	0.391	9.93	0.356	9.04			98.7	17.280	C0180-035-0500-S	0.414	10.52			82.22	14.39
C0180-035-0560-M					0.560	14.22	0.436	11.07	0.391	9.93			86.6	15.160	C0180-035-0560-S	0.463	11.76			72.14	12.63
C0180-035-0620-M					0.620	15.75	0.481	12.22	0.426	10.82			77.2	13.520	C0180-035-0620-S	0.511	12.98			64.31	11.26
C0180-035-0690-M					0.690	17.53	0.533	13.54	0.467	11.86			68.5	11.990	C0180-035-0690-S	0.567	14.4			57.06	9.99
C0180-035-0750-M					0.750	19.05	0.578	14.68	0.502	12.75			62.4	10.930	C0180-035-0750-S	0.615	15.62			51.98	9.10
C0180-035-0810-M			0.035	0.89	0.810	20.57	0.623	15.82	0.537	13.64	10.74	47.77	57.4	10.050	C0180-035-0810-S	0.663	16.84	7.03	31.27	47.81	8.37
C0180-035-0880-M					0.880	22.35	0.675	17.15	0.578	14.68			52.4	9.180	C0180-035-0880-S	0.719	18.26			43.65	7.65
C0180-035-0940-M					0.940	23.88	0.720	18.29	0.613	15.57			48.8	8.550	C0180-035-0940-S	0.767	19.48			40.65	7.12
C0180-035-1000-M					1.000	25.40	0.765	19.43	0.648	16.46			45.7	8.000	C0180-035-1000-S	0.815	20.7			38.07	6.66
C0180-035-1120-M					1.120	28.45	0.854	21.69	0.718	18.24			40.4	7.070	C0180-035-1120-S	0.911	23.14			33.65	5.89
C0180-035-1250-M					1.250	31.75	0.951	24.16	0.793	20.14			36.0	6.300	C0180-035-1250-S	1.016	25.81			29.99	5.25
C0180-035-1500-M					1.500	38.10	1.138	28.91	0.939	23.85			29.7	5.200	C0180-035-1500-S	1.216	30.89			24.74	4.33
C0180-035-1750-M					1.750	44.45	1.325	33.66	1.085	27.56			25.3	4.430	C0180-035-1750-S	1.416	35.97			21.07	3.69
C0180-035-2000-M					2.000	50.80	1.512	38.40	1.231	31.27			22.0	3.850	C0180-035-2000-S	1.616	41.05			18.33	3.21
D11400					0.264	6.70	0.169	4.30	0.161	4.10			40.9	7.160	D21400	0.169	4.29			34.06	5.96
D11410					0.378	9.60	0.228	5.80	0.211	5.36			26.0	4.550	D21410	0.228	5.79			21.64	3.79
D11420			0.025	0.63	0.551	14.00	0.323	8.20	0.285	7.25	3.86	17.16	16.8	2.940	D21420	0.323	8.2	3.21	14.28	13.98	2.45
D11430					0.787	20.00	0.445	11.30	0.385	9.77			11.4	2.000	D21430	0.445	11.3			9.51	1.67
D11440					1.142	29.00	0.638	16.20	0.533	13.55			7.7	1.350	D21440	0.638	16.21			6.42	1.12
D11600					0.272	6.90	0.205	5.20	0.205	5.20			105.8	18.530	D21600	0.205	5.21			88.14	15.44
D11610					0.382	9.70	0.276	7.00	0.268	6.80			67.8	11.870	D21610	0.276	7.01			56.46	9.89
D11620			0.031	0.80	0.551	14.00	0.386	9.80	0.362	9.20	7.16	31.87	43.8	7.670	D21620	0.386	9.8	5.97	26.55	36.48	6.39
D11630					0.768	19.50	0.531	13.50	0.488	12.40			29.8	5.220	D21630	0.531	13.49			24.83	4.35
D11640					1.102	28.00	0.752	19.10	0.677	17.20			20.1	3.520	D21640	0.752	19.1				

MUSIC WIRE											STAINLESS STEEL										
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0210-018-0380-M					0.380	9.65	0.161	4.09	0.110	2.79			6.8	1.191	C0210-018-0380-S	0.213	5.41			5.66	0.99
C0210-018-0440-M					0.440	11.18	0.182	4.62	0.120	3.05			5.8	1.016	C0210-018-0440-S	0.244	6.2			4.83	0.85
C0210-018-0500-M					0.500	12.70	0.204	5.18	0.130	3.30			5.1	0.893	C0210-018-0500-S	0.277	7.04			4.25	0.74
C0210-018-0560-M					0.560	14.22	0.226	5.74	0.140	3.56			4.5	0.788	C0210-018-0560-S	0.308	7.82			3.75	0.66
C0210-018-0620-M					0.620	15.75	0.248	6.30	0.150	3.81			4.0	0.700	C0210-018-0620-S	0.336	8.53			3.33	0.58
C0210-018-0690-M					0.690	17.53	0.273	6.93	0.161	4.09			3.6	0.630	C0210-018-0690-S	0.375	9.53			3.00	0.52
C0210-018-0750-M			0.018	0.46	0.750	19.05	0.295	7.49	0.171	4.34	1.50	6.67	3.3	0.578	C0210-018-0750-S	0.406	10.31	0.95	4.23	2.75	0.48
C0210-018-0810-M					0.810	20.57	0.310	7.87	0.181	4.60			3.0	0.525	C0210-018-0810-S	0.432	10.97			2.50	0.44
C0210-018-0880-M					0.880	22.35	0.342	8.69	0.192	4.88			2.8	0.490	C0210-018-0880-S	0.475	12.07			2.33	0.41
C0210-018-1000-M					1.000	25.40	0.375	9.53	0.212	5.38			2.4	0.420	C0210-018-1000-S	0.527	13.39			2.00	0.35
C0210-018-1250-M					1.250	31.75	0.461	11.71	0.253	6.43			1.9	0.333	C0210-018-1250-S	0.653	16.59			1.58	0.28
C0210-018-1500-M					1.500	38.10	0.566	14.38	0.294	7.47			1.6	0.280	C0210-018-1500-S	0.79	20.07			1.33	0.23
C0210-018-1750-M					1.750	44.45	0.679	17.25	0.334	8.48			1.4	0.245	C0210-018-1750-S	0.939	23.85			1.17	0.20
C0210-018-2000-M					2.000	50.80	0.748	19.00	0.375	9.53			1.2	0.210	C0210-018-2000-S	1.054	26.77			1.00	0.17
C0210-022-0250-M					0.250	6.35	0.140	3.56	0.113	2.87			23.6	4.130	C0210-022-0250-S	0.165	4.19			19.66	3.44
C0210-022-0310-M					0.310	7.87	0.168	4.27	0.127	3.23			18.3	3.200	C0210-022-0310-S	0.201	5.11			15.24	2.67
C0210-022-0380-M					0.380	9.65	0.201	5.11	0.143	3.63			14.5	2.540	C0210-022-0380-S	0.242	6.15			12.08	2.12
C0210-022-0440-M					0.440	11.18	0.229	5.82	0.157	3.99			12.3	2.150	C0210-022-0440-S	0.278	7.06			10.25	1.79
C0210-022-0500-M					0.500	12.70	0.257	6.53	0.170	4.32			10.7	1.874	C0210-022-0500-S	0.313	7.95			8.91	1.56
C0210-022-0560-M					0.560	14.22	0.285	7.24	0.184	4.67			9.4	1.646	C0210-022-0560-S	0.348	8.84			7.83	1.37
C0210-022-0620-M					0.620	15.75	0.314	7.98	0.198	5.03			8.5	1.488	C0210-022-0620-S	0.385	9.78			7.08	1.24
C0210-022-0690-M			0.022	0.56	0.690	17.53	0.346	8.79	0.214	5.44	2.59	11.52	7.5	1.313	C0210-022-0690-S	0.424	10.77	1.66	7.38	6.25	1.09
C0210-022-0750-M					0.750	19.05	0.374	9.50	0.228	5.79			6.9	1.208	C0210-022-0750-S	0.461	11.71			5.75	1.01
C0210-022-0810-M	0.210	5.33			0.810	20.57	0.402	10.21	0.241	6.12			6.4	1.121	C0210-022-0810-S	0.498	12.65			5.33	0.93
C0210-022-0880-M					0.880	22.35	0.435	11.05	0.257	6.53			5.8	1.016	C0210-022-0880-S	0.536	13.61			4.83	0.85
C0210-022-1000-M					1.000	25.40	0.491	12.47	0.285	7.24			5.1	0.893	C0210-022-1000-S	0.608	15.44			4.25	0.74
C0210-022-1250-M					1.250	31.75	0.608	15.44	0.342	8.69			4.0	0.700	C0210-022-1250-S	0.751	19.08			3.33	0.58
C0210-022-1500-M					1.500	38.10	0.715	18.16	0.399	10.13			3.3	0.578	C0210-022-1500-S	0.895	22.73			2.75	0.48
C0210-022-1750-M					1.750	44.45	0.857	21.77	0.456	11.58			2.9	0.508	C0210-022-1750-S	1.061	26.95			2.42	0.42
C0210-022-2000-M					2.000	50.80	0.959	24.36	0.514	13.06			2.5	0.438	C0210-022-2000-S	1.201	30.51			2.08	0.36
C0210-026-0250-M					0.250	6.35	0.156	3.96	0.140	3.56			44.1	7.720	C0210-026-0250-S	0.177	4.5			36.74	6.43
C0210-026-0310-M					0.310	7.87	0.188	4.78	0.159	4.04			33.9	5.940	C0210-026-0310-S	0.215	5.46			28.24	4.95
C0210-026-0380-M					0.380	9.65	0.225	5.72	0.181	4.60			26.6	4.660	C0210-026-0380-S	0.259	6.58			22.16	3.88
C0210-026-0440-M					0.440	11.18	0.256	6.50	0.200	5.08			22.5	3.940	C0210-026-0440-S	0.297	7.54			18.74	3.28
C0210-026-0500-M					0.500	12.70	0.288	7.32	0.219	5.56			19.5	3.410	C0210-026-0500-S	0.335	8.51			16.24	2.84
C0210-026-0560-M					0.560	14.22	0.320	8.13	0.237	6.02			17.2	3.010	C0210-026-0560-S	0.372	9.45			14.33	2.51
C0210-026-0620-M					0.620	15.75	0.351	8.92	0.256	6.50			15.4	2.700	C0210-026-0620-S	0.411	10.44			12.83	2.25
C0210-026-0690-M			0.026	0.66	0.690	17.53	0.388	9.86	0.278	7.06	4.14	18.42	13.7	2.400	C0210-026-0690-S	0.455	11.56	2.69	11.97	11.41	2.00
C0210-026-0750-M					0.750	19.05	0.420	10.67	0.297	7.54			12.5	2.190	C0210-026-0750-S	0.492	12.5			10.41	1.82
C0210-026-0810-M					0.810	20.57	0.451	11.46	0.316	8.03			11.5	2.010	C0210-026-0810-S	0.529	13.44			9.58	1.67
C0210-026-0880-M					0.880	22.35	0.488	12.40	0.338	8.59			10.5	1.839	C0210-026-0880-S	0.573	14.55			8.75	1.53
C0210-026-1000-M					1.000	25.40	0.551	14.00	0.376	9.55			9.2	1.611	C0210-026-1000-S	0.649	16.48			7.66	1.34
C0210-026-1250-M					1.250	31.75	0.683	17.35	0.454	11.53			7.3	1.278	C0210-026-1250-S	0.808	20.52			6.08	1.06
C0210-026-1500-M					1.500	38.10	0.814	20.68	0.533	13.54			6.0	1.051	C0210-026-1500-S	0.962	24.43			5.00	0.88
C0210-026-1750-M					1.750	44.45	0.946	24.03	0.611	15.52			5.1	0.893	C0210-026-1750-S	1.117	28.37			4.25	0.74
C0210-026-2000-M					2.000	50.80	1.078	27.38	0.689	17.50			4.5	0.788	C0210-026-2000-S	1.283	32.59			3.75	0.66
D11050					0.413	10.50	0.126	3.20	0.102	2.60			3.4	0.600	D21050	0.126	3.2			2.85	0.50
D11060					0.630	16.00	0.177	4.50	0.134	3.40			2.2	0.380	D21060	0.177	4.5			1.81	0.32
D11070	0.213	5.40	0.016	0.40	0.945	24.00	0.252	6.40	0.181	4.60	0.98	4.36	1.4	0.250	D21070	0.252	6.4	0.82	3.65	1.19	0.21
D11080					1.378	35.00	0.354	9.00	0.244	6.20			1.0	0.170	D21080	0.354	8.99			0.81	0.14
D11090					2.087	53.00	0.504	12.80	0.339	8.60			0.6	0.110	D21090	0.504	12.8			0.52	0.09
D11250					0.370	9.40	0.154	3.90	0.128	3.25			8.3	1.460	D21250	0.154	3.91			6.94	1.22
D11260					0.551	14.00	0.213	5.40	0.167	4.25			5.3	0.930	D21260	0.213	5.41			4.42	0.77
D11270	0.217	5.50	0.020	0.50	0.807	20.50	0.299	7.60	0.226	5.75	1.81	8.04	3.5	0.610	D21270	0.299	7.59	1.51	6.72	2.90	0.51
D11280					1.181	30.00	0.417	10.60	0.305	7.75			2.3	0.410	D21280	0.417	10.59			1.95	0.34
D11290					1.752	44.50	0.594	15.10	0.423	10.75			1.5	0.270	D21290	0.594	15.09			1.28	0.22
D11450					0.335	8.50	0.169	4.30	0.161	4.10			21.1	3.690	D21450	0.169	4.29			17.55	3.07
D11460					0.492	12.50	0.228	5.80	0.211	5.36			13.4	2.350	D21460	0.228	5.79			11.18	1.96
D11470	0.222	5.63	0.025	0.63	0.728	18.50	0.323	8.20	0.285	7.25	3.48	15.49	8.9	1.550	D21470	0.323	8.2	2.9	12.9	7.37	1.29
D11480					1.024	26.00	0.445	11.30	0.385	9.77			5.9	1.030	D21480	0.445	11.3			4.90	0.86
D11490					1.516	38.50	0.638	16.20	0.533	13.55			4.0	0.700	D21490	0.638	16.21			3.33	0.58
D11650					0.327	8.30	0.220	5.60	0.205	5.20			54.4	9.530	D21650	0.22	5.59			45.33	7.94
D11660	0.228	5.80	0.031	0.80	0.472	12.00	0.303	7.70	0.268	6.80	5.84	25.99	34.7	6.070	D21660	0.303	7.7	4.87	21.66	28.87	5.06
D11670					0.689	17.50	0.429	10.90	0.362	9.20											

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D11680	0.228	5.80	0.031	0.80	0.965	24.50	0.594	15.10	0.488	12.40	5.84	25.99	15.2	2.670	D21680	0.594	15.09	4.87	21.66	12.70	2.22
D11690					1.417	36.00	0.846	21.50	0.677	17.20			10.3	1.800	D21690	0.846	21.49			8.56	1.50
D11850					0.335	8.50	0.260	6.60	0.217	5.50			132.7	23.240	D21850	0.26	6.6			110.54	19.36
D11860					0.472	12.00	0.354	9.00	0.295	7.50			84.6	14.810	D21860	0.354	8.99			70.44	12.34
D11870	0.236	6.00	0.039	1.00	0.669	17.00	0.496	12.60	0.413	10.50	9.83	43.74	54.6	9.570	D21870	0.496	12.6	8.2	36.47	45.52	7.97
D11880					0.945	24.00	0.685	17.40	0.571	14.50			37.2	6.510	D21880	0.685	17.4			30.96	5.42
D11890					1.358	34.50	0.969	24.60	0.807	20.50			25.1	4.400	D21890	0.969	24.61			20.93	3.67
C0240-016-0250-M					0.250	6.35	0.102	2.59	0.070	1.78			6.2	1.086	C0240-016-0250-S	0.134	3.4			5.16	0.90
C0240-016-0310-M					0.310	7.87	0.119	3.02	0.076	1.93			4.8	0.840	C0240-016-0310-S	0.16	4.06			4.00	0.70
C0240-016-0380-M					0.380	9.65	0.144	3.66	0.083	2.11			3.9	0.683	C0240-016-0380-S	0.196	4.98			3.25	0.57
C0240-016-0440-M					0.440	11.18	0.160	4.06	0.089	2.26			3.3	0.578	C0240-016-0440-S	0.222	5.64			2.75	0.48
C0240-016-0500-M					0.500	12.70	0.183	4.65	0.095	2.41			2.9	0.508	C0240-016-0500-S	0.252	6.4			2.42	0.42
C0240-016-0560-M					0.560	14.22	0.192	4.88	0.101	2.57			2.5	0.438	C0240-016-0560-S	0.273	6.93			2.08	0.36
C0240-016-0620-M					0.620	15.75	0.217	5.51	0.107	2.72			2.3	0.403	C0240-016-0620-S	0.308	7.82			1.92	0.34
C0240-016-0690-M	0.240	6.10	0.016	0.41	0.690	17.53	0.230	5.84	0.114	2.90	0.92	4.09	2.0	0.350	C0240-016-0690-S	0.331	8.41	0.6	2.67	1.67	0.29
C0240-016-0750-M					0.750	19.05	0.266	6.76	0.120	3.05			1.9	0.333	C0240-016-0750-S	0.372	9.45			1.58	0.28
C0240-016-0810-M					0.810	20.57	0.269	6.83	0.126	3.20			1.7	0.298	C0240-016-0810-S	0.387	9.83			1.42	0.25
C0240-016-0880-M					0.880	22.35	0.305	7.75	0.133	3.38			1.6	0.280	C0240-016-0880-S	0.431	10.95			1.33	0.23
C0240-016-1000-M					1.000	25.40	0.343	8.71	0.145	3.68			1.4	0.245	C0240-016-1000-S	0.487	12.37			1.17	0.20
C0240-016-1250-M					1.250	31.75	0.415	10.54	0.170	4.32			1.1	0.193	C0240-016-1250-S	0.597	15.16			0.92	0.16
C0240-016-1500-M					1.500	38.10	0.478	12.14	0.195	4.95			0.9	0.158	C0240-016-1500-S	0.702	17.83			0.75	0.13
C0240-016-1750-M					1.750	44.45	0.600	15.24	0.220	5.59			0.8	0.140	C0240-016-1750-S	0.852	21.64			0.67	0.12
C0240-016-2000-M					2.000	50.80	0.686	17.42	0.245	6.22			0.7	0.123	C0240-016-2000-S	0.974	24.74			0.58	0.10
C0240-018-0250-M					0.250	6.35	0.115	2.92	0.080	2.03			9.5	1.663	C0240-018-0250-S	0.145	3.68			7.91	1.39
C0240-018-0310-M					0.310	7.87	0.137	3.48	0.088	2.24			7.4	1.296	C0240-018-0310-S	0.175	4.45			6.16	1.08
C0240-018-0380-M					0.380	9.65	0.162	4.11	0.096	2.44			5.9	1.033	C0240-018-0380-S	0.211	5.36			4.91	0.86
C0240-018-0440-M					0.440	11.18	0.184	4.67	0.103	2.62			5.0	0.876	C0240-018-0440-S	0.24	6.1			4.17	0.73
C0240-018-0500-M					0.500	12.70	0.209	5.31	0.111	2.82			4.4	0.770	C0240-018-0500-S	0.273	6.93			3.67	0.64
C0240-018-0560-M					0.560	14.22	0.232	5.89	0.118	3.00			3.9	0.683	C0240-018-0560-S	0.304	7.72			3.25	0.57
C0240-018-0620-M					0.620	15.75	0.251	6.38	0.126	3.20			3.5	0.613	C0240-018-0620-S	0.335	8.51			2.92	0.51
C0240-018-0690-M	0.240	6.10	0.018	0.46	0.690	17.53	0.276	7.01	0.134	3.40	1.28	5.69	3.1	0.543	C0240-018-0690-S	0.368	9.35	0.83	3.69	2.58	0.45
C0240-018-0750-M					0.750	19.05	0.293	7.44	0.141	3.58			2.8	0.490	C0240-018-0750-S	0.393	9.98			2.33	0.41
C0240-018-0810-M					0.810	20.57	0.320	8.13	0.149	3.78			2.6	0.455	C0240-018-0810-S	0.426	10.82			2.17	0.38
C0240-018-0880-M					0.880	22.35	0.346	8.79	0.157	3.99			2.4	0.420	C0240-018-0880-S	0.464	11.79			2.00	0.35
C0240-018-1000-M					1.000	25.40	0.390	9.91	0.172	4.37			2.1	0.368	C0240-018-1000-S	0.524	13.31			1.75	0.31
C0240-018-1250-M					1.250	31.75	0.497	12.62	0.203	5.16			1.7	0.298	C0240-018-1250-S	0.663	16.84			1.42	0.25
C0240-018-1500-M					1.500	38.10	0.586	14.88	0.233	5.92			1.4	0.245	C0240-018-1500-S	0.787	19.99			1.17	0.20
C0240-018-1750-M					1.750	44.45	0.683	17.35	0.264	6.71			1.2	0.210	C0240-018-1750-S	0.918	23.32			1.00	0.17
C0240-018-2000-M					2.000	50.80	0.720	18.29	0.294	7.47			1.0	0.175	C0240-018-2000-S	1.001	25.43			0.83	0.15
C0240-020-0250-M					0.250	6.35	0.126	3.20	0.091	2.31			14.1	2.470	C0240-020-0250-S	0.155	3.94			11.75	2.06
C0240-020-0310-M					0.310	7.87	0.151	3.84	0.099	2.51			11.0	1.926	C0240-020-0310-S	0.188	4.78			9.16	1.60
C0240-020-0380-M					0.380	9.65	0.180	4.57	0.110	2.79			8.7	1.523	C0240-020-0380-S	0.225	5.72			7.25	1.27
C0240-020-0440-M					0.440	11.18	0.204	5.18	0.118	3.00			7.4	1.296	C0240-020-0440-S	0.258	6.55			6.16	1.08
C0240-020-0500-M					0.500	12.70	0.229	5.82	0.127	3.23			6.4	1.121	C0240-020-0500-S	0.29	7.37			5.33	0.93
C0240-020-0560-M					0.560	14.22	0.254	6.45	0.136	3.45			5.7	0.998	C0240-020-0560-S	0.324	8.23			4.75	0.83
C0240-020-0620-M					0.620	15.75	0.278	7.06	0.145	3.68			5.1	0.893	C0240-020-0620-S	0.356	9.04			4.25	0.74
C0240-020-0690-M	0.240	6.10	0.020	0.51	0.690	17.53	0.307	7.80	0.155	3.94	1.75	7.78	4.6	0.805	C0240-020-0690-S	0.397	10.08	1.12	4.98	3.83	0.67
C0240-020-0750-M					0.750	19.05	0.332	8.43	0.164	4.17			4.2	0.735	C0240-020-0750-S	0.43	10.92			3.50	0.61
C0240-020-0810-M					0.810	20.57	0.349	8.86	0.172	4.37			3.8	0.665	C0240-020-0810-S	0.456	11.58			3.17	0.55
C0240-020-0880-M					0.880	22.35	0.380	9.65	0.182	4.62			3.5	0.613	C0240-020-0880-S	0.495	12.57			2.92	0.51
C0240-020-1000-M					1.000	25.40	0.434	11.02	0.200	5.08			3.1	0.543	C0240-020-1000-S	0.566	14.38			2.58	0.45
C0240-020-1250-M					1.250	31.75	0.521	13.23	0.236	5.99			2.4	0.420	C0240-020-1250-S	0.689	17.5			2.00	0.35
C0240-020-1500-M					1.500	38.10	0.625	15.88	0.273	6.93			2.0	0.350	C0240-020-1500-S	0.827	21.01			1.67	0.29
C0240-020-1750-M					1.750	44.45	0.721	18.31	0.309	7.85			1.7	0.298	C0240-020-1750-S	0.958	24.33			1.42	0.25
C0240-020-2000-M					2.000	50.80	0.833	21.16	0.346	8.79			1.5	0.263	C0240-020-2000-S	1.103	28.02			1.25	0.22
C0240-022-0250-M					0.250	6.35	0.127	3.23	0.103	2.62			19.5	3.410	C0240-022-0250-S	0.16	4.06			16.24	2.84
C0240-022-0310-M					0.310	7.87	0.152	3.86	0.113	2.87			15.1	2.640	C0240-022-0310-S	0.193	4.9			12.58	2.20
C0240-022-0380-M					0.380	9.65	0.186	4.72	0.115	2.92			12.3	2.150	C0240-022-0380-S	0.237	6.02			10.25	1.79
C0240-022-0440-M					0.440	11.18	0.193	4.90	0.131	3.33			9.7	1.698	C0240-022-0440-S	0.259	6.58			8.08	1.41
C0240-022-0500-M					0.500	12.70	0.218	5.54	0.142	3.61	2.39	10.63	8.5	1.488	C0240-022-0500-S	0.293	7.44	1.47	6.54	7.08	1.24
C0240-022-0560-M					0.560	14.22	0.242	6.15	0.154	3.91			7.5	1.313	C0240-022-0560-S	0.325	8.26			6.25	1.09
C0240-022-0620-M					0.620	15.75	0.267	6.78	0.164	4.17			6.8	1.191	C0240-022-0620-S	0.361	9.17			5.66	0.99
C0240-022-0690-M					0.690	17.53	0.302	7.67	0.175	4.45			6.2	1.086							

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0240-022-0810-M					0.810	20.57	0.352	8.94	0.198	5.03			5.2	0.911	C0240-022-0810-S	0.472	11.99			4.33	0.76
C0240-022-1000-M					1.000	25.40	0.431	10.95	0.236	5.99			4.2	0.735	C0240-022-1000-S	0.581	14.76			3.50	0.61
C0240-022-1250-M			0.022	0.56	1.250	31.75	0.526	13.36	0.280	7.11	2.39	10.63	3.3	0.578	C0240-022-1250-S	0.717	18.21	1.47	6.54	2.75	0.48
C0240-022-1500-M					1.500	38.10	0.646	16.41	0.325	8.26			2.8	0.490	C0240-022-1500-S	0.872	22.15			2.33	0.41
C0240-022-1750-M					1.750	44.45	0.754	19.15	0.369	9.37			2.4	0.420	C0240-022-1750-S	1.017	25.83			2.00	0.35
C0240-022-2000-M					2.000	50.80	0.862	21.89	0.413	10.49			2.1	0.368	C0240-022-2000-S	1.162	29.51			1.75	0.31
C0240-024-0380-M					0.380	9.65	0.199	5.05	0.142	3.61			16.2	2.840	C0240-024-0380-S	0.24	6.1			13.49	2.37
C0240-024-0440-M					0.440	11.18	0.227	5.77	0.155	3.94			13.7	2.400	C0240-024-0440-S	0.275	6.99			11.41	2.00
C0240-024-0500-M					0.500	12.70	0.254	6.45	0.168	4.27			11.9	2.080	C0240-024-0500-S	0.31	7.87			9.91	1.73
C0240-024-0560-M					0.560	14.22	0.282	7.16	0.180	4.57			10.5	1.839	C0240-024-0560-S	0.344	8.74			8.75	1.53
C0240-024-0620-M					0.620	15.75	0.309	7.85	0.193	4.90			9.4	1.646	C0240-024-0620-S	0.379	9.63			7.83	1.37
C0240-024-0690-M					0.690	17.53	0.341	8.66	0.208	5.28			8.4	1.471	C0240-024-0690-S	0.42	10.67			7.00	1.23
C0240-024-0750-M			0.024	0.61	0.750	19.05	0.368	9.35	0.221	5.61	2.92	12.99	7.6	1.331	C0240-024-0750-S	0.452	11.48	1.89	8.41	6.33	1.11
C0240-024-0810-M					0.810	20.57	0.396	10.06	0.233	5.92			7.0	1.226	C0240-024-0810-S	0.486	12.34			5.83	1.02
C0240-024-0880-M					0.880	22.35	0.427	10.85	0.248	6.30			6.4	1.121	C0240-024-0880-S	0.526	13.36			5.33	0.93
C0240-024-1000-M					1.000	25.40	0.482	12.24	0.274	6.96			5.6	0.981	C0240-024-1000-S	0.595	15.11			4.66	0.82
C0240-024-1250-M					1.250	31.75	0.596	15.14	0.327	8.31			4.5	0.788	C0240-024-1250-S	0.746	18.95			3.75	0.66
C0240-024-1500-M					1.500	38.10	0.710	18.03	0.379	9.63			3.7	0.648	C0240-024-1500-S	0.887	22.53			3.08	0.54
C0240-024-1750-M					1.750	44.45	0.838	21.29	0.432	10.97			3.2	0.560	C0240-024-1750-S	1.042	26.47			2.67	0.47
C0240-024-2000-M					2.000	50.80	0.919	23.34	0.485	12.32			2.7	0.473	C0240-024-2000-S	1.161	29.49			2.25	0.39
C0240-026-0310-M					0.310	7.87	0.176	4.47	0.138	3.51			28.7	5.030	C0240-026-0310-S	0.211	5.36			23.91	4.19
C0240-026-0380-M					0.380	9.65	0.215	5.46	0.143	3.63			23.3	4.080	C0240-026-0380-S	0.258	6.55			19.41	3.40
C0240-026-0440-M					0.440	11.18	0.247	6.27	0.156	3.96			19.9	3.480	C0240-026-0440-S	0.297	7.54			16.58	2.90
C0240-026-0500-M					0.500	12.70	0.279	7.09	0.169	4.29			17.4	3.050	C0240-026-0500-S	0.336	8.53			14.49	2.54
C0240-026-0560-M					0.560	14.22	0.298	7.57	0.188	4.78			14.7	2.570	C0240-026-0560-S	0.366	9.3			12.25	2.14
C0240-026-0620-M					0.620	15.75	0.317	8.05	0.208	5.28			12.7	2.220	C0240-026-0620-S	0.396	10.06			10.58	1.85
C0240-026-0690-M					0.690	17.53	0.345	8.76	0.228	5.79			11.1	1.944	C0240-026-0690-S	0.433	11			9.25	1.62
C0240-026-0750-M			0.026	0.66	0.750	19.05	0.364	9.25	0.246	6.25	3.85	17.13	10.0	1.751	C0240-026-0750-S	0.465	11.81	2.37	10.54	8.33	1.46
C0240-026-0810-M					0.810	20.57	0.396	10.06	0.260	6.60			9.3	1.628	C0240-026-0810-S	0.504	12.8			7.75	1.36
C0240-026-0880-M					0.880	22.35	0.425	10.80	0.281	7.14			8.4	1.471	C0240-026-0880-S	0.541	13.74			7.00	1.23
C0240-026-1000-M					1.000	25.40	0.480	12.19	0.313	7.95			7.4	1.296	C0240-026-1000-S	0.615	15.62			6.16	1.08
C0240-026-1250-M					1.250	31.75	0.597	15.16	0.375	9.53			5.9	1.033	C0240-026-1250-S	0.767	19.48			4.91	0.86
C0240-026-1500-M	0.240	6.10			1.500	38.10	0.714	18.14	0.437	11.10			4.9	0.858	C0240-026-1500-S	0.919	23.34			4.08	0.71
C0240-026-1750-M					1.750	44.45	0.811	20.60	0.499	12.67			4.1	0.718	C0240-026-1750-S	1.055	26.8			3.42	0.60
C0240-026-2000-M					2.000	50.80	0.931	23.65	0.561	14.25			3.6	0.630	C0240-026-2000-S	1.209	30.71			3.00	0.52
C0240-029-0380-M					0.380	9.65	0.225	5.72	0.185	4.70			32.0	5.600	C0240-029-0380-S	0.259	6.58			26.66	4.66
C0240-029-0440-M					0.440	11.18	0.257	6.53	0.203	5.16			27.0	4.730	C0240-029-0440-S	0.297	7.54			22.49	3.94
C0240-029-0500-M					0.500	12.70	0.288	7.32	0.221	5.61			23.3	4.080	C0240-029-0500-S	0.334	8.48			19.41	3.40
C0240-029-0560-M					0.560	14.22	0.319	8.10	0.240	6.10			20.6	3.610	C0240-029-0560-S	0.372	9.45			17.16	3.01
C0240-029-0620-M					0.620	15.75	0.350	8.89	0.258	6.55			18.4	3.220	C0240-029-0620-S	0.41	10.41			15.33	2.68
C0240-029-0690-M					0.690	17.53	0.387	9.83	0.279	7.09			16.3	2.850	C0240-029-0690-S	0.453	11.51			13.58	2.37
C0240-029-0750-M					0.750	19.05	0.418	10.62	0.298	7.57			14.9	2.610	C0240-029-0750-S	0.49	12.45			12.41	2.17
C0240-029-0810-M					0.810	20.57	0.449	11.40	0.316	8.03			13.7	2.400	C0240-029-0810-S	0.528	13.41			11.41	2.00
C0240-029-0880-M			0.029	0.74	0.880	22.35	0.485	12.32	0.337	8.56	4.95	22.02	12.6	2.210	C0240-029-0880-S	0.573	14.55	3.22	14.32	10.50	1.84
C0240-029-0940-M					0.940	23.88	0.517	13.13	0.355	9.02			11.7	2.050	C0240-029-0940-S	0.609	15.47			9.75	1.71
C0240-029-1000-M					1.000	25.40	0.548	13.92	0.374	9.50			11.0	1.926	C0240-029-1000-S	0.648	16.46			9.16	1.60
C0240-029-1120-M					1.120	28.45	0.610	15.49	0.410	10.41			9.7	1.698	C0240-029-1120-S	0.721	18.31			8.08	1.41
C0240-029-1250-M					1.250	31.75	0.678	17.22	0.450	11.43			8.7	1.523	C0240-029-1250-S	0.805	20.45			7.25	1.27
C0240-029-1380-M					1.380	35.05	0.745	18.92	0.489	12.42			7.8	1.366	C0240-029-1380-S	0.884	22.45			6.50	1.14
C0240-029-1500-M					1.500	38.10	0.808	20.52	0.526	13.36			7.2	1.261	C0240-029-1500-S	0.963	24.46			6.00	1.05
C0240-029-1750-M					1.750	44.45	0.938	23.83	0.602	15.29			6.1	1.068	C0240-029-1750-S	1.116	28.35			5.08	0.89
C0240-029-2000-M					2.000	50.80	1.068	27.13	0.678	17.22			5.3	0.928	C0240-029-2000-S	1.27	32.26			4.41	0.77
C0240-032-0310-M					0.310	7.87	0.202	5.13	0.167	4.24			63.8	11.170	C0240-032-0310-S	0.23	5.84			53.15	9.30
C0240-032-0380-M					0.380	9.65	0.252	6.40	0.184	4.67			53.8	9.420	C0240-032-0380-S	0.285	7.24			44.82	7.85
C0240-032-0440-M					0.440	11.18	0.282	7.16	0.209	5.31			43.2	7.560	C0240-032-0440-S	0.322	8.18			35.99	6.30
C0240-032-0500-M					0.500	12.70	0.313	7.95	0.232	5.89			36.8	6.440	C0240-032-0500-S	0.361	9.17			30.65	5.36
C0240-032-0560-M					0.560	14.22	0.344	8.74	0.255	6.48			31.9	5.590	C0240-032-0560-S	0.4	10.16			26.57	4.66
C0240-032-0620-M			0.032	0.81	0.620	15.75	0.374	9.50	0.279	7.09	6.89	30.65	28.0	4.900	C0240-032-0620-S	0.438	11.13	4.25	18.9	23.32	4.08
C0240-032-0690-M					0.690	17.53	0.414	10.52	0.303	7.70			25.0	4.380	C0240-032-0690-S	0.486	12.34			20.83	3.65
C0240-032-0750-M					0.750	19.05	0.435	11.05	0.335	8.51			21.9	3.840	C0240-032-0750-S	0.517	13.13			18.24	3.20
C0240-032-0810-M					0.810	20.57	0.466	11.84	0.359	9.12			20.0	3.500	C0240-032-0810-S	0.555	14.1			16.66	2.92
C0240-032-0880-M					0.880	22.35	0.506	12.85	0.384	9.75			18.4	3.220	C0240-032-0880-S	0.603	15.32				

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0240-032-1250-M					1.250	31.75	0.699	17.75	0.526	13.36			12.5	2.190	C0240-032-1250-S	0.842	21.39			10.41	1.82
C0240-032-1380-M					1.380	35.05	0.765	19.43	0.573	14.55			11.2	1.961	C0240-032-1380-S	0.924	23.47			9.33	1.63
C0240-032-1500-M			0.032	0.81	1.500	38.10	0.831	21.11	0.616	15.65	6.89	30.65	10.3	1.804	C0240-032-1500-S	1.004	25.5	4.25	18.9	8.58	1.50
C0240-032-1750-M					1.750	44.45	0.967	24.56	0.707	17.96			8.8	1.541	C0240-032-1750-S	1.17	29.72			7.33	1.28
C0240-032-2000-M					2.000	50.80	1.093	27.76	0.797	20.24			7.6	1.331	C0240-032-2000-S	1.328	33.73			6.33	1.11
C0240-035-0310-M					0.310	7.87	0.214	5.44	0.206	5.23			86.9	15.220	C0240-035-0310-S	0.234	5.94			72.39	12.68
C0240-035-0380-M					0.380	9.65	0.256	6.50	0.235	5.97			67.3	11.780	C0240-035-0380-S	0.282	7.16			56.06	9.81
C0240-035-0440-M					0.440	11.18	0.292	7.42	0.260	6.60			56.4	9.880	C0240-035-0440-S	0.323	8.2			46.98	8.23
C0240-035-0500-M					0.500	12.70	0.328	8.33	0.286	7.26			48.5	8.490	C0240-035-0500-S	0.364	9.25			40.40	7.07
C0240-035-0560-M					0.560	14.22	0.364	9.25	0.311	7.90			42.6	7.460	C0240-035-0560-S	0.406	10.31			35.49	6.21
C0240-035-0620-M					0.620	15.75	0.400	10.16	0.336	8.53			37.9	6.640	C0240-035-0620-S	0.446	11.33			31.57	5.53
C0240-035-0690-M					0.690	17.53	0.442	11.23	0.366	9.30			33.6	5.880	C0240-035-0690-S	0.494	12.55			27.99	4.90
C0240-035-0750-M					0.750	19.05	0.478	12.14	0.391	9.93			30.7	5.380	C0240-035-0750-S	0.536	13.61			25.57	4.48
C0240-035-0810-M					0.810	20.57	0.514	13.06	0.416	10.57			28.2	4.940	C0240-035-0810-S	0.577	14.66			23.49	4.12
C0240-035-0880-M			0.035	0.89	0.880	22.35	0.556	14.12	0.445	11.30	8.34	37.10	25.7	4.500	C0240-035-0880-S	0.624	15.85	5.48	24.38	21.41	3.75
C0240-035-0940-M					0.940	23.88	0.592	15.04	0.471	11.96			24.0	4.200	C0240-035-0940-S	0.666	16.92			19.99	3.50
C0240-035-1000-M					1.000	25.40	0.628	15.95	0.496	12.60			22.4	3.920	C0240-035-1000-S	0.706	17.93			18.66	3.27
C0240-035-1250-M					1.250	31.75	0.778	19.76	0.601	15.27			17.7	3.100	C0240-035-1250-S	0.878	22.3			14.74	2.58
C0240-035-1380-M					1.380	35.05	0.856	21.74	0.656	16.66			15.9	2.780	C0240-035-1380-S	0.966	24.54			13.24	2.32
C0240-035-1500-M					1.500	38.10	0.928	23.57	0.706	17.93			14.6	2.560	C0240-035-1500-S	1.05	26.67			12.16	2.13
C0240-035-1750-M					1.750	44.45	1.078	27.38	0.811	20.60			12.4	2.170	C0240-035-1750-S	1.22	30.99			10.33	1.81
C0240-035-2000-M					2.000	50.80	1.228	31.19	0.916	23.27			10.8	1.891	C0240-035-2000-S	1.391	35.33			9.00	1.58
C0240-035-2250-M					2.250	57.15	1.378	35.00	1.021	25.93			9.6	1.681	C0240-035-2250-S	1.565	39.75			8.00	1.40
C0240-035-2500-M					2.500	63.50	1.528	38.81	1.126	28.60			8.6	1.506	C0240-035-2500-S	1.735	44.07			7.16	1.25
C0240-038-0310-M					0.310	7.87	0.223	5.66	0.208	5.28			127.1	22.260	C0240-038-0310-S	0.246	6.25			105.87	18.54
C0240-038-0380-M					0.380	9.65	0.271	6.88	0.237	6.02			101.5	17.770	C0240-038-0380-S	0.299	7.59			84.55	14.80
C0240-038-0440-M					0.440	11.18	0.309	7.85	0.265	6.73			84.4	14.780	C0240-038-0440-S	0.343	8.71			70.31	12.31
C0240-038-0500-M					0.500	12.70	0.347	8.81	0.294	7.47			72.3	12.660	C0240-038-0500-S	0.387	9.83			60.23	10.55
C0240-038-0560-M					0.560	14.22	0.385	9.78	0.323	8.20			63.2	11.070	C0240-038-0560-S	0.43	10.92			52.65	9.22
C0240-038-0620-M					0.620	15.75	0.424	10.77	0.350	8.89			56.4	9.880	C0240-038-0620-S	0.475	12.07			46.98	8.23
C0240-038-0690-M					0.690	17.53	0.472	11.99	0.379	9.63			50.7	8.880	C0240-038-0690-S	0.528	13.41			42.23	7.40
C0240-038-0750-M	0.240	6.10			0.750	19.05	0.510	12.95	0.407	10.34			46.1	8.070	C0240-038-0750-S	0.572	14.53			38.40	6.72
C0240-038-0810-M					0.810	20.57	0.548	13.92	0.436	11.07			42.2	7.390	C0240-038-0810-S	0.616	15.65			35.15	6.16
C0240-038-0880-M			0.038	0.97	0.880	22.35	0.589	14.96	0.474	12.04	11.06	49.20	38.0	6.650	C0240-038-0880-S	0.664	16.87	6.82	30.34	31.65	5.54
C0240-038-0940-M					0.940	23.88	0.620	15.75	0.511	12.98			34.6	6.060	C0240-038-0940-S	0.703	17.86			28.82	5.05
C0240-038-1000-M					1.000	25.40	0.658	16.71	0.541	13.74			32.3	5.660	C0240-038-1000-S	0.746	18.95			26.91	4.71
C0240-038-1120-M					1.120	28.45	0.735	18.67	0.597	15.16			28.7	5.030	C0240-038-1120-S	0.835	21.21			23.91	4.19
C0240-038-1250-M					1.250	31.75	0.821	20.85	0.653	16.59			25.8	4.520	C0240-038-1250-S	0.932	23.67			21.49	3.77
C0240-038-1380-M					1.380	35.05	0.907	23.04	0.711	18.06			23.4	4.100	C0240-038-1380-S	1.03	26.16			19.49	3.42
C0240-038-1500-M					1.500	38.10	0.984	24.99	0.768	19.51			21.4	3.750	C0240-038-1500-S	1.117	28.37			17.83	3.12
C0240-038-1750-M					1.750	44.45	1.111	28.22	0.912	23.16			17.3	3.030	C0240-038-1750-S	1.276	32.41			14.41	2.52
C0240-038-2000-M					2.000	50.80	1.268	32.21	1.032	26.21			15.1	2.640	C0240-038-2000-S	1.457	37.01			12.58	2.20
C0240-038-2250-M					2.250	57.15	1.418	36.02	1.151	29.24			13.3	2.330	C0240-038-2250-S	1.634	41.5			11.08	1.94
C0240-038-2500-M					2.500	63.50	1.578	40.08	1.270	32.26			12.0	2.100	C0240-038-2500-S	1.817	46.15			10.00	1.75
C0240-040-0310-M					0.310	7.87	0.233	5.92	0.220	5.59			155.8	27.280	C0240-040-0310-S	0.249	6.32			129.78	22.72
C0240-040-0380-M					0.380	9.65	0.279	7.09	0.274	6.96			119.4	20.910	C0240-040-0380-S	0.3	7.62			99.46	17.42
C0240-040-0440-M					0.440	11.18	0.319	8.10	0.305	7.75			99.5	17.420	C0240-040-0440-S	0.345	8.76			82.88	14.51
C0240-040-0500-M					0.500	12.70	0.359	9.12	0.336	8.53			85.3	14.940	C0240-040-0500-S	0.389	9.88			71.05	12.45
C0240-040-0560-M					0.560	14.22	0.399	10.13	0.366	9.30			74.7	13.080	C0240-040-0560-S	0.433	11			62.23	10.90
C0240-040-0620-M					0.620	15.75	0.439	11.15	0.397	10.08			66.4	11.630	C0240-040-0620-S	0.477	12.12			55.31	9.69
C0240-040-0690-M					0.690	17.53	0.485	12.32	0.433	11.00			58.7	10.280	C0240-040-0690-S	0.528	13.41			48.90	8.56
C0240-040-0750-M					0.750	19.05	0.525	13.34	0.464	11.79			53.5	9.370	C0240-040-0750-S	0.572	14.53			44.57	7.81
C0240-040-0810-M					0.810	20.57	0.565	14.35	0.495	12.57			49.1	8.600	C0240-040-0810-S	0.617	15.67			40.90	7.16
C0240-040-0880-M			0.040	1.02	0.880	22.35	0.611	15.52	0.531	13.49	12.03	53.51	44.8	7.840	C0240-040-0880-S	0.668	16.97	7.91	35.18	37.32	6.53
C0240-040-0940-M					0.940	23.88	0.651	16.54	0.562	14.27			41.7	7.300	C0240-040-0940-S	0.712	18.08			34.74	6.08
C0240-040-1000-M					1.000	25.40	0.691	17.55	0.592	15.04			39.0	6.830	C0240-040-1000-S	0.756	19.2			32.49	5.69
C0240-040-1120-M					1.120	28.45	0.771	19.58	0.654	16.61			34.5	6.040	C0240-040-1120-S	0.845	21.46			28.74	5.03
C0240-040-1250-M					1.250	31.75	0.857	21.77	0.721	18.31			30.6	5.360	C0240-040-1250-S	0.94	23.88			25.49	4.46
C0240-040-1380-M					1.380	35.05	0.944	23.98	0.788	20.02			27.6	4.830	C0240-040-1380-S	1.036	26.31			22.99	4.02
C0240-040-1500-M					1.500	38.10	1.023	25.98	0.849	21.56			25.2	4.410	C0240-040-1500-S	1.123	28.52			20.99	3.67
C0240-040-1750-M					1.750	44.45	1.189	30.20	0.977	24.82			21.5	3.770	C0240-040-1750-S	1.308	33.22			17.91	3.14
C02																					

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0240-042-0380-M					0.380	9.65	0.285	7.24	0.272	6.91			151.0	26.440	C0240-042-0380-S	0.308	7.82			125.78	22.02
C0240-042-0440-M					0.440	11.18	0.323	8.20	0.310	7.87			123.0	21.540	C0240-042-0440-S	0.352	8.94			102.46	17.94
C0240-042-0500-M					0.500	12.70	0.365	9.27	0.343	8.71			106.0	18.560	C0240-042-0500-S	0.398	10.11			88.30	15.46
C0240-042-0560-M					0.560	14.22	0.407	10.34	0.373	9.47			94.0	16.460	C0240-042-0560-S	0.445	11.3			78.30	13.71
C0240-042-0620-M					0.620	15.75	0.451	11.46	0.401	10.19			85.0	14.880	C0240-042-0620-S	0.493	12.52			70.81	12.40
C0240-042-0690-M					0.690	17.53	0.498	12.65	0.441	11.20			75.0	13.130	C0240-042-0690-S	0.546	13.87			62.48	10.94
C0240-042-0750-M					0.750	19.05	0.527	13.39	0.499	12.67			64.0	11.210	C0240-042-0750-S	0.581	14.76			53.31	9.34
C0240-042-0810-M					0.810	20.57	0.569	14.45	0.525	13.34			60.0	10.510	C0240-042-0810-S	0.63	16			49.98	8.75
C0240-042-0880-M					0.880	22.35	0.621	15.77	0.556	14.12			56.0	9.810	C0240-042-0880-S	0.687	17.45			46.65	8.17
C0240-042-0940-M			0.042	1.07	0.940	23.88	0.657	16.69	0.600	15.24	14.39	64.01	51.0	8.930	C0240-042-0940-S	0.728	18.49	9	40.03	42.48	7.44
C0240-042-1000-M					1.000	25.40	0.699	17.75	0.631	16.03			48.0	8.410	C0240-042-1000-S	0.775	19.69			39.98	7.01
C0240-042-1120-M					1.120	28.45	0.783	19.89	0.699	17.75			42.5	7.440	C0240-042-1120-S	0.866	22			35.40	6.20
C0240-042-1250-M					1.250	31.75	0.868	22.05	0.778	19.76			37.5	6.570	C0240-042-1250-S	0.962	24.43			31.24	5.47
C0240-042-1380-M					1.380	35.05	0.958	24.33	0.847	21.51			34.0	5.950	C0240-042-1380-S	1.062	26.97			28.32	4.96
C0240-042-1500-M					1.500	38.10	1.028	26.11	0.933	23.70			30.5	5.340	C0240-042-1500-S	1.146	29.11			25.41	4.45
C0240-042-1750-M					1.750	44.45	1.207	30.66	1.040	26.42			26.5	4.640	C0240-042-1750-S	1.342	34.09			22.07	3.87
C0240-042-2000-M					2.000	50.80	1.374	34.90	1.177	29.90			23.0	4.030	C0240-042-2000-S	1.53	38.86			19.16	3.36
C0240-042-2250-M	0.240	6.10			2.250	57.15	1.545	39.24	1.314	33.38			20.4	3.570	C0240-042-2250-S	1.72	43.69			16.99	2.97
C0240-042-2500-M					2.500	63.50	1.714	43.54	1.452	36.88			18.3	3.200	C0240-042-2500-S	1.91	48.51			15.24	2.67
C0240-045-0440-M					0.440	11.18	0.348	8.84	0.326	8.28			174.9	30.630	C0240-045-0440-S	0.366	9.3			145.69	25.51
C0240-045-0500-M					0.500	12.70	0.392	9.96	0.361	9.17			149.3	26.140	C0240-045-0500-S	0.414	10.52			124.37	21.77
C0240-045-0560-M					0.560	14.22	0.436	11.07	0.396	10.06			130.2	22.800	C0240-045-0560-S	0.461	11.71			108.46	18.99
C0240-045-0620-M					0.620	15.75	0.480	12.19	0.436	11.07			115.5	20.220	C0240-045-0620-S	0.508	12.9			96.21	16.84
C0240-045-0690-M					0.690	17.53	0.532	13.51	0.477	12.12			102.0	17.860	C0240-045-0690-S	0.563	14.3			84.97	14.88
C0240-045-0750-M					0.750	19.05	0.576	14.63	0.516	13.11			92.7	16.230	C0240-045-0750-S	0.611	15.52			77.22	13.52
C0240-045-0810-M					0.810	20.57	0.620	15.75	0.551	14.00			85.0	14.880	C0240-045-0810-S	0.658	16.71			70.81	12.40
C0240-045-0880-M			0.045	1.14	0.880	22.35	0.671	17.04	0.594	15.09	16.17	71.92	77.5	13.570	C0240-045-0880-S	0.713	18.11	10.75	47.82	64.56	11.30
C0240-045-1000-M					1.000	25.40	0.760	19.30	0.667	16.94			67.3	11.780	C0240-045-1000-S	0.808	20.52			56.06	9.81
C0240-045-1250-M					1.250	31.75	0.944	23.98	0.813	20.65			52.8	9.250	C0240-045-1250-S	1.006	25.55			43.98	7.71
C0240-045-1500-M					1.500	38.10	1.128	28.65	0.959	24.36			43.4	7.600	C0240-045-1500-S	1.203	30.56			36.15	6.33
C0240-045-1750-M					1.750	44.45	1.311	33.30	1.105	28.07			36.9	6.460	C0240-045-1750-S	1.4	35.56			30.74	5.38
C0240-045-2000-M					2.000	50.80	1.495	37.97	1.251	31.78			32.0	5.600	C0240-045-2000-S	1.597	40.56			26.66	4.66
C0240-045-2250-M					2.250	57.15	1.679	42.65	1.397	35.48			28.3	4.960	C0240-045-2250-S	1.794	45.57			23.57	4.13
C0240-045-2500-M					2.500	63.50	1.863	47.32	1.543	39.19			25.4	4.450	C0240-045-2500-S	1.992	50.6			21.16	3.71
D11300					0.531	13.50	0.169	4.30	0.128	3.25			4.2	0.730	D21300	0.169	4.29			3.47	0.61
D11310					0.787	20.00	0.236	6.00	0.167	4.25			2.6	0.460	D21310	0.236	5.99			2.19	0.38
D11320	0.268	6.80	0.020	0.50	1.181	30.00	0.343	8.70	0.226	5.75	1.48	6.57	1.7	0.300	D21320	0.343	8.71	1.23	5.47	1.43	0.25
D11330					1.732	44.00	0.480	12.20	0.305	7.75			1.2	0.210	D21330	0.48	12.19			1.00	0.17
D11340					2.559	65.00	0.685	17.40	0.423	10.75			0.8	0.140	D21340	0.685	17.4			0.67	0.12
D11500					0.453	11.50	0.181	4.60	0.161	4.10			10.4	1.830	D21500	0.181	4.6			8.70	1.52
D11510					0.669	17.00	0.244	6.20	0.211	5.36			6.7	1.170	D21510	0.244	6.2			5.57	0.97
D11520	0.273	6.93	0.025	0.63	1.004	25.50	0.350	8.90	0.285	7.25	2.80	12.45	4.3	0.760	D21520	0.35	8.89	2.33	10.36	3.61	0.63
D11530					1.437	36.50	0.484	12.30	0.385	9.77			2.9	0.510	D21530	0.484	12.29			2.43	0.42
D11540					2.126	54.00	0.697	17.70	0.533	13.55			1.9	0.340	D21540	0.697	17.7			1.62	0.28
D11700					0.413	10.50	0.220	5.60	0.205	5.20			27.2	4.770	D21700	0.22	5.59			22.69	3.97
D11710					0.610	15.50	0.303	7.70	0.268	6.80			17.3	3.030	D21710	0.303	7.7			14.41	2.52
D11720	0.280	7.10	0.031	0.80	0.906	23.00	0.429	10.90	0.362	9.20	5.40	24.03	11.2	1.960	D21720	0.429	10.9	4.5	20.02	9.32	1.63
D11730					1.299	33.00	0.594	15.10	0.488	12.40			7.6	1.330	D21730	0.594	15.09			6.33	1.11
D11740					1.890	48.00	0.846	21.50	0.677	17.20			5.1	0.900	D21740	0.846	21.49			4.28	0.75
D11900					0.394	10.00	0.287	7.30	0.217	5.50			66.1	11.570	D21900	0.287	7.29			55.03	9.64
D11910					0.571	14.50	0.398	10.10	0.295	7.50			42.2	7.390	D21910	0.398	10.11			35.15	6.16
D11920	0.287	7.30	0.039	1.00	0.846	21.50	0.563	14.30	0.413	10.50	7.67	34.13	27.4	4.790	D21920	0.563	14.3	6.4	28.47	22.78	3.99
D11930					1.201	30.50	0.783	19.90	0.571	14.50			18.6	3.260	D21930	0.783	19.89			15.51	2.72
D11940					1.713	43.50	1.114	28.30	0.807	20.50			12.6	2.200	D21940	1.114	28.3			10.46	1.83
D12100					0.472	12.00	0.283	7.20	0.271	6.88			165.8	29.030	D22100	0.283	7.19			138.08	24.18
D12110					0.669	17.00	0.386	9.80	0.369	9.38			103.0	18.040	D22110	0.386	9.8			85.81	15.03
D12120	0.297	7.55	0.049	1.25	0.984	25.00	0.543	13.80	0.517	13.13	29.98	133.37	67.2	11.770	D22120	0.543	13.79	25	111.2	55.98	9.80
D12130					1.398	35.50	0.756	19.20	0.714	18.13			46.2	8.090	D22130	0.756	19.2			38.48	6.74
D12140					2.028	51.50	1.067	27.10	1.009	25.63			30.8	5.390	D22140	1.067	27.1			25.64	4.49
C0300-022-0380-M					0.380	9.65	0.165	4.19	0.100	2.54			9.0	1.576	C0300-022-0380-S	0.222	5.64			7.50	1.31
C0300-022-0440-M					0.440	11.18	0.186	4.72	0.106	2.69			7.6	1.331	C0300-022-0440-S	0.253	6.43			6.33	1.11
C0300-022-0500-M	0.300	7.62	0.022	0.56	0.500	12.70	0.205	5.21	0.109	2.77	1.93	8.59	6.6	1.156	C0300-022-0500-S	0.285	7.24	1.18	5.25	5.50	0.96
C0300-022-0560-M					0.560	14.22	0.235	5.97	0.115	2.92			5.9	1.033	C0300-022-0560-S	0.319					

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0300-022-0690-M					0.690	17.53	0.277	7.04	0.131	3.33			4.7	0.823	C0300-022-0690-S	0.388	9.86			3.92	0.69
C0300-022-0750-M					0.750	19.05	0.278	7.06	0.142	3.61			4.1	0.718	C0300-022-0750-S	0.403	10.24			3.42	0.60
C0300-022-0810-M					0.810	20.57	0.302	7.67	0.149	3.78			3.8	0.665	C0300-022-0810-S	0.436	11.07			3.17	0.55
C0300-022-0880-M					0.880	22.35	0.349	8.86	0.154	3.91			3.6	0.630	C0300-022-0880-S	0.485	12.32			3.00	0.52
C0300-022-1000-M					1.000	25.40	0.397	10.08	0.175	4.45			3.2	0.560	C0300-022-1000-S	0.556	14.12			2.67	0.47
C0300-022-1250-M			0.022	0.56	1.250	31.75	0.478	12.14	0.204	5.18	1.93	8.59	2.5	0.438	C0300-022-1250-S	0.682	17.32	1.18	5.25	2.08	0.36
C0300-022-1500-M					1.500	38.10	0.581	14.76	0.232	5.89			2.1	0.368	C0300-022-1500-S	0.823	20.9			1.75	0.31
C0300-022-1750-M					1.750	44.45	0.678	17.22	0.261	6.63			1.8	0.316	C0300-022-1750-S	0.961	24.41			1.50	0.26
C0300-022-2000-M					2.000	50.80	0.713	18.11	0.289	7.34			1.5	0.263	C0300-022-2000-S	1.053	26.75			1.25	0.22
C0300-022-2250-M					2.250	57.15	0.871	22.12	0.308	7.82			1.4	0.245	C0300-022-2250-S	1.235	31.37			1.17	0.20
C0300-022-2500-M					2.500	63.50	1.015	25.78	0.334	8.48			1.3	0.228	C0300-022-2500-S	1.407	35.74			1.08	0.19
C0300-026-0440-M					0.440	11.18	0.206	5.23	0.130	3.30			13.3	2.330	C0300-026-0440-S	0.267	6.78			11.08	1.94
C0300-026-0500-M					0.500	12.70	0.219	5.56	0.143	3.63			11.1	1.944	C0300-026-0500-S	0.292	7.42			9.25	1.62
C0300-026-0560-M					0.560	14.22	0.256	6.50	0.148	3.76			10.3	1.804	C0300-026-0560-S	0.336	8.53			8.58	1.50
C0300-026-0620-M					0.620	15.75	0.269	6.83	0.162	4.11			8.9	1.558	C0300-026-0620-S	0.361	9.17			7.41	1.30
C0300-026-0690-M					0.690	17.53	0.292	7.42	0.176	4.47			7.8	1.366	C0300-026-0690-S	0.394	10.01			6.50	1.14
C0300-026-0750-M					0.750	19.05	0.328	8.33	0.182	4.62			7.4	1.296	C0300-026-0750-S	0.438	11.13			6.16	1.08
C0300-026-0810-M					0.810	20.57	0.342	8.69	0.194	4.93			6.7	1.173	C0300-026-0810-S	0.466	11.84			5.58	0.98
C0300-026-0880-M					0.880	22.35	0.365	9.27	0.206	5.23			6.1	1.068	C0300-026-0880-S	0.502	12.75			5.08	0.89
C0300-026-0940-M			0.026	0.66	0.940	23.88	0.378	9.60	0.222	5.64	3.12	13.88	5.5	0.963	C0300-026-0940-S	0.521	13.23	1.92	8.54	4.58	0.80
C0300-026-1000-M					1.000	25.40	0.391	9.93	0.234	5.94			5.1	0.893	C0300-026-1000-S	0.548	13.92			4.25	0.74
C0300-026-1250-M					1.250	31.75	0.524	13.31	0.272	6.91			4.3	0.753	C0300-026-1250-S	0.714	18.14			3.58	0.63
C0300-026-1500-M					1.500	38.10	0.609	15.47	0.313	7.95			3.5	0.613	C0300-026-1500-S	0.841	21.36			2.92	0.51
C0300-026-1750-M					1.750	44.45	0.710	18.03	0.354	8.99			3.0	0.525	C0300-026-1750-S	0.981	24.92			2.50	0.44
C0300-026-2000-M					2.000	50.80	0.800	20.32	0.394	10.01			2.6	0.455	C0300-026-2000-S	1.113	28.27			2.17	0.38
C0300-026-2250-M					2.250	57.15	1.002	25.45	0.416	10.57			2.5	0.438	C0300-026-2250-S	1.328	33.73			2.08	0.36
C0300-026-2500-M					2.500	63.50	1.085	27.56	0.455	11.56			2.2	0.385	C0300-026-2500-S	1.452	36.88			1.83	0.32
C0300-030-0440-M					0.440	11.18	0.235	5.97	0.172	4.37			21.5	3.770	C0300-030-0440-S	0.279	7.09			17.91	3.14
C0300-030-0500-M					0.500	12.70	0.262	6.65	0.185	4.70			18.6	3.260	C0300-030-0500-S	0.314	7.98			15.49	2.72
C0300-030-0560-M					0.560	14.22	0.290	7.37	0.198	5.03			16.4	2.870	C0300-030-0560-S	0.349	8.86			13.66	2.39
C0300-030-0620-M					0.620	15.75	0.317	8.05	0.212	5.38			14.6	2.560	C0300-030-0620-S	0.382	9.7			12.16	2.13
C0300-030-0690-M	0.300	7.62			0.690	17.53	0.350	8.89	0.227	5.77			13.0	2.280	C0300-030-0690-S	0.423	10.74			10.83	1.90
C0300-030-0750-M					0.750	19.05	0.377	9.58	0.240	6.10			11.9	2.080	C0300-030-0750-S	0.459	11.66			9.91	1.73
C0300-030-0810-M					0.810	20.57	0.405	10.29	0.253	6.43			10.9	1.909	C0300-030-0810-S	0.492	12.5			9.08	1.59
C0300-030-0880-M					0.880	22.35	0.437	11.10	0.268	6.81			10.0	1.751	C0300-030-0880-S	0.533	13.54			8.33	1.46
C0300-030-0940-M			0.030	0.76	0.940	23.88	0.465	11.81	0.281	7.14	4.42	19.66	9.3	1.628	C0300-030-0940-S	0.567	14.4	2.89	12.85	7.75	1.36
C0300-030-1000-M					1.000	25.40	0.492	12.50	0.294	7.47			8.7	1.523	C0300-030-1000-S	0.601	15.27			7.25	1.27
C0300-030-1250-M					1.250	31.75	0.607	15.42	0.348	8.84			6.9	1.208	C0300-030-1250-S	0.747	18.97			5.75	1.01
C0300-030-1500-M					1.500	38.10	0.722	18.34	0.402	10.21			5.7	0.998	C0300-030-1500-S	0.891	22.63			4.75	0.83
C0300-030-1750-M					1.750	44.45	0.837	21.26	0.457	11.61			4.8	0.840	C0300-030-1750-S	1.027	26.09			4.00	0.70
C0300-030-2000-M					2.000	50.80	0.952	24.18	0.511	12.98			4.2	0.735	C0300-030-2000-S	1.174	29.82			3.50	0.61
C0300-030-2250-M					2.250	57.15	1.067	27.10	0.565	14.35			3.7	0.648	C0300-030-2250-S	1.313	33.35			3.08	0.54
C0300-030-2500-M					2.500	63.50	1.200	30.48	0.619	15.72			3.4	0.595	C0300-030-2500-S	1.48	37.59			2.83	0.50
C0300-032-0440-M					0.440	11.18	0.235	5.97	0.175	4.45			27.3	4.780	C0300-032-0440-S	0.288	7.32			22.74	3.98
C0300-032-0500-M					0.500	12.70	0.263	6.68	0.190	4.83			23.6	4.130	C0300-032-0500-S	0.324	8.23			19.66	3.44
C0300-032-0560-M					0.560	14.22	0.286	7.26	0.208	5.28			20.4	3.570	C0300-032-0560-S	0.357	9.07			16.99	2.97
C0300-032-0620-M					0.620	15.75	0.312	7.92	0.223	5.66			18.2	3.190	C0300-032-0620-S	0.392	9.96			15.16	2.66
C0300-032-0690-M					0.690	17.53	0.348	8.84	0.240	6.10			16.3	2.850	C0300-032-0690-S	0.435	11.05			13.58	2.37
C0300-032-0750-M					0.750	19.05	0.374	9.50	0.255	6.48			14.9	2.610	C0300-032-0750-S	0.471	11.96			12.41	2.17
C0300-032-0810-M					0.810	20.57	0.400	10.16	0.272	6.91			13.6	2.380	C0300-032-0810-S	0.505	12.83			11.33	1.98
C0300-032-0880-M			0.032	0.81	0.880	22.35	0.435	11.05	0.287	7.29	5.59	24.87	12.6	2.210	C0300-032-0880-S	0.551	14	3.46	15.39	10.50	1.84
C0300-032-0940-M					0.940	23.88	0.444	11.28	0.311	7.90			11.3	1.979	C0300-032-0940-S	0.573	14.55			9.41	1.65
C0300-032-1000-M					1.000	25.40	0.470	11.94	0.326	8.28			10.6	1.856	C0300-032-1000-S	0.609	15.47			8.83	1.55
C0300-032-1250-M					1.250	31.75	0.600	15.24	0.388	9.86			8.6	1.506	C0300-032-1250-S	0.767	19.48			7.16	1.25
C0300-032-1500-M					1.500	38.10	0.713	18.11	0.450	11.43			7.1	1.243	C0300-032-1500-S	0.916	23.27			5.91	1.04
C0300-032-1750-M					1.750	44.45	0.818	20.78	0.511	12.98			6.0	1.051	C0300-032-1750-S	1.058	26.87			5.00	0.88
C0300-032-2000-M					2.000	50.80	0.945	24.00	0.573	14.55			5.3	0.928	C0300-032-2000-S	1.217	30.91			4.41	0.77
C0300-032-2250-M					2.250	57.15	1.113	28.27	0.608	15.44			4.9	0.858	C0300-032-2250-S	1.403	35.64			4.08	0.71
C0300-032-2500-M					2.500	63.50	1.233	31.32	0.656	16.66			4.4	0.770	C0300-032-2500-S	1.557	39.55			3.67	0.64
C0300-035-0380-M					0.380	9.65	0.224	5.69	0.193	4.90			46.0	8.060	C0300-035-0380-S	0.263	6.68			38.32	6.71
C0300-035-0440-M					0.440	11.18	0.254	6.45	0.210	5.33			38.5	6.740	C0300-035-0440-S	0.301	7.65			32.07	5.61
C0300-035-0500-M			0.035	0.89	0.500	12.70	0.284	7.21	0.227	5.77	7.16	31.85	33.2	5.810							

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0300-035-0690-M					0.690	17.53	0.379	9.63	0.281	7.14			23.0	4.030	C0300-035-0690-S	0.457	11.61			19.16	3.36
C0300-035-0750-M					0.750	19.05	0.408	10.36	0.298	7.57			21.0	3.680	C0300-035-0750-S	0.495	12.57			17.49	3.07
C0300-035-0810-M					0.810	20.57	0.438	11.13	0.316	8.03			19.3	3.380	C0300-035-0810-S	0.532	13.51			16.08	2.82
C0300-035-0880-M					0.880	22.35	0.473	12.01	0.335	8.51			17.6	3.080	C0300-035-0880-S	0.575	14.61			14.66	2.57
C0300-035-0940-M					0.940	23.88	0.503	12.78	0.353	8.97			16.4	2.870	C0300-035-0940-S	0.613	15.57			13.66	2.39
C0300-035-1000-M					1.000	25.40	0.533	13.54	0.370	9.40			15.3	2.680	C0300-035-1000-S	0.65	16.51			12.74	2.23
C0300-035-1120-M			0.035	0.89	1.120	28.45	0.593	15.06	0.404	10.26	7.16	31.85	13.6	2.380	C0300-035-1120-S	0.726	18.44	4.46	19.84	11.33	1.98
C0300-035-1250-M					1.250	31.75	0.657	16.69	0.441	11.20			12.1	2.120	C0300-035-1250-S	0.807	20.5			10.08	1.77
C0300-035-1380-M					1.380	35.05	0.722	18.34	0.478	12.14			10.9	1.909	C0300-035-1380-S	0.888	22.56			9.08	1.59
C0300-035-1500-M					1.500	38.10	0.782	19.86	0.512	13.00			10.0	1.751	C0300-035-1500-S	0.964	24.49			8.33	1.46
C0300-035-1750-M					1.750	44.45	0.906	23.01	0.583	14.81			8.5	1.488	C0300-035-1750-S	1.119	28.42			7.08	1.24
C0300-035-2000-M					2.000	50.80	1.030	26.16	0.654	16.61			7.4	1.296	C0300-035-2000-S	1.276	32.41			6.16	1.08
C0300-035-2250-M					2.250	57.15	1.155	29.34	0.725	18.42			6.5	1.138	C0300-035-2250-S	1.425	36.2			5.41	0.95
C0300-035-2500-M					2.500	63.50	1.279	32.49	0.796	20.22			5.9	1.033	C0300-035-2500-S	1.592	40.44			4.91	0.86
C0300-038-0380-M					0.380	9.65	0.240	6.10	0.197	5.00			64.5	11.29	C0300-038-0380-S	0.276	7.01			53.73	9.40
C0300-038-0440-M					0.440	11.18	0.271	6.88	0.218	5.54			53.5	9.370	C0300-038-0440-S	0.315	8			44.57	7.81
C0300-038-0500-M					0.500	12.70	0.305	7.75	0.237	6.02			46.4	8.130	C0300-038-0500-S	0.356	9.04			38.65	6.77
C0300-038-0560-M					0.560	14.22	0.327	8.31	0.265	6.73			38.8	6.790	C0300-038-0560-S	0.387	9.83			32.32	5.66
C0300-038-0620-M					0.620	15.75	0.361	9.17	0.284	7.21			34.9	6.110	C0300-038-0620-S	0.428	10.87			29.07	5.09
C0300-038-0690-M					0.690	17.53	0.392	9.96	0.313	7.95			30.3	5.310	C0300-038-0690-S	0.469	11.91			25.24	4.42
C0300-038-0750-M					0.750	19.05	0.426	10.82	0.331	8.41			27.9	4.890	C0300-038-0750-S	0.51	12.95			23.24	4.07
C0300-038-0810-M					0.810	20.57	0.460	11.68	0.351	8.92			25.8	4.520	C0300-038-0810-S	0.55	13.97			21.49	3.77
C0300-038-0880-M					0.880	22.35	0.491	12.47	0.379	9.63			23.2	4.060	C0300-038-0880-S	0.591	15.01			19.33	3.38
C0300-038-0940-M			0.038	0.97	0.940	23.88	0.525	13.34	0.398	10.11	9.04	40.21	21.8	3.820	C0300-038-0940-S	0.633	16.08	5.58	24.82	18.16	3.18
C0300-038-1000-M					1.000	25.40	0.559	14.20	0.417	10.59			20.5	3.590	C0300-038-1000-S	0.673	17.09			17.08	2.99
C0300-038-1120-M					1.120	28.45	0.627	15.93	0.456	11.58			18.3	3.200	C0300-038-1120-S	0.754	19.15			15.24	2.67
C0300-038-1250-M					1.250	31.75	0.705	17.91	0.493	12.52			16.6	2.910	C0300-038-1250-S	0.847	21.51			13.83	2.42
C0300-038-1380-M					1.380	35.05	0.783	19.89	0.532	13.51			15.1	2.640	C0300-038-1380-S	0.937	23.8			12.58	2.20
C0300-038-1500-M					1.500	38.10	0.852	21.64	0.570	14.48			13.9	2.430	C0300-038-1500-S	1.018	25.86			11.58	2.02
C0300-038-1750-M					1.750	44.45	0.943	23.95	0.680	17.27			11.2	1.961	C0300-038-1750-S	1.152	29.26			9.33	1.63
C0300-038-2000-M					2.000	50.80	1.068	27.13	0.765	19.43			9.7	1.698	C0300-038-2000-S	1.31	33.27			8.08	1.41
C0300-038-2250-M	0.300	7.62			2.250	57.15	1.246	31.65	0.806	20.47			9.0	1.576	C0300-038-2250-S	1.506	38.25			7.50	1.31
C0300-038-2500-M					2.500	63.50	1.393	35.38	0.874	22.20			8.2	1.436	C0300-038-2500-S	1.683	42.75			6.83	1.20
C0300-040-0380-M					0.380	9.65	0.250	6.35	0.231	5.87			75.5	13.220	C0300-040-0380-S	0.277	7.04			62.89	11.01
C0300-040-0440-M					0.440	11.18	0.283	7.19	0.253	6.43			62.9	11.010	C0300-040-0440-S	0.316	8.03			52.40	9.17
C0300-040-0500-M					0.500	12.70	0.317	8.05	0.275	6.99			53.9	9.440	C0300-040-0500-S	0.356	9.04			44.90	7.86
C0300-040-0560-M					0.560	14.22	0.351	8.92	0.297	7.54			47.2	8.270	C0300-040-0560-S	0.395	10.03			39.32	6.89
C0300-040-0620-M					0.620	15.75	0.385	9.78	0.320	8.13			41.9	7.340	C0300-040-0620-S	0.434	11.02			34.90	6.11
C0300-040-0690-M					0.690	17.53	0.425	10.80	0.346	8.79			37.1	6.500	C0300-040-0690-S	0.48	12.19			30.90	5.41
C0300-040-0750-M					0.750	19.05	0.459	11.66	0.368	9.35			33.8	5.920	C0300-040-0750-S	0.52	13.21			28.16	4.93
C0300-040-0810-M					0.810	20.57	0.493	12.52	0.390	9.91			31.0	5.430	C0300-040-0810-S	0.559	14.2			25.82	4.52
C0300-040-0880-M					0.880	22.35	0.532	13.51	0.416	10.57			28.3	4.960	C0300-040-0880-S	0.605	15.37			23.57	4.13
C0300-040-0940-M			0.040	1.02	0.940	23.88	0.566	14.38	0.438	11.13	9.85	43.81	26.3	4.610	C0300-040-0940-S	0.644	16.36	6.48	28.82	21.91	3.84
C0300-040-1000-M					1.000	25.40	0.600	15.24	0.460	11.68			24.6	4.310	C0300-040-1000-S	0.684	17.37			20.49	3.59
C0300-040-1120-M					1.120	28.45	0.668	16.97	0.505	12.83			21.8	3.820	C0300-040-1120-S	0.763	19.38			18.16	3.18
C0300-040-1250-M					1.250	31.75	0.741	18.82	0.553	14.05			19.4	3.400	C0300-040-1250-S	0.849	21.56			16.16	2.83
C0300-040-1380-M					1.380	35.05	0.815	20.70	0.601	15.27			17.4	3.050	C0300-040-1380-S	0.933	23.7			14.49	2.54
C0300-040-1500-M					1.500	38.10	0.882	22.40	0.645	16.38			16.0	2.800	C0300-040-1500-S	1.014	25.76			13.33	2.33
C0300-040-1750-M					1.750	44.45	1.024	26.01	0.737	18.72			13.6	2.380	C0300-040-1750-S	1.178	29.92			11.33	1.98
C0300-040-2000-M					2.000	50.80	1.165	29.59	0.830	21.08			11.8	2.070	C0300-040-2000-S	1.341	34.06			9.83	1.72
C0300-040-2250-M					2.250	57.15	1.306	33.17	0.922	23.42			10.4	1.821	C0300-040-2250-S	1.502	38.15			8.66	1.52
C0300-040-2500-M					2.500	63.50	1.448	36.78	1.015	25.78			9.4	1.646	C0300-040-2500-S	1.673	42.49			7.83	1.37
C0300-042-0380-M					0.380	9.65	0.271	6.88	0.210	5.33			108.3	18.960	C0300-042-0380-S	0.298	7.57			90.21	15.79
C0300-042-0440-M					0.440	11.18	0.310	7.87	0.230	5.84			90.8	15.900	C0300-042-0440-S	0.342	8.69			75.64	13.24
C0300-042-0500-M					0.500	12.70	0.333	8.46	0.266	6.76			70.7	12.380	C0300-042-0500-S	0.375	9.53			58.89	10.31
C0300-042-0560-M					0.560	14.22	0.364	9.25	0.294	7.47			60.2	10.540	C0300-042-0560-S	0.413	10.49			50.15	8.78
C0300-042-0620-M					0.620	15.75	0.391	9.93	0.325	8.26			51.6	9.040	C0300-042-0620-S	0.448	11.38			42.98	7.53
C0300-042-0690-M			0.042	1.07	0.690	17.53	0.428	10.87	0.357	9.07	11.81	52.53	45.1	7.900	C0300-042-0690-S	0.493	12.52	7.39	32.87	37.57	6.58
C0300-042-0750-M					0.750	19.05	0.467	11.86	0.378	9.60			41.7	7.300	C0300-042-0750-S	0.537	13.64			34.74	6.08
C0300-042-0810-M					0.810	20.57	0.494	12.55	0.409	10.39			37.4	6.550	C0300-042-0810-S	0.573	14.55			31.15	5.46
C0300-042-0880-M					0.880	22.35	0.531	13.49	0.442	11.23			33.8	5.920	C0300-042-0880-S	0.618	15.7			28.16	4.93
C0300-042-0940-M					0.940	23.88	0.570	14.48	0.462	11.73											

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0300-042-1250-M					1.250	31.75	0.760	19.30	0.578	14.68			24.1	4.220	C0300-042-1250-S	0.882	22.4			20.08	3.52
C0300-042-1380-M					1.380	35.05	0.835	21.21	0.630	16.00			21.7	3.800	C0300-042-1380-S	0.971	24.66			18.08	3.17
C0300-042-1500-M					1.500	38.10	0.901	22.89	0.684	17.37			19.7	3.450	C0300-042-1500-S	1.05	26.67			16.41	2.87
C0300-042-1750-M			0.042	1.07	1.750	44.45	1.030	26.16	0.794	20.17	11.81	52.53	16.4	2.870	C0300-042-1750-S	1.209	30.71	7.39	32.87	13.66	2.39
C0300-042-2000-M					2.000	50.80	1.168	29.67	0.894	22.71			14.2	2.490	C0300-042-2000-S	1.376	34.95			11.83	2.07
C0300-042-2250-M					2.250	57.15	1.313	33.35	0.995	25.27			12.6	2.210	C0300-042-2250-S	1.546	39.27			10.50	1.84
C0300-042-2500-M					2.500	63.50	1.502	38.15	1.050	26.67			11.8	2.070	C0300-042-2500-S	1.749	44.42			9.83	1.72
C0300-045-0380-M					0.380	9.65	0.264	6.71	0.247	6.27			123.5	21.630	C0300-045-0380-S	0.294	7.47			102.88	18.02
C0300-045-0440-M					0.440	11.18	0.305	7.75	0.269	6.83			106.1	18.580	C0300-045-0440-S	0.34	8.64			88.38	15.48
C0300-045-0500-M					0.500	12.70	0.346	8.79	0.292	7.42			92.6	16.210	C0300-045-0500-S	0.385	9.78			77.14	13.50
C0300-045-0560-M					0.560	14.22	0.378	9.60	0.325	8.26			78.3	13.710	C0300-045-0560-S	0.424	10.77			65.22	11.42
C0300-045-0620-M					0.620	15.75	0.409	10.39	0.359	9.12			67.6	11.840	C0300-045-0620-S	0.463	11.76			56.31	9.86
C0300-045-0690-M					0.690	17.53	0.460	11.68	0.381	9.68			62.0	10.860	C0300-045-0690-S	0.519	13.18			51.65	9.05
C0300-045-0750-M					0.750	19.05	0.491	12.47	0.415	10.54			55.0	9.630	C0300-045-0750-S	0.557	14.15			45.82	8.02
C0300-045-0810-M					0.810	20.57	0.532	13.51	0.437	11.10			51.3	8.980	C0300-045-0810-S	0.603	15.32			42.73	7.48
C0300-045-0880-M					0.880	22.35	0.573	14.55	0.472	11.99			46.4	8.130	C0300-045-0880-S	0.651	16.54			38.65	6.77
C0300-045-0940-M			0.045	1.14	0.940	23.88	0.604	15.34	0.506	12.85	14.26	63.43	42.4	7.420	C0300-045-0940-S	0.689	17.5	8.86	39.41	35.32	6.18
C0300-045-1000-M					1.000	25.40	0.645	16.38	0.527	13.39			40.2	7.040	C0300-045-1000-S	0.736	18.69			33.49	5.86
C0300-045-1120-M					1.120	28.45	0.726	18.44	0.573	14.55			36.2	6.340	C0300-045-1120-S	0.826	20.98			30.15	5.28
C0300-045-1250-M					1.250	31.75	0.809	20.55	0.629	15.98			32.3	5.660	C0300-045-1250-S	0.921	23.39			26.91	4.71
C0300-045-1380-M					1.380	35.05	0.890	22.61	0.686	17.42			29.1	5.100	C0300-045-1380-S	1.015	25.78			24.24	4.25
C0300-045-1500-M					1.500	38.10	0.962	24.43	0.742	18.85			26.5	4.640	C0300-045-1500-S	1.099	27.91			22.07	3.87
C0300-045-1750-M					1.750	44.45	1.087	27.61	0.878	22.30			21.5	3.770	C0300-045-1750-S	1.256	31.9			17.91	3.14
C0300-045-2000-M					2.000	50.80	1.237	31.42	0.990	25.15			18.7	3.270	C0300-045-2000-S	1.431	36.35			15.58	2.72
C0300-045-2250-M					2.250	57.15	1.391	35.33	1.102	27.99			16.6	2.910	C0300-045-2250-S	1.61	40.89			13.83	2.42
C0300-045-2500-M					2.500	63.50	1.581	40.16	1.170	29.72			15.6	2.730	C0300-045-2500-S	1.818	46.18			12.99	2.27
C0300-047-0380-M					0.380	9.65	0.279	7.09	0.250	6.35			159.0	27.840	C0300-047-0380-S	0.304	7.72			132.45	23.19
C0300-047-0440-M					0.440	11.18	0.317	8.05	0.279	7.09			131.4	23.010	C0300-047-0440-S	0.348	8.84			109.46	19.17
C0300-047-0500-M					0.500	12.70	0.356	9.04	0.311	7.90			112.0	19.610	C0300-047-0500-S	0.392	9.96			93.30	16.34
C0300-047-0560-M					0.560	14.22	0.395	10.03	0.343	8.71			97.6	17.090	C0300-047-0560-S	0.436	11.07			81.30	14.24
C0300-047-0620-M					0.620	15.75	0.434	11.02	0.374	9.50			86.5	15.150	C0300-047-0620-S	0.481	12.22			72.05	12.62
C0300-047-0690-M					0.690	17.53	0.479	12.17	0.408	10.36			76.3	13.360	C0300-047-0690-S	0.532	13.51			63.56	11.13
C0300-047-0750-M	0.300	7.62			0.750	19.05	0.518	13.16	0.435	11.05			69.3	12.130	C0300-047-0750-S	0.576	14.63			57.73	10.10
C0300-047-0810-M					0.810	20.57	0.556	14.12	0.461	11.71			63.5	11.120	C0300-047-0810-S	0.62	15.75			52.90	9.26
C0300-047-0880-M					0.880	22.35	0.602	15.29	0.493	12.52			57.9	10.140	C0300-047-0880-S	0.672	17.07			48.23	8.45
C0300-047-0940-M					0.940	23.88	0.640	16.26	0.520	13.21			53.8	9.420	C0300-047-0940-S	0.716	18.19			44.82	7.85
C0300-047-1000-M			0.047	1.19	1.000	25.40	0.679	17.25	0.547	13.89	16.10	71.61	50.2	8.790	C0300-047-1000-S	0.76	19.3	10.04	44.66	41.82	7.32
C0300-047-1120-M					1.120	28.45	0.757	19.23	0.600	15.24			44.3	7.760	C0300-047-1120-S	0.848	21.54			36.90	6.46
C0300-047-1250-M					1.250	31.75	0.841	21.36	0.658	16.71			39.3	6.880	C0300-047-1250-S	0.943	23.95			32.74	5.73
C0300-047-1380-M					1.380	35.05	0.925	23.50	0.717	18.21			35.4	6.200	C0300-047-1380-S	1.039	26.39			29.49	5.16
C0300-047-1500-M					1.500	38.10	1.002	25.45	0.770	19.56			32.3	5.660	C0300-047-1500-S	1.127	28.63			26.91	4.71
C0300-047-1750-M					1.750	44.45	1.164	29.57	0.882	22.40			27.5	4.820	C0300-047-1750-S	1.312	33.32			22.91	4.02
C0300-047-2000-M					2.000	50.80	1.325	33.66	0.994	25.25			23.9	4.190	C0300-047-2000-S	1.496	38			19.91	3.49
C0300-047-2250-M					2.250	57.15	1.487	37.77	1.106	28.09			21.1	3.700	C0300-047-2250-S	1.679	42.65			17.58	3.08
C0300-047-2500-M					2.500	63.50	1.648	41.86	1.218	30.94			18.9	3.310	C0300-047-2500-S	1.862	47.29			15.74	2.76
C0300-047-2750-M					2.750	69.85	1.810	45.97	1.330	33.78			17.1	2.990	C0300-047-2750-S	2.045	51.94			14.24	2.49
C0300-047-3000-M					3.000	76.20	1.971	50.06	1.442	36.63			15.7	2.750	C0300-047-3000-S	2.232	56.69			13.08	2.29
C0300-049-0380-M					0.380	9.65	0.285	7.24	0.263	6.68			189.5	33.180	C0300-049-0380-S	0.308	7.82			157.85	27.64
C0300-049-0440-M					0.440	11.18	0.325	8.26	0.294	7.47			156.3	27.370	C0300-049-0440-S	0.353	8.97			130.20	22.80
C0300-049-0500-M					0.500	12.70	0.365	9.27	0.328	8.33			133.0	23.290	C0300-049-0500-S	0.398	10.11			110.79	19.40
C0300-049-0560-M					0.560	14.22	0.405	10.29	0.362	9.19			115.7	20.260	C0300-049-0560-S	0.443	11.25			96.38	16.88
C0300-049-0620-M					0.620	15.75	0.444	11.28	0.395	10.03			102.4	17.930	C0300-049-0620-S	0.487	12.37			85.30	14.94
C0300-049-0690-M					0.690	17.53	0.491	12.47	0.431	10.95			90.3	15.810	C0300-049-0690-S	0.539	13.69			75.22	13.17
C0300-049-0750-M					0.750	19.05	0.531	13.49	0.460	11.68			82.0	14.360	C0300-049-0750-S	0.584	14.83			68.31	11.96
C0300-049-0810-M					0.810	20.57	0.570	14.48	0.489	12.42			75.1	13.150	C0300-049-0810-S	0.629	15.98			62.56	10.95
C0300-049-0880-M			0.049	1.24	0.880	22.35	0.617	15.67	0.523	13.28	17.98	79.98	68.4	11.980	C0300-049-0880-S	0.681	17.3	11.32	50.35	56.98	9.98
C0300-049-0940-M					0.940	23.88	0.657	16.69	0.551	14.00			63.5	11.120	C0300-049-0940-S	0.726	18.44			52.90	9.26
C0300-049-1000-M					1.000	25.40	0.697	17.70	0.580	14.73			59.3	10.380	C0300-049-1000-S	0.771	19.58			49.40	8.65
C0300-049-1120-M					1.120	28.45	0.776	19.71	0.638	16.21			52.3	9.160	C0300-049-1120-S	0.86	21.84			43.57	7.63
C0300-049-1250-M					1.250	31.75	0.862	21.89	0.700	17.78			46.4	8.130	C0300-049-1250-S	0.957	24.31			38.65	6.77
C0300-049-1380-M					1.380	35.05	0.949	24.10	0.763	19.38			41.7	7.300	C0300-049-						

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0300-049-2250-M					2.250	57.15	1.526	38.76	1.181	30.00			24.8	4.340	C0300-049-2250-S	1.702	43.23			20.66	3.62
C0300-049-2500-M			0.049	1.24	2.500	63.50	1.692	42.98	1.301	33.05	17.98	79.98	22.3	3.910	C0300-049-2500-S	1.89	48.01	11.32	50.35	18.58	3.26
C0300-049-2750-M					2.750	69.85	1.858	47.19	1.421	36.09			20.2	3.540	C0300-049-2750-S	2.077	52.76			16.83	2.95
C0300-049-3000-M					3.000	76.20	2.024	51.41	1.541	39.14			18.4	3.220	C0300-049-3000-S	2.261	57.43			15.33	2.68
C0300-051-0380-M					0.380	9.65	0.291	7.39	0.274	6.96			226.6	39.680	C0300-051-0380-S	0.313	7.95			188.76	33.05
C0300-051-0440-M					0.440	11.18	0.332	8.43	0.308	7.82			186.4	32.640	C0300-051-0440-S	0.359	9.12			155.27	27.19
C0300-051-0500-M					0.500	12.70	0.373	9.47	0.343	8.71			158.3	27.720	C0300-051-0500-S	0.404	10.26			131.86	23.09
C0300-051-0560-M					0.560	14.22	0.413	10.49	0.379	9.63			137.5	24.080	C0300-051-0560-S	0.45	11.43			114.54	20.06
C0300-051-0620-M					0.620	15.75	0.454	11.53	0.415	10.54			121.6	21.290	C0300-051-0620-S	0.496	12.6			101.29	17.73
C0300-051-0690-M					0.690	17.53	0.502	12.75	0.453	11.51			107.1	18.750	C0300-051-0690-S	0.549	13.94			89.21	15.62
C0300-051-0750-M					0.750	19.05	0.542	13.77	0.483	12.27			97.2	17.020	C0300-051-0750-S	0.594	15.09			80.97	14.18
C0300-051-0810-M					0.810	20.57	0.583	14.81	0.514	13.06			89.0	15.580	C0300-051-0810-S	0.64	16.26			74.14	12.98
C0300-051-0880-M	0.300	7.62			0.880	22.35	0.631	16.03	0.550	13.97			81.0	14.180	C0300-051-0880-S	0.693	17.6			67.47	11.81
C0300-051-0940-M					0.940	23.88	0.672	17.07	0.580	14.73			75.2	13.170	C0300-051-0940-S	0.739	18.77			62.64	10.97
C0300-051-1000-M			0.051	1.30	1.000	25.40	0.712	18.08	0.611	15.52	20.17	89.72	70.1	12.280	C0300-051-1000-S	0.784	19.91	12.61	56.09	58.39	10.23
C0300-051-1120-M					1.120	28.45	0.794	20.17	0.672	17.07			61.9	10.840	C0300-051-1120-S	0.875	22.23			51.56	9.03
C0300-051-1250-M					1.250	31.75	0.882	22.40	0.738	18.75			54.9	9.610	C0300-051-1250-S	0.974	24.74			45.73	8.01
C0300-051-1380-M					1.380	35.05	0.971	24.66	0.805	20.45			49.3	8.630	C0300-051-1380-S	1.073	27.25			41.07	7.19
C0300-051-1500-M					1.500	38.10	1.052	26.72	0.866	22.00			45.1	7.900	C0300-051-1500-S	1.164	29.57			37.57	6.58
C0300-051-1750-M					1.750	44.45	1.222	31.04	0.993	25.22			38.2	6.690	C0300-051-1750-S	1.354	34.39			31.82	5.57
C0300-051-2000-M					2.000	50.80	1.392	35.36	1.121	28.47			33.2	5.810	C0300-051-2000-S	1.544	39.22			27.66	4.84
C0300-051-2250-M					2.250	57.15	1.562	39.67	1.248	31.70			29.3	5.130	C0300-051-2250-S	1.733	44.02			24.41	4.27
C0300-051-2500-M					2.500	63.50	1.732	43.99	1.376	34.95			26.3	4.610	C0300-051-2500-S	1.925	48.9			21.91	3.84
C0300-051-2750-M					2.750	69.85	1.902	48.31	1.503	38.18			23.8	4.170	C0300-051-2750-S	2.114	53.7			19.83	3.47
C0300-051-3000-M					3.000	76.20	2.072	52.63	1.631	41.43			21.7	3.800	C0300-051-3000-S	2.303	58.5			18.08	3.17
D11550					0.630	16.00	0.201	5.10	0.161	4.10			5.1	0.890	D21550	0.201	5.11			4.23	0.74
D11560					0.965	24.50	0.280	7.10	0.211	5.36			3.3	0.570	D21560	0.28	7.11			2.71	0.47
D11570	0.340	8.63	0.025	0.63	1.457	37.00	0.402	10.20	0.285	7.25	2.25	10.00	2.1	0.370	D21570	0.402	10.21	1.87	8.32	1.76	0.31
D11580					2.165	55.00	0.563	14.30	0.385	9.77			1.4	0.250	D21580	0.563	14.3			1.19	0.21
D11590					3.169	80.50	0.811	20.60	0.533	13.55			1.0	0.170	D21590	0.811	20.6			0.81	0.14
D11750					0.571	14.50	0.240	6.10	0.205	5.20			13.2	2.320	D21750	0.24	6.1			11.03	1.93
D11760					0.846	21.50	0.331	8.40	0.268	6.80			8.5	1.480	D21760	0.331	8.41			7.04	1.23
D11770	0.346	8.80	0.031	0.80	1.260	32.00	0.472	12.00	0.362	9.20	4.39	19.52	5.5	0.960	D21770	0.472	11.99	3.66	16.28	4.57	0.80
D11780					1.850	47.00	0.657	16.70	0.488	12.40			3.7	0.650	D21780	0.657	16.69			3.09	0.54
D11790					2.677	68.00	0.937	23.80	0.677	17.20			2.5	0.440	D21790	0.937	23.8			2.09	0.37
D11950					0.512	13.00	0.287	7.30	0.217	5.50			32.4	5.680	D21950	0.287	7.29			27.02	4.73
D11960					0.748	19.00	0.398	10.10	0.295	7.50			20.6	3.610	D21960	0.398	10.11			17.17	3.01
D11970	0.354	9.00	0.039	1.00	1.122	28.50	0.563	14.30	0.413	10.50	7.45	33.15	13.3	2.330	D21970	0.563	14.3	6.21	27.62	11.08	1.94
D11980					1.594	40.50	0.783	19.90	0.571	14.50			9.1	1.590	D21980	0.783	19.89			7.56	1.32
D11990					2.323	59.00	1.114	28.30	0.807	20.50			6.2	1.080	D21990	1.114	28.3			5.14	0.90
C0360-026-0500-M					0.500	12.70	0.215	5.46	0.117	2.97			9.2	1.611	C0360-026-0500-S	0.29	7.37			7.66	1.34
C0360-026-0560-M					0.560	14.22	0.239	6.07	0.123	3.12			8.2	1.436	C0360-026-0560-S	0.324	8.23			6.83	1.20
C0360-026-0620-M					0.620	15.75	0.264	6.71	0.129	3.28			7.4	1.296	C0360-026-0620-S	0.358	9.09			6.16	1.08
C0360-026-0690-M					0.690	17.53	0.298	7.57	0.136	3.45			6.7	1.173	C0360-026-0690-S	0.401	10.19			5.58	0.98
C0360-026-0750-M					0.750	19.05	0.323	8.20	0.143	3.63			6.1	1.068	C0360-026-0750-S	0.433	11			5.08	0.89
C0360-026-0810-M					0.810	20.57	0.347	8.81	0.148	3.76			5.7	0.998	C0360-026-0810-S	0.47	11.94			4.75	0.83
C0360-026-0880-M			0.026	0.66	0.880	22.35	0.346	8.79	0.162	4.11	2.62	11.65	4.9	0.858	C0360-026-0880-S	0.485	12.32	1.61	7.16	4.08	0.71
C0360-026-0940-M					0.940	23.88	0.370	9.40	0.169	4.29			4.6	0.805	C0360-026-0940-S	0.519	13.18			3.83	0.67
C0360-026-1000-M					1.000	25.40	0.359	9.12	0.181	4.60			4.1	0.718	C0360-026-1000-S	0.528	13.41			3.42	0.60
C0360-026-1120-M					1.120	28.45	0.443	11.25	0.187	4.75			3.9	0.683	C0360-026-1120-S	0.624	15.85			3.25	0.57
C0360-026-1250-M					1.250	31.75	0.479	12.17	0.213	5.41			3.4	0.595	C0360-026-1250-S	0.681	17.3			2.83	0.50
C0360-026-1500-M	0.360	9.14			1.500	38.10	0.564	14.33	0.242	6.15			2.8	0.490	C0360-026-1500-S	0.809	20.55			2.33	0.41
C0360-026-1750-M					1.750	44.45	0.652	16.56	0.270	6.86			2.4	0.420	C0360-026-1750-S	0.943	23.95			2.00	0.35
C0360-026-2000-M					2.000	50.80	0.834	21.18	0.298	7.57			2.1	0.368	C0360-026-2000-S	1.078	27.38			1.75	0.31
C0360-029-0500-M					0.500	12.70	0.238	6.05	0.150	3.81			12.9	2.260	C0360-029-0500-S	0.296	7.52			10.75	1.88
C0360-029-0560-M					0.560	14.22	0.263	6.68	0.159	4.04											

COMPRESSION SPRINGS

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0360-029-1250-M					1.250	31.75	0.545	13.84	0.257	6.53			4.8	0.840	C0360-029-1250-S	0.7	17.78			4.00	0.70
C0360-029-1380-M					1.380	35.05	0.598	15.19	0.275	6.99			4.3	0.753	C0360-029-1380-S	0.767	19.48			3.58	0.63
C0360-029-1500-M			0.029	0.74	1.500	38.10	0.647	16.43	0.292	7.42	3.38	15.03	4.0	0.700	C0360-029-1500-S	0.841	21.36	2.2	9.79	3.33	0.58
C0360-029-1750-M					1.750	44.45	0.749	19.02	0.328	8.33			3.4	0.595	C0360-029-1750-S	0.974	24.74			2.83	0.50
C0360-029-2000-M					2.000	50.80	0.834	21.18	0.364	9.25			2.9	0.508	C0360-029-2000-S	1.09	27.69			2.42	0.42
C0360-032-0380-M					0.380	9.65	0.190	4.83	0.151	3.84			24.8	4.340	C0360-032-0380-S	0.239	6.07			20.66	3.62
C0360-032-0440-M					0.440	11.18	0.214	5.44	0.162	4.11			20.8	3.640	C0360-032-0440-S	0.272	6.91			17.33	3.03
C0360-032-0500-M					0.500	12.70	0.237	6.02	0.159	4.04			17.9	3.130	C0360-032-0500-S	0.305	7.75			14.91	2.61
C0360-032-0560-M					0.560	14.22	0.270	6.86	0.167	4.24			16.3	2.850	C0360-032-0560-S	0.346	8.79			13.58	2.37
C0360-032-0620-M					0.620	15.75	0.304	7.72	0.175	4.45			14.9	2.610	C0360-032-0620-S	0.386	9.8			12.41	2.17
C0360-032-0690-M					0.690	17.53	0.321	8.15	0.191	4.85			12.8	2.240	C0360-032-0690-S	0.417	10.59			10.66	1.87
C0360-032-0750-M					0.750	19.05	0.355	9.02	0.199	5.05			11.9	2.080	C0360-032-0750-S	0.457	11.61			9.91	1.73
C0360-032-0810-M					0.810	20.57	0.388	9.86	0.207	5.26			11.2	1.961	C0360-032-0810-S	0.498	12.65			9.33	1.63
C0360-032-0880-M					0.880	22.35	0.406	10.31	0.224	5.69			9.9	1.733	C0360-032-0880-S	0.527	13.39			8.25	1.44
C0360-032-0940-M			0.032	0.81	0.940	23.88	0.439	11.15	0.231	5.87	4.72	21.00	9.4	1.646	C0360-032-0940-S	0.569	14.45	2.91	12.94	7.83	1.37
C0360-032-1000-M					1.000	25.40	0.447	11.35	0.247	6.27			8.5	1.488	C0360-032-1000-S	0.589	14.96			7.08	1.24
C0360-032-1120-M					1.120	28.45	0.488	12.40	0.270	6.86			7.5	1.313	C0360-032-1120-S	0.654	16.61			6.25	1.09
C0360-032-1250-M					1.250	31.75	0.535	13.59	0.303	7.70			6.6	1.156	C0360-032-1250-S	0.721	18.31			5.50	0.96
C0360-032-1380-M					1.380	35.05	0.590	14.99	0.317	8.05			6.0	1.051	C0360-032-1380-S	0.798	20.27			5.00	0.88
C0360-032-1500-M					1.500	38.10	0.631	16.03	0.344	8.74			5.4	0.946	C0360-032-1500-S	0.853	21.67			4.50	0.79
C0360-032-1750-M					1.750	44.45	0.724	18.39	0.391	9.93			4.6	0.805	C0360-032-1750-S	0.991	25.17			3.83	0.67
C0360-032-2000-M					2.000	50.80	0.820	20.83	0.434	11.02			4.0	0.700	C0360-032-2000-S	1.127	28.63			3.33	0.58
C0360-032-2250-M					2.250	57.15	1.005	25.53	0.464	11.79			3.8	0.665	C0360-032-2250-S	1.331	33.81			3.17	0.55
C0360-032-2500-M					2.500	63.50	1.113	28.27	0.498	12.65			3.4	0.595	C0360-032-2500-S	1.473	37.41			2.83	0.50
C0360-035-0440-M					0.440	11.18	0.238	6.05	0.182	4.62			28.4	4.970	C0360-035-0440-S	0.281	7.14			23.66	4.14
C0360-035-0500-M					0.500	12.70	0.265	6.73	0.195	4.95			24.4	4.270	C0360-035-0500-S	0.315	8			20.33	3.56
C0360-035-0560-M					0.560	14.22	0.293	7.44	0.208	5.28			21.4	3.750	C0360-035-0560-S	0.349	8.86			17.83	3.12
C0360-035-0620-M					0.620	15.75	0.320	8.13	0.220	5.59			19.1	3.340	C0360-035-0620-S	0.384	9.75			15.91	2.78
C0360-035-0690-M					0.690	17.53	0.352	8.94	0.235	5.97			16.9	2.960	C0360-035-0690-S	0.423	10.74			14.08	2.47
C0360-035-0750-M					0.750	19.05	0.379	9.63	0.247	6.27			15.4	2.700	C0360-035-0750-S	0.457	11.61			12.83	2.25
C0360-035-0810-M					0.810	20.57	0.406	10.31	0.260	6.60			14.2	2.490	C0360-035-0810-S	0.492	12.5			11.83	2.07
C0360-035-0880-M					0.880	22.35	0.438	11.13	0.275	6.99			13.0	2.280	C0360-035-0880-S	0.533	13.54			10.83	1.90
C0360-035-0940-M	0.360	9.14	0.035	0.89	0.940	23.88	0.465	11.81	0.287	7.29	5.73	25.49	12.1	2.120	C0360-035-0940-S	0.567	14.4	3.76	16.72	10.08	1.77
C0360-035-1000-M					1.000	25.40	0.493	12.52	0.300	7.62			11.3	1.979	C0360-035-1000-S	0.6	15.24			9.41	1.65
C0360-035-1120-M					1.120	28.45	0.547	13.89	0.325	8.26			10.0	1.751	C0360-035-1120-S	0.668	16.97			8.33	1.46
C0360-035-1250-M					1.250	31.75	0.606	15.39	0.352	8.94			8.9	1.558	C0360-035-1250-S	0.743	18.87			7.41	1.30
C0360-035-1380-M					1.380	35.05	0.665	16.89	0.379	9.63			8.0	1.401	C0360-035-1380-S	0.815	20.7			6.66	1.17
C0360-035-1500-M					1.500	38.10	0.720	18.29	0.404	10.26			7.3	1.278	C0360-035-1500-S	0.881	22.38			6.08	1.06
C0360-035-1750-M					1.750	44.45	0.834	21.18	0.457	11.61			6.3	1.103	C0360-035-1750-S	1.033	26.24			5.25	0.92
C0360-035-2000-M					2.000	50.80	0.947	24.05	0.509	12.93			5.4	0.946	C0360-035-2000-S	1.164	29.57			4.50	0.79
C0360-035-2250-M					2.250	57.15	1.061	26.95	0.562	14.27			4.8	0.840	C0360-035-2250-S	1.309	33.25			4.00	0.70
C0360-035-2500-M					2.500	63.50	1.174	29.82	0.614	15.60			4.3	0.753	C0360-035-2500-S	1.45	36.83			3.58	0.63
C0360-038-0440-M					0.440	11.18	0.236	5.99	0.190	4.83			37.4	6.550	C0360-038-0440-S	0.289	7.34			31.15	5.46
C0360-038-0500-M					0.500	12.70	0.276	7.01	0.199	5.05			34.1	5.970	C0360-038-0500-S	0.334	8.48			28.41	4.97
C0360-038-0560-M					0.560	14.22	0.295	7.49	0.218	5.54			28.8	5.040	C0360-038-0560-S	0.364	9.25			23.99	4.20
C0360-038-0620-M					0.620	15.75	0.314	7.98	0.237	6.02			24.9	4.360	C0360-038-0620-S	0.393	9.98			20.74	3.63
C0360-038-0690-M					0.690	17.53	0.344	8.74	0.256	6.50			22.1	3.870	C0360-038-0690-S	0.434	11.02			18.41	3.22
C0360-038-0750-M					0.750	19.05	0.383	9.73	0.266	6.76			20.8	3.640	C0360-038-0750-S	0.478	12.14			17.33	3.03
C0360-038-0810-M					0.810	20.57	0.403	10.24	0.285	7.24			18.7	3.270	C0360-038-0810-S	0.508	12.9			15.58	2.72
C0360-038-0880-M					0.880	22.35	0.432	10.97	0.304	7.72			17.0	2.980	C0360-038-0880-S	0.548	13.92			14.16	2.48
C0360-038-0940-M					0.940	23.88	0.451	11.46	0.323	8.20			15.6	2.730	C0360-038-0940-S	0.578	14.68			12.99	2.27
C0360-038-1000-M			0.038	0.97	1.000	25.40	0.491	12.47	0.332	8.43	7.63	33.94	15.0	2.630	C0360-038-1000-S	0.623	15.82	4.71	20.95	12.50	2.19
C0360-038-1120-M					1.120	28.45	0.529	13.44	0.370	9.40			12.9	2.260	C0360-038-1120-S	0.682	17.32			10.75	1.88
C0360-038-1250-M					1.250	31.75	0.598	15.19	0.399	10.13			11.7	2.050	C0360-038-1250-S	0.767	19.48			9.75	1.71
C0360-038-1380-M					1.380	35.05	0.647	16.43	0.437	11.10			10.4	1.821	C0360-038-1380-S						

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0360-040-0690-M					0.690	17.53	0.383	9.73	0.286	7.26			27.1	4.750	C0360-040-0690-S	0.448	11.38			22.57	3.96
C0360-040-0750-M					0.750	19.05	0.413	10.49	0.302	7.67			24.7	4.330	C0360-040-0750-S	0.484	12.29			20.58	3.61
C0360-040-0810-M					0.810	20.57	0.443	11.25	0.318	8.08			22.7	3.980	C0360-040-0810-S	0.521	13.23			18.91	3.32
C0360-040-0880-M					0.880	22.35	0.478	12.14	0.337	8.56			20.7	3.630	C0360-040-0880-S	0.563	14.3			17.24	3.02
C0360-040-0940-M					0.940	23.88	0.508	12.90	0.353	8.97			19.2	3.360	C0360-040-0940-S	0.598	15.19			15.99	2.80
C0360-040-1000-M					1.000	25.40	0.537	13.64	0.370	9.40			18.0	3.150	C0360-040-1000-S	0.635	16.13			14.99	2.62
C0360-040-1120-M			0.040	1.02	1.120	28.45	0.597	15.16	0.402	10.21	8.32	37.01	15.9	2.780	C0360-040-1120-S	0.707	17.96	5.47	24.33	13.24	2.32
C0360-040-1250-M					1.250	31.75	0.662	16.81	0.438	11.13			14.1	2.470	C0360-040-1250-S	0.784	19.91			11.75	2.06
C0360-040-1380-M					1.380	35.05	0.726	18.44	0.473	12.01			12.7	2.220	C0360-040-1380-S	0.863	21.92			10.58	1.85
C0360-040-1500-M					1.500	38.10	0.786	19.96	0.505	12.83			11.7	2.050	C0360-040-1500-S	0.938	23.83			9.75	1.71
C0360-040-1750-M					1.750	44.45	0.910	23.11	0.573	14.55			9.9	1.733	C0360-040-1750-S	1.086	27.58			8.25	1.44
C0360-040-2000-M					2.000	50.80	1.035	26.29	0.641	16.28			8.6	1.506	C0360-040-2000-S	1.236	31.39			7.16	1.25
C0360-040-2250-M					2.250	57.15	1.159	29.44	0.709	18.01			7.6	1.331	C0360-040-2250-S	1.386	35.2			6.33	1.11
C0360-040-2500-M					2.500	63.50	1.283	32.59	0.777	19.74			6.8	1.191	C0360-040-2500-S	1.534	38.96			5.66	0.99
C0360-042-0440-M					0.440	11.18	0.268	6.81	0.209	5.31			58.1	10.17	C0360-042-0440-S	0.311	7.9			48.40	8.47
C0360-042-0500-M					0.500	12.70	0.293	7.44	0.231	5.87			48.3	8.460	C0360-042-0500-S	0.345	8.76			40.23	7.05
C0360-042-0560-M					0.560	14.22	0.318	8.08	0.252	6.40			41.3	7.230	C0360-042-0560-S	0.378	9.6			34.40	6.02
C0360-042-0620-M					0.620	15.75	0.361	9.17	0.262	6.65			38.6	6.760	C0360-042-0620-S	0.426	10.82			32.15	5.63
C0360-042-0690-M					0.690	17.53	0.396	10.06	0.284	7.21			34.0	5.950	C0360-042-0690-S	0.469	11.91			28.32	4.96
C0360-042-0750-M					0.750	19.05	0.426	10.82	0.301	7.65			30.9	5.410	C0360-042-0750-S	0.507	12.88			25.74	4.51
C0360-042-0810-M					0.810	20.57	0.447	11.35	0.326	8.28			27.5	4.820	C0360-042-0810-S	0.537	13.64			22.91	4.02
C0360-042-0880-M					0.880	22.35	0.483	12.27	0.346	8.79			25.2	4.420	C0360-042-0880-S	0.582	14.78			20.99	3.68
C0360-042-0940-M			0.042	1.07	0.940	23.88	0.508	12.90	0.368	9.35	10.00	44.48	23.1	4.040	C0360-042-0940-S	0.615	15.62	6.25	27.8	19.24	3.37
C0360-042-1000-M					1.000	25.40	0.534	13.56	0.388	9.86			21.5	3.770	C0360-042-1000-S	0.651	16.54			17.91	3.14
C0360-042-1120-M					1.120	28.45	0.585	14.86	0.430	10.92			18.7	3.270	C0360-042-1120-S	0.719	18.26			15.58	2.72
C0360-042-1250-M					1.250	31.75	0.663	16.84	0.463	11.76			17.0	2.980	C0360-042-1250-S	0.809	20.55			14.16	2.48
C0360-042-1380-M					1.380	35.05	0.741	18.82	0.495	12.57			15.6	2.730	C0360-042-1380-S	0.899	22.83			12.99	2.27
C0360-042-1500-M					1.500	38.10	0.809	20.55	0.525	13.34			14.5	2.540	C0360-042-1500-S	0.983	24.97			12.08	2.12
C0360-042-1750-M					1.750	44.45	0.903	22.94	0.621	15.77			11.8	2.070	C0360-042-1750-S	1.115	28.32			9.83	1.72
C0360-042-2000-M					2.000	50.80	1.029	26.14	0.695	17.65			10.3	1.804	C0360-042-2000-S	1.272	32.31			8.58	1.50
C0360-042-2250-M					2.250	57.15	1.151	29.24	0.770	19.56			9.1	1.593	C0360-042-2250-S	1.426	36.22			7.58	1.33
C0360-042-2500-M					2.500	63.50	1.265	32.13	0.844	21.44			8.1	1.418	C0360-042-2500-S	1.574	39.98			6.75	1.18
C0360-045-0440-M	0.360	9.14			0.440	11.18	0.287	7.29	0.224	5.69			79.0	13.830	C0360-045-0440-S	0.326	8.28			65.81	11.52
C0360-045-0500-M					0.500	12.70	0.316	8.03	0.247	6.27			65.7	11.500	C0360-045-0500-S	0.363	9.22			54.73	9.58
C0360-045-0560-M					0.560	14.22	0.345	8.76	0.270	6.86			56.2	9.840	C0360-045-0560-S	0.4	10.16			46.81	8.20
C0360-045-0620-M					0.620	15.75	0.374	9.50	0.292	7.42			49.1	8.600	C0360-045-0620-S	0.437	11.1			40.90	7.16
C0360-045-0690-M					0.690	17.53	0.414	10.52	0.314	7.98			43.8	7.670	C0360-045-0690-S	0.484	12.29			36.49	6.39
C0360-045-0750-M					0.750	19.05	0.443	11.25	0.337	8.56			39.4	6.900	C0360-045-0750-S	0.521	13.23			32.82	5.75
C0360-045-0810-M					0.810	20.57	0.472	11.99	0.359	9.12			35.8	6.270	C0360-045-0810-S	0.558	14.17			29.82	5.22
C0360-045-0880-M					0.880	22.35	0.512	13.00	0.382	9.70			32.8	5.740	C0360-045-0880-S	0.605	15.37			27.32	4.78
C0360-045-0940-M					0.940	23.88	0.541	13.74	0.404	10.26			30.3	5.310	C0360-045-0940-S	0.643	16.33			25.24	4.42
C0360-045-1000-M			0.045	1.14	1.000	25.40	0.570	14.48	0.427	10.85	12.09	53.78	28.1	4.920	C0360-045-1000-S	0.679	17.25	7.5	33.36	23.41	4.10
C0360-045-1120-M					1.120	28.45	0.629	15.98	0.472	11.99			24.6	4.310	C0360-045-1120-S	0.754	19.15			20.49	3.59
C0360-045-1250-M					1.250	31.75	0.698	17.73	0.516	13.11			21.9	3.840	C0360-045-1250-S	0.839	21.31			18.24	3.20
C0360-045-1380-M					1.380	35.05	0.766	19.46	0.562	14.27			19.7	3.450	C0360-045-1380-S	0.923	23.44			16.41	2.87
C0360-045-1500-M					1.500	38.10	0.825	20.96	0.607	15.42			17.9	3.130	C0360-045-1500-S	0.997	25.32			14.91	2.61
C0360-045-1750-M					1.750	44.45	0.955	24.26	0.694	17.63			15.2	2.660	C0360-045-1750-S	1.157	29.39			12.66	2.22
C0360-045-2000-M					2.000	50.80	1.084	27.53	0.778	19.76			13.2	2.310	C0360-045-2000-S	1.318	33.48			11.00	1.92
C0360-045-2250-M					2.250	57.15	1.217	30.91	0.862	21.89			11.7	2.050	C0360-045-2250-S	1.48	37.59			9.75	1.71
C0360-045-2500-M					2.500	63.50	1.349	34.26	0.946	24.03			10.5	1.839	C0360-045-2500-S	1.642	41.71			8.75	1.53
C0360-045-2750-M					2.750	69.85	1.532	38.91	0.990	25.15			9.9	1.733	C0360-045-2750-S	1.84	46.74			8.25	1.44
C0360-047-0440-M					0.440	11.18	0.299	7.59	0.257	6.53			92.6	16.210	C0360-047-0440-S	0.33	8.38			77.14	13.50
C0360-047-0500-M					0.500	12.70	0.335	8.51	0.277	7.04			78.9	13.820	C0360-047-0500-S	0.37	9.4			65.72	11.51
C0360-047-0560-M					0.560	14.22	0.371	9.42	0.297	7.54			68.7	12.030	C0360-047-0560-S	0.411	10.44			57.23	10.02
C0360-047-0620-M					0.620	15.75	0.406	10.31	0.318	8.08			60.9	10.660	C0360-047-0620-S	0.452	11.48			50.73	8.88
C0360-047-0690-M					0.690	17.53	0.448	11.38	0.341	8.66			53.7	9.400	C0360-047-0690-S	0.5	12.7			44.73	7.83
C0360-047-0750-M					0.750	19.05	0.484	12.29	0.361	9.17			48.8	8.550	C0360-047-0750-S	0.54	13.72			40.65	7.12
C0360-047-0810-M			0.047	1.19	0.810	20.57	0.519	13.18	0.381	9.68	13.01	57.87	44.7	7.830	C0360-047-0810-S	0.581	14.76	8.52	37.9	37.24	6.52
C0360-047-0880-M					0.880	22.35	0.561	14.25	0.405	10.29			40.7	7.130	C0360-047-0880-S	0.629	15.98			33.90	5.94
C0360-047-0940-M					0.940	23.88	0.596	15.14	0.425	10.80			37.9	6.640	C0360-047-0940-S	0.67	17.02			31.57	5.53
C0360-047-1000-M					1.000	25.40	0.632	16.05	0.445	11.30			35.3	6.180	C0360-047-1000-S	0.71	18.03			29.40	5.15
C0360-047-1120-M					1.120	28.45	0.703	17.86	0.485	12.3											

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0360-047-1500-M					1.500	38.10	0.929	23.60	0.613	15.57			22.8	3.990	C0360-047-1500-S	1.051	26.7			18.99	3.32
C0360-047-1750-M					1.750	44.45	1.077	27.36	0.697	17.70			19.3	3.380	C0360-047-1750-S	1.22	30.99			16.08	2.82
C0360-047-2000-M					2.000	50.80	1.226	31.14	0.781	19.84			16.8	2.940	C0360-047-2000-S	1.391	35.33			13.99	2.45
C0360-047-2250-M					2.250	57.15	1.374	34.90	0.865	21.97			14.9	2.610	C0360-047-2250-S	1.564	39.73			12.41	2.17
C0360-047-2500-M			0.047	1.19	2.500	63.50	1.523	38.68	0.949	24.10	13.01	57.87	13.3	2.330	C0360-047-2500-S	1.731	43.97	8.52	37.9	11.08	1.94
C0360-047-2750-M					2.750	69.85	1.671	42.44	1.033	26.24			12.1	2.120	C0360-047-2750-S	1.905	48.39			10.08	1.77
C0360-047-3000-M					3.000	76.20	1.819	46.20	1.117	28.37			11.0	1.926	C0360-047-3000-S	2.07	52.58			9.16	1.60
C0360-047-3250-M					3.250	82.55	1.968	49.99	1.201	30.51			10.1	1.769	C0360-047-3250-S	2.238	56.85			8.41	1.47
C0360-047-3500-M					3.500	88.90	2.116	53.75	1.284	32.61			9.4	1.646	C0360-047-3500-S	2.412	61.26			7.83	1.37
C0360-049-0440-M					0.440	11.18	0.306	7.77	0.271	6.88			108.7	19.030	C0360-049-0440-S	0.334	8.48			90.55	15.85
C0360-049-0500-M					0.500	12.70	0.343	8.71	0.293	7.44			92.5	16.200	C0360-049-0500-S	0.375	9.53			77.05	13.49
C0360-049-0560-M					0.560	14.22	0.379	9.63	0.315	8.00			80.5	14.100	C0360-049-0560-S	0.417	10.59			67.06	11.75
C0360-049-0620-M					0.620	15.75	0.416	10.57	0.336	8.53			71.2	12.470	C0360-049-0620-S	0.458	11.63			59.31	10.39
C0360-049-0690-M					0.690	17.53	0.458	11.63	0.362	9.19			62.8	11.000	C0360-049-0690-S	0.506	12.85			52.31	9.16
C0360-049-0750-M					0.750	19.05	0.495	12.57	0.384	9.75			57.0	9.980	C0360-049-0750-S	0.547	13.89			47.48	8.31
C0360-049-0810-M					0.810	20.57	0.532	13.51	0.405	10.29			52.2	9.140	C0360-049-0810-S	0.589	14.96			43.48	7.61
C0360-049-0880-M					0.880	22.35	0.574	14.58	0.431	10.95			47.6	8.340	C0360-049-0880-S	0.637	16.18			39.65	6.95
C0360-049-0940-M					0.940	23.88	0.611	15.52	0.453	11.51			44.2	7.740	C0360-049-0940-S	0.679	17.25			36.82	6.45
C0360-049-1000-M					1.000	25.40	0.647	16.43	0.474	12.04			41.2	7.210	C0360-049-1000-S	0.72	18.29			34.32	6.01
C0360-049-1120-M					1.120	28.45	0.720	18.29	0.518	13.16			36.4	6.370	C0360-049-1120-S	0.803	20.4			30.32	5.31
C0360-049-1250-M			0.049	1.24	1.250	31.75	0.799	20.29	0.565	14.35	14.55	64.72	32.3	5.660	C0360-049-1250-S	0.893	22.68	9.62	42.79	26.91	4.71
C0360-049-1380-M					1.380	35.05	0.879	22.33	0.612	15.54			29.0	5.080	C0360-049-1380-S	0.982	24.94			24.16	4.23
C0360-049-1500-M					1.500	38.10	0.952	24.18	0.656	16.66			26.5	4.640	C0360-049-1500-S	1.064	27.03			22.07	3.87
C0360-049-1750-M					1.750	44.45	1.104	28.04	0.747	18.97			22.5	3.940	C0360-049-1750-S	1.237	31.42			18.74	3.28
C0360-049-2000-M					2.000	50.80	1.256	31.90	0.837	21.26			19.6	3.430	C0360-049-2000-S	1.411	35.84			16.33	2.86
C0360-049-2250-M					2.250	57.15	1.408	35.76	0.928	23.57			17.3	3.030	C0360-049-2250-S	1.583	40.21			14.41	2.52
C0360-049-2500-M					2.500	63.50	1.561	39.65	1.019	25.88			15.5	2.710	C0360-049-2500-S	1.755	44.58			12.91	2.26
C0360-049-2750-M					2.750	69.85	1.713	43.51	1.110	28.19			14.0	2.450	C0360-049-2750-S	1.925	48.9			11.66	2.04
C0360-049-3000-M					3.000	76.20	1.865	47.37	1.200	30.48			12.8	2.240	C0360-049-3000-S	2.098	53.29			10.66	1.87
C0360-049-3250-M					3.250	82.55	2.017	51.23	1.291	32.79			11.8	2.070	C0360-049-3250-S	2.271	57.68			9.83	1.72
C0360-049-3500-M					3.500	88.90	2.169	55.09	1.382	35.10			10.9	1.909	C0360-049-3500-S	2.441	62			9.08	1.59
C0360-051-0440-M	0.360	9.14			0.440	11.18	0.311	7.90	0.286	7.26			126.8	22.200	C0360-051-0440-S	0.338	8.59			105.62	18.49
C0360-051-0500-M					0.500	12.70	0.348	8.84	0.309	7.85			107.7	18.860	C0360-051-0500-S	0.38	9.65			89.71	15.71
C0360-051-0560-M					0.560	14.22	0.385	9.78	0.333	8.46			93.6	16.390	C0360-051-0560-S	0.422	10.72			77.97	13.65
C0360-051-0620-M					0.620	15.75	0.422	10.72	0.356	9.04			82.7	14.480	C0360-051-0620-S	0.464	11.79			68.89	12.06
C0360-051-0690-M					0.690	17.53	0.466	11.84	0.384	9.75			72.9	12.770	C0360-051-0690-S	0.513	13.03			60.73	10.64
C0360-051-0750-M					0.750	19.05	0.503	12.78	0.407	10.34			66.1	11.570	C0360-051-0750-S	0.555	14.1			55.06	9.64
C0360-051-0810-M					0.810	20.57	0.540	13.72	0.431	10.95			60.5	10.590	C0360-051-0810-S	0.597	15.16			50.40	8.82
C0360-051-0880-M					0.880	22.35	0.583	14.81	0.458	11.63			55.1	9.650	C0360-051-0880-S	0.646	16.41			45.90	8.04
C0360-051-0940-M					0.940	23.88	0.620	15.75	0.482	12.24			51.1	8.950	C0360-051-0940-S	0.688	17.48			42.57	7.46
C0360-051-1000-M					1.000	25.40	0.658	16.71	0.505	12.83			47.7	8.350	C0360-051-1000-S	0.73	18.54			39.73	6.96
C0360-051-1120-M			0.051	1.30	1.120	28.45	0.732	18.59	0.552	14.02	16.34	72.68	42.1	7.370	C0360-051-1120-S	0.814	20.68	10.72	47.68	35.07	6.14
C0360-051-1250-M					1.250	31.75	0.812	20.62	0.603	15.32			37.3	6.530	C0360-051-1250-S	0.905	22.99			31.07	5.44
C0360-051-1380-M					1.380	35.05	0.893	22.68	0.654	16.61			33.5	5.870	C0360-051-1380-S	0.996	25.3			27.91	4.89
C0360-051-1500-M					1.500	38.10	0.967	24.56	0.701	17.81			30.7	5.380	C0360-051-1500-S	1.081	27.46			25.57	4.48
C0360-051-1750-M					1.750	44.45	1.122	28.50	0.800	20.32			26.0	4.550	C0360-051-1750-S	1.255	31.88			21.66	3.79
C0360-051-2000-M					2.000	50.80	1.276	32.41	0.898	22.81			22.6	3.960	C0360-051-2000-S	1.43	36.32			18.83	3.30
C0360-051-2250-M					2.250	57.15	1.431	36.35	0.996	25.30			19.9	3.480	C0360-051-2250-S	1.603	40.72			16.58	2.90
C0360-051-2500-M					2.500	63.50	1.586	40.28	1.094	27.79			17.9	3.130	C0360-051-2500-S	1.781	45.24			14.91	2.61
C0360-051-2750-M					2.750	69.85	1.740	44.20	1.192	30.28			16.2	2.840	C0360-051-2750-S	1.955	49.66			13.49	2.37
C0360-051-3000-M					3.000	76.20	1.895	48.13	1.290	32.77			14.8	2.590	C0360-051-3000-S	2.13	54.1			12.33	2.16
C0360-051-3250-M					3.250	82.55	2.050	52.07	1.388	35.26			13.6	2.380	C0360-051-3250-S	2.303	58.5			11.33	1.98
C0360-051-3500-M					3.500	88.90	2.204	55.98	1.486	37.74			12.6	2.210	C0360-051-3500-S	2.478	62.94			10.50	1.84
C0360-055-0440-M					0.440	11.18	0.325	8.26	0.310	7.87			175.6	30.750	C0360-055-0440-S	0.35	8.89			146.27	25.61
C0360-055-0500-M					0.500	12.70	0.364	9.25	0.337	8.56			148.6	26.020	C0360-055-0500-S	0.394	10.01			123.78	21.67
C0360-055-0560-M					0.560	14.22	0.404	10.26	0.363	9.22			128.8	22.550	C0360-055-0560-S	0.437	11.1			107.29	18.78
C0360-055-0620-M					0.620	15.75	0.443	11.25	0.389	9.88			113.6	19.890	C0360-055-0620-S	0.481	12.22			94.63	16.57
C0360-055-0690-M					0.690	17.53	0.488	12.40	0.420	10.67			99.9	17.490	C0360-055-0690-S	0.532	13.51			83.22	14.57
C0360-055-0750-M			0.055	1.40	0.750	19.05	0.528	13.41	0.447	11.35	20.14	89.58	90.6	15.860	C0360-055-0750-S	0.576	14.63	13.15	58.49	75.47	13.21
C0360-055-0810-M					0.810	20.57	0.567	14.40	0.473	12.01			82.8	14.500	C0360-055-0810-S	0.619	15.72			68.97	12.08
C0360-055-0880-M					0.880	22.35	0.612	15.54	0.504	12.80			75.3	13.190	C0360-055-0880-S	0.67					

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0360-055-1250-M					1.250	31.75	0.854	21.69	0.667	16.94			50.8	8.900	C0360-055-1250-S	0.939	23.85			42.32	7.41
C0360-055-1380-M					1.380	35.05	0.939	23.85	0.724	18.39			45.6	7.990	C0360-055-1380-S	1.034	26.26			37.98	6.66
C0360-055-1500-M					1.500	38.10	1.017	25.83	0.777	19.74			41.7	7.300	C0360-055-1500-S	1.122	28.5			34.74	6.08
C0360-055-1750-M					1.750	44.45	1.180	29.97	0.887	22.53			35.3	6.180	C0360-055-1750-S	1.303	33.1			29.40	5.15
C0360-055-2000-M					2.000	50.80	1.343	34.11	0.997	25.32			30.7	5.380	C0360-055-2000-S	1.486	37.74			25.57	4.48
C0360-055-2250-M			0.055	1.40	2.250	57.15	1.506	38.25	1.107	28.12	20.14	89.58	27.1	4.750	C0360-055-2250-S	1.668	42.37	13.15	58.49	22.57	3.96
C0360-055-2500-M					2.500	63.50	1.670	42.42	1.217	30.91			24.2	4.240	C0360-055-2500-S	1.848	46.94			20.16	3.53
C0360-055-2750-M					2.750	69.85	1.833	46.56	1.327	33.71			22.0	3.850	C0360-055-2750-S	2.033	51.64			18.33	3.21
C0360-055-3000-M					3.000	76.20	1.996	50.70	1.437	36.50			20.1	3.520	C0360-055-3000-S	2.215	56.26			16.74	2.93
C0360-055-3250-M					3.250	82.55	2.159	54.84	1.547	39.29			18.5	3.240	C0360-055-3250-S	2.397	60.88			15.41	2.70
C0360-055-3500-M					3.500	88.90	2.322	58.98	1.657	42.09			17.1	2.990	C0360-055-3500-S	2.577	65.46			14.24	2.49
C0360-059-0440-M					0.440	11.18	0.338	8.59	0.321	8.15			238.0	41.670	C0360-059-0440-S	0.36	9.14			198.25	34.71
C0360-059-0500-M					0.500	12.70	0.379	9.63	0.356	9.04			200.6	35.130	C0360-059-0500-S	0.405	10.29			167.10	29.26
C0360-059-0560-M					0.560	14.22	0.420	10.67	0.388	9.86			173.4	30.360	C0360-059-0560-S	0.45	11.43			144.44	25.29
C0360-059-0620-M					0.620	15.75	0.461	11.71	0.421	10.69			152.7	26.740	C0360-059-0620-S	0.495	12.57			127.20	22.27
C0360-059-0690-M					0.690	17.53	0.508	12.90	0.458	11.63			134.0	23.460	C0360-059-0690-S	0.547	13.89			111.62	19.54
C0360-059-0750-M	0.360	9.14			0.750	19.05	0.549	13.94	0.488	12.40			121.3	21.240	C0360-059-0750-S	0.593	15.06			101.04	17.69
C0360-059-0810-M					0.810	20.57	0.590	14.99	0.517	13.13			110.8	19.400	C0360-059-0810-S	0.638	16.21			92.30	16.16
C0360-059-0880-M					0.880	22.35	0.638	16.21	0.552	14.02			100.6	17.620	C0360-059-0880-S	0.69	17.53			83.80	14.68
C0360-059-0940-M					0.940	23.88	0.679	17.25	0.581	14.76			93.2	16.320	C0360-059-0940-S	0.735	18.67			77.64	13.59
C0360-059-1000-M					1.000	25.40	0.720	18.29	0.611	15.52			86.9	15.220	C0360-059-1000-S	0.78	19.81			72.39	12.68
C0360-059-1120-M			0.059	1.50	1.120	28.45	0.802	20.37	0.670	17.02	24.33	108.22	76.5	13.400	C0360-059-1120-S	0.87	22.1	15.91	70.77	63.72	11.16
C0360-059-1250-M					1.250	31.75	0.891	22.63	0.734	18.64			67.7	11.850	C0360-059-1250-S	0.968	24.59			56.39	9.87
C0360-059-1380-M					1.380	35.05	0.979	24.87	0.797	20.24			60.7	10.630	C0360-059-1380-S	1.065	27.05			50.56	8.85
C0360-059-1500-M					1.500	38.10	1.061	26.95	0.856	21.74			55.5	9.720	C0360-059-1500-S	1.156	29.36			46.23	8.10
C0360-059-1750-M					1.750	44.45	1.232	31.29	0.979	24.87			47.0	8.230	C0360-059-1750-S	1.344	34.14			39.15	6.86
C0360-059-2000-M					2.000	50.80	1.403	35.64	1.102	27.99			40.7	7.130	C0360-059-2000-S	1.531	38.89			33.90	5.94
C0360-059-2250-M					2.250	57.15	1.573	39.95	1.225	31.12			36.0	6.300	C0360-059-2250-S	1.719	43.66			29.99	5.25
C0360-059-2500-M					2.500	63.50	1.744	44.30	1.348	34.24			32.2	5.640	C0360-059-2500-S	1.907	48.44			26.82	4.70
C0360-059-2750-M					2.750	69.85	1.915	48.64	1.471	37.36			29.1	5.100	C0360-059-2750-S	2.094	53.19			24.24	4.25
C0360-059-3000-M					3.000	76.20	2.085	52.96	1.594	40.49			26.6	4.660	C0360-059-3000-S	2.282	57.96			22.16	3.88
C0360-059-3250-M					3.250	82.55	2.256	57.30	1.717	43.61			24.5	4.290	C0360-059-3250-S	2.47	62.74			20.41	3.57
C0360-059-3500-M					3.500	88.90	2.427	61.65	1.840	46.74			22.7	3.980	C0360-059-3500-S	2.659	67.54			18.91	3.32
D12150					0.591	15.00	0.291	7.40	0.271	6.88			81.8	14.320	D22150	0.291	7.39			68.11	11.93
D12160					0.866	22.00	0.413	10.50	0.369	9.38			50.9	8.920	D22160	0.413	10.49			42.43	7.43
D12170	0.364	9.25	0.049	1.25	1.299	33.00	0.587	14.90	0.517	13.13	23.59	104.93	33.3	5.830	D22170	0.587	14.91	19.67	87.49	27.73	4.86
D12180					1.870	47.50	0.827	21.00	0.714	18.13			22.6	3.960	D22180	0.827	21.01			18.84	3.30
D12190					2.717	69.00	1.181	30.00	1.009	25.63			15.4	2.690	D22190	1.181	30			12.79	2.24
D12350					0.571	14.50	0.354	9.00	0.346	8.80			212.8	37.270	D22350	0.354	8.99			177.27	31.05
D12360					0.846	21.50	0.496	12.60	0.472	12.00			135.5	23.730	D22360	0.496	12.6			112.87	19.77
D12370	0.378	9.60	0.063	1.60	1.240	31.50	0.705	17.90	0.661	16.80	47.62	211.82	87.9	15.400	D22370	0.705	17.91	39.7	176.59	73.25	12.83
D12380					1.772	45.00	0.976	24.80	0.913	23.20			59.4	10.400	D22380	0.976	24.79			49.47	8.66
D12390					2.579	65.50	1.386	35.20	1.291	32.80			40.3	7.050	D22390	1.386	35.2			33.53	5.87
C0390-043-0500-M					0.500	12.70	0.291	7.39	0.241	6.12			45.3	7.930	C0390-043-0500-S	0.335	8.51			37.73	6.61
C0390-043-0560-M					0.560	14.22	0.321	8.15	0.257	6.53			39.6	6.930	C0390-043-0560-S	0.372	9.45			32.99	5.77
C0390-043-0620-M					0.620	15.75	0.351	8.92	0.273	6.93			35.1	6.150	C0390-043-0620-S	0.408	10.36			29.24	5.12
C0390-043-0690-M					0.690	17.53	0.386	9.80	0.292	7.42			31.0	5.430	C0390-043-0690-S	0.45	11.43			25.82	4.52
C0390-043-0750-M					0.750	19.05	0.415	10.54	0.308	7.82			28.2	4.940	C0390-043-0750-S	0.486	12.34			23.49	4.12
C0390-043-0810-M					0.810	20.57	0.445	11.30	0.324	8.23			25.9	4.540	C0390-043-0810-S	0.522	13.26			21.57	3.78
C0390-043-0880-M	0.390	9.91	0.043	1.09	0.880	22.35	0.480	12.19	0.343	8.71	9.45	42.04	23.6	4.130	C0390-043-0880-S	0.564	14.33	6.21	27.62	19.66	3.44
C0390-043-0940-M					0.940	23.88	0.513	13.03	0.359	9.12			22.1	3.870	C0390-043-0940-S	0.603	15.32			18.41	3.22
C0390-043-1000-M					1.000	25.40	0.539	13.69	0.376	9.55			20.5	3.590	C0390-043-1000-S	0.636	16.15			17.08	2.99
C0390-043-1120-M					1.120	28.45	0.599	15.21	0.408	10.36			18.1	3.170	C0390-043-1120-S	0.708	17.98			15.08	2.64
C0390-043-1250-M					1.250	31.75	0.664	16.87	0.443	11.25			16.1	2.820	C0390-043-1250-S	0.787	19.99			13.41	2.35
C0390-043-1380-M					1.380	35.05	0.728	18.49	0.478	12.14			14.5	2.540	C0390-043-1380-S	0.866	22			12.08	2.12
C0390-043-1500-M					1.500	38.10	0.788	20.02	0.510	12.95			13.3	2.330	C0390-043-1500-S	0.939	23.85			11.08	1.94
C0390-043-1750-M					1.750	44.45	0.912	23.16	0.578	14.68			11.3	1.979	C0390-043-1750-S	1.09	27.69			9.41	1.65
C0390-043-2000-M					2.000	50.80	1.036	26.31	0.645	16.38			9.8	1.716	C0390-043-2000-S	1.239	31.47			8.16	1.43
C0390-047-0500-M					0.500	12.70	0.309	7.85	0.270	6.86			63.3	11.080	C0390-047-0500-S	0.35	8.89			52.73	9.23
C0390-047-0560-M					0.560	14.22	0.341	8.66	0.289	7.34			55.2	9.670	C0390-047-0560-S	0.388	9.86			45.98	8.06
C0390-047-0620-M			0.047	1.19	0.620	15.75	0.372	9.45	0.308	7.82	12.10	53.82	48.9	8.560	C0390-047-0620-S	0.426	10.82	7.91	35.18	40.73	7.13
C0390-047-0690-M					0.690	17.53	0.409	10.39	0.330	8.3											

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0390-047-0880-M					0.880	22.35	0.510	12.95	0.391	9.93			32.7	5.730	C0390-047-0880-S	0.59	14.99			27.24	4.77
C0390-047-0940-M					0.940	23.88	0.542	13.77	0.410	10.41			30.4	5.320	C0390-047-0940-S	0.628	15.95			25.32	4.43
C0390-047-1000-M					1.000	25.40	0.574	14.58	0.429	10.90			28.4	4.970	C0390-047-1000-S	0.666	16.92			23.66	4.14
C0390-047-1120-M					1.120	28.45	0.637	16.18	0.467	11.86			25.1	4.400	C0390-047-1120-S	0.742	18.85			20.91	3.67
C0390-047-1250-M	0.390	9.91			1.250	31.75	0.706	17.93	0.508	12.90		53.82	22.2	3.890	C0390-047-1250-S	0.822	20.88	7.91	35.18	18.49	3.24
C0390-047-1380-M					1.380	35.05	0.775	19.69	0.550	13.97			20.0	3.500	C0390-047-1380-S	0.905	22.99			16.66	2.92
C0390-047-1500-M					1.500	38.10	0.838	21.29	0.588	14.94			18.3	3.200	C0390-047-1500-S	0.981	24.92			15.24	2.67
C0390-047-1750-M					1.750	44.45	0.971	24.66	0.667	16.94			15.5	2.710	C0390-047-1750-S	1.137	28.88			12.91	2.26
C0390-047-2000-M					2.000	50.80	1.103	28.02	0.747	18.97			13.5	2.360	C0390-047-2000-S	1.296	32.92			11.25	1.97
C0420-035-0500-M					0.500	12.70	0.250	6.35	0.172	4.37			19.7	3.450	C0420-035-0500-S	0.302	7.67			16.41	2.87
C0420-035-0620-M					0.620	15.75	0.300	7.62	0.191	4.85			15.4	2.700	C0420-035-0620-S	0.367	9.32			12.83	2.25
C0420-035-0750-M					0.750	19.05	0.354	8.99	0.211	5.36			12.5	2.190	C0420-035-0750-S	0.438	11.13			10.41	1.82
C0420-035-0880-M					0.880	22.35	0.408	10.36	0.231	5.87		22.02	10.5	1.839	C0420-035-0880-S	0.509	12.93	3.25	14.46	8.75	1.53
C0420-035-1000-M					1.000	25.40	0.458	11.63	0.250	6.35			9.1	1.593	C0420-035-1000-S	0.571	14.5			7.58	1.33
C0420-035-1250-M					1.250	31.75	0.563	14.30	0.289	7.34			7.2	1.261	C0420-035-1250-S	0.708	17.98			6.00	1.05
C0420-035-1500-M					1.500	38.10	0.667	16.94	0.328	8.33			5.9	1.033	C0420-035-1500-S	0.839	21.31			4.91	0.86
C0420-035-1750-M					1.750	44.45	0.771	19.58	0.367	9.32			5.1	0.893	C0420-035-1750-S	0.985	25.02			4.25	0.74
C0420-038-0500-M					0.500	12.70	0.200	5.08	0.172	4.37			22.0	3.850	C0420-038-0500-S	0.278	7.06			18.33	3.21
C0420-038-0560-M					0.560	14.22	0.230	5.84	0.186	4.72			20.0	3.500	C0420-038-0560-S	0.316	8.03			16.66	2.92
C0420-038-0625-M					0.620	15.75	0.253	6.43	0.194	4.93			18.0	3.150	C0420-038-0625-S	0.349	8.86			14.99	2.62
C0420-038-0750-M					0.750	19.05	0.295	7.49	0.223	5.66			14.5	2.540	C0420-038-0750-S	0.413	10.49			12.08	2.12
C0420-038-0880-M					0.880	22.35	0.352	8.94	0.246	6.25			12.5	2.190	C0420-038-0880-S	0.489	12.42			10.41	1.82
C0420-038-1000-M					1.000	25.40	0.400	10.16	0.269	6.83		29.36	11.0	1.926	C0420-038-1000-S	0.556	14.12	4.07	18.1	9.16	1.60
C0420-038-1250-M					1.250	31.75	0.475	12.07	0.326	8.28			8.5	1.488	C0420-038-1250-S	0.675	17.15			7.08	1.24
C0420-038-1500-M					1.500	38.10	0.580	14.73	0.372	9.45			7.2	1.261	C0420-038-1500-S	0.822	20.88			6.00	1.05
C0420-038-1750-M					1.750	44.45	0.750	19.05	0.423	10.74			6.6	1.156	C0420-038-1750-S	1.01	25.65			5.50	0.96
C0420-038-2000-M					2.000	50.80	0.917	23.29	0.456	11.58			6.1	1.068	C0420-038-2000-S	1.199	30.45			5.08	0.89
C0420-038-2250-M					2.250	57.15	1.027	26.09	0.494	12.55			5.4	0.946	C0420-038-2250-S	1.346	34.19			4.50	0.79
C0420-038-2500-M					2.500	63.50	1.136	28.85	0.532	13.51			4.8	0.840	C0420-038-2500-S	1.483	37.67			4.00	0.70
C0420-042-0500-M					0.500	12.70	0.238	6.05	0.190	4.83			34.0	5.950	C0420-042-0500-S	0.309	7.85			28.32	4.96
C0420-042-0560-M					0.560	14.22	0.272	6.91	0.201	5.11			31.0	5.430	C0420-042-0560-S	0.351	8.92			25.82	4.52
C0420-042-0625-M					0.620	15.75	0.302	7.67	0.213	5.41			28.0	4.900	C0420-042-0625-S	0.388	9.86			23.32	4.08
C0420-042-0750-M					0.750	19.05	0.345	8.76	0.248	6.30			22.0	3.850	C0420-042-0750-S	0.455	11.56			18.33	3.21
C0420-042-0880-M					0.880	22.35	0.395	10.03	0.280	7.11			18.5	3.240	C0420-042-0880-S	0.529	13.44			15.41	2.70
C0420-042-1000-M	0.420	10.67			1.000	25.40	0.445	11.30	0.310	7.87		39.59	16.0	2.800	C0420-042-1000-S	0.594	15.09	5.4	24.02	13.33	2.33
C0420-042-1250-M					1.250	31.75	0.565	14.35	0.363	9.22			13.0	2.280	C0420-042-1250-S	0.751	19.08			10.83	1.90
C0420-042-1500-M					1.500	38.10	0.650	16.51	0.429	10.90			10.5	1.839	C0420-042-1500-S	0.882	22.4			8.75	1.53
C0420-042-1750-M					1.750	44.45	0.793	20.14	0.501	12.73			9.3	1.628	C0420-042-1750-S	1.052	26.72			7.75	1.36
C0420-042-2000-M					2.000	50.80	0.901	22.89	0.558	14.17			8.1	1.418	C0420-042-2000-S	1.199	30.45			6.75	1.18
C0420-042-2250-M					2.250	57.15	1.092	27.74	0.592	15.04			7.7	1.348	C0420-042-2250-S	1.407	35.74			6.41	1.12
C0420-042-2500-M					2.500	63.50	1.209	30.71	0.630	16.00			6.9	1.208	C0420-042-2500-S	1.56	39.62			5.75	1.01
C0420-045-0500-M					0.500	12.70	0.250	6.35	0.214	5.44			42.0	7.350	C0420-045-0500-S	0.314	7.98			34.99	6.12
C0420-045-0625-M					0.620	15.75	0.311	7.90	0.244	6.20			34.0	5.950	C0420-045-0625-S	0.391	9.93			28.32	4.96
C0420-045-0750-M					0.750	19.05	0.360	9.14	0.284	7.21			27.0	4.730	C0420-045-0750-S	0.461	11.71			22.49	3.94
C0420-045-0880-M					0.880	22.35	0.420	10.67	0.318	8.08			23.0	4.030	C0420-045-0880-S	0.541	13.74			19.16	3.36
C0420-045-1000-M					1.000	25.40	0.475	12.07	0.352	8.94			20.0	3.500	C0420-045-1000-S	0.61	15.49			16.66	2.92
C0420-045-1250-M					1.250	31.75	0.595	15.11	0.418	10.62		46.71	16.0	2.800	C0420-045-1250-S	0.762	19.35	6.5	28.91	13.33	2.33
C0420-045-1500-M					1.500	38.10	0.690	17.53	0.493	12.52			13.0	2.280	C0420-045-1500-S	0.9	22.86			10.83	1.90
C0420-045-1750-M					1.750	44.45	0.860	21.84	0.563	14.30			11.8	2.070	C0420-045-1750-S	1.089	27.66			9.83	1.72
C0420-045-2000-M					2.000	50.80	0.971	24.66	0.627	15.93			10.2	1.786	C0420-045-2000-S	1.235	31.37			8.50	1.49
C0420-045-2250-M					2.250	57.15	1.083	27.51	0.691	17.55			9.0	1.576	C0420-045-2250-S	1.383	35.13			7.50	1.31
C0420-045-2500-M					2.500	63.50	1.204	30.58	0.756	19.20			8.1	1.418	C0420-045-2500-S	1.537	39.04			6.75	1.18
C0420-048-0500-M					0.500	12.70	0.302	7.67	0.261	6.63			60.6	10.610	C0420-048-0500-S	0.344	8.74			50.48	8.84
C0420-048-0750-M					0.750	19.05	0.430	10.92	0.334	8.48			37.4	6.550	C0420-048-0750-S	0.498	12.65			31.15	5.46
C0420-048-1000-M					1.000	25.40	0.558	14.17	0.407	10.34			27.1	4.750	C0420-048-1000-S	0.652	16.56			22.57	3.96
C0420-048-1250-M					1.250	31.75	0.685	17.40	0.480	12.19		53.25	21.2	3.710	C0420-048-1250-S	0.805	20.45	7.86	34.96	17.66	3.09
C0420-048-1500-M					1.500	38.10	0.813	20.65	0.552	14.02			17.4	3.050	C0420-048-1500-S	0.958	24.33			14.49	2.54
C0420-048-1750-M					1.750	44.45	0.941	23.90	0.625	15.88			14.8	2.590	C0420-048-1750-S	1.113	28.27			12.33	2.16
C0420-048-2000-M					2.000	50.80	1.068	27.13	0.698	17.73			12.9	2.260	C0420-048-2000-S	1.269	32.23			10.75	1.88
C0420-051-0500-M					0.500	12.70	0.315	8.00	0.282	7.16			76.4	13.380	C0420-051-0500-S	0.354	8.99			63.64	11.15
C0420-051-0620-M					0.620	15.75	0.379	9.63	0.321	8.15			58.7	10.280	C0420-051-0620-S	0.43	10.92			48.90	8.56
C0420-051-0750-M					0.750	19.05	0.448	11.38	0.363												

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0420-051-1250-M					1.250	31.75	0.715	18.16	0.526	13.36			26.5	4.640	C0420-051-1250-S	0.828	21.03			22.07	3.87
C0420-051-1500-M					1.500	38.10	0.849	21.56	0.607	15.42			21.7	3.800	C0420-051-1500-S	0.985	25.02			18.08	3.17
C0420-051-1750-M					1.750	44.45	0.982	24.94	0.688	17.48		63.03	18.4	3.220	C0420-051-1750-S	1.142	29.01	9.31	41.41	15.33	2.68
C0420-051-2000-M					2.000	50.80	1.116	28.35	0.769	19.53			16.0	2.800	C0420-051-2000-S	1.301	33.05			13.33	2.33
C0420-051-2250-M					2.250	57.15	1.249	31.72	0.850	21.59			14.2	2.490	C0420-051-2250-S	1.463	37.16			11.83	2.07
C0420-051-2500-M					2.500	63.50	1.383	35.13	0.932	23.67			12.7	2.220	C0420-051-2500-S	1.62	41.15			10.58	1.85
C0420-055-0500-M					0.500	12.70	0.310	7.87	0.273	6.93			95.0	16.640	C0420-055-0500-S	0.356	9.04			79.14	13.86
C0420-055-0625-M					0.620	15.75	0.380	9.65	0.316	8.03			75.0	13.130	C0420-055-0625-S	0.437	11.1			62.48	10.94
C0420-055-0750-M					0.750	19.05	0.460	11.68	0.360	9.14			62.0	10.860	C0420-055-0750-S	0.529	13.44			51.65	9.05
C0420-055-0880-M					0.880	22.35	0.534	13.56	0.408	10.36			52.0	9.110	C0420-055-0880-S	0.616	15.65			43.32	7.59
C0420-055-1000-M					1.000	25.40	0.600	15.24	0.454	11.53			45.0	7.880	C0420-055-1000-S	0.695	17.65			37.49	6.56
C0420-055-1250-M					1.250	31.75	0.735	18.67	0.553	14.05		80.07	35.0	6.130	C0420-055-1250-S	0.858	21.79	11.43	50.84	29.16	5.11
C0420-055-1500-M					1.500	38.10	0.880	22.35	0.645	16.38			29.0	5.080	C0420-055-1500-S	1.027	26.09			24.16	4.23
C0420-055-1750-M					1.750	44.45	1.015	25.78	0.722	19.61			24.5	4.290	C0420-055-1750-S	1.19	30.23			20.41	3.57
C0420-055-2000-M					2.000	50.80	1.155	29.34	0.865	21.97			21.3	3.730	C0420-055-2000-S	1.356	34.44			17.74	3.11
C0420-055-2250-M					2.250	57.15	1.290	32.77	0.957	24.31			18.8	3.290	C0420-055-2250-S	1.52	38.61			15.66	2.74
C0420-055-2500-M					2.500	63.50	1.430	36.32	1.050	26.67			16.8	2.940	C0420-055-2500-S	1.683	42.75			13.99	2.45
C0420-059-0500-M					0.500	12.70	0.345	8.76	0.322	8.18			136.7	23.940	C0420-059-0500-S	0.378	9.6			113.87	19.94
C0420-059-0625-M					0.620	15.75	0.414	10.52	0.380	9.65			103.0	18.040	C0420-059-0625-S	0.458	11.63			85.80	15.03
C0420-059-0750-M					0.750	19.05	0.493	12.52	0.439	11.15			82.6	14.460	C0420-059-0750-S	0.548	13.92			68.81	12.05
C0420-059-0880-M					0.880	22.35	0.571	14.50	0.496	12.60			68.5	11.990	C0420-059-0880-S	0.637	16.18			57.06	9.99
C0420-059-1000-M					1.000	25.40	0.642	16.31	0.546	13.87			59.2	10.370	C0420-059-1000-S	0.719	18.26			49.31	8.64
C0420-059-1250-M					1.250	31.75	0.790	20.07	0.651	16.54		94.30	46.1	8.070	C0420-059-1250-S	0.889	22.58	13.87	61.69	38.40	6.72
C0420-059-1500-M					1.500	38.10	0.939	23.85	0.755	19.18			37.8	6.620	C0420-059-1500-S	1.06	26.92			31.49	5.51
C0420-059-1750-M					1.750	44.45	1.087	27.61	0.860	21.84			32.0	5.600	C0420-059-1750-S	1.23	31.24			26.66	4.66
C0420-059-2000-M					2.000	50.80	1.236	31.39	0.965	24.51			27.7	4.850	C0420-059-2000-S	1.399	35.53			23.07	4.04
C0420-059-2250-M					2.250	57.15	1.384	35.15	1.069	27.15			24.5	4.290	C0420-059-2250-S	1.571	39.9			20.41	3.57
C0420-059-2500-M	0.420	10.67			2.500	63.50	1.532	20.96	1.174	29.82			21.9	3.840	C0420-059-2500-S	1.74	44.2			18.24	3.20
C0420-063-0500-M					0.500	12.70	0.361	9.17	0.345	8.76			182.1	31.890	C0420-063-0500-S	0.392	9.96			151.69	26.56
C0420-063-0620-M					0.620	15.75	0.436	11.07	0.416	10.57			137.9	24.150	C0420-063-0620-S	0.477	12.12			114.87	20.12
C0420-063-0750-M					0.750	19.05	0.518	13.16	0.476	12.09			109.2	19.120	C0420-063-0750-S	0.57	14.48			90.96	15.93
C0420-063-0880-M					0.880	22.35	0.599	15.21	0.536	13.61			90.3	15.810	C0420-063-0880-S	0.662	16.81			75.22	13.17
C0420-063-1000-M					1.000	25.40	0.675	17.15	0.591	15.01			77.9	13.640	C0420-063-1000-S	0.748	19			64.89	11.36
C0420-063-1250-M					1.250	31.75	0.831	21.11	0.706	17.93		112.85	60.6	10.610	C0420-063-1250-S	0.925	23.5	16.38	72.86	50.48	8.84
C0420-063-1500-M					1.500	38.10	0.988	25.10	0.821	20.85			49.6	8.690	C0420-063-1500-S	1.103	28.02			41.32	7.24
C0420-063-1750-M					1.750	44.45	1.145	29.08	0.937	23.80			41.9	7.340	C0420-063-1750-S	1.281	32.54			34.90	6.11
C0420-063-2000-M					2.000	50.80	1.302	33.07	1.052	26.72			36.3	6.360	C0420-063-2000-S	1.458	37.03			30.24	5.30
C0420-063-2250-M					2.250	57.15	1.459	37.06	1.167	29.64			32.1	5.620	C0420-063-2250-S	1.637	41.58			26.74	4.68
C0420-063-2500-M					2.500	63.50	1.616	41.05	1.282	32.56			28.7	5.030	C0420-063-2500-S	1.815	46.1			23.91	4.19
C0420-067-0750-M					0.750	19.05	0.542	13.77	0.507	12.88			144.3	25.270	C0420-067-0750-S	0.587	14.91			120.20	21.05
C0420-067-1000-M					1.000	25.40	0.708	17.98	0.631	16.03			102.7	17.980	C0420-067-1000-S	0.771	19.58			85.55	14.98
C0420-067-1250-M					1.250	31.75	0.873	22.17	0.755	19.18			79.7	13.960	C0420-067-1250-S	0.955	24.26			66.39	11.63
C0420-067-1500-M					1.500	38.10	1.039	26.39	0.879	22.33		133.53	65.1	11.400	C0420-067-1500-S	1.139	28.93	19.57	87.05	54.23	9.50
C0420-067-1750-M					1.750	44.45	1.204	30.58	1.003	25.48			55.0	9.630	C0420-067-1750-S	1.323	33.6			45.82	8.02
C0420-067-2000-M					2.000	50.80	1.370	34.80	1.127	28.63			47.6	8.340	C0420-067-2000-S	1.506	38.25			39.65	6.95
C0420-067-2250-M					2.250	57.15	1.536	39.01	1.251	31.78			42.0	7.350	C0420-067-2250-S	1.691	42.95			34.99	6.12
C0420-067-2500-M					2.500	63.50	1.701	43.21	1.375	34.93			37.6	6.580	C0420-067-2500-S	1.875	47.63			31.32	5.48
C0420-072-1000-M					1.000	25.40	0.738	18.75	0.690	17.53			139.2	24.370	C0420-072-1000-S	0.794	20.17			115.95	20.30
C0420-072-1250-M					1.250	31.75	0.911	23.14	0.829	21.06			107.7	18.860	C0420-072-1250-S	0.984	24.99			89.71	15.71
C0420-072-1500-M					1.500	38.10	1.084	27.53	0.967	24.56			87.9	15.390	C0420-072-1500-S	1.174	29.82			73.22	12.82
C0420-072-1750-M					1.750	44.45	1.258	31.95	1.105	28.07		162.49	74.2	12.990	C0420-072-1750-S	1.364	34.65	23.88	106.22	61.81	10.82
C0420-072-2000-M					2.000	50.80	1.431	36.35	1.244	31.60			64.2	11.240	C0420-072-2000-S	1.553	39.45			53.48	9.36
C0420-072-2250-M					2.250	57.15	1.604	40.74	1.382	35.10			56.6	9.910	C0420-072-2250-S	1.744	44.3			47.15	8.26
C0420-072-2500-M					2.500	63.50	1.778	45.16	1.521	38.63			50.6	8.860	C0420-072-2500-S	1.933	49.1			42.15	7.38
D11800					0.787	20.00	0.272	6.90	0.205	5.20			6.9	1.200	D21800	0.272	6.91			5.71	1.00
D11810					1.181	30.00	0.386	9.80	0.268	6.80			4.3	0.760	D21810	0.386	9.8			3.61	0.63
D11820	0.425	10.80			1.791	45.50	0.563	14.30	0.362	9.20		15.40	2.8	0.490	D21820	0.563	14.3	2.89	12.85	2.33	0.41
D11830					2.598	66.00	0.783	19.90	0.488	12.40			1.9	0.330	D21830	0.783	19.89			1.57	0.27
D11840					3.799	96.50	1.122	28.50	0.677	17.20			1.3	0.230	D21840	1.122	28.5			1.09	0.19
D12000					0.689	17.50	0.315	8.00	0.217	5.50			16.6	2.900	D22000	0.315	8			13.79	2.42
D12010					1.024	26.00	0.441	11.20	0.295	7.50			10.6	1.850	D22010	0.441	11.2			8.80	1.54
D12020	0.433	11.00			1.535	39.00	0.630	16.00	0.413	10.50		27.36	6.9	1.200	D22020</						



COMPRESSION SPRINGS

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D12200					0.787	20.00	0.303	7.70	0.271	6.88			40.5	7.090	D22200	0.303	7.7			33.72	5.91
D12210					1.161	29.50	0.425	10.80	0.369	9.38			25.8	4.510	D22210	0.425	10.8			21.45	3.76
D12220	0.443	11.25	0.049	1.25	1.752	44.50	0.598	15.20	0.517	13.13	19.20	85.42	16.7	2.920	D22220	0.598	15.19	16.01	71.21	13.89	2.43
D12230					2.520	64.00	0.831	21.10	0.714	18.13			11.4	1.990	D22230	0.831	21.11			9.47	1.66
D12240					3.681	93.50	1.181	30.00	1.009	25.63			7.7	1.340	D22240	1.181	30			6.37	1.12
D12850					0.638	16.20	0.508	12.90	0.476	12.10			571.2	100.030	D22850	0.508	12.9			475.79	83.32
D12860	0.433	11.00	0.087	2.20	0.906	23.00	0.697	17.70	0.650	16.50	75.84	337.35	362.9	63.550	D22860	0.697	17.7	63.22	281.2	302.27	52.94
D12870					1.437	36.50	1.079	27.40	0.996	25.30			210.5	36.870	D22870	1.079	27.41			175.37	30.71
D12880					2.236	56.80	1.650	41.90	1.516	38.50			128.8	22.560	D22880	1.65	41.91			107.31	18.79
C0455-039-0500-M					0.500	12.70	0.257	6.53	0.187	4.75			25.6	4.480	C0455-039-0500-S	0.309	7.85			21.32	3.73
C0455-039-0620-M					0.620	15.75	0.308	7.82	0.207	5.26			19.9	3.480	C0455-039-0620-S	0.375	9.53			16.58	2.90
C0455-039-0750-M					0.750	19.05	0.364	9.25	0.229	5.82			16.1	2.820	C0455-039-0750-S	0.447	11.35			13.41	2.35
C0455-039-0880-M			0.039	0.99	0.880	22.35	0.419	10.64	0.251	6.38	6.21	27.62	13.5	2.360	C0455-039-0880-S	0.518	13.16	4.07	18.1	11.25	1.97
C0455-039-1000-M					1.000	25.40	0.470	11.94	0.271	6.88			11.7	2.050	C0455-039-1000-S	0.582	14.78			9.75	1.71
C0455-039-1250-M					1.250	31.75	0.576	14.63	0.312	7.92			9.2	1.611	C0455-039-1250-S	0.719	18.26			7.66	1.34
C0455-039-1500-M					1.500	38.10	0.682	17.32	0.354	8.99			7.6	1.331	C0455-039-1500-S	0.857	21.77			6.33	1.11
C0455-039-1750-M	0.455	11.56			1.750	44.45	0.789	20.04	0.396	10.06			6.5	1.138	C0455-039-1750-S	0.998	25.35			5.41	0.95
C0455-046-0500-M					0.500	12.70	0.284	7.21	0.233	5.92			45.6	7.990	C0455-046-0500-S	0.331	8.41			37.98	6.66
C0455-046-0620-M					0.620	15.75	0.340	8.64	0.261	6.63			35.3	6.180	C0455-046-0620-S	0.401	10.19			29.40	5.15
C0455-046-0750-M					0.750	19.05	0.401	10.19	0.291	7.39			28.3	4.960	C0455-046-0750-S	0.477	12.12			23.57	4.13
C0455-046-0880-M			0.046	1.17	0.880	22.35	0.463	11.76	0.321	8.15	9.86	43.86	23.6	4.130	C0455-046-0880-S	0.553	14.05	6.43	28.6	19.66	3.44
C0455-046-1000-M					1.000	25.40	0.519	13.18	0.349	8.86			20.5	3.590	C0455-046-1000-S	0.623	15.82			17.08	2.99
C0455-046-1250-M					1.250	31.75	0.637	16.18	0.407	10.34			16.1	2.820	C0455-046-1250-S	0.771	19.58			13.41	2.35
C0455-046-1500-M					1.500	38.10	0.754	19.15	0.465	11.81			13.2	2.310	C0455-046-1500-S	0.915	23.24			11.00	1.92
C0455-046-1750-M					1.750	44.45	0.872	22.15	0.523	13.28			11.2	1.961	C0455-046-1750-S	1.061	26.95			9.33	1.63
D12400					0.728	18.50	0.370	9.40	0.346	8.80			109.2	19.120	D22400	0.37	9.4			90.94	15.93
D12410					1.063	27.00	0.520	13.20	0.472	12.00			69.4	12.160	D22410	0.52	13.21			57.84	10.13
D12420			0.063	1.60	1.594	40.50	0.744	18.90	0.661	16.80	38.14	169.66	44.9	7.870	D22420	0.744	18.9	31.8	141.45	37.43	6.56
D12430					2.303	58.50	1.043	26.50	0.913	23.20			30.4	5.330	D22430	1.043	26.49			25.35	4.44
D12440	0.457	11.60			3.346	85.00	1.492	37.90	1.291	32.80			20.6	3.610	D22440	1.492	37.9			17.17	3.01
D12600					0.709	18.00	0.441	11.20	0.433	11.00			266.0	46.580	D22600	0.441	11.2			221.55	38.80
D12610					1.043	26.50	0.614	15.60	0.591	15.00			169.6	29.710	D22610	0.614	15.6			141.31	24.75
D12620			0.079	2.00	1.516	38.50	0.866	22.00	0.827	21.00	71.43	317.74	109.7	19.220	D22620	0.866	22	59.55	264.88	91.42	16.01
D12630					2.165	55.00	1.205	30.60	1.142	29.00			74.5	13.040	D22630	1.205	30.61			62.02	10.86
D12640					3.130	79.50	1.709	43.40	1.614	41.00			50.3	8.810	D22640	1.709	43.41			41.90	7.34
C0480-035-0500-M					0.500	12.70	0.200	5.08	0.160	4.06			15.7	2.750	C0480-035-0500-S	0.282	7.16			13.08	2.29
C0480-035-0620-M					0.620	15.75	0.237	6.02	0.175	4.45			12.2	2.140	C0480-035-0620-S	0.339	8.61			10.16	1.78
C0480-035-0750-M					0.750	19.05	0.276	7.01	0.192	4.88			9.9	1.733	C0480-035-0750-S	0.404	10.26			8.25	1.44
C0480-035-0880-M					0.880	22.35	0.315	8.00	0.208	5.28			8.3	1.453	C0480-035-0880-S	0.467	11.86			6.91	1.21
C0480-035-1000-M					1.000	25.40	0.352	8.94	0.223	5.66			7.2	1.261	C0480-035-1000-S	0.524	13.31			6.00	1.05
C0480-035-1250-M			0.035	0.89	1.250	31.75	0.427	10.85	0.255	6.48	4.69	20.86	5.7	0.998	C0480-035-1250-S	0.648	16.46	2.86	12.72	4.75	0.83
C0480-035-1500-M					1.500	38.10	0.503	12.78	0.287	7.29			4.7	0.823	C0480-035-1500-S	0.77	19.56			3.92	0.69
C0480-035-1750-M					1.750	44.45	0.579	14.71	0.319	8.10			4.0	0.700	C0480-035-1750-S	0.893	22.68			3.33	0.58
C0480-035-2000-M					2.000	50.80	0.655	16.64	0.351	8.92			3.5	0.613	C0480-035-2000-S	1.02	25.91			2.92	0.51
C0480-035-2500-M					2.500	63.50	0.825	20.96	0.414	10.52			2.8	0.490	C0480-035-2500-S	1.275	32.39			2.33	0.41
C0480-035-3000-M					3.000	76.20	0.958	24.33	0.478	12.14			2.3	0.403	C0480-035-3000-S	1.509	38.33			1.92	0.34
C0480-038-0500-M					0.500	12.70	0.200	5.08	0.144	3.66			20.0	3.500	C0480-038-0500-S	0.285	7.24			16.66	2.92
C0480-038-0625-M					0.620	15.75	0.220	5.59	0.167	4.24			15.0	2.630	C0480-038-0625-S	0.333	8.46			12.50	2.19
C0480-038-0750-M					0.750	19.05	0.270	6.86	0.185	4.70			12.5	2.190	C0480-038-0750-S	0.406	10.31			10.41	1.82
C0480-038-0880-M	0.480	12.19			0.880	22.35	0.305	7.75	0.207	5.26			10.5	1.839	C0480-038-0880-S	0.471	11.96			8.75	1.53
C0480-038-1000-M					1.000	25.40	0.370	9.40	0.220	5.59			9.5	1.663	C0480-038-1000-S	0.548	13.92			7.91	1.39
C0480-038-1250-M					1.250	31.75	0.450	11.43	0.259	6.58			7.5	1.313	C0480-038-1250-S	0.677	17.2			6.25	1.09
C0480-038-1500-M			0.038	0.97	1.500	38.10	0.500	12.70	0.305	7.75	6.00	26.69	6.0	1.051	C0480-038-1500-S	0.784	19.91	3.58	15.92	5.00	0.88
C0480-038-1750-M					1.750	44.45	0.660	16.76	0.352	8.94			5.5	0.963	C0480-038-1750-S	0.969	24.61			4.58	0.80
C0480-038-2000-M					2.000	50.80	0.756	19.20	0.388	9.86			4.8	0.840	C0480-038-2000-S	1.105	28.07			4.00	0.70

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0480-042-1250-M					1.250	31.75	0.470	11.94	0.317	8.05			10.0	1.751	C0480-042-1250-S	0.678	17.22			8.33	1.46
C0480-042-1500-M					1.500	38.10	0.580	14.73	0.358	9.09			8.5	1.488	C0480-042-1500-S	0.828	21.03			7.08	1.24
C0480-042-1750-M					1.750	44.45	0.737	18.72	0.418	10.62			7.7	1.348	C0480-042-1750-S	1.008	25.6			6.41	1.12
C0480-042-2000-M			0.042	1.07	2.000	50.80	0.836	21.23	0.462	11.73	7.80	34.70	6.7	1.173	C0480-042-2000-S	1.147	29.13	4.76	21.17	5.58	0.98
C0480-042-2250-M					2.250	57.15	0.928	23.57	0.505	12.83			5.9	1.033	C0480-042-2250-S	1.281	32.54			4.91	0.86
C0480-042-2500-M					2.500	63.50	1.125	28.58	0.520	13.21			5.7	0.998	C0480-042-2500-S	1.497	38.02			4.75	0.83
C0480-042-2750-M					2.750	69.85	1.233	31.32	0.561	14.25			5.1	0.893	C0480-042-2750-S	1.629	41.38			4.25	0.74
C0480-042-3000-M					3.000	76.20	1.340	34.04	0.602	15.29			4.7	0.823	C0480-042-3000-S	1.784	45.31			3.92	0.69
C0480-045-0500-M					0.500	12.70	0.237	6.02	0.185	4.70			35.0	6.130	C0480-045-0500-S	0.303	7.7			29.16	5.11
C0480-045-0625-M					0.620	15.75	0.291	7.39	0.209	5.31			28.0	4.900	C0480-045-0625-S	0.374	9.5			23.32	4.08
C0480-045-0750-M					0.750	19.05	0.330	8.38	0.242	6.15			22.0	3.850	C0480-045-0750-S	0.437	11.1			18.33	3.21
C0480-045-0880-M					0.880	22.35	0.396	10.06	0.266	6.76			19.0	3.330	C0480-045-0880-S	0.518	13.16			15.83	2.77
C0480-045-1000-M					1.000	25.40	0.460	11.68	0.287	7.29			17.0	2.980	C0480-045-1000-S	0.595	15.11			14.16	2.48
C0480-045-1250-M					1.250	31.75	0.545	13.84	0.348	8.84			13.0	2.280	C0480-045-1250-S	0.721	18.31			10.83	1.90
C0480-045-1500-M			0.045	1.14	1.500	38.10	0.665	16.89	0.395	10.03	9.20	40.92	11.0	1.926	C0480-045-1500-S	0.875	22.23	5.73	25.49	9.16	1.60
C0480-045-1750-M					1.750	44.45	0.792	20.12	0.469	11.91			9.6	1.681	C0480-045-1750-S	1.034	26.26			8.00	1.40
C0480-045-2000-M					2.000	50.80	0.905	22.99	0.520	13.21			8.4	1.471	C0480-045-2000-S	1.181	30			7.00	1.23
C0480-045-2250-M					2.250	57.15	1.007	25.58	0.570	14.48			7.4	1.296	C0480-045-2250-S	1.321	33.55			6.16	1.08
C0480-045-2500-M					2.500	63.50	1.115	28.32	0.620	15.75			6.6	1.156	C0480-045-2500-S	1.458	37.03			5.50	0.96
C0480-045-2750-M					2.750	69.85	1.222	31.04	0.671	17.04			6.0	1.051	C0480-045-2750-S	1.604	40.74			5.00	0.88
C0480-045-3000-M					3.000	76.20	1.327	33.71	0.721	18.31			5.5	0.963	C0480-045-3000-S	1.75	44.45			4.58	0.80
C0480-051-0500-M					0.500	12.70	0.296	7.52	0.255	6.48			61.3	10.730	C0480-051-0500-S	0.339	8.61			51.06	8.94
C0480-051-0620-M					0.620	15.75	0.355	9.02	0.286	7.26			47.1	8.250	C0480-051-0620-S	0.41	10.41			39.23	6.87
C0480-051-0750-M					0.750	19.05	0.418	10.62	0.320	8.13			37.7	6.600	C0480-051-0750-S	0.488	12.4			31.40	5.50
C0480-051-0880-M					0.880	22.35	0.481	12.22	0.353	8.97			31.4	5.500	C0480-051-0880-S	0.566	14.38			26.16	4.58
C0480-051-1000-M					1.000	25.40	0.540	13.72	0.384	9.75			27.2	4.760	C0480-051-1000-S	0.637	16.18			22.66	3.97
C0480-051-1250-M					1.250	31.75	0.662	16.81	0.448	11.38			21.3	3.730	C0480-051-1250-S	0.787	19.99			17.74	3.11
C0480-051-1500-M			0.051	1.30	1.500	38.10	0.784	19.91	0.513	13.03	12.51	55.65	17.5	3.060	C0480-051-1500-S	0.936	23.77	8.22	36.56	14.58	2.55
C0480-051-1750-M					1.750	44.45	0.906	23.01	0.577	14.66			14.8	2.590	C0480-051-1750-S	1.083	27.51			12.33	2.16
C0480-051-2000-M					2.000	50.80	1.027	26.09	0.641	16.28			12.9	2.260	C0480-051-2000-S	1.235	31.37			10.75	1.88
C0480-051-2250-M					2.250	57.15	1.149	29.18	0.706	17.93			11.4	1.996	C0480-051-2250-S	1.384	35.15			9.50	1.66
C0480-051-2500-M					2.500	63.50	1.271	32.28	0.770	19.56			10.2	1.786	C0480-051-2500-S	1.532	38.91			8.50	1.49
C0480-051-2750-M	0.480	12.19			2.750	69.85	1.393	35.38	0.834	21.18			9.2	1.611	C0480-051-2750-S	1.677	42.6			7.66	1.34
C0480-051-3000-M					3.000	76.20	1.515	38.48	0.899	22.83			8.4	1.471	C0480-051-3000-S	1.825	46.36			7.00	1.23
C0480-055-0500-M					0.500	12.70	0.275	6.99	0.246	6.25			72.0	12.610	C0480-055-0500-S	0.331	8.41			59.98	10.50
C0480-055-0625-M					0.620	15.75	0.331	8.41	0.285	7.24			56.0	9.810	C0480-055-0625-S	0.403	10.24			46.65	8.17
C0480-055-0750-M					0.750	19.05	0.404	10.26	0.319	8.10			47.0	8.230	C0480-055-0750-S	0.492	12.5			39.15	6.86
C0480-055-0880-M					0.880	22.35	0.450	11.43	0.368	9.35			38.0	6.650	C0480-055-0880-S	0.561	14.25			31.65	5.54
C0480-055-1000-M					1.000	25.40	0.535	13.59	0.391	9.93			35.0	6.130	C0480-055-1000-S	0.653	16.59			29.16	5.11
C0480-055-1250-M					1.250	31.75	0.650	16.51	0.474	12.04			27.0	4.730	C0480-055-1250-S	0.801	20.35			22.49	3.94
C0480-055-1500-M			0.055	1.40	1.500	38.10	0.765	19.43	0.557	14.15	16.20	72.06	22.0	3.850	C0480-055-1500-S	0.949	24.1	10.11	44.97	18.33	3.21
C0480-055-1750-M					1.750	44.45	0.915	23.24	0.651	16.54			19.4	3.400	C0480-055-1750-S	1.125	28.58			16.16	2.83
C0480-055-2000-M					2.000	50.80	1.036	26.31	0.725	18.42			16.8	2.940	C0480-055-2000-S	1.278	32.46			13.99	2.45
C0480-055-2250-M					2.250	57.15	1.163	29.54	0.799	20.29			14.9	2.610	C0480-055-2250-S	1.436	36.47			12.41	2.17
C0480-055-2500-M					2.500	63.50	1.282	32.56	0.874	22.20			13.3	2.330	C0480-055-2500-S	1.588	40.34			11.08	1.94
C0480-055-2750-M					2.750	69.85	1.468	37.29	0.911	23.14			12.6	2.210	C0480-055-2750-S	1.787	45.39			10.50	1.84
C0480-055-3000-M					3.000	76.20	1.597	40.56	0.981	24.92			11.5	2.010	C0480-055-3000-S	1.945	49.4			9.58	1.67
C0480-059-0500-M					0.500	12.70	0.325	8.26	0.305	7.75			107.2	18.770	C0480-059-0500-S	0.363	9.22			89.30	15.64
C0480-059-0620-M					0.620	15.75	0.390	9.91	0.346	8.79			81.6	14.290	C0480-059-0620-S	0.439	11.15			67.97	11.90
C0480-059-0750-M					0.750	19.05	0.461	11.71	0.390	9.91			64.8	11.350	C0480-059-0750-S	0.523	13.28			53.98	9.45
C0480-059-1000-M					1.000	25.40	0.596	15.14	0.474	12.04			46.4	8.130	C0480-059-1000-S	0.683	17.35			38.65	6.77
C0480-059-1250-M					1.250	31.75	0.732	18.59	0.558	14.17			36.2	6.340	C0480-059-1250-S	0.843	21.41			30.15	5.28
C0480-059-1500-M			0.059	1.50	1.500	38.10	0.867	22.02	0.642	16.31	18.75	83.40	29.6	5.180	C0480-059-1500-S	1.002	25.45	12.27	54.58	24.66	4.31
C0480-059-1750-M					1.750	44.45	1.003	25.48	0.726	18.44			25.1	4.400	C0480-059-1750-S	1.163	29.54			20.91	3.67
C0480-059-2000-M					2.000	50.80	1.138	28.91	0.810	20.57			21.8	3.820	C0480-059-2000-S	1.324	33.63			18.16	3.18
C0480-059-2250-M					2.250	57.15	1.274	32.36	0.894	22.71			19.2	3.360	C0480-059-2250-S	1.483	37.67			15.99	2.80
C0480-059-2500-M					2.500	63.50	1.409	35.79	0.978	24.84			17.2	3.010	C0480-059-2500-S	1.644	41.76			14.33	2.51
C0480-059-2750-M					2.750	69.85	1.545	39.24	1.062	26.97			15.6	2.730	C0480-059-2750-S	1.806	45.87			12.99	2.27
C0480-059-3000-M					3.000	76.20	1.680	42.67	1.146	29.11			14.2	2.490	C0480-059-3000-S	1.963	49.86			11.83	2.07
C0480-063-0500-M					0.500	12.70	0.308	7.82	0.296	7.52			120.0	21.010	C0480-063-0500-S	0.355	9.02			99.96	17.50
C0480-063-0625-M					0.620	15.75	0.378	9.60	0.342	8.69			95.0	16.640	C0480-063-0625-S	0.437	11.1			79.14	13.86
C0480-063-0750-M			0.063	1.60	0.7																

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0480-063-1250-M					1.250	31.75	0.740	18.80	0.582	14.78			45.0	7.880	C0480-063-1250-S	0.863	21.92			37.49	6.56
C0480-063-1380-M					1.380	35.05	0.841	21.36	0.655	16.64			42.7	7.480	C0480-063-1380-S	0.972	24.69			35.57	6.23
C0480-063-1500-M					1.500	38.10	0.895	22.73	0.665	16.89			38.0	6.650	C0480-063-1500-S	1.041	26.44			31.65	5.54
C0480-063-1750-M					1.750	44.45	1.036	26.31	0.801	20.35			32.2	5.640	C0480-063-1750-S	1.209	30.71			26.82	4.70
C0480-063-2000-M			0.063	1.60	2.000	50.80	1.176	29.87	0.895	22.73	23.00	102.31	27.9	4.890	C0480-063-2000-S	1.375	34.93	14.52	64.58	23.24	4.07
C0480-063-2250-M					2.250	57.15	1.315	33.40	0.989	25.12			24.6	4.310	C0480-063-2250-S	1.542	39.17			20.49	3.59
C0480-063-2500-M					2.500	63.50	1.455	36.96	1.083	27.51			22.0	3.850	C0480-063-2500-S	1.708	43.38			18.33	3.21
C0480-063-2750-M					2.750	69.85	1.597	40.56	1.177	29.90			19.9	3.480	C0480-063-2750-S	1.874	47.6			16.58	2.90
C0480-063-3000-M					3.000	76.20	1.737	44.12	1.271	32.28			18.2	3.190	C0480-063-3000-S	2.043	51.89			15.16	2.66
C0480-067-0500-M					0.500	12.70	0.353	8.97	0.336	8.53			180.7	31.640	C0480-067-0500-S	0.385	9.78			150.52	26.36
C0480-067-0620-M					0.620	15.75	0.424	10.77	0.403	10.24			136.1	23.830	C0480-067-0620-S	0.467	11.86			113.37	19.85
C0480-067-0750-M					0.750	19.05	0.502	12.75	0.458	11.63			107.4	18.810	C0480-067-0750-S	0.556	14.12			89.46	15.67
C0480-067-0880-M					0.880	22.35	0.580	14.73	0.512	13.00			88.7	15.530	C0480-067-0880-S	0.645	16.38			73.89	12.94
C0480-067-1000-M					1.000	25.40	0.651	16.54	0.562	14.27			76.4	13.380	C0480-067-1000-S	0.727	18.47			63.64	11.15
C0480-067-1250-M			0.067	1.70	1.250	31.75	0.801	20.35	0.666	16.92	26.63	118.46	59.3	10.380	C0480-067-1250-S	0.898	22.81	17.37	77.26	49.40	8.65
C0480-067-1500-M					1.500	38.10	0.950	24.13	0.770	19.56			48.4	8.480	C0480-067-1500-S	1.069	27.15			40.32	7.06
C0480-067-1750-M					1.750	44.45	1.099	27.91	0.874	22.20			40.9	7.160	C0480-067-1750-S	1.24	31.5			34.07	5.96
C0480-067-2000-M					2.000	50.80	1.249	31.72	0.978	24.84			35.4	6.200	C0480-067-2000-S	1.411	35.84			29.49	5.16
C0480-067-2250-M					2.250	57.15	1.398	35.51	1.082	27.48			31.3	5.480	C0480-067-2250-S	1.584	40.23			26.07	4.56
C0480-067-2500-M					2.500	63.50	1.547	39.29	1.187	30.15			28.0	4.900	C0480-067-2500-S	1.755	44.58			23.32	4.08
C0480-067-2750-M					2.750	69.85	1.697	43.10	1.291	32.79			25.3	4.430	C0480-067-2750-S	1.926	48.92			21.07	3.69
C0480-067-3000-M					3.000	76.20	1.846	46.89	1.395	35.43			23.1	4.050	C0480-067-3000-S	2.098	53.29			19.24	3.37
C0480-072-0500-M					0.500	12.70	0.373	9.47	0.358	9.09			255.6	44.760	C0480-072-0500-S	0.4	10.16			212.91	37.29
C0480-072-0620-M					0.620	15.75	0.450	11.43	0.419	10.64			191.2	33.480	C0480-072-0620-S	0.487	12.37			159.27	27.89
C0480-072-0750-M					0.750	19.05	0.534	13.56	0.485	12.32			150.2	26.300	C0480-072-0750-S	0.58	14.73			125.12	21.91
C0480-072-0880-M					0.880	22.35	0.617	15.67	0.547	13.89			123.7	21.660	C0480-072-0880-S	0.674	17.12			103.04	18.04
C0480-072-1000-M					1.000	25.40	0.695	17.65	0.601	15.27			106.3	18.610	C0480-072-1000-S	0.76	19.3			88.55	15.50
C0480-072-1250-M					1.250	31.75	0.855	21.72	0.714	18.14			82.3	14.410	C0480-072-1250-S	0.94	23.88			68.56	12.00
C0480-072-1500-M					1.500	38.10	1.016	25.81	0.826	20.98			67.1	11.750	C0480-072-1500-S	1.12	28.45			55.89	9.79
C0480-072-1750-M			0.072	1.83	1.750	44.45	1.177	29.90	0.939	23.85	32.48	144.47	56.7	9.930	C0480-072-1750-S	1.301	33.05	21.23	94.43	47.23	8.27
C0480-072-2000-M					2.000	50.80	1.338	33.99	1.051	26.70			49.0	8.580	C0480-072-2000-S	1.48	37.59			40.82	7.15
C0480-072-2250-M	0.480	12.19			2.250	57.15	1.498	38.05	1.164	29.57			43.2	7.560	C0480-072-2250-S	1.66	42.16			35.99	6.30
C0480-072-2500-M					2.500	63.50	1.659	42.14	1.276	32.41			38.6	6.760	C0480-072-2500-S	1.84	46.74			32.15	5.63
C0480-072-2750-M					2.750	69.85	1.820	46.23	1.389	35.28			34.9	6.110	C0480-072-2750-S	2.02	51.31			29.07	5.09
C0480-072-3000-M					3.000	76.20	1.981	50.32	1.501	38.13			31.9	5.590	C0480-072-3000-S	2.201	55.91			26.57	4.66
C0480-072-3250-M					3.250	82.55	2.142	54.41	1.614	41.00			29.3	5.130	C0480-072-3250-S	2.38	60.45			24.41	4.27
C0480-072-3500-M					3.500	88.90	2.302	58.47	1.726	43.84			27.1	4.750	C0480-072-3500-S	2.56	65.02			22.57	3.96
C0480-074-0500-M					0.500	12.70	0.380	9.65	0.350	8.89			289.1	50.620	C0480-074-0500-S	0.405	10.29			240.82	42.17
C0480-074-0620-M					0.620	15.75	0.459	11.66	0.421	10.69			215.6	37.750	C0480-074-0620-S	0.492	12.5			179.59	31.45
C0480-074-0750-M					0.750	19.05	0.544	13.82	0.482	12.24			169.1	29.610	C0480-074-0750-S	0.587	14.91			140.86	24.67
C0480-074-0880-M					0.880	22.35	0.630	16.00	0.546	13.87			139.0	24.340	C0480-074-0880-S	0.682	17.32			115.79	20.28
C0480-074-1000-M					1.000	25.40	0.709	18.01	0.610	15.49			119.4	20.910	C0480-074-1000-S	0.769	19.53			99.46	17.42
C0480-074-1250-M					1.250	31.75	0.873	22.17	0.734	18.64			92.3	16.160	C0480-074-1250-S	0.951	24.16			76.89	13.46
C0480-074-1500-M			0.074	1.88	1.500	38.10	1.038	26.37	0.855	21.72	34.79	154.75	75.3	13.190	C0480-074-1500-S	1.134	28.8	22.98	102.22	62.72	10.99
C0480-074-1750-M					1.750	44.45	1.202	30.53	0.972	24.69			63.5	11.120	C0480-074-1750-S	1.316	33.43			52.90	9.26
C0480-074-2000-M					2.000	50.80	1.367	34.72	1.089	27.66			55.0	9.630	C0480-074-2000-S	1.498	38.05			45.82	8.02
C0480-074-2250-M					2.250	57.15	1.531	38.89	1.206	30.63			48.4	8.480	C0480-074-2250-S	1.68	42.67			40.32	7.06
C0480-074-2500-M					2.500	63.50	1.696	43.08	1.324	33.63			43.3	7.580	C0480-074-2500-S	1.863	47.32			36.07	6.31
C0480-074-2750-M					2.750	69.85	1.861	47.27	1.441	36.60			39.1	6.850	C0480-074-2750-S	2.044	51.92			32.57	5.71
C0480-074-3000-M					3.000	76.20	2.025	51.44	1.558	39.57			35.7	6.250	C0480-074-3000-S	2.227	56.57			29.74	5.21
C0480-074-3250-M					3.250	82.55	2.190	55.63	1.675	42.55			32.8	5.740	C0480-074-3250-S	2.409	61.19			27.32	4.78
C0480-074-3500-M					3.500	88.90	2.354	59.79	1.792	45.52			30.4	5.320	C0480-074-3500-S	2.593	65.86			25.32	4.43
C0480-081-0500-M					0.500	12.70	0.401	10.19	0.379	9.63			446.7	78.220	C0480-081-0500-S	0.422	10.72			372.10	65.16
C0480-081-0620-M					0.620	15.75	0.486	12.34	0.458	11.63			329.7	57.730	C0480-081-0620-S	0.515	13.08			274.64	48.09
C0480-081-0750-M					0.750	19.05	0.577	14.66	0.526	13.36			256.8	44.970	C0480-081-0750-S	0.615	15.62			213.91	37.46
C0480-081-0880-M					0.880	22.35	0.669	16.99	0.598	15.19			210.3	36.820	C0480-081-0880-S	0.715	18.16			175.18	30.67
C0480-081-1000-M					1.000	25.40	0.754	19.15	0.669	16.99			180.2	31.550	C0480-081-1000-S	0.808	20.52			150.11	26.28
C0480-081-1250-M			0.081	2.06	1.250	31.75	0.931	23.65	0.808	20.52	44.34	197.22	138.8	24.300	C0480-081-1250-S	1	25.4	28.86	128.37	115.62	20.24
C0480-081-1500-M					1.500	38.10	1.107	28.12	0.942	23.93			112.9	19.770	C0480-081-1500-S	1.193	30.3			94.05	16.47
C0480-081-1750-M					1.750	44.45	1.284	32.61	1.073	27.25			95.1	16.650	C0480-081-1750-S	1.386	35.2			79.22	13.87
C0480-081-2000-M					2.00																

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0480-081-3000-M					3.000	76.20	2.167	55.04	1.726	43.84			53.2	9.320	C0480-081-3000-S	2.349	59.66			44.32	7.76
C0480-081-3250-M	0.480	12.19	0.081	2.06	3.250	82.55	2.343	59.51	1.857	47.17	44.34	197.22	48.9	8.560	C0480-081-3250-S	2.542	64.57	28.86	128.37	40.73	7.13
C0480-081-3500-M					3.500	88.90	2.520	64.01	1.987	50.47			45.2	7.920	C0480-081-3500-S	2.734	69.44			37.65	6.60
D12050					0.945	24.00	0.370	9.40	0.217	5.50			8.5	1.490	D22050	0.37	9.4			7.09	1.24
D12060					1.437	36.50	0.528	13.40	0.295	7.50			5.4	0.950	D22060	0.528	13.41			4.52	0.79
D12070	0.531	13.50	0.039	1.00	2.185	55.50	0.764	19.40	0.413	10.50	4.94	21.97	3.5	0.610	D22070	0.764	19.41	4.12	18.33	2.90	0.51
D12080					3.169	80.50	1.079	27.40	0.571	14.50			2.3	0.410	D22080	1.079	27.41			1.95	0.34
D12090					4.528	115.00	1.551	39.40	0.807	20.50			1.6	0.280	D22090	1.551	39.4			1.33	0.23
D12250					1.063	27.00	0.323	8.20	0.271	6.88			20.7	3.630	D22250	0.323	8.2			17.27	3.02
D12260					1.634	41.50	0.457	11.60	0.369	9.38			13.2	2.310	D22260	0.457	11.61			10.99	1.92
D12270	0.541	13.75	0.049	1.25	2.461	62.50	0.650	16.50	0.517	13.13	15.52	69.04	8.5	1.490	D22270	0.65	16.51	12.94	57.56	7.09	1.24
D12280					3.563	90.50	0.909	23.10	0.714	18.13			5.8	1.020	D22280	0.909	23.09			4.85	0.85
D12290					5.118	130.00	1.295	32.90	1.009	25.63			3.9	0.690	D22290	1.295	32.89			3.28	0.57
D13190					0.807	20.50	0.646	16.40	0.606	15.40			728.0	27.490	D23190	0.646	16.41			606.40	106.20
D13200	0.551	14.00	0.110	2.80	1.142	29.00	0.878	22.30	0.827	21.00	116.62	518.77	358.9	62.860	D23200	0.878	22.3	97.26	432.61	298.99	52.36
D13210					1.807	45.90	1.374	34.90	1.268	32.20			267.7	46.880	D23210	1.374	34.9			222.98	39.05
D13220					2.811	71.40	2.098	53.30	1.929	49.00			164.0	28.730	D23220	2.098	53.29			136.65	23.93
D12450					0.945	24.00	0.394	10.00	0.346	8.80			55.7	9.760	D22450	0.394	10.01			46.42	8.13
D12460					1.417	36.00	0.555	14.10	0.472	12.00			35.6	6.230	D22460	0.555	14.1			29.63	5.19
D12470	0.555	14.10	0.063	1.60	2.106	53.50	0.791	20.10	0.661	16.80	30.42	135.33	23.1	4.040	D22470	0.791	20.09	25.36	112.8	19.22	3.37
D12480					3.071	78.00	1.102	28.00	0.913	23.20			15.6	2.730	D22480	1.102	27.99			12.99	2.27
D12490					4.528	115.00	1.571	39.90	1.291	32.80			10.5	1.840	D22490	1.571	39.9			8.75	1.53
D12650					0.886	22.50	0.461	11.70	0.433	11.00			136.6	23.930	D22650	0.461	11.71			113.82	19.93
D12660					1.299	33.00	0.646	16.40	0.591	15.00			86.8	15.200	D22660	0.646	16.41			72.30	12.66
D12670	0.571	14.50	0.079	2.00	1.949	49.50	0.925	23.50	0.827	21.00	57.10	253.99	56.0	9.810	D22670	0.925	23.5	47.6	211.72	46.66	8.17
D12680					2.795	71.00	1.299	33.00	1.142	29.00			38.2	6.690	D22680	1.299	32.99			31.82	5.57
D12690					4.134	105.00	1.858	47.20	1.614	41.00			25.8	4.520	D22690	1.858	47.19			21.50	3.77
D12890					0.787	20.00	0.508	12.90	0.476	12.10			185.3	32.460	D22890	0.508	12.9			154.39	27.04
D12900	0.591	15.00	0.087	2.20	1.189	30.20	0.697	17.70	0.650	16.50	57.76	256.93	118.1	20.690	D22900	0.697	17.7	48.15	214.17	98.41	17.23
D12910					1.925	48.90	1.079	27.40	0.996	25.30			68.3	11.960	D22910	1.079	27.41			56.89	9.96
D12940					0.866	22.00	0.551	14.00	0.541	13.75			333.2	58.350	D22940	0.551	14			277.54	48.61
D12950					1.260	32.00	0.768	19.50	0.738	18.75			212.2	37.170	D22950	0.768	19.51			176.80	30.96
D12960	0.591	15.00	0.098	2.50	1.870	47.50	1.094	27.80	1.033	26.25	105.16	467.78	137.2	24.030	D22960	1.094	27.79	87.67	389.96	114.30	20.02
D12970					2.657	67.50	1.524	38.70	1.427	36.25			93.0	16.280	D22970	1.524	38.71			77.43	13.56
D12980					3.858	98.00	2.169	55.10	2.018	51.25			62.7	10.980	D22980	2.169	55.09			52.23	9.15
C0600-045-0500-M					0.500	12.70	0.257	6.53	0.153	3.89			24.7	4.330	C0600-045-0500-S	0.257	6.53			20.58	3.61
C0600-045-0625-M					0.620	15.75	0.287	7.29	0.179	4.55			18.0	3.150	C0600-045-0625-S	0.287	7.29			14.99	2.62
C0600-045-0750-M					0.750	19.05	0.321	8.15	0.205	5.21			14.0	2.450	C0600-045-0750-S	0.321	8.15			11.66	2.04
C0600-045-0880-M					0.880	22.35	0.380	9.65	0.224	5.69			12.0	2.100	C0600-045-0880-S	0.38	9.65			10.00	1.75
C0600-045-1000-M					1.000	25.40	0.400	10.16	0.251	6.38			10.0	1.751	C0600-045-1000-S	0.4	10.16			8.33	1.46
C0600-045-1250-M					1.250	31.75	0.500	12.70	0.292	7.42			8.0	1.401	C0600-045-1250-S	0.5	12.7			6.66	1.17
C0600-045-1380-M					1.380	35.05	0.540	13.72	0.306	7.77			7.1	1.243	C0600-045-1380-S	0.54	13.72			5.91	1.04
C0600-045-1500-M			0.045	1.14	1.500	38.10	0.575	14.61	0.338	8.59	6.00	26.69	6.5	1.138	C0600-045-1500-S	0.575	14.61	5	22.24	5.41	0.95
C0600-045-1750-M					1.750	44.45	0.854	21.69	0.366	9.30			6.7	1.173	C0600-045-1750-S	0.854	21.69			5.58	0.98
C0600-045-2000-M					2.000	50.80	0.966	24.54	0.401	10.19			5.8	1.016	C0600-045-2000-S	0.966	24.54			4.83	0.85
C0600-045-2250-M					2.250	57.15	1.096	27.84	0.436	11.07			5.2	0.911	C0600-045-2250-S	1.096	27.84			4.33	0.76
C0600-045-2500-M					2.500	63.50	1.196	30.38	0.471	11.96			4.6	0.805	C0600-045-2500-S	1.196	30.38			3.83	0.67
C0600-045-2750-M					2.750	69.85	1.170	29.72	0.540	13.72			3.8	0.665	C0600-045-2750-S	1.17	29.72			3.17	0.55
C0600-045-3000-M					3.000	76.20	1.272	32.31	0.585	14.86			3.5	0.613	C0600-045-3000-S	1.272	32.31			2.92	0.51
C0600-045-3500-M	0.600	15.24			3.500	88.90	1.500	38.10	0.659	16.74			3.0	0.525	C0600-045-3500-S	1.5	38.1			2.50	0.44
C0600-049-0620-M					0.620	15.75	0.320	8.13	0.234	5.94			28.0	4.900	C0600-049-0620-S	0.365	9.27			23.32	4.08
C0600-049-0750-M					0.750	19.05	0.375	9.53	0.255	6.48			22.4	3.920	C0600-049-0750-S	0.431	10.95			18.66	3.27
C0600-049-1000-M					1.000	25.40	0.481	12.22	0.297	7.54			16.2	2.840	C0600-049-1000-S	0.559	14.2			13.49	2.37
C0600-049-1250-M					1.250	31.75	0.587	14.91	0.338	8.59			12.7	2.220	C0600-049-1250-S	0.687	17.45			10.58	1.85
C0600-049-1500-M					1.500	38.10	0.693	17.60	0.380	9.65			10.4	1.821	C0600-049-1500-S	0.813	20.65			8.66	1.52
C0600-049-1750-M			0.049	1.24	1.750	44.45	0.800	20.32	0.422	10.72	8.40	37.37	8.8	1.541	C0600-049-1750-S	0.938	2				

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0600-055-1000-M					1.000	25.40	0.500	12.70	0.304	7.72			24.0	4.200	C0600-055-1000-S	0.59	14.99			19.99	3.50
C0600-055-1250-M					1.250	31.75	0.580	14.73	0.369	9.37			18.0	3.150	C0600-055-1250-S	0.704	17.88			14.99	2.62
C0600-055-1500-M					1.500	38.10	0.700	17.78	0.420	10.67			15.0	2.630	C0600-055-1500-S	0.845	21.46			12.50	2.19
C0600-055-1750-M					1.750	44.45	0.827	21.01	0.509	12.93			13.0	2.280	C0600-055-1750-S	0.994	25.25			10.83	1.90
C0600-055-2000-M			0.055	1.40	2.000	50.80	0.938	23.83	0.562	14.27	12.00	53.38	11.3	1.979	C0600-055-2000-S	1.13	28.7	8.19	36.43	9.41	1.65
C0600-055-2250-M					2.250	57.15	1.050	26.67	0.614	15.60			10.0	1.751	C0600-055-2250-S	1.267	32.18			8.33	1.46
C0600-055-2500-M					2.500	63.50	1.152	29.26	0.667	16.94			8.9	1.558	C0600-055-2500-S	1.395	35.43			7.41	1.30
C0600-055-2750-M					2.750	69.85	1.311	33.30	0.701	17.81			8.3	1.453	C0600-055-2750-S	1.566	39.78			6.91	1.21
C0600-055-3000-M					3.000	76.20	1.424	36.17	0.752	19.10			7.6	1.331	C0600-055-3000-S	1.706	43.33			6.33	1.11
C0600-059-0620-M					0.620	15.75	0.357	9.07	0.298	7.57			53.7	9.400	C0600-059-0620-S	0.397	10.08			44.73	7.83
C0600-059-0750-M					0.750	19.05	0.419	10.64	0.329	8.36			42.7	7.480	C0600-059-0750-S	0.47	11.94			35.57	6.23
C0600-059-0880-M					0.880	22.35	0.481	12.22	0.360	9.14			35.4	6.200	C0600-059-0880-S	0.542	13.77			29.49	5.16
C0600-059-1000-M					1.000	25.40	0.538	13.67	0.389	9.88			30.6	5.360	C0600-059-1000-S	0.609	15.47			25.49	4.46
C0600-059-1250-M					1.250	31.75	0.657	16.69	0.449	11.40			23.8	4.170	C0600-059-1250-S	0.748	19			19.83	3.47
C0600-059-1500-M			0.059	1.50	1.500	38.10	0.776	19.71	0.510	12.95	14.13	62.85	19.5	3.410	C0600-059-1500-S	0.887	22.53	9.96	44.3	16.24	2.84
C0600-059-1750-M					1.750	44.45	0.895	22.73	0.570	14.48			16.5	2.890	C0600-059-1750-S	1.026	26.06			13.74	2.41
C0600-059-2000-M					2.000	50.80	1.014	25.76	0.630	16.00			14.3	2.500	C0600-059-2000-S	1.164	29.57			11.91	2.08
C0600-059-2250-M					2.250	57.15	1.133	28.78	0.690	17.53			12.6	2.210	C0600-059-2250-S	1.301	33.05			10.50	1.84
C0600-059-2500-M					2.500	63.50	1.252	31.80	0.750	19.05			11.3	1.979	C0600-059-2500-S	1.442	36.63			9.41	1.65
C0600-059-2750-M					2.750	69.85	1.371	34.82	0.811	20.60			10.2	1.786	C0600-059-2750-S	1.578	40.08			8.50	1.49
C0600-059-3000-M					3.000	76.20	1.490	37.85	0.871	22.12			9.4	1.646	C0600-059-3000-S	1.728	43.89			7.83	1.37
C0600-063-0625-M					0.620	15.75	0.330	8.38	0.280	7.11			62.0	10.860	C0600-063-0625-S	0.392	9.96			51.65	9.05
C0600-063-0750-M					0.750	19.05	0.400	10.16	0.314	7.98			51.0	8.930	C0600-063-0750-S	0.472	11.99			42.48	7.44
C0600-063-0880-M					0.880	22.35	0.471	11.96	0.343	8.71			44.0	7.700	C0600-063-0880-S	0.558	14.17			36.65	6.41
C0600-063-1000-M					1.000	25.40	0.525	13.34	0.378	9.60			38.0	6.650	C0600-063-1000-S	0.627	15.93			31.65	5.54
C0600-063-1250-M					1.250	31.75	0.670	17.02	0.435	11.05			31.0	5.430	C0600-063-1250-S	0.793	20.14			25.82	4.52
C0600-063-1500-M					1.500	38.10	0.750	19.05	0.526	13.36			24.0	4.200	C0600-063-1500-S	0.91	23.11			19.99	3.50
C0600-063-1750-M			0.063	1.60	1.750	44.45	0.885	22.48	0.632	16.05	18.00	80.07	20.8	3.640	C0600-063-1750-S	1.069	27.15	11.8	52.49	17.33	3.03
C0600-063-2000-M					2.000	50.80	1.000	25.40	0.700	17.78			18.0	3.150	C0600-063-2000-S	1.213	30.81			14.99	2.62
C0600-063-2250-M					2.250	57.15	1.118	28.40	0.768	19.51			15.9	2.780	C0600-063-2250-S	1.359	34.52			13.24	2.32
C0600-063-2500-M					2.500	63.50	1.232	31.29	0.836	21.23			14.2	2.490	C0600-063-2500-S	1.503	38.18			11.83	2.07
C0600-063-2750-M	0.600	15.24			2.750	69.85	1.433	36.40	0.863	21.92			13.7	2.400	C0600-063-2750-S	1.716	43.59			11.41	2.00
C0600-063-3000-M					3.000	76.20	1.558	39.57	0.927	23.55			12.5	2.190	C0600-063-3000-S	1.867	47.42			10.41	1.82
C0600-063-3500-M					3.500	88.90	1.807	45.90	1.055	26.80			10.6	1.856	C0600-063-3500-S	2.164	54.97			8.83	1.55
C0600-067-0625-M					0.620	15.75	0.360	9.14	0.300	7.62			80.0	14.010	C0600-067-0625-S	0.408	10.36			66.64	11.67
C0600-067-0750-M					0.750	19.05	0.430	10.92	0.336	8.53			66.0	11.560	C0600-067-0750-S	0.493	12.52			54.98	9.63
C0600-067-0880-M					0.880	22.35	0.460	11.68	0.401	10.19			50.0	8.760	C0600-067-0880-S	0.541	13.74			41.65	7.30
C0600-067-1000-M					1.000	25.40	0.530	13.46	0.430	10.92			45.0	7.880	C0600-067-1000-S	0.623	15.82			37.49	6.56
C0600-067-1250-M					1.250	31.75	0.665	16.89	0.505	12.83			36.0	6.300	C0600-067-1250-S	0.779	19.79			29.99	5.25
C0600-067-1500-M			0.067	1.70	1.500	38.10	0.780	19.81	0.594	15.09	21.00	93.41	29.0	5.080	C0600-067-1500-S	0.915	23.24	14.14	62.89	24.16	4.23
C0600-067-1750-M					1.750	44.45	0.830	21.08	0.715	18.16			23.0	4.030	C0600-067-1750-S	1.012	25.7			19.16	3.36
C0600-067-2000-M					2.000	50.80	1.067	27.10	0.771	19.58			22.5	3.940	C0600-067-2000-S	1.246	31.65			18.74	3.28
C0600-067-2250-M					2.250	57.15	1.189	30.20	0.847	21.51			19.8	3.470	C0600-067-2250-S	1.393	35.38			16.49	2.89
C0600-067-2500-M					2.500	63.50	1.314	33.38	0.923	23.44			17.7	3.100	C0600-067-2500-S	1.541	39.14			14.74	2.58
C0600-067-2750-M					2.750	69.85	1.496	38.00	0.966	24.54			16.7	2.920	C0600-067-2750-S	1.734	44.04			13.91	2.43
C0600-067-3000-M					3.000	76.20	1.626	41.30	1.040	26.42			15.3	2.680	C0600-067-3000-S	1.891	48.03			12.74	2.23
C0600-072-0620-M					0.620	15.75	0.410	10.41	0.381	9.68			114.5	20.050	C0600-072-0620-S	0.41	10.41			95.38	16.70
C0600-072-0750-M					0.750	19.05	0.445	11.30	0.396	10.06			78.0	13.660	C0600-072-0750-S	0.445	11.3			64.97	11.38
C0600-072-0880-M					0.880	22.35	0.527	13.39	0.433	11.00			68.0	11.910	C0600-072-0880-S	0.527	13.39			56.64	9.92
C0600-072-1000-M					1.000	25.40	0.565	14.35	0.502	12.75			55.0	9.630	C0600-072-1000-S	0.565	14.35			45.82	8.02
C0600-072-1250-M					1.250	31.75	0.717	18.21	0.581	14.76			45.0	7.880	C0600-072-1250-S	0.717	18.21			37.49	6.56
C0600-072-1500-M			0.072	1.83	1.500	38.10	0.830	21.08	0.691	17.55	24.00	106.76	36.0	6.300	C0600-072-1500-S	0.83	21.08	19.99	88.92	29.99	5.25
C0600-072-1750-M					1.750	44.45	0.950	24.13	0.801	20.35			30.0	5.250	C0600-072-1750-S	0.95	24.13			24.99	4.37
C0600-072-2000-M					2.000	50.80	1.140	28.96	0.848	21.54			28.0	4.900	C0600-072-2000-S	1.14	28.96			23.32	4.08
C0600-072-2250-M					2.250	57.15	1.323	33.60	0.946	24.03			25.9	4.540	C0600-072-2250-S	1.323	33.6			21.57	3.78
C0600-072-2500-M					2.500	63.50	1.461	37.11	1.033	26.24			23.1	4.050	C0600-072-2500-S	1.461	37.11			19.24	3.37
C0600-072-2750-M					2.750	69.85	1.601	40.67	1.119	28.42			20.9	3.660	C0600-072-2750-S	1.601	40.67			17.41	3.05
C0600-072-3000-M					3.000	76.20	1.742	44.25	1.206	30.63			19.1	3.340	C0600-072-3000-S	1.742	44.25			15.91	2.78
C0600-081-0620-M					0.620	15.75	0.466	11.84	0.412	10.46			212.6	37.230	C0600-081-0620-S	0.466	11.84			177.10	31.01
C0600-081-0750-M					0.750	19.05	0.553	14.05	0.459	11.66			165.6	29.000	C0600-081-0750-S	0.553	14.05			137.94	24.16
C0600-081-0880-M			0.081	2.06	0.880	22.35	0.639	16.23	0.507	12.88	32.69	145.41	135.6</								

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0600-081-1750-M					1.750	44.45	1.217	30.91	0.828	21.03			61.3	10.730	C0600-081-1750-S	1.217	30.91			51.06	8.94
C0600-081-2000-M					2.000	50.80	1.383	35.13	0.920	23.37			53.0	9.280	C0600-081-2000-S	1.383	35.13			44.15	7.73
C0600-081-2250-M					2.250	57.15	1.549	39.34	1.012	25.70			46.6	8.160	C0600-081-2250-S	1.549	39.34			38.82	6.80
C0600-081-2500-M					2.500	63.50	1.715	43.56	1.104	28.04			41.7	7.300	C0600-081-2500-S	1.715	43.56			34.74	6.08
C0600-081-2750-M			0.081	2.06	2.750	69.85	1.881	47.78	1.196	30.38	32.69	145.41	37.6	6.580	C0600-081-2750-S	1.881	47.78	27.23	121.12	31.32	5.48
C0600-081-3000-M					3.000	76.20	2.047	51.99	1.288	32.72			34.3	6.010	C0600-081-3000-S	2.047	51.99			28.57	5.01
C0600-081-3250-M					3.250	82.55	2.213	56.21	1.380	35.05			31.5	5.520	C0600-081-3250-S	2.213	56.21			26.24	4.60
C0600-081-3500-M					3.500	88.90	2.379	60.43	1.472	37.39			29.2	5.110	C0600-081-3500-S	2.379	60.43			24.32	4.26
C0600-081-3750-M					3.750	95.25	2.545	64.64	1.564	39.73			27.1	4.750	C0600-081-3750-S	2.545	64.64			22.57	3.96
C0600-081-4000-M					4.000	101.60	2.711	68.86	1.656	42.06			25.4	4.450	C0600-081-4000-S	2.711	68.86			21.16	3.71
C0600-085-0620-M					0.620	15.75	0.477	12.12	0.433	11.00			262.5	45.960	C0600-085-0620-S	0.477	12.12			218.66	38.28
C0600-085-0750-M					0.750	19.05	0.565	14.35	0.484	12.29			203.6	35.650	C0600-085-0750-S	0.565	14.35			169.60	29.70
C0600-085-0880-M					0.880	22.35	0.654	16.61	0.536	13.61			166.4	29.140	C0600-085-0880-S	0.654	16.61			138.61	24.27
C0600-085-1000-M					1.000	25.40	0.736	18.69	0.583	14.81			142.3	24.920	C0600-085-1000-S	0.736	18.69			118.54	20.76
C0600-085-1250-M					1.250	31.75	0.906	23.01	0.682	17.32			109.4	19.160	C0600-085-1250-S	0.906	23.01			91.13	15.96
C0600-085-1500-M					1.500	38.10	1.076	27.33	0.781	19.84			88.8	15.550	C0600-085-1500-S	1.076	27.33			73.97	12.95
C0600-085-1750-M					1.750	44.45	1.247	31.67	0.880	22.35			74.8	13.100	C0600-085-1750-S	1.247	31.67			62.31	10.91
C0600-085-2000-M			0.085	2.16	2.000	50.80	1.417	35.99	0.978	24.84	37.62	167.33	64.5	11.290	C0600-085-2000-S	1.417	35.99	31.34	139.4	53.73	9.40
C0600-085-2250-M					2.250	57.15	1.588	40.34	1.077	27.36			56.8	9.950	C0600-085-2250-S	1.588	40.34			47.31	8.29
C0600-085-2500-M					2.500	63.50	1.758	44.65	1.176	29.87			50.7	8.880	C0600-085-2500-S	1.758	44.65			42.23	7.40
C0600-085-2750-M					2.750	69.85	1.928	48.97	1.275	32.39			45.8	8.020	C0600-085-2750-S	1.928	48.97			38.15	6.68
C0600-085-3000-M					3.000	76.20	2.099	53.31	1.374	34.90			41.7	7.300	C0600-085-3000-S	2.099	53.31			34.74	6.08
C0600-085-3250-M					3.250	82.55	2.269	57.63	1.473	37.41			38.3	6.710	C0600-085-3250-S	2.269	57.63			31.90	5.59
C0600-085-3500-M					3.500	88.90	2.439	61.95	1.572	39.93			35.5	6.220	C0600-085-3500-S	2.439	61.95			29.57	5.18
C0600-085-3750-M					3.750	95.25	2.610	66.29	1.670	42.42			33.0	5.780	C0600-085-3750-S	2.610	66.29			27.49	4.81
C0600-085-4000-M					4.000	101.60	2.780	70.61	1.769	44.93			30.8	5.390	C0600-085-4000-S	2.780	70.61			25.66	4.49
C0600-092-0750-M					0.750	19.05	0.591	15.01	0.524	13.31			291.5	51.040	C0600-092-0750-S	0.591	15.01			242.82	42.52
C0600-092-0880-M	0.600	15.24			0.880	22.35	0.684	17.37	0.581	14.76			237.0	41.500	C0600-092-0880-S	0.684	17.37			197.42	34.57
C0600-092-1000-M					1.000	25.40	0.770	19.56	0.633	16.08			202.2	35.410	C0600-092-1000-S	0.770	19.56			168.43	29.50
C0600-092-1250-M					1.250	31.75	0.950	24.13	0.743	18.87			154.7	27.090	C0600-092-1250-S	0.950	24.13			128.87	22.57
C0600-092-1500-M					1.500	38.10	1.129	28.68	0.853	21.67			125.4	21.960	C0600-092-1500-S	1.129	28.68			104.46	18.29
C0600-092-1750-M					1.750	44.45	1.309	33.25	0.962	24.43			105.3	18.440	C0600-092-1750-S	1.309	33.25			87.71	15.36
C0600-092-2000-M					2.000	50.80	1.488	37.80	1.072	27.23			90.8	15.900	C0600-092-2000-S	1.488	37.80			75.64	13.24
C0600-092-2250-M			0.092	2.34	2.250	57.15	1.668	42.37	1.181	30.00	46.46	206.65	79.8	13.970	C0600-092-2250-S	1.668	42.37	38.7	172.14	66.47	11.64
C0600-092-2500-M					2.500	63.50	1.848	46.94	1.291	32.79			71.2	12.470	C0600-092-2500-S	1.848	46.94			59.31	10.39
C0600-092-2750-M					2.750	69.85	2.027	51.49	1.400	35.56			64.3	11.260	C0600-092-2750-S	2.027	51.49			53.56	9.38
C0600-092-3000-M					3.000	76.20	2.207	56.06	1.510	38.35			58.6	10.260	C0600-092-3000-S	2.207	56.06			48.81	8.55
C0600-092-3250-M					3.250	82.55	2.386	60.60	1.619	41.12			53.8	9.420	C0600-092-3250-S	2.386	60.60			44.82	7.85
C0600-092-3500-M					3.500	88.90	2.566	65.18	1.729	43.92			49.7	8.700	C0600-092-3500-S	2.566	65.18			41.40	7.25
C0600-092-3750-M					3.750	95.25	2.746	69.75	1.838	46.69			46.3	8.110	C0600-092-3750-S	2.746	69.75			38.57	6.76
C0600-092-4000-M					4.000	101.60	2.925	74.30	1.948	49.48			43.2	7.560	C0600-092-4000-S	2.925	74.30			35.99	6.30
C0600-098-0750-M					0.750	19.05	0.608	15.44	0.559	14.20			387.8	67.900	C0600-098-0750-S	0.628	15.95			323.04	56.56
C0600-098-0880-M					0.880	22.35	0.704	17.88	0.621	15.77			314.1	55.000	C0600-098-0880-S	0.730	18.54			261.65	45.82
C0600-098-1000-M					1.000	25.40	0.794	20.17	0.678	17.22			267.2	46.790	C0600-098-1000-S	0.823	20.90			222.58	38.98
C0600-098-1250-M					1.250	31.75	0.980	24.89	0.798	20.27			203.9	35.700	C0600-098-1250-S	1.018	25.86			169.85	29.74
C0600-098-1500-M					1.500	38.10	1.165	29.59	0.917	23.29			164.8	28.860	C0600-098-1500-S	1.213	30.81			137.28	24.04
C0600-098-1750-M					1.750	44.45	1.351	34.32	1.037	26.34			138.3	24.220	C0600-098-1750-S	1.408	35.76			115.20	20.18
C0600-098-2000-M					2.000	50.80	1.537	39.04	1.156	29.36			119.1	20.850	C0600-098-2000-S	1.603	40.72			99.21	17.37
C0600-098-2250-M			0.098	2.49	2.250	57.15	1.723	43.76	1.276	32.41	55.14	245.26	104.6	18.320	C0600-098-2250-S	1.798	45.67	39.36	175.07	87.13	15.26
C0600-098-2500-M					2.500	63.50	1.909	48.49	1.395	35.43			93.3	16.340	C0600-098-2500-S	1.994	50.65			77.72	13.61
C0600-098-2750-M					2.750	69.85	2.095	53.21	1.515	38.48			84.1	14.730	C0600-098-2750-S	2.188	55.58			70.06	12.27
C0600-098-3000-M					3.000	76.20	2.280	57.91	1.634	41.50			76.6	13.410	C0600-098-3000-S	2.383	60.53			63.81	11.17
C0600-098-3250-M					3.250	82.55	2.466	62.64	1.754	44.55			70.4	12.330	C0600-098-3250-S	2.579	65.51			58.64	10.27
C0600-098-3500-M					3.500	88.90	2.652	67.36	1.873	47.57			65.0	11.380	C0600-098-3500-S	2.773	70.43			54.15	9.48
C0600-098-3750-M					3.750	95.25	2.838	72.09	1.993	50.62			60.5	10.590	C0600-098-3750-S	2.969	75.41			50.40	8.82
C0600-098-4000-M					4.000	101.60	3.024	76.81	2.112	53.64			56.5	9.890	C0600-098-4000-S	3.164	80.37			47.06	8.24
D12300					1.594	40.50	0.358	9.10	0.271	6.88			9.9	1.730	D22300	0.358	9.09			8.23	1.44
D12310					2.441	62.00	0.508	12.90	0.369	9.38			6.3	1.100	D22310	0.508	12.90			5.23	0.92
D12320	0.679	17.25	0.049	1.25	3.701	94.00	0.728	18.50	0.517	13.13	12.19	54.23	4.1	0.720	D22320	0.728	18.49	10.16	45.19	3.42	0.60
D12330					5.512	140.00	1.024	26.00	0.714	18.13			2.7	0.480	D22330	1.024	26.01			2.28	0.40
D12340					8.071	205.00	1.469	37.30	1.009	25.63			1.8	0.320	D22340	1.4					

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D12530	0.693	17.60	0.063	1.60	4.331	110.00	1.228	31.20	0.913	23.20	23.81	105.91	7.4	1.300	D22530	1.228	31.19	19.85	88.29	6.18	1.08
D12540					6.496	165.00	1.756	44.60	1.291	32.80			5.0	0.880	D22540	1.756	44.6			4.19	0.73
D12700					1.181	30.00	0.492	12.50	0.433	11.00			65.0	11.380	D22700	0.492	12.5			54.13	9.48
D12710					1.772	45.00	0.697	17.70	0.591	15.00			41.3	7.240	D22710	0.697	17.7			34.44	6.03
D12720	0.709	18.00	0.079	2.00	2.677	68.00	1.004	25.50	0.827	21.00	44.53	198.09	26.8	4.690	D22720	1.004	25.5	37.12	165.11	22.31	3.91
D12730					3.858	98.00	1.413	35.90	1.142	29.00			18.2	3.190	D22730	1.413	35.89			15.17	2.66
D12740					5.709	145.00	2.024	51.40	1.614	41.00			12.3	2.160	D22740	2.024	51.41			10.27	1.80
C0720-055-0620-M					0.620	15.75	0.320	8.13	0.241	6.12			32.5	5.690	C0720-055-0620-S	0.366	9.3			27.07	4.74
C0720-055-0750-M					0.750	19.05	0.326	8.28	0.221	5.61			23.0	4.030	C0720-055-0750-S	0.391	9.93			19.16	3.36
C0720-055-0880-M					0.880	22.35	0.393	9.98	0.238	6.05			20.0	3.500	C0720-055-0880-S	0.467	11.86			16.66	2.92
C0720-055-1000-M					1.000	25.40	0.473	12.01	0.248	6.30			18.5	3.240	C0720-055-1000-S	0.554	14.07			15.41	2.70
C0720-055-1250-M					1.250	31.75	0.600	15.24	0.281	7.14			15.0	2.630	C0720-055-1250-S	0.7	17.78			12.50	2.19
C0720-055-1500-M	0.720	18.29	0.055	1.40	1.500	38.10	0.652	16.56	0.333	8.46	9.75	43.37	11.5	2.010	C0720-055-1500-S	0.782	19.86	6.88	30.6	9.58	1.67
C0720-055-1750-M					1.750	44.45	0.690	17.53	0.388	9.86			9.2	1.611	C0720-055-1750-S	0.853	21.67			7.66	1.34
C0720-055-2000-M					2.000	50.80	0.853	21.67	0.411	10.44			8.5	1.488	C0720-055-2000-S	1.029	26.14			7.08	1.24
C0720-055-2250-M					2.250	57.15	0.992	25.20	0.482	12.24			7.8	1.366	C0720-055-2250-S	1.191	30.25			6.50	1.14
C0720-055-2500-M					2.500	63.50	1.095	27.81	0.519	13.18			6.9	1.208	C0720-055-2500-S	1.303	33.1			5.75	1.01
C0720-055-2750-M					2.750	69.85	1.198	30.43	0.556	14.12			6.3	1.103	C0720-055-2750-S	1.439	36.55			5.25	0.92
C0720-055-3000-M					3.000	76.20	1.302	33.07	0.593	15.06			5.7	0.998	C0720-055-3000-S	1.551	39.4			4.75	0.83
C0720-059-0750-M					0.750	19.05	0.389	9.88	0.285	7.24			32.9	5.760	C0720-059-0750-S	0.445	11.3			27.41	4.80
C0720-059-0880-M					0.880	22.35	0.444	11.28	0.308	7.82			27.3	4.780	C0720-059-0880-S	0.512	13			22.74	3.98
C0720-059-1000-M					1.000	25.40	0.496	12.60	0.328	8.33			23.5	4.120	C0720-059-1000-S	0.572	14.53			19.58	3.43
C0720-059-1250-M					1.250	31.75	0.603	15.32	0.371	9.42			18.3	3.200	C0720-059-1250-S	0.701	17.81			15.24	2.67
C0720-059-1500-M	0.720	18.29	0.059	1.50	1.500	38.10	0.710	18.03	0.414	10.52	11.88	52.84	15.0	2.630	C0720-059-1500-S	0.83	21.08	8.37	37.23	12.50	2.19
C0720-059-1750-M					1.750	44.45	0.817	20.75	0.457	11.61			12.7	2.220	C0720-059-1750-S	0.959	24.36			10.58	1.85
C0720-059-2000-M					2.000	50.80	0.924	23.47	0.499	12.67			11.0	1.926	C0720-059-2000-S	1.087	27.61			9.16	1.60
C0720-059-2250-M					2.250	57.15	1.031	26.19	0.542	13.77			9.7	1.698	C0720-059-2250-S	1.214	30.84			8.08	1.41
C0720-059-2500-M					2.500	63.50	1.138	28.91	0.585	14.86			8.7	1.523	C0720-059-2500-S	1.345	34.16			7.25	1.27
C0720-063-0620-M					0.620	15.75	0.351	8.92	0.286	7.26			52.0	9.110	C0720-063-0620-S	0.391	9.93			43.32	7.59
C0720-063-0750-M					0.750	19.05	0.325	8.26	0.284	7.21			33.0	5.780	C0720-063-0750-S	0.389	9.88			27.49	4.81
C0720-063-0880-M					0.880	22.35	0.380	9.65	0.313	7.95			28.0	4.900	C0720-063-0880-S	0.455	11.56			23.32	4.08
C0720-063-1000-M					1.000	25.40	0.420	10.67	0.344	8.74			24.0	4.200	C0720-063-1000-S	0.504	12.8			19.99	3.50
C0720-063-1250-M					1.250	31.75	0.490	12.45	0.409	10.39			18.5	3.240	C0720-063-1250-S	0.606	15.39			15.41	2.70
C0720-063-1500-M	0.720	18.29	0.063	1.60	1.500	38.10	0.570	14.48	0.475	12.07	14.00	62.28	15.0	2.630	C0720-063-1500-S	0.706	17.93	9.92	44.12	12.50	2.19
C0720-063-1750-M					1.750	44.45	0.680	17.27	0.529	13.44			13.0	2.280	C0720-063-1750-S	0.834	21.18			10.83	1.90
C0720-063-2000-M					2.000	50.80	0.730	18.54	0.602	15.29			11.0	1.926	C0720-063-2000-S	0.917	23.29			9.16	1.60
C0720-063-2250-M					2.250	57.15	1.093	27.76	0.605	15.37			12.1	2.120	C0720-063-2250-S	1.265	32.13			10.08	1.77
C0720-063-2500-M					2.500	63.50	1.204	30.58	0.654	16.61			10.8	1.891	C0720-063-2500-S	1.397	35.48			9.00	1.58
C0720-063-2750-M					2.750	69.85	1.321	33.55	0.702	17.83			9.8	1.716	C0720-063-2750-S	1.534	38.96			8.16	1.43
C0720-063-3000-M					3.000	76.20	1.427	36.25	0.751	19.08			8.9	1.558	C0720-063-3000-S	1.661	42.19			7.41	1.30
C0720-065-0750-M					0.750	19.05	0.411	10.44	0.324	8.23			46.0	8.060	C0720-065-0750-S	0.466	11.84			38.32	6.71
C0720-065-0880-M					0.880	22.35	0.470	11.94	0.351	8.92			38.0	6.650	C0720-065-0880-S	0.536	13.61			31.65	5.54
C0720-065-1000-M					1.000	25.40	0.525	13.34	0.376	9.55			32.8	5.740	C0720-065-1000-S	0.602	15.29			27.32	4.78
C0720-065-1250-M					1.250	31.75	0.638	16.21	0.428	10.87			25.4	4.450	C0720-065-1250-S	0.736	18.69			21.16	3.71
C0720-065-1500-M					1.500	38.10	0.752	19.10	0.480	12.19			20.8	3.640	C0720-065-1500-S	0.872	22.15			17.33	3.03
C0720-065-1750-M	0.720	18.29	0.065	1.65	1.750	44.45	0.865	21.97	0.532	13.51	15.57	69.26	17.6	3.080	C0720-065-1750-S	1.008	25.6	10.88	48.39	14.66	2.57
C0720-065-2000-M					2.000	50.80	0.978	24.84	0.584	14.83			15.2	2.660	C0720-065-2000-S	1.14	28.96			12.66	2.22
C0720-065-2250-M					2.250	57.15	1.092	27.74	0.636	16.15			13.4	2.350	C0720-065-2250-S	1.275	32.39			11.16	1.96
C0720-065-2500-M					2.500	63.50	1.205	30.61	0.689	17.50			12.0	2.100	C0720-065-2500-S	1.411	35.84			10.00	1.75
C0720-065-2750-M					2.750	69.85	1.319	33.50	0.714	18.14			10.9	1.909	C0720-065-2750-S	1.551	39.4			9.08	1.59
C0720-065-3000-M					3.000	76.20	1.432	36.37	0.793	20.14			9.9	1.733	C0720-065-3000-S	1.68	42.67			8.25	1.44
C0720-067-0750-M					0.750	19.05	0.390	9.91	0.279	7.09			50.0	8.760	C0720-067-0750-S	0.464	11.79			41.65	7.30
C0720-067-0880-M					0.880	22.35	0.430	10.92	0.315	8.00			40.0	7.000	C0720-067-0880-S	0.523	13.28			33.32	5.83
C0720-067-1000-M					1.000	25.40	0.450	11.43	0.354	8.99			33.0	5.780	C0720-067-1000-S	0.567	14.4			27.49	4.81
C0720-067-1250-M					1.250	31.75	0.580	14.73	0.403	10.24			27.0	4.730	C0720-067-1250-S	0.721	18.31			22.49	3.94
C0720-067-1500-M					1.500	38.10	0.680	17.27	0.464	11.79			22.0	3.850	C0720-067-1500-S	0.851	21.62			18.33	3.21
C0720-067-1750-M	0.720	18.29	0.067	1.70	1.750	44.45	0.750	19.05	0.538	13.67	18.00	80.07	18.0	3.150	C0720-067-1750-S	0.956	24.28	11.9	52.93	14.99	2.62
C0720-067-2000-M					2.000	50.80	0.850	21.59	0.603	15.32			15.5	2.710	C0720-067-2000-S	1.078	27.38			12.91	2.26
C0720-067-2250-M					2.250	57.15	1.042	26.47	0.669	16.99			14.9	2.610	C0720-067-2250-S	1.291	32.79			12.41	2.17
C0720-067-2500-M					2.500	63.50	1.147	29.13	0.724	18.39			13.3	2.330	C0720-067-2500-S	1.426	36.22			11.08	1.94
C0720-067-3000-M					3.000	76.20	1.364	34.65	0.835	21.21			11.0	1.926	C0720-067-3000-S	1.701	43.21			9	

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0720-072-0880-M					0.880	22.35	0.443	11.25	0.365	9.27			48.0	8.410	C0720-072-0880-S	0.515	13.08			39.98	7.01
C0720-072-1000-M					1.000	25.40	0.500	12.70	0.397	10.08			42.0	7.350	C0720-072-1000-S	0.583	14.81			34.99	6.12
C0720-072-1250-M					1.250	31.75	0.650	16.51	0.448	11.38			35.0	6.130	C0720-072-1250-S	0.749	19.02			29.16	5.11
C0720-072-1500-M					1.500	38.10	0.700	17.78	0.554	14.07			26.0	4.550	C0720-072-1500-S	0.826	20.98			21.66	3.79
C0720-072-1750-M					1.750	44.45	0.795	20.19	0.628	15.95			22.0	3.850	C0720-072-1750-S	0.953	24.21			18.33	3.21
C0720-072-2000-M					2.000	50.80	0.950	24.13	0.677	17.20			20.0	3.500	C0720-072-2000-S	1.124	28.55			16.66	2.92
C0720-072-2250-M			0.072	1.83	2.250	57.15	1.151	29.24	0.751	19.08	21.00	93.41	19.1	3.340	C0720-072-2250-S	1.332	33.83	14.6	64.94	15.91	2.78
C0720-072-2500-M					2.500	63.50	1.275	32.39	0.815	20.70			17.1	2.990	C0720-072-2500-S	1.475	37.47			14.24	2.49
C0720-072-2750-M					2.750	69.85	1.386	35.20	0.878	22.30			15.4	2.700	C0720-072-2750-S	1.612	40.94			12.83	2.25
C0720-072-3000-M					3.000	76.20	1.511	38.38	0.942	23.93			14.1	2.470	C0720-072-3000-S	1.757	44.63			11.75	2.06
C0720-072-3250-M					3.250	82.55	1.629	41.38	1.005	25.53			13.0	2.280	C0720-072-3250-S	1.902	48.31			10.83	1.90
C0720-072-3500-M					3.500	88.90	1.749	44.42	1.069	27.15			12.0	2.100	C0720-072-3500-S	2.04	51.82			10.00	1.75
C0720-072-4000-M					4.000	101.60	2.015	51.18	1.182	30.02			10.6	1.856	C0720-072-4000-S	2.347	59.61			8.83	1.55
C0720-081-0750-M					0.750	19.05	0.472	11.99	0.429	10.90			103.5	18.120	C0720-081-0750-S	0.518	13.16			86.22	15.09
C0720-081-0880-M					0.880	22.35	0.541	13.74	0.470	11.94			84.7	14.830	C0720-081-0880-S	0.597	15.16			70.56	12.35
C0720-081-1000-M					1.000	25.40	0.604	15.34	0.508	12.90			72.6	12.710	C0720-081-1000-S	0.67	17.02			60.48	10.59
C0720-081-1250-M					1.250	31.75	0.736	18.69	0.587	14.91			55.9	9.790	C0720-081-1250-S	0.821	20.85			46.56	8.16
C0720-081-1500-M					1.500	38.10	0.868	22.05	0.665	16.89			45.5	7.970	C0720-081-1500-S	0.973	24.71			37.90	6.64
C0720-081-1750-M					1.750	44.45	1.000	25.40	0.744	18.90			38.3	6.710	C0720-081-1750-S	1.124	28.55			31.90	5.59
C0720-081-2000-M			0.081	2.06	2.000	50.80	1.132	28.75	0.823	20.90	28.72	127.75	33.1	5.800	C0720-081-2000-S	1.275	32.39	19.98	88.87	27.57	4.83
C0720-081-2250-M					2.250	57.15	1.264	32.11	0.902	22.91			29.1	5.100	C0720-081-2250-S	1.426	36.22			24.24	4.25
C0720-081-2500-M					2.500	63.50	1.396	35.46	0.981	24.92			26.0	4.550	C0720-081-2500-S	1.578	40.08			21.66	3.79
C0720-081-2750-M					2.750	69.85	1.528	38.81	1.060	26.92			23.5	4.120	C0720-081-2750-S	1.729	43.92			19.58	3.43
C0720-081-3000-M					3.000	76.20	1.660	42.16	1.139	28.93			21.4	3.750	C0720-081-3000-S	1.879	47.73			17.83	3.12
C0720-081-3500-M					3.500	88.90	1.924	48.87	1.297	32.94			18.2	3.190	C0720-081-3500-S	2.182	55.42			15.16	2.66
C0720-081-4000-M					4.000	101.60	2.186	55.52	1.455	36.96			15.9	2.780	C0720-081-4000-S	2.492	63.3			13.24	2.32
C0720-085-0750-M					0.750	19.05	0.508	12.90	0.434	11.02			139.0	24.340	C0720-085-0750-S	0.551	14			115.79	20.28
C0720-085-0880-M					0.880	22.35	0.584	14.83	0.474	12.04			113.5	19.870	C0720-085-0880-S	0.637	16.18			94.55	16.55
C0720-085-1000-M					1.000	25.40	0.654	16.61	0.512	13.00			97.1	17.000	C0720-085-1000-S	0.716	18.19			80.88	14.16
C0720-085-1250-M					1.250	31.75	0.800	20.32	0.589	14.96			74.6	13.060	C0720-085-1250-S	0.88	22.35			62.14	10.88
C0720-085-1500-M					1.500	38.10	0.946	24.03	0.666	16.92			60.6	10.610	C0720-085-1500-S	1.044	26.52			50.48	8.84
C0720-085-1750-M					1.750	44.45	1.092	27.74	0.743	18.87			51.0	8.930	C0720-085-1750-S	1.208	30.68			42.48	7.44
C0720-085-2000-M	0.720	18.29	0.085	2.16	2.000	50.80	1.237	31.42	0.821	20.85	33.59	149.41	44.0	7.700	C0720-085-2000-S	1.372	34.85	23.01	102.35	36.65	6.41
C0720-085-2250-M					2.250	57.15	1.383	35.13	0.898	22.81			38.7	6.780	C0720-085-2250-S	1.536	39.01			32.24	5.65
C0720-085-2500-M					2.500	63.50	1.529	38.84	0.975	24.77			34.6	6.060	C0720-085-2500-S	1.702	43.23			28.82	5.05
C0720-085-2750-M					2.750	69.85	1.675	42.55	1.052	26.72			31.2	5.460	C0720-085-2750-S	1.865	47.37			25.99	4.55
C0720-085-3000-M					3.000	76.20	1.821	46.25	1.130	28.70			28.5	4.990	C0720-085-3000-S	2.031	51.59			23.74	4.16
C0720-085-3500-M					3.500	88.90	2.112	53.64	1.284	32.61			24.2	4.240	C0720-085-3500-S	2.358	59.89			20.16	3.53
C0720-085-4000-M					4.000	101.60	2.404	61.06	1.439	36.55			21.0	3.680	C0720-085-4000-S	2.685	68.2			17.49	3.07
C0720-096-0750-M					0.750	19.05	0.560	14.22	0.490	12.45			238.6	41.780	C0720-096-0750-S	0.592	15.04			198.75	34.80
C0720-096-0880-M					0.880	22.35	0.646	16.41	0.537	13.64			193.6	33.900	C0720-096-0880-S	0.685	17.4			161.27	28.24
C0720-096-1000-M					1.000	25.40	0.725	18.42	0.581	14.76			164.8	28.860	C0720-096-1000-S	0.771	19.58			137.28	24.04
C0720-096-1250-M					1.250	31.75	0.890	22.61	0.671	17.04			125.9	22.050	C0720-096-1250-S	0.95	24.13			104.87	18.37
C0720-096-1500-M					1.500	38.10	1.055	26.80	0.762	19.35			101.8	17.830	C0720-096-1500-S	1.129	28.68			84.80	14.85
C0720-096-1750-M					1.750	44.45	1.220	30.99	0.852	21.64			85.5	14.970	C0720-096-1750-S	1.308	33.22			71.22	12.47
C0720-096-2000-M			0.096	2.44	2.000	50.80	1.385	35.18	0.943	23.95	45.33	201.63	73.7	12.910	C0720-096-2000-S	1.487	37.77	31.48	140.02	61.39	10.75
C0720-096-2250-M					2.250	57.15	1.549	39.34	1.034	26.26			64.7	11.330	C0720-096-2250-S	1.666	42.32			53.90	9.44
C0720-096-2500-M					2.500	63.50	1.714	43.54	1.124	28.55			57.7	10.100	C0720-096-2500-S	1.845	46.86			48.06	8.41
C0720-096-2750-M					2.750	69.85	1.879	47.73	1.215	30.86			52.1	9.120	C0720-096-2750-S	2.025	51.44			43.40	7.60
C0720-096-3000-M					3.000	76.20	2.044	51.92	1.305	33.15			47.4	8.300	C0720-096-3000-S	2.203	55.96			39.48	6.91
C0720-096-3500-M					3.500	88.90	2.374	60.30	1.486	37.74			40.3	7.060	C0720-096-3500-S	2.562	65.07			33.57	5.88
C0720-096-4000-M					4.000	101.60	2.704	68.68	1.668	42.37			35.0	6.130	C0720-096-4000-S	2.92	74.17			29.16	5.11
C0720-105-0750-M					0.750	19.05	0.585	14.86	0.537	13.64			354.7	62.110	C0720-105-0750-S	0.615	15.62			295.47	51.74
C0720-105-0880-M					0.880	22.35	0.675	17.15	0.591	15.01			285.9	50.060	C0720-105-0880-S	0.712	18.08			238.15	41.70
C0720-105-1000-M					1.000	25.40	0.758	19.25	0.640	16.26			242.5	42.460	C0720-105-1000-S	0.802	20.37			202.00	35.37
C0720-105-1250-M					1.250	31.75	0.932	23.67	0.743	18.87			184.2	32.250	C0720-105-1250-S	0.99	25.15			153.44	26.86
C0720-105-1500-M					1.500	38.10	1.105	28.07	0.846	21.49			148.5	26.000	C0720-105-1500-S	1.177	29.9			123.70	21.66
C0720-105-1750-M			0.105	2.67	1.750	44.45	1.279	32.49	0.949	24.10	58.60	260.65	124.4	21.780	C0720-105-1750-S	1.364	34.65	39.97	177.79	103.63	18.14
C0720-105-2000-M					2.000	50.80	1.452	36.88	1.052	26.72			107.0	18.740	C0720-105-2000-S	1.552	39.42			89.13	15.61
C0720-105-2250-M					2.250	57.15	1.626	41.30	1.155	29.34			93.9	16.440	C0720-105-2250-S	1.739	44.17			78.22	13.69
C0720-105-2500-M					2.500	63.50	1.799	45.69	1.258	31.95											

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0720-105-4000-M	0.720	18.29	0.105	2.67	4.000	101.60	2.840	72.14	1.876	47.65	58.60	260.65	50.5	8.840	C0720-105-4000-S	3.05	77.47	39.97	177.79	42.07	7.36
C0720-112-0750-M					0.750	19.05	0.602	15.29	0.576	14.63			468.8	82.090	C0720-112-0750-S	0.627	15.93			390.51	68.38
C0720-112-0880-M					0.880	22.35	0.695	17.65	0.636	16.15			375.9	65.820	C0720-112-0880-S	0.726	18.44			313.12	54.83
C0720-112-1000-M					1.000	25.40	0.781	19.84	0.691	17.55			317.7	55.630	C0720-112-1000-S	0.818	20.78			264.64	46.34
C0720-112-1250-M					1.250	31.75	0.960	24.38	0.805	20.45			240.3	42.080	C0720-112-1250-S	1.009	25.63			200.17	35.05
C0720-112-1500-M					1.500	38.10	1.140	28.96	0.919	23.34			193.2	33.830	C0720-112-1500-S	1.201	30.51			160.94	28.18
C0720-112-1750-M					1.750	44.45	1.319	33.50	1.034	26.26			161.6	28.300	C0720-112-1750-S	1.392	35.36			134.61	23.57
C0720-112-2000-M	0.720	18.29	0.112	2.84	2.000	50.80	1.499	38.07	1.148	29.16	69.59	309.54	138.8	24.300	C0720-112-2000-S	1.583	40.21	48.18	214.3	115.62	20.24
C0720-112-2250-M					2.250	57.15	1.678	42.62	1.262	32.05			121.7	21.310	C0720-112-2250-S	1.775	45.09			101.38	17.75
C0720-112-2500-M					2.500	63.50	1.858	47.19	1.376	34.95			108.3	18.960	C0720-112-2500-S	1.966	49.94			90.21	15.79
C0720-112-2750-M					2.750	69.85	2.037	51.74	1.491	37.87			97.6	17.090	C0720-112-2750-S	2.157	54.79			81.30	14.24
C0720-112-3000-M					3.000	76.20	2.216	56.29	1.605	40.77			88.8	15.550	C0720-112-3000-S	2.349	59.66			73.97	12.95
C0720-112-3500-M					3.500	88.90	2.575	65.41	1.834	46.58			75.3	13.190	C0720-112-3500-S	2.732	69.39			62.72	10.99
C0720-112-4000-M					4.000	101.60	2.934	74.52	2.062	52.37			65.3	11.430	C0720-112-4000-S	3.114	79.1			54.39	9.52
D12990					1.083	27.50	0.575	14.60	0.541	13.75			158.5	27.750	D22990	0.575	14.61			131.99	23.12
D13000					1.614	41.00	0.807	20.50	0.738	18.75			100.8	17.650	D23000	0.807	20.5			83.95	14.70
D13010	0.728	18.50	0.098	2.50	2.402	61.00	1.154	29.30	1.033	26.25	82.01	364.81	65.5	11.470	D23010	1.154	29.31	68.37	304.11	54.56	9.55
D13020					3.465	88.00	1.618	41.10	1.427	36.25			44.4	7.780	D23020	1.618	41.1			37.01	6.48
D13030					5.118	130.00	2.319	58.90	2.018	51.25			30.0	5.250	D23030	2.319	58.9			24.97	4.37
D13280					1.083	27.50	0.701	17.80	0.693	17.60			424.4	74.330	D23280	0.701	17.81			353.55	61.92
D13290					1.575	40.00	0.980	24.90	0.945	24.00			270.5	47.370	D23290	0.98	24.89			225.31	39.46
D13300	0.756	19.20	0.126	3.20	2.323	59.00	1.394	35.40	1.323	33.60	162.03	720.79	175.2	30.690	D23300	1.394	35.41	135.14	601.1	145.97	25.56
D13310					3.287	83.50	1.929	49.00	1.827	46.40			118.7	20.790	D23310	1.929	49			98.89	17.32
D13320					4.724	120.00	2.732	69.40	2.583	65.60			80.6	14.120	D23320	2.732	69.39			67.16	11.76
D13230					1.071	27.20	0.646	16.40	0.606	15.40			200.5	35.110	D23230	0.646	16.41			167.00	29.25
D13240	0.787	20.00	0.110	2.80	1.555	39.50	0.886	22.50	0.827	21.00	85.32	379.52	127.7	22.360	D23240	0.886	22.5	71.15	316.48	106.35	18.63
D13250					2.528	64.20	1.374	34.90	1.268	32.20			73.9	12.940	D23250	1.374	34.9			61.55	10.78
D12550					1.890	48.00	0.488	12.40	0.346	8.80			13.6	2.380	D22550	0.488	12.4			11.32	1.98
D12560					2.894	73.50	0.693	17.60	0.472	12.00			8.7	1.520	D22560	0.693	17.6			7.23	1.27
D12570	0.850	21.60	0.063	1.60	4.331	110.00	1.004	25.50	0.661	16.80	19.07	84.83	5.7	0.990	D22570	1.004	25.5	15.9	70.72	4.71	0.82
D12580					6.496	165.00	1.417	36.00	0.913	23.20			3.8	0.670	D22580	1.417	35.99			3.19	0.56
D12590					9.449	240.00	2.039	51.80	1.291	32.80			2.6	0.450	D22590	2.039	51.79			2.14	0.37
C0850-068-0750-M					0.750	19.05	0.445	11.30	0.292	7.42			35.9	6.290	C0850-068-0750-S	0.445	11.3			29.90	5.24
C0850-068-0875-M					0.880	22.35	0.513	13.03	0.317	8.05			29.8	5.220	C0850-068-0875-S	0.513	13.03			24.82	4.35
C0850-068-1000-M					1.000	25.40	0.571	14.50	0.342	8.69			25.5	4.470	C0850-068-1000-S	0.571	14.5			21.24	3.72
C0850-068-1250-M					1.250	31.75	0.696	17.68	0.391	9.93			19.8	3.470	C0850-068-1250-S	0.696	17.68			16.49	2.89
C0850-068-1500-M					1.500	38.10	0.822	20.88	0.441	11.20			16.1	2.820	C0850-068-1500-S	0.822	20.88			13.41	2.35
C0850-068-1750-M	0.850	21.59	0.068	1.73	1.750	44.45	0.948	24.08	0.490	12.45	10.94	48.66	13.6	2.380	C0850-068-1750-S	0.948	24.08	9.11	40.52	11.33	1.98
C0850-068-2000-M					2.000	50.80	1.074	27.28	0.540	13.72			11.8	2.070	C0850-068-2000-S	1.074	27.28			9.83	1.72
C0850-068-2250-M					2.250	57.15	1.200	30.48	0.590	14.99			10.4	1.821	C0850-068-2250-S	1.2	30.48			8.66	1.52
C0850-068-2500-M					2.500	63.50	1.325	33.66	0.639	16.23			9.3	1.628	C0850-068-2500-S	1.325	33.66			7.75	1.36
C0850-068-3000-M					3.000	76.20	1.577	40.06	0.739	18.77			7.7	1.348	C0850-068-3000-S	1.577	40.06			6.41	1.12
C0850-068-3500-M					3.500	88.90	1.828	46.43	0.838	21.29			6.5	1.138	C0850-068-3500-S	1.828	46.43			5.41	0.95
C0850-068-4000-M					4.000	101.60	2.080	52.83	0.937	23.80			5.7	0.998	C0850-068-4000-S	2.08	52.83			4.75	0.83
C0850-074-0875-M					0.880	22.35	0.534	13.56	0.355	9.02			40.1	7.020	C0850-074-0875-S	0.534	13.56			33.40	5.85
C0850-074-1000-M					1.000	25.40	0.595	15.11	0.384	9.75			34.2	5.990	C0850-074-1000-S	0.595	15.11			28.49	4.99
C0850-074-1250-M					1.250	31.75	0.727	18.47	0.443	11.25			26.5	4.640	C0850-074-1250-S	0.727	18.47			22.07	3.87
C0850-074-1500-M	0.850	21.59	0.074	1.88	1.500	38.10	0.858	21.79	0.501	12.73	13.86	61.65	21.6	3.780	C0850-074-1500-S	0.858	21.79	11.55	51.37	17.99	3.15
C0850-074-2000-M					2.000	50.80	1.120	28.45	0.618	15.70			15.8	2.770	C0850-074-2000-S	1.12	28.45			13.16	2.31
C0850-074-2500-M					2.500	63.50	1.383	35.13	0.735	18.67			12.4	2.170	C0850-074-2500-S	1.383	35.13			10.33	1.81
C0850-074-3000-M					3.000	76.20	1.645	41.78	0.852	21.64			10.2	1.786	C0850-074-3000-S	1.645	41.78			8.50	1.49
C0850-074-3500-M					3.500	88.90	1.908	48.46	0.969	24.61			8.7	1.523	C0850-074-3500-S	1.908	48.46			7.25	1.27
C0850-081-0750-M					0.750	19.05	0.486	12.34	0.365	9.27			67.7	11.850	C0850-081-0750-S	0.486	12.34			56.39	9.87
C0850-081-0875-M					0.880	22.35	0.560	14.22	0.400	10.16			55.8	9.770	C0850-081-0875-S	0.56	14.22			46.48	8.14
C0850-081-1000-M					1.000	25.4															

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0850-085-0750-M					0.750	19.05	0.499	12.67	0.388	9.86			81.3	14.240	C0850-085-0750-S	0.499	12.67			67.72	11.86
C0850-085-0875-M					0.880	22.35	0.575	14.61	0.426	10.82			66.9	11.710	C0850-085-0875-S	0.575	14.61			55.73	9.75
C0850-085-1000-M					1.000	25.40	0.641	16.28	0.463	11.76			56.8	9.950	C0850-085-1000-S	0.641	16.28			47.31	8.29
C0850-085-1250-M					1.250	31.75	0.783	19.89	0.539	13.69			43.6	7.630	C0850-085-1250-S	0.783	19.89			36.32	6.36
C0850-085-1500-M					1.500	38.10	0.925	23.50	0.615	15.62			35.4	6.200	C0850-085-1500-S	0.925	23.5			29.49	5.16
C0850-085-1750-M					1.750	44.45	1.067	27.10	0.690	17.53			29.8	5.220	C0850-085-1750-S	1.067	27.1			24.82	4.35
C0850-085-2000-M			0.085	2.16	2.000	50.80	1.208	30.68	0.766	19.46	20.39	90.69	25.8	4.520	C0850-085-2000-S	1.208	30.68	16.98	75.53	21.49	3.77
C0850-085-2250-M					2.250	57.15	1.350	34.29	0.841	21.36			22.7	3.980	C0850-085-2250-S	1.35	34.29			18.91	3.32
C0850-085-2500-M					2.500	63.50	1.492	37.90	0.917	23.29			20.2	3.540	C0850-085-2500-S	1.492	37.9			16.83	2.95
C0850-085-2750-M					2.750	69.85	1.634	41.50	0.992	25.20			18.3	3.200	C0850-085-2750-S	1.634	41.5			15.24	2.67
C0850-085-3000-M					3.000	76.20	1.776	45.11	1.068	27.13			16.7	2.920	C0850-085-3000-S	1.776	45.11			13.91	2.43
C0850-085-3250-M					3.250	82.55	1.918	48.72	1.144	29.06			15.3	2.680	C0850-085-3250-S	1.918	48.72			12.74	2.23
C0850-085-3500-M					3.500	88.90	2.059	52.30	1.219	30.96			14.2	2.490	C0850-085-3500-S	2.059	52.3			11.83	2.07
C0850-085-4000-M					4.000	101.60	2.343	59.51	1.370	34.80			12.3	2.150	C0850-085-4000-S	2.343	59.51			10.25	1.79
C0850-092-0880-M					0.880	22.35	0.598	15.19	0.471	11.96			90.1	15.780	C0850-092-0880-S	0.598	15.19			75.05	13.14
C0850-092-1000-M					1.000	25.40	0.670	17.02	0.513	13.03			76.9	13.470	C0850-092-1000-S	0.67	17.02			64.06	11.22
C0850-092-1250-M					1.250	31.75	0.818	20.78	0.600	15.24			58.8	10.300	C0850-092-1250-S	0.818	20.78			48.98	8.58
C0850-092-1500-M	0.850	21.59			1.500	38.10	0.967	24.56	0.686	17.42			47.7	8.350	C0850-092-1500-S	0.967	24.56			39.73	6.96
C0850-092-1750-M					1.750	44.45	1.116	28.35	0.773	19.63			40.0	7.000	C0850-092-1750-S	1.116	28.35			33.32	5.83
C0850-092-2000-M			0.092	2.34	2.000	50.80	1.265	32.13	0.860	21.84	25.39	112.93	34.5	6.040	C0850-092-2000-S	1.265	32.13	21.15	94.08	28.74	5.03
C0850-092-2250-M					2.250	57.15	1.413	35.89	0.947	24.05			30.4	5.320	C0850-092-2250-S	1.413	35.89			25.32	4.43
C0850-092-2500-M					2.500	63.50	1.562	39.67	1.033	26.24			27.1	4.750	C0850-092-2500-S	1.562	39.67			22.57	3.96
C0850-092-2750-M					2.750	69.85	1.711	43.46	1.120	28.45			24.4	4.270	C0850-092-2750-S	1.711	43.46			20.33	3.56
C0850-092-3000-M					3.000	76.20	1.860	47.24	1.207	30.66			22.3	3.910	C0850-092-3000-S	1.86	47.24			18.58	3.26
C0850-092-3500-M					3.500	88.90	2.157	54.79	1.380	35.05			18.9	3.310	C0850-092-3500-S	2.157	54.79			15.74	2.76
C0850-098-1000-M					1.000	25.40	0.694	17.63	0.555	14.10			98.7	17.280	C0850-098-1000-S	0.694	17.63			82.22	14.39
C0850-098-1250-M					1.250	31.75	0.848	21.54	0.651	16.54			75.3	13.190	C0850-098-1250-S	0.848	21.54			62.72	10.99
C0850-098-1500-M					1.500	38.10	1.003	25.48	0.747	18.97			60.8	10.650	C0850-098-1500-S	1.003	25.48			50.65	8.87
C0850-098-1750-M					1.750	44.45	1.158	29.41	0.843	21.41			51.1	8.950	C0850-098-1750-S	1.158	29.41			42.57	7.46
C0850-098-2000-M			0.098	2.49	2.000	50.80	1.312	33.32	0.940	23.88	30.24	134.51	44.0	7.700	C0850-098-2000-S	1.312	33.32	25.19	112.05	36.65	6.41
C0850-098-2250-M					2.250	57.15	1.467	37.26	1.036	26.31			38.6	6.760	C0850-098-2250-S	1.467	37.26			32.15	5.63
C0850-098-2500-M					2.500	63.50	1.622	41.20	1.132	28.75			34.4	6.020	C0850-098-2500-S	1.622	41.2			28.66	5.01
C0850-098-2750-M					2.750	69.85	1.776	45.11	1.229	31.22			31.1	5.450	C0850-098-2750-S	1.776	45.11			25.91	4.54
C0850-098-3000-M					3.000	76.20	1.931	49.05	1.325	33.66			28.3	4.960	C0850-098-3000-S	1.931	49.05			23.57	4.13
C0850-098-3500-M					3.500	88.90	2.240	56.90	1.517	38.53			24.0	4.200	C0850-098-3500-S	2.24	56.9			19.99	3.50
D12750					1.614	41.00	0.535	13.60	0.433	11.00			33.3	5.830	D22750	0.535	13.59			27.73	4.86
D12760					2.441	62.00	0.756	19.20	0.591	15.00			21.2	3.710	D22760	0.756	19.2			17.65	3.09
D12770	0.866	22.00	0.079	2.00	3.701	94.00	1.087	27.60	0.827	21.00	35.71	158.87	13.6	2.390	D22770	1.087	27.61	29.77	132.42	11.37	1.99
D12780					5.315	135.00	1.528	38.80	1.142	29.00			9.3	1.630	D22780	1.528	38.81			7.75	1.36
D12790					7.874	200.00	2.189	55.60	1.614	41.00			6.3	1.100	D22790	2.189	55.6			5.23	0.92
D13040					1.417	36.00	0.610	15.50	0.541	13.75			81.2	14.220	D23040	0.61	15.49			67.64	11.85
D13050					2.126	54.00	0.862	21.90	0.738	18.75			51.7	9.050	D23050	0.862	21.89			43.05	7.54
D13060	0.886	22.50	0.098	2.50	3.209	81.50	1.240	31.50	1.033	26.25	65.70	292.24	33.4	5.850	D23060	1.24	31.5	54.77	243.62	27.83	4.87
D13070					4.724	120.00	1.744	44.30	1.427	36.25			22.7	3.980	D23070	1.744	44.3			18.93	3.32
D13080					6.890	175.00	2.504	63.60	2.018	51.25			15.4	2.690	D23080	2.504	63.6			12.79	2.24
D13330					1.319	33.50	0.728	18.50	0.693	17.60			217.8	38.150	D23330	0.728	18.49			181.46	31.78
D13340					1.949	49.50	1.020	25.90	0.945	24.00			138.3	24.220	D23340	1.02	25.91			115.20	20.18
D13350	0.913	23.20	0.126	3.20	2.913	74.00	1.461	37.10	1.323	33.60	129.63	576.63	89.6	15.690	D23350	1.461	37.11	108.11	480.87	74.63	13.07
D13360					4.134	105.00	2.031	51.60	1.827	46.40			61.0	10.690	D23360	2.031	51.59			50.85	8.90
D13370					6.102	155.00	2.882	73.20	2.583	65.60			41.2	7.210	D23370	2.882	73.2			34.29	6.01
D12920			0.087	2.20	1.543	39.20	0.551	14.00	0.476	12.10	37.26	165.73	37.5	6.570	D22920	0.551	14	31.06	138.15	31.25	5.47
D12930					2.327	59.10	0.768	19.50	0.650	16.50			23.9	4.190	D22930	0.768	19.51			19.93	3.49
D13530					1.319	33.50	0.874	22.20	0.866	22.00			531.4	93.070	D23530	0.874	22.2			442.68	77.53
D13540					1.929	49.00	1.220	31.00	1.181	30.00			338.2	59.230	D23540	1.22	30.99			281.72	49.34
D13550	0.945	24.00	0.157	4.00	2.835	72.00	1.740	44.20	1.654	42.00	240.29	1068.92	218.9	38.340	D23550	1.74	44.2	200.41	891.42	182.36	31.94
D13560					4.134	105.00	2.429	61.70	2.283	58.00			149.0	26.090	D23560	2.429	61.7			124.10	21.73
D13570					5.906	150.00	3.453	87.70	3.228	82.00			100.2	17.550	D23570	3.453	87.71			83.48	14.62
C0975-074-0750-M					0.750	19.05	0.445	11.30	0.295	7.49			39.8	6.970	C0975-074-0750-S	0.445	11.3			33.15	5.81
C0975-074-0875-M					0.880	22.35	0.512	13.00	0.317	8.05			33.0	5.780	C0975-074-0875-S	0.512	13			27.49	4.81
C0975-074-1000-M					1.000	25.40	0.568	14.43	0.340	8.64			28.1	4.920	C0975-074-1000-S	0.568	14.43			23.41	4.10
C0975-074-1250-M	0.975	24.77	0.074	1.88	1.250	31.75	0.691	17.55	0.386	9.80	12.15	54.04	21.7	3.800	C0975-074-1250-S	0.691	17.55	10.12	45.01	18.08	3.17
C0975-074-1500-M					1.500	38.10	0.814	20.68	0.431	10.95			17.7	3.100	C0975-074-15						

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0975-074-3000-M					3.000	76.20	1.554	39.47	0.704	17.88			8.4	1.471	C0975-074-3000-S	1.554	39.47			7.00	1.23
C0975-074-3500-M			0.074	1.88	3.500	88.90	1.800	45.72	0.795	20.19	12.15	54.04	7.1	1.243	C0975-074-3500-S	1.8	45.72	10.12	45.01	5.91	1.04
C0975-074-4000-M					4.000	101.60	2.047	51.99	0.886	22.50			6.2	1.086	C0975-074-4000-S	2.047	51.99			5.16	0.90
C0975-085-0875-M					0.880	22.35	0.547	13.89	0.381	9.68			53.8	9.420	C0975-085-0875-S	0.547	13.89			44.82	7.85
C0975-085-1000-M					1.000	25.40	0.608	15.44	0.411	10.44			45.7	8.000	C0975-085-1000-S	0.608	15.44			38.07	6.66
C0975-085-1250-M					1.250	31.75	0.740	18.80	0.470	11.94			35.1	6.150	C0975-085-1250-S	0.74	18.8			29.24	5.12
C0975-085-1500-M			0.085	2.16	1.500	38.10	0.872	22.15	0.530	13.46	17.90	79.62	28.5	4.990	C0975-085-1500-S	0.872	22.15	14.91	66.32	23.74	4.16
C0975-085-2000-M					2.000	50.80	1.136	28.85	0.649	16.48			20.7	3.630	C0975-085-2000-S	1.136	28.85			17.24	3.02
C0975-085-2500-M					2.500	63.50	1.400	35.56	0.769	19.53			16.3	2.850	C0975-085-2500-S	1.4	35.56			13.58	2.37
C0975-085-3000-M					3.000	76.20	1.664	42.27	0.888	22.56			13.4	2.350	C0975-085-3000-S	1.664	42.27			11.16	1.96
C0975-085-3500-M					3.500	88.90	1.928	48.97	1.007	25.58			11.4	1.996	C0975-085-3500-S	1.928	48.97			9.50	1.66
C0975-092-0875-M					0.880	22.35	0.570	14.48	0.421	10.69			72.0	12.610	C0975-092-0875-S	0.57	14.48			59.98	10.50
C0975-092-1000-M					1.000	25.40	0.634	16.10	0.456	11.58			61.0	10.680	C0975-092-1000-S	0.634	16.1			50.81	8.90
C0975-092-1250-M					1.250	31.75	0.772	19.61	0.525	13.34			46.7	8.180	C0975-092-1250-S	0.772	19.61			38.90	6.81
C0975-092-1500-M					1.500	38.10	0.910	23.11	0.594	15.09			37.8	6.620	C0975-092-1500-S	0.91	23.11			31.49	5.51
C0975-092-2000-M			0.092	2.34	2.000	50.80	1.186	30.12	0.732	18.59	22.31	99.23	27.4	4.800	C0975-092-2000-S	1.186	30.12	18.58	82.64	22.82	4.00
C0975-092-2500-M					2.500	63.50	1.461	37.11	0.871	22.12			21.5	3.770	C0975-092-2500-S	1.461	37.11			17.91	3.14
C0975-092-3000-M					3.000	76.20	1.737	44.12	1.009	25.63			17.7	3.100	C0975-092-3000-S	1.737	44.12			14.74	2.58
C0975-092-3500-M					3.500	88.90	2.013	51.13	1.147	29.13			15.0	2.630	C0975-092-3500-S	2.013	51.13			12.50	2.19
C0975-092-4000-M					4.000	101.60	2.289	58.14	1.286	32.66			13.0	2.280	C0975-092-4000-S	2.289	58.14			10.83	1.90
C0975-096-0875-M					0.880	22.35	0.583	14.81	0.444	11.28			84.6	14.810	C0975-096-0875-S	0.583	14.81			70.47	12.34
C0975-096-1000-M					1.000	25.40	0.649	16.48	0.481	12.22			71.5	12.520	C0975-096-1000-S	0.649	16.48			59.56	10.43
C0975-096-1250-M					1.250	31.75	0.790	20.07	0.556	14.12			54.6	9.560	C0975-096-1250-S	0.79	20.07			45.48	7.96
C0975-096-1500-M					1.500	38.10	0.931	23.65	0.631	16.03			44.2	7.740	C0975-096-1500-S	0.931	23.65			36.82	6.45
C0975-096-2000-M			0.096	2.44	2.000	50.80	1.214	30.84	0.780	19.81	25.11	111.69	31.9	5.590	C0975-096-2000-S	1.214	30.84	20.92	93.05	26.57	4.66
C0975-096-2500-M					2.500	63.50	1.497	38.02	0.930	23.62			25.0	4.380	C0975-096-2500-S	1.497	38.02			20.83	3.65
C0975-096-3000-M					3.000	76.20	1.779	45.19	1.079	27.41			20.6	3.610	C0975-096-3000-S	1.779	45.19			17.16	3.01
C0975-096-3500-M					3.500	88.90	2.062	52.37	1.228	31.19			17.5	3.060	C0975-096-3500-S	2.062	52.37			14.58	2.55
C0975-105-0880-M					0.880	22.35	0.610	15.49	0.496	12.60			119.1	20.850	C0975-105-0880-S	0.61	15.49			99.21	17.37
C0975-105-1000-M					1.000	25.40	0.681	17.30	0.538	13.67			101.0	17.690	C0975-105-1000-S	0.681	17.3			84.13	14.74
C0975-105-1250-M					1.250	31.75	0.830	21.08	0.626	15.90			76.7	13.430	C0975-105-1250-S	0.83	21.08			63.89	11.19
C0975-105-1500-M	0.975	24.77			1.500	38.10	0.979	24.87	0.713	18.11			61.8	10.820	C0975-105-1500-S	0.979	24.87			51.48	9.01
C0975-105-1750-M					1.750	44.45	1.129	28.68	0.800	20.32			51.8	9.070	C0975-105-1750-S	1.129	28.68			43.15	7.56
C0975-105-2000-M					2.000	50.80	1.278	32.46	0.888	22.56			44.6	7.810	C0975-105-2000-S	1.278	32.46			37.15	6.51
C0975-105-2250-M			0.105	2.67	2.250	57.15	1.427	36.25	0.975	24.77	32.19	143.18	39.1	6.850	C0975-105-2250-S	1.427	36.25	26.81	119.25	32.57	5.71
C0975-105-2500-M					2.500	63.50	1.576	40.03	1.062	26.97			34.8	6.090	C0975-105-2500-S	1.576	40.03			28.99	5.07
C0975-105-2750-M					2.750	69.85	1.725	43.82	1.149	29.18			31.4	5.500	C0975-105-2750-S	1.725	43.82			26.16	4.58
C0975-105-3000-M					3.000	76.20	1.874	47.60	1.237	31.42			28.6	5.010	C0975-105-3000-S	1.874	47.6			23.82	4.17
C0975-105-3500-M					3.500	88.90	2.173	55.19	1.411	35.84			24.3	4.260	C0975-105-3500-S	2.173	55.19			20.24	3.55
C0975-105-4000-M					4.000	101.60	2.471	62.76	1.586	40.28			21.1	3.700	C0975-105-4000-S	2.471	62.76			17.58	3.08
C0975-112-0880-M					0.880	22.35	0.631	16.03	0.535	13.59			154.7	27.090	C0975-112-0880-S	0.631	16.03			128.87	22.57
C0975-112-1000-M					1.000	25.40	0.706	17.93	0.581	14.76			130.8	22.900	C0975-112-1000-S	0.706	17.93			108.96	19.08
C0975-112-1250-M					1.250	31.75	0.861	21.87	0.679	17.25			98.9	17.320	C0975-112-1250-S	0.861	21.87			82.38	14.43
C0975-112-1500-M			0.112	2.84	1.500	38.10	1.016	25.81	0.776	19.71	38.48	171.16	79.5	13.920	C0975-112-1500-S	1.016	25.81	32.05	142.56	66.22	11.60
C0975-112-2000-M					2.000	50.80	1.327	33.71	0.970	24.64			57.1	10.000	C0975-112-2000-S	1.327	33.71			47.56	8.33
C0975-112-2500-M					2.500	63.50	1.637	41.58	1.164	29.57			44.6	7.810	C0975-112-2500-S	1.637	41.58			37.15	6.51
C0975-112-3000-M					3.000	76.20	1.947	49.45	1.358	34.49			36.6	6.410	C0975-112-3000-S	1.947	49.45			30.49	5.34
C0975-112-3500-M					3.500	88.90	2.258	57.35	1.553	39.45			31.0	5.430	C0975-112-3500-S	2.258	57.35			25.82	4.52
C0975-125-0880-M					0.880	22.35	0.669	16.99	0.602	15.29			246.6	43.180	C0975-125-0880-S	0.669	16.99			205.42	35.97
C0975-125-1000-M					1.000	25.40	0.749	19.02	0.657	16.69			207.2	36.280	C0975-125-1000-S	0.749	19.02			172.60	30.22
C0975-125-1250-M					1.250	31.75	0.915	23.24	0.772	19.61			155.4	27.210	C0975-125-1250-S	0.915	23.24			129.45	22.67
C0975-125-1500-M					1.500	38.10	1.081	27.46	0.887	22.53			124.3	21.770	C0975-125-1500-S	1.081	27.46			103.54	18.13
C0975-125-1750-M					1.750	44.45	1.248	31.70	1.002	25.45			103.6	18.140	C0975-125-1750-S	1.248	31.7			86.30	15.11
C0975-125-2000-M			0.125	3.18	2.000	50.80	1.414	35.92	1.117	28.37	52.04	231.47	88.8	15.550	C0975-125-2000-S	1.414	35.92	43.35	192.82	73.97	12.95
C0975-125-2250-M					2.250	57.15	1.580	40.13	1.232	31.29			77.7	13.610	C0975-125-2250-S	1.58	40.13			64.72	11.34
C0975-125-2500-M					2.500	63.50	1.746	44.35	1.347	34.21			69.1	12.100	C0975-125-2500-S	1.746	44.35			57.56	10.08
C0975-125-2750-M					2.750	69.85	1.913	48.59	1.462	37.13			62.2	10.890	C0975-125-2750-S	1.913	48.59			51.81	9.07
C0975-125-3000-M					3.000	76.20	2.079	52.81	1.577	40.06			56.5	9.890	C0975-125-3000-S	2.079	52.81			47.06	8.24
C0975-125-3500-M					3.500	88.90	2.411	61.24	1.807	45.90			47.8	8.370	C0975-125-3500-S	2.411	61.24			39.82	6.97
C0975-125-4000-M					4.000	101.60	2.744	69.70	2.037	51.74			41.4	7.250	C0975-125-4000-S	2.744	69.7			34.49	6.04

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C0975-135-2500-M					2.500	63.50	1.839	46.71	1.453	36.91			97.5	17.070	C0975-135-2500-S	1.839	46.71			81.22	14.22
C0975-135-3000-M			0.135	3.43	3.000	76.20	2.191	55.65	1.703	43.26	64.46	286.72	79.7	13.960	C0975-135-3000-S	2.191	55.65	53.7	238.86	66.39	11.63
C0975-135-3500-M					3.500	88.90	2.543	64.59	1.953	49.61			67.3	11.780	C0975-135-3500-S	2.543	64.59			56.06	9.81
C0975-135-4000-M					4.000	101.60	2.895	73.53	2.203	55.96			58.3	10.210	C0975-135-4000-S	2.895	73.53			48.56	8.50
C0975-148-1000-M					1.000	25.40	0.820	20.83	0.763	19.38			459.0	80.370	C0975-148-1000-S	0.82	20.83			382.35	66.95
C0975-148-1500-M					1.500	38.10	1.193	30.30	1.042	26.47			268.4	47.000	C0975-148-1500-S	1.193	30.3			223.58	39.15
C0975-148-2000-M					2.000	50.80	1.565	39.75	1.322	33.58			189.6	33.200	C0975-148-2000-S	1.565	39.75			157.94	27.66
C0975-148-2500-M			0.148	3.76	2.500	63.50	1.937	49.20	1.601	40.67	82.53	367.09	146.6	25.670	C0975-148-2500-S	1.937	49.2	68.75	305.8	122.12	21.38
C0975-148-3000-M	0.975	24.77			3.000	76.20	2.309	58.65	1.880	47.75			119.5	20.920	C0975-148-3000-S	2.309	58.65			99.54	17.43
C0975-148-3500-M					3.500	88.90	2.682	68.12	2.159	54.84			100.9	17.670	C0975-148-3500-S	2.682	68.12			84.05	14.72
C0975-148-4000-M					4.000	101.60	3.054	77.57	2.439	61.95			87.2	15.270	C0975-148-4000-S	3.054	77.57			72.64	12.72
C0975-162-1500-M					1.500	38.10	1.246	31.65	1.124	28.55			415.2	72.700	C0975-162-1500-S	1.246	31.65			345.86	60.56
C0975-162-2000-M					2.000	50.80	1.638	41.61	1.430	36.32			291.3	51.010	C0975-162-2000-S	1.638	41.61			242.65	42.49
C0975-162-2500-M			0.162	4.11	2.500	63.50	2.030	51.56	1.735	44.07	105.40	468.82	224.4	39.290	C0975-162-2500-S	2.03	51.56	87.8	390.53	186.93	32.73
C0975-162-3000-M					3.000	76.20	2.422	61.52	2.041	51.84			182.5	31.960	C0975-162-3000-S	2.422	61.52			152.02	26.62
C0975-162-3500-M					3.500	88.90	2.814	71.48	2.347	59.61			153.7	26.910	C0975-162-3500-S	2.814	71.48			128.03	22.42
C0975-162-4000-M					4.000	101.60	3.206	81.43	2.652	67.36			132.8	23.250	C0975-162-4000-S	3.206	81.43			110.62	19.37
D12800					2.283	58.00	0.591	15.00	0.433	11.00			17.0	2.980	D22800	0.591	15.01			14.17	2.48
D12810					3.484	88.50	0.843	21.40	0.591	15.00			10.8	1.900	D22810	0.843	21.41			9.04	1.58
D12820	1.063	27.00	0.079	2.00	5.315	135.00	1.220	31.00	0.827	21.00	28.66	127.49	7.0	1.230	D22820	1.22	30.99	23.89	106.26	5.85	1.02
D12830					7.677	195.00	1.724	43.80	1.142	29.00			4.7	0.830	D22830	1.724	43.79			3.95	0.69
D12840					11.417	290.00	2.480	63.00	1.614	41.00			3.3	0.570	D22840	2.48	62.99			2.71	0.47
D13090					1.929	49.00	0.661	16.80	0.541	13.75			41.6	7.290	D23090	0.661	16.79			34.67	6.07
D13100					2.933	74.50	0.945	24.00	0.738	18.75			26.5	4.640	D23100	0.945	24			22.07	3.87
D13110	1.083	27.50	0.098	2.50	4.528	115.00	1.370	34.80	1.033	26.25	52.47	233.40	17.1	3.000	D23110	1.37	34.8	43.74	194.56	14.27	2.50
D13120					6.496	165.00	1.937	49.20	1.427	36.25			11.6	2.040	D23120	1.937	49.2			9.70	1.70
D13130					9.449	240.00	2.787	70.80	2.018	51.25			7.9	1.380	D23130	2.787	70.79			6.56	1.15
C1100-085-0875-M					0.875	22.35	0.527	13.39	0.348	8.84			45.1	7.900	C1100-085-0875-S	0.527	13.39			37.57	6.58
C1100-085-1000-M					1.000	25.40	0.584	14.83	0.372	9.45			38.3	6.710	C1100-085-1000-S	0.584	14.83			31.90	5.59
C1100-085-1250-M					1.250	31.75	0.709	18.01	0.420	10.67			29.5	5.170	C1100-085-1250-S	0.709	18.01			24.57	4.31
C1100-085-1500-M					1.500	38.10	0.833	21.16	0.467	11.86			23.9	4.190	C1100-085-1500-S	0.833	21.16			19.91	3.49
C1100-085-2000-M					2.000	50.80	1.083	27.51	0.563	14.30			17.4	3.050	C1100-085-2000-S	1.083	27.51			14.49	2.54
C1100-085-2500-M	1.100	27.94	0.085	2.16	2.500	63.50	1.332	33.83	0.659	16.74	15.94	70.90	13.7	2.400	C1100-085-2500-S	1.332	33.83	13.28	59.07	11.41	2.00
C1100-085-3000-M					3.000	76.20	1.577	40.06	0.755	19.18			11.2	1.961	C1100-085-3000-S	1.577	40.06			9.33	1.63
C1100-085-3500-M					3.500	88.90	1.831	46.51	0.851	21.62			9.6	1.681	C1100-085-3500-S	1.831	46.51			8.00	1.40
C1100-085-4000-M					4.000	101.60	2.081	52.86	0.947	24.05			8.3	1.453	C1100-085-4000-S	2.081	52.86			6.91	1.21
C1100-085-4500-M					4.500	114.30	2.330	59.18	1.043	26.49			7.3	1.278	C1100-085-4500-S	2.33	59.18			6.08	1.06
C1100-085-5000-M					5.000	127.00	2.580	65.53	1.139	28.93			6.6	1.156	C1100-085-5000-S	2.58	65.53			5.50	0.96
C1100-096-0875-M					0.880	22.35	0.559	14.20	0.406	10.31			69.8	12.220	C1100-096-0875-S	0.559	14.2			58.14	10.18
C1100-096-1000-M					1.000	25.40	0.621	15.77	0.436	11.07			59.0	10.330	C1100-096-1000-S	0.621	15.77			49.15	8.60
C1100-096-1250-M					1.250	31.75	0.753	19.13	0.497	12.62			45.1	7.900	C1100-096-1250-S	0.753	19.13			37.57	6.58
C1100-096-1500-M					1.500	38.10	0.886	22.50	0.558	14.17			36.5	6.390	C1100-096-1500-S	0.886	22.5			30.40	5.32
C1100-096-2000-M	1.100	27.94	0.096	2.44	2.000	50.80	1.151	29.24	0.679	17.25	22.39	99.59	26.4	4.620	C1100-096-2000-S	1.151	29.24	18.65	82.96	21.99	3.85
C1100-096-2500-M					2.500	63.50	1.417	35.99	0.800	20.32			20.7	3.630	C1100-096-2500-S	1.417	35.99			17.24	3.02
C1100-096-3000-M					3.000	76.20	1.682	42.72	0.922	23.42			17.0	2.980	C1100-096-3000-S	1.682	42.72			14.16	2.48
C1100-096-3500-M					3.500	88.90	1.947	49.45	1.043	26.49			14.4	2.520	C1100-096-3500-S	1.947	49.45			12.00	2.10
C1100-096-4000-M					4.000	101.60	2.212	56.18	1.165	29.59			12.5	2.190	C1100-096-4000-S	2.212	56.18			10.41	1.82
C1100-096-4500-M					4.500	114.30	2.478	62.94	1.286	32.66			11.1	1.944	C1100-096-4500-S	2.478	62.94			9.25	1.62
C1100-105-0875-M					0.880	22.35	0.586	14.88	0.453	11.51			97.7	17.110	C1100-105-0875-S	0.586	14.88			81.38	14.25
C1100-105-1000-M					1.000	25.40	0.651	16.54	0.489	12.42			82.2	14.390	C1100-105-1000-S	0.651	16.54			68.47	11.99
C1100-105-1250-M					1.250	31.75	0.790	20.07	0.561	14.25			62.5	10.940	C1100-105-1250-S	0.79	20.07			52.06	9.11
C1100-105-1500-M	1.100	27.94	0.105	2.67	1.500	38.10	0.930	23.62	0.632	16.05	28.73	127.79	50.4	8.830	C1100-105-1500-S	0.93	23.62	23.93	106.44	41.98	7.36
C1100-105-2000-M					2.000	50.80	1.208	30.68	0.776	19.71			36.3	6.360	C1100-105-2000-S	1.208	30.68			30.24	5.30
C1100-105-2500-M					2.500	63.50	1.487	37.77	0.919	23.34			28.4	4.970	C1100-105-2500-S	1.487	37.77			23.66	4.14

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C1100-112-3000-M					3.000	76.20	1.832	46.53	1.173	29.79			29.4	5.150	C1100-112-3000-S	1.832	46.53			24.49	4.29
C1100-112-3500-M			0.112	2.84	3.500	88.90	2.122	53.90	1.333	33.86	34.36	152.83	24.9	4.360	C1100-112-3500-S	2.122	53.9	28.62	127.3	20.74	3.63
C1100-112-4000-M					4.000	101.60	2.412	61.26	1.494	37.95			21.6	3.780	C1100-112-4000-S	2.412	61.26			17.99	3.15
C1100-112-4500-M					4.500	114.30	2.701	68.61	1.655	42.04			19.1	3.340	C1100-112-4500-S	2.701	68.61			15.91	2.78
C1100-125-0880-M					0.880	22.35	0.640	16.26	0.556	14.12			194.3	34.020	C1100-125-0880-S	0.64	16.26			161.85	28.34
C1100-125-1000-M					1.000	25.40	0.715	18.16	0.603	15.32			163.2	28.580	C1100-125-1000-S	0.715	18.16			135.95	23.81
C1100-125-1250-M					1.250	31.75	0.870	22.10	0.699	17.75			122.4	21.430	C1100-125-1250-S	0.87	22.1			101.96	17.85
C1100-125-1500-M					1.500	38.10	1.025	26.04	0.796	20.22			97.9	17.140	C1100-125-1500-S	1.025	26.04			81.55	14.28
C1100-125-1750-M					1.750	44.45	1.180	29.97	0.893	22.68			81.6	14.290	C1100-125-1750-S	1.18	29.97			67.97	11.90
C1100-125-2000-M			0.125	3.18	2.000	50.80	1.335	33.91	0.989	25.12	46.54	207.01	69.9	12.240	C1100-125-2000-S	1.335	33.91	38.77	172.45	58.23	10.20
C1100-125-2250-M					2.250	57.15	1.490	37.85	1.086	27.58			61.2	10.720	C1100-125-2250-S	1.49	37.85			50.98	8.93
C1100-125-2500-M					2.500	63.50	1.644	41.76	1.183	30.05			54.4	9.530	C1100-125-2500-S	1.644	41.76			45.32	7.94
C1100-125-3000-M	1.100	27.94			3.000	76.20	1.954	49.63	1.376	34.95			44.5	7.790	C1100-125-3000-S	1.954	49.63			37.07	6.49
C1100-125-3500-M					3.500	88.90	2.264	57.51	1.569	39.85			37.7	6.600	C1100-125-3500-S	2.264	57.51			31.40	5.50
C1100-125-4000-M					4.000	101.60	2.574	65.38	1.763	44.78			32.6	5.710	C1100-125-4000-S	2.574	65.38			27.16	4.76
C1100-125-4500-M					4.500	114.30	2.884	73.25	1.956	49.68			28.8	5.040	C1100-125-4500-S	2.884	73.25			23.99	4.20
C1100-135-1500-M					1.500	38.10	1.070	27.18	0.874	22.20			133.7	23.410	C1100-135-1500-S	1.07	27.18			111.37	19.50
C1100-135-2000-M					2.000	50.80	1.395	35.43	1.092	27.74			95.1	16.650	C1100-135-2000-S	1.395	35.43			79.22	13.87
C1100-135-2500-M					2.500	63.50	1.720	43.69	1.310	33.27			73.8	12.920	C1100-135-2500-S	1.72	43.69			61.48	10.76
C1100-135-3000-M			0.135	3.43	3.000	76.20	2.045	51.94	1.528	38.81	57.51	255.80	60.3	10.560	C1100-135-3000-S	2.045	51.94	47.91	213.1	50.23	8.80
C1100-135-3500-M					3.500	88.90	2.371	60.22	1.746	44.35			50.9	8.910	C1100-135-3500-S	2.371	60.22			42.40	7.42
C1100-135-4000-M					4.000	101.60	2.696	68.48	1.964	49.89			44.1	7.720	C1100-135-4000-S	2.696	68.48			36.74	6.43
C1100-135-4500-M					4.500	114.30	3.021	76.73	2.182	55.42			38.9	6.810	C1100-135-4500-S	3.021	76.73			32.40	5.67
C1100-135-5000-M					5.000	127.00	3.346	84.99	2.400	60.96			34.8	6.090	C1100-135-5000-S	3.346	84.99			28.99	5.07
D13380					1.673	42.50	0.752	19.10	0.693	17.60			110.9	19.420	D23380	0.752	19.1			92.37	16.18
D13390					2.500	63.50	1.035	26.30	0.945	24.00			70.6	12.360	D23390	1.035	26.29			58.79	10.30
D13400	1.110	28.20	0.126	3.20	3.720	94.50	1.461	37.10	1.323	33.60	103.61	460.91	45.8	8.020	D23400	1.461	37.11	86.41	384.35	38.15	6.68
D13410					5.315	135.00	2.031	51.60	1.827	46.40			31.1	5.450	D23410	2.031	51.59			25.92	4.54
D13420					7.874	200.00	2.882	73.20	2.583	65.60			21.0	3.680	D23420	2.882	73.2			17.50	3.07
D13580					1.614	41.00	0.902	22.90	0.866	22.00			272.1	47.660	D23580	0.902	22.91			226.69	39.70
D13590					2.382	60.50	1.268	32.20	1.181	30.00			173.0	30.300	D23590	1.268	32.21			144.12	25.24
D13600	1.142	29.00	0.157	4.00	3.524	89.50	1.811	46.00	1.654	42.00	191.57	852.20	112.0	19.610	D23600	1.811	46	159.77	710.66	93.27	16.34
D13610					5.118	130.00	2.539	64.50	2.283	58.00			76.2	13.340	D23610	2.539	64.49			63.45	11.11
D13620					7.283	185.00	3.626	92.10	3.228	82.00			51.5	9.020	D23620	3.626	92.1			42.90	7.51
D13260			0.110	2.80	1.850	47.00	0.705	17.90	0.606	15.40	58.20	258.90	50.7	8.880	D23260	0.705	17.91	48.54	215.91	42.24	7.40
D13270					2.783	70.70	0.980	24.90	0.827	21.00			32.3	5.650	D23270	0.98	24.89			26.87	4.71
D13780					1.614	41.00	1.087	27.60	1.083	27.50			666.4	16.700	D23780	1.087	27.61			555.08	97.21
D13790	1.181	30.00			2.362	60.00	1.516	38.50	1.476	37.50			422.8	74.040	D23790	1.516	38.51			352.17	61.68
D13800			0.197	5.00	3.445	87.50	2.161	54.90	2.067	52.50	352.72	1569.06	273.3	47.860	D23800	2.161	54.89	294.18	1308.51	227.64	39.87
D13810					4.921	125.00	3.020	76.70	2.854	72.50			186.1	32.590	D23810	3.02	76.71			155.01	27.15
D13820					7.087	180.00	4.291	109.00	4.035	102.50			125.4	21.970	D23820	4.291	108.99			104.50	18.30
C1225-085-0875-M					0.880	22.35	0.487	12.37	0.330	8.38			36.6	6.410	C1225-085-0875-S	0.487	12.37			30.49	5.34
C1225-085-1000-M					1.000	25.40	0.537	13.64	0.351	8.92			31.1	5.450	C1225-085-1000-S	0.537	13.64			25.91	4.54
C1225-085-1500-M					1.500	38.10	0.759	19.28	0.434	11.02			19.4	3.400	C1225-085-1500-S	0.759	19.28			16.16	2.83
C1225-085-2000-M					2.000	50.80	0.980	24.89	0.518	13.16			14.1	2.470	C1225-085-2000-S	0.98	24.89			11.75	2.06
C1225-085-2500-M			0.085	2.16	2.500	63.50	1.201	30.51	0.601	15.27	14.40	64.05	11.1	1.944	C1225-085-2500-S	1.201	30.51	12	53.38	9.25	1.62
C1225-085-3000-M					3.000	76.20	1.423	36.14	0.684	17.37			9.1	1.593	C1225-085-3000-S	1.423	36.14			7.58	1.33
C1225-085-3500-M					3.500	88.90	1.644	41.76	0.768	19.51			7.8	1.366	C1225-085-3500-S	1.644	41.76			6.50	1.14
C1225-085-4000-M					4.000	101.60	1.865	47.37	0.851	21.62			6.7	1.173	C1225-085-4000-S	1.865	47.37			5.58	0.98
C1225-085-4500-M					4.500	114.30	2.087	53.01	0.934	23.72			6.0	1.051	C1225-085-4500-S	2.087	53.01			5.00	0.88
C1225-085-5000-M					5.000	127.00	2.308	58.62	1.018	25.86			5.3	0.928	C1225-085-5000-S	2.308	58.62			4.41	0.77
C1225-096-0875-M					0.880	22.35	0.541	13.74	0.377	9.58			59.6	10.440	C1225-096-0875-S	0.541	13.74			49.65	8.70
C1225-096-1000-M	1.225	31.12			1.000	25.40	0.599	15.21	0.402	10.21			50.4	8.830	C1225-096-1000-S	0.599	15.21			41.98	7.36
C1225-096-1250-M					1.250	31.75	0.725	18.42	0.452	11.48			38.5	6.740	C1225-096-1250-S	0.725	18.42			32.07	5.61
C1225-096-1500-M					1.500</																

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C1225-096-5000-M			0.096	2.44	5.000	127.00	2.615	66.42	1.202	30.53	20.20	89.85	8.5	1.488	C1225-096-5000-S	2.615	66.42	16.83	74.86	7.08	1.24
C1225-105-0875-M					0.880	22.35	0.566	14.38	0.421	10.69			82.5	14.450	C1225-105-0875-S	0.566	14.38			68.72	12.04
C1225-105-1000-M					1.000	25.40	0.627	15.93	0.450	11.43			69.5	12.170	C1225-105-1000-S	0.627	15.93			57.89	10.14
C1225-105-1250-M					1.250	31.75	0.759	19.28	0.510	12.95			52.8	9.250	C1225-105-1250-S	0.759	19.28			43.98	7.71
C1225-105-1500-M					1.500	38.10	0.891	22.63	0.569	14.45			42.5	7.440	C1225-105-1500-S	0.891	22.63			35.40	6.20
C1225-105-2000-M					2.000	50.80	1.154	29.31	0.688	17.48			30.7	5.380	C1225-105-2000-S	1.154	29.31			25.57	4.48
C1225-105-2500-M			0.105	2.67	2.500	63.50	1.418	36.02	0.807	20.50	25.93	115.34	24.0	4.200	C1225-105-2500-S	1.418	36.02	21.6	96.08	19.99	3.50
C1225-105-3000-M					3.000	76.20	1.682	42.72	0.926	23.52			19.7	3.450	C1225-105-3000-S	1.682	42.72			16.41	2.87
C1225-105-3500-M					3.500	88.90	1.946	49.43	1.045	26.54			16.7	2.920	C1225-105-3500-S	1.946	49.43			13.91	2.43
C1225-105-4000-M					4.000	101.60	2.209	56.11	1.164	29.57			14.5	2.540	C1225-105-4000-S	2.209	56.11			12.08	2.12
C1225-105-4500-M					4.500	114.30	2.473	62.81	1.283	32.59			12.8	2.240	C1225-105-4500-S	2.473	62.81			10.66	1.87
C1225-105-5000-M					5.000	127.00	2.737	69.52	1.402	35.61			11.5	2.010	C1225-105-5000-S	2.737	69.52			9.58	1.67
C1225-112-0875-M					0.880	22.35	0.585	14.86	0.455	11.56			105.1	18.400	C1225-112-0875-S	0.585	14.86			87.55	15.33
C1225-112-1000-M					1.000	25.40	0.648	16.46	0.488	12.40			88.2	15.440	C1225-112-1000-S	0.648	16.46			73.47	12.86
C1225-112-1250-M					1.250	31.75	0.785	19.94	0.556	14.12			66.7	11.680	C1225-112-1250-S	0.785	19.94			55.56	9.73
C1225-112-1500-M					1.500	38.10	0.921	23.39	0.623	15.82			53.6	9.390	C1225-112-1500-S	0.921	23.39			44.65	7.82
C1225-112-2000-M			0.112	2.84	2.000	50.80	1.195	30.35	0.757	19.23	31.03	138.02	38.5	6.740	C1225-112-2000-S	1.195	30.35	25.85	114.98	32.07	5.61
C1225-112-2500-M					2.500	63.50	1.468	37.29	0.891	22.63			30.1	5.270	C1225-112-2500-S	1.468	37.29			25.07	4.39
C1225-112-3000-M					3.000	76.20	1.741	44.22	1.026	26.06			24.6	4.310	C1225-112-3000-S	1.741	44.22			20.49	3.59
C1225-112-3500-M					3.500	88.90	2.014	51.16	1.160	29.46			20.9	3.660	C1225-112-3500-S	2.014	51.16			17.41	3.05
C1225-112-4000-M					4.000	101.60	2.288	58.12	1.294	32.87			18.1	3.170	C1225-112-4000-S	2.288	58.12			15.08	2.64
C1225-125-0875-M					0.880	22.35	0.619	15.72	0.517	13.13			161.3	28.240	C1225-125-0875-S	0.619	15.72			134.36	23.52
C1225-125-1000-M					1.000	25.40	0.687	17.45	0.558	14.17			134.4	23.530	C1225-125-1000-S	0.687	17.45			111.96	19.60
C1225-125-1250-M					1.250	31.75	0.833	21.16	0.639	16.23			100.8	17.650	C1225-125-1250-S	0.833	21.16			83.97	14.70
C1225-125-1500-M					1.500	38.10	0.978	24.84	0.721	18.31			80.6	14.110	C1225-125-1500-S	0.978	24.84			67.14	11.75
C1225-125-1750-M					1.750	44.45	1.124	28.55	0.803	20.40			67.2	11.770	C1225-125-1750-S	1.124	28.55			55.98	9.80
C1225-125-2000-M					2.000	50.80	1.270	32.26	0.885	22.48			57.6	10.090	C1225-125-2000-S	1.27	32.26			47.98	8.40
C1225-125-2250-M			0.125	3.18	2.250	57.15	1.415	35.94	0.966	24.54	42.07	187.13	50.4	8.830	C1225-125-2250-S	1.415	35.94	35.04	155.86	41.98	7.36
C1225-125-2500-M					2.500	63.50	1.561	39.65	1.048	26.62			44.8	7.840	C1225-125-2500-S	1.561	39.65			37.32	6.53
C1225-125-2750-M					2.750	69.85	1.707	43.36	1.130	28.70			40.3	7.060	C1225-125-2750-S	1.707	43.36			33.57	5.88
C1225-125-3000-M					3.000	76.20	1.852	47.04	1.212	30.78			36.7	6.430	C1225-125-3000-S	1.852	47.04			30.57	5.36
C1225-125-3500-M					3.500	88.90	2.144	54.46	1.375	34.93			31.0	5.430	C1225-125-3500-S	2.144	54.46			25.82	4.52
C1225-125-4000-M	1.225	31.12			4.000	101.60	2.435	61.85	1.539	39.09			26.9	4.710	C1225-125-4000-S	2.435	61.85			22.41	3.92
C1225-125-4500-M					4.500	114.30	2.726	69.24	1.702	43.23			23.7	4.150	C1225-125-4500-S	2.726	69.24			19.74	3.46
C1225-125-5000-M					5.000	127.00	3.018	76.66	1.865	47.37			21.2	3.710	C1225-125-5000-S	3.018	76.66			17.66	3.09
C1225-135-0880-M					0.880	22.35	0.643	16.33	0.565	14.35			219.2	38.380	C1225-135-0880-S	0.643	16.33			182.59	31.97
C1225-135-1000-M					1.000	25.40	0.716	18.19	0.609	15.47			183.1	32.060	C1225-135-1000-S	0.716	18.19			152.52	26.71
C1225-135-1250-M					1.250	31.75	0.869	22.07	0.702	17.83			136.4	23.880	C1225-135-1250-S	0.869	22.07			113.62	19.89
C1225-135-1500-M			0.135	3.43	1.500	38.10	1.021	25.93	0.795	20.19	52.03	231.43	108.7	19.030	C1225-135-1500-S	1.021	25.93	43.34	192.78	90.55	15.85
C1225-135-2000-M					2.000	50.80	1.327	33.71	0.982	24.94			77.3	13.540	C1225-135-2000-S	1.327	33.71			64.39	11.28
C1225-135-2500-M					2.500	63.50	1.632	41.45	1.168	29.67			60.0	10.510	C1225-135-2500-S	1.632	41.45			49.98	8.75
C1225-135-3000-M					3.000	76.20	1.938	49.23	1.354	34.39			49.0	8.580	C1225-135-3000-S	1.938	49.23			40.82	7.15
C1225-135-3500-M					3.500	88.90	2.243	56.97	1.540	39.12			41.4	7.250	C1225-135-3500-S	2.243	56.97			34.49	6.04
C1225-148-0880-M					0.880	22.35	0.674	17.12	0.621	15.77			325.0	56.910	C1225-148-0880-S	0.674	17.12			270.73	47.41
C1225-148-1000-M					1.000	25.40	0.751	19.08	0.673	17.09			269.6	47.210	C1225-148-1000-S	0.751	19.08			224.58	39.33
C1225-148-1250-M					1.250	31.75	0.913	23.19	0.781	19.84			198.9	34.830	C1225-148-1250-S	0.913	23.19			165.68	29.01
C1225-148-1500-M					1.500	38.10	1.075	27.31	0.888	22.56			157.6	27.600	C1225-148-1500-S	1.075	27.31			131.28	22.99
C1225-148-2000-M					2.000	50.80	1.398	35.51	1.104	28.04			111.4	19.510	C1225-148-2000-S	1.398	35.51			92.80	16.25
C1225-148-2500-M			0.148	3.76	2.500	63.50	1.722	43.74	1.319	33.50	67.00	298.02	86.1	15.080	C1225-148-2500-S	1.722	43.74	55.81	248.24	71.72	12.56
C1225-148-3000-M					3.000	76.20	2.045	51.94	1.534	38.96			70.2	12.290	C1225-148-3000-S	2.045	51.94			58.48	10.24
C1225-148-3500-M					3.500	88.90	2.369	60.17	1.749	44.42			59.2	10.370	C1225-148-3500-S	2.369	60.17			49.31	8.64
C1225-148-4000-M					4.000	101.60	2.692	68.38	1.965	49.91			51.2	8.970	C1225-148-4000-S	2.692	68.38			42.65	7.47
C1225-148-4500-M					4.500	114.30	3.016	76.61	2.180	55.37			45.1	7.900	C1225-148-4500-S	3.016	76.61			37.57	6.58
C1225-148-5000-M					5.000	127.00	3.339	84.81	2.395	60.83			40.3								

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C1225-177-2000-M					2.000	50.80	1.555	39.50	1.325	33.66			245.8	43.040
C1225-177-2500-M					2.500	63.50	1.920	48.77	1.594	40.49			188.5	33.010
C1225-177-3000-M					3.000	76.20	2.285	58.04	1.862	47.29			152.9	26.770
C1225-177-3500-M			0.177	4.50	3.500	88.90	2.650	67.31	2.130	54.10	109.36	486.43	128.6	22.520
C1225-177-4000-M					4.000	101.60	3.014	76.56	2.398	60.91			110.9	19.420
C1225-177-4500-M					4.500	114.30	3.379	85.83	2.666	67.72			97.6	17.090
C1225-177-5000-M					5.000	127.00	3.744	95.10	2.934	74.52			87.1	15.250
C1225-192-1500-M					1.500	38.10	1.236	31.39	1.139	28.93			516.1	90.370
C1225-192-2000-M					2.000	50.80	1.618	41.10	1.435	36.45			356.4	62.410
C1225-192-2500-M					2.500	63.50	2.000	50.80	1.730	43.94			272.2	47.660
C1225-192-3000-M	1.225	31.12	0.192	4.88	3.000	76.20	2.382	60.50	2.025	51.44	136.13	605.51	220.2	38.560
C1225-192-3500-M					3.500	88.90	2.764	70.21	2.321	58.95			184.8	32.360
C1225-192-4000-M					4.000	101.60	3.145	79.88	2.616	66.45			159.3	27.890
C1225-192-4500-M					4.500	114.30	3.527	89.59	2.912	73.96			139.9	24.500
C1225-192-5000-M					5.000	127.00	3.909	99.29	3.207	81.46			124.8	21.850
C1225-207-2000-M					2.000	50.80	1.669	42.39	1.543	39.19			504.8	88.390
C1225-207-2500-M					2.500	63.50	2.065	52.45	1.867	47.42			383.8	67.200
C1225-207-3000-M					3.000	76.20	2.461	62.51	2.190	55.63			309.6	54.210
C1225-207-3500-M			0.207	5.26	3.500	88.90	2.857	72.57	2.514	63.86	166.93	742.50	259.4	45.420
C1225-207-4000-M					4.000	101.60	3.252	82.60	2.837	72.06			223.2	39.080
C1225-207-4500-M					4.500	114.30	3.648	92.66	3.161	80.29			195.9	34.300
C1225-207-5000-M					5.000	127.00	4.044	102.72	3.484	88.49			174.6	30.570
D13140					2.815	71.50	0.760	19.30	0.541	13.75			19.9	3.480
D13150					4.331	110.00	1.098	27.90	0.738	18.75			12.7	2.220
D13160	1.358	34.50	0.098	2.50	6.693	170.00	1.614	41.00	1.033	26.25	41.00	182.40	8.2	1.430
D13170					9.646	245.00	2.287	58.10	1.427	36.25			5.5	0.970
D13180					14.173	360.00	3.303	83.90	2.018	51.25			3.8	0.660
D13430					2.303	58.50	0.780	19.80	0.693	17.60			53.2	9.310
D13440					3.484	88.50	1.079	27.40	0.945	24.00			33.8	5.920
D13450	1.386	35.20	0.126	3.20	5.315	135.00	1.528	38.80	1.323	33.60	81.13	360.88	21.8	3.820
D13460					7.480	190.00	2.130	54.10	1.827	46.40			14.9	2.610
D13470					11.024	280.00	3.031	77.00	2.583	65.60			10.0	1.760
D13630					2.106	53.50	0.945	24.00	0.866	22.00			129.9	22.750
D13640					3.130	79.50	1.311	33.30	1.181	30.00			82.3	14.420
D13650	1.417	36.00	0.157	4.00	4.724	120.00	1.858	47.20	1.654	42.00	149.69	665.87	53.4	9.350
D13660					6.693	170.00	2.591	65.80	2.283	58.00			36.3	6.350
D13670					9.843	250.00	3.685	93.60	3.228	82.00			24.6	4.300
D13830					2.008	51.00	1.130	28.70	1.083	27.50			316.4	55.410
D13840					2.953	75.00	1.583	40.20	1.476	37.50			201.6	35.300
D13850	1.457	37.00	0.197	5.00	4.331	110.00	2.264	57.50	2.067	52.50	275.57	1225.83	130.5	22.850
D13860					6.299	160.00	3.169	80.50	2.854	72.50			88.4	15.490
D13870					9.055	230.00	4.528	115.00	4.035	102.50			59.9	10.490
C1460-112-1500-M					1.500	38.10	0.864	21.95	0.531	13.49			41.3	7.230
C1460-112-2000-M					2.000	50.80	1.115	28.32	0.629	15.98			29.6	5.180
C1460-112-2500-M			0.112	2.84	2.500	63.50	1.366	34.70	0.727	18.47	26.23	116.67	23.1	4.050
C1460-112-3000-M					3.000	76.20	1.617	41.07	0.825	20.96			19.0	3.330
C1460-112-3500-M					3.500	88.90	1.868	47.45	0.924	23.47			16.1	2.820
C1460-112-4000-M					4.000	101.60	2.119	53.82	1.022	25.96			13.9	2.430
C1460-125-1500-M					1.500	38.10	0.913	23.19	0.616	15.65			60.7	10.630
C1460-125-2000-M					2.000	50.80	1.179	29.95	0.738	18.75			43.4	7.600
C1460-125-2500-M			0.125	3.18	2.500	63.50	1.444	36.68	0.859	21.82	35.61	158.39	33.7	5.900
C1460-125-3000-M					3.000	76.20	1.709	43.41	0.981	24.92			27.6	4.830
C1460-125-3500-M	1.460	37.08			3.500	88.90	1.975	50.17	1.102	27.99			23.3	4.080
C1460-125-4000-M					4.000	101.60	2.240	56.90	1.224	31.09			20.2	3.540
C1460-135-1500-M					1.500	38.10	0.951	24.16	0.682	17.32			80.3	14.060
C1460-135-2000-M					2.000	50.80	1.228	31.19	0.823	20.90			57.1	10.000
C1460-135-2500-M			0.135	3.43	2.500	63.50	1.505	38.23	0.963	24.46	44.09	196.11	44.3	7.760
C1460-135-3000-M					3.000	76.20	1.782	45.26	1.103	28.02			36.2	6.340
C1460-135-3500-M					3.500	88.90	2.059	52.30	1.243	31.57			30.6	5.360
C1460-135-4000-M					4.000	101.60	2.336	59.33	1.393	35.38			26.5	4.640
C1460-148-1500-M					1.500	38.10	1.000	25.40	0.768	19.51			113.7	19.910
C1460-148-2000-M			0.148	3.76	2.000	50.80	1.292	32.82	0.933	23.70	56.86	252.91	80.3	14.060
C1460-148-2500-M					2.500	63.50	1.585	40.26	1.098	27.89			62.1	10.870
C1460-148-3000-M					3.000	76.20	1.877	47.68	1.263	32.08			50.6	8.860
C1225-177-2000-S					1.555	39.5							204.75	35.85
C1225-177-2500-S					1.92	48.77							157.02	27.50
C1225-177-3000-S					2.285	58.04							127.37	22.30
C1225-177-3500-S					2.65	67.31	91.1	405.21					107.12	18.76
C1225-177-4000-S					3.014	76.56							92.38	16.18
C1225-177-4500-S					3.379	85.83							81.30	14.24
C1225-177-5000-S					3.744	95.1							72.55	12.70
C1225-192-1500-S					1.236	31.39							429.91	75.28
C1225-192-2000-S					1.618	41.1							296.88	51.99
C1225-192-2500-S					2	50.8							226.74	39.70
C1225-192-3000-S					2.382	60.5	113.4	504.4					183.43	32.12
C1225-192-3500-S					2.764	70.21							153.94	26.96
C1225-192-4000-S					3.145	79.88							132.70	23.23
C1225-192-4500-S					3.527	89.59							116.54	20.41
C1225-192-5000-S					3.909	99.29							103.96	18.20
C1225-207-2000-S					1.669	42.39							420.50	73.63
C1225-207-2500-S					2.065	52.45							319.71	55.98
C1225-207-3000-S					2.461	62.51							257.90	45.16
C1225-207-3500-S					2.857	72.57	139.05	618.49					216.08	37.83
C1225-207-4000-S					3.252	82.6							185.93	32.55
C1225-207-4500-S					3.648	92.66							163.18	28.57
C1225-207-5000-S					4.044	102.72							145.44	25.46
D23140					0.76	19.3							16.55	2.90
D23150					1.098	27.89							10.56	1.85
D23160					1.614	41	34.18	152.03					6.80	1.19
D23170					2.287	58.09							4.61	0.81
D23180					3.303	83.9							3.14	0.55
D23430					0.78	19.81							44.28	7.76
D23440					1.079	27.41							28.16	4.93
D23450					1.528	38.81	67.66	300.95					18.17	3.18
D23460					2.13	54.1							12.41	2.17
D23470														

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
C1460-148-3500-M			0.148	3.76	3.500	88.90	2.169	55.09	1.428	36.27	56.86	252.91	42.7	7.480	C1460-148-3500-S	2.169	55.09	47.36	210.66	35.57	6.23
C1460-148-4000-M					4.000	101.60	2.462	62.53	1.593	40.46			37.0	6.480	C1460-148-4000-S	2.462	62.53			30.82	5.40
C1460-162-1500-M					1.500	38.10	1.051	26.70	0.857	21.77			162.4	28.440	C1460-162-1500-S	1.051	26.7			135.28	23.69
C1460-162-2000-M					2.000	50.80	1.360	34.54	1.049	26.64			114.0	19.960	C1460-162-2000-S	1.36	34.54			94.96	16.63
C1460-162-2500-M					2.500	63.50	1.669	42.39	1.241	31.52			87.8	15.370	C1460-162-2500-S	1.669	42.39			73.14	12.80
C1460-162-3000-M	1.460	37.08	0.162	4.11	3.000	76.20	1.978	50.24	1.433	36.40	72.94	324.44	71.4	12.500	C1460-162-3000-S	1.978	50.24	60.76	270.26	59.48	10.41
C1460-162-3500-M					3.500	88.90	2.287	58.09	1.625	41.28			60.1	10.520	C1460-162-3500-S	2.287	58.09			50.06	8.76
C1460-162-4000-M					4.000	101.60	2.596	65.94	1.817	46.15			52.0	9.110	C1460-162-4000-S	2.596	65.94			43.32	7.59
C1460-162-4500-M					4.500	114.30	2.905	73.79	2.009	51.03			45.7	8.000	C1460-162-4500-S	2.905	73.79			38.07	6.66
C1460-162-5000-M					5.000	127.00	3.214	81.64	2.201	55.91			40.8	7.140	C1460-162-5000-S	3.214	81.64			33.99	5.95
C1687-135-1500-M					1.500	38.10	0.903	22.94	0.605	15.37			64.4	11.280	C1687-135-1500-S	0.903	22.94			53.65	9.40
C1687-135-2000-M					2.000	50.80	1.161	29.49	0.714	18.14			45.8	8.020	C1687-135-2000-S	1.161	29.49			38.15	6.68
C1687-135-2500-M					2.500	63.50	1.418	36.02	0.823	20.90			35.5	6.220	C1687-135-2500-S	1.418	36.02			29.57	5.18
C1687-135-3000-M			0.135	3.43	3.000	76.20	1.676	42.57	0.932	23.67	38.40	170.80	29.0	5.080	C1687-135-3000-S	1.676	42.57	31.99	142.29	24.16	4.23
C1687-135-3500-M					3.500	88.90	1.933	49.10	1.041	26.44			24.5	4.290	C1687-135-3500-S	1.933	49.1			20.41	3.57
C1687-135-4000-M					4.000	101.60	2.191	55.65	1.150	29.21			21.2	3.710	C1687-135-4000-S	2.191	55.65			17.66	3.09
C1687-135-4500-M					4.500	114.30	2.449	62.20	1.259	31.98			18.7	3.270	C1687-135-4500-S	2.449	62.2			15.58	2.72
C1687-135-5000-M					5.000	127.00	2.706	68.73	1.368	34.75			16.7	2.920	C1687-135-5000-S	2.706	68.73			13.91	2.43
C1687-148-1500-M					1.500	38.10	0.947	24.05	0.682	17.32			89.7	15.710	C1687-148-1500-S	0.947	24.05			74.72	13.09
C1687-148-2000-M					2.000	50.80	1.218	30.94	0.812	20.62			63.4	11.100	C1687-148-2000-S	1.218	30.94			52.81	9.25
C1687-148-2500-M					2.500	63.50	1.488	37.80	0.942	23.93			49.0	8.580	C1687-148-2500-S	1.488	37.8			40.82	7.15
C1687-148-3000-M			0.148	3.76	3.000	76.20	1.758	44.65	1.071	27.20	49.57	220.49	39.9	6.990	C1687-148-3000-S	1.758	44.65	41.29	183.66	33.24	5.82
C1687-148-3500-M					3.500	88.90	2.029	51.54	1.201	30.51			33.7	5.900	C1687-148-3500-S	2.029	51.54			28.07	4.91
C1687-148-4000-M					4.000	101.60	2.299	58.39	1.331	33.81			29.1	5.100	C1687-148-4000-S	2.299	58.39			24.24	4.25
C1687-148-4500-M					4.500	114.30	2.570	65.28	1.461	37.11			25.7	4.500	C1687-148-4500-S	2.57	65.28			21.41	3.75
C1687-148-5000-M					5.000	127.00	2.840	72.14	1.590	40.39			22.9	4.010	C1687-148-5000-S	2.84	72.14			19.08	3.34
C1687-162-1500-M					1.500	38.10	0.994	25.25	0.765	19.43			125.8	22.030	C1687-162-1500-S	0.994	25.25			104.79	18.35
C1687-162-2000-M					2.000	50.80	1.279	32.49	0.918	23.32			88.2	15.440	C1687-162-2000-S	1.279	32.49			73.47	12.86
C1687-162-2500-M					2.500	63.50	1.563	39.70	1.070	27.18			68.0	11.910	C1687-162-2500-S	1.563	39.7			56.64	9.92
C1687-162-3000-M	1.687	42.85	0.162	4.11	3.000	76.20	1.848	46.94	1.223	31.06	63.65	283.12	55.3	9.680	C1687-162-3000-S	1.848	46.94	53.02	235.83	46.06	8.06
C1687-162-3500-M					3.500	88.90	2.133	54.18	1.376	34.95			46.6	8.160	C1687-162-3500-S	2.133	54.18			38.82	6.80
C1687-162-4000-M					4.000	101.60	2.418	61.42	1.529	38.84			40.2	7.040	C1687-162-4000-S	2.418	61.42			33.49	5.86
C1687-162-4500-M					4.500	114.30	2.703	68.66	1.682	42.72			35.4	6.200	C1687-162-4500-S	2.703	68.66			29.49	5.16
C1687-162-5000-M					5.000	127.00	2.987	75.87	1.835	46.61			31.6	5.530	C1687-162-5000-S	2.987	75.87			26.32	4.61
C1687-177-1500-M					1.500	38.10	1.043	26.49	0.851	21.62			177.7	31.120	C1687-177-1500-S	1.043	26.49			148.02	25.92
C1687-177-2000-M					2.000	50.80	1.343	34.11	1.029	26.14			123.7	21.660	C1687-177-2000-S	1.343	34.11			103.04	18.04
C1687-177-2500-M					2.500	63.50	1.644	41.76	1.207	30.66			94.9	16.620	C1687-177-2500-S	1.644	41.76			79.05	13.84
C1687-177-3000-M			0.177	4.50	3.000	76.20	1.944	49.38	1.385	35.18	81.26	361.44	76.9	13.470	C1687-177-3000-S	1.944	49.38	67.69	301.09	64.06	11.22
C1687-177-3500-M					3.500	88.90	2.244	57.00	1.563	39.70			64.7	11.330	C1687-177-3500-S	2.244	57			53.90	9.44
C1687-177-4000-M					4.000	101.60	2.545	64.64	1.741	44.22			55.8	9.770	C1687-177-4000-S	2.545	64.64			46.48	8.14
C1687-177-4500-M					4.500	114.30	2.845	72.26	1.920	48.77			49.1	8.600	C1687-177-4500-S	2.845	72.26			40.90	7.16
C1687-177-5000-M					5.000	127.00	3.146	79.91	2.098	53.29			43.8	7.670	C1687-177-5000-S	3.146	79.91			36.49	6.39
C1687-192-1500-M					1.500	38.10	1.089	27.66	0.934	23.72			247.4	43.320	C1687-192-1500-S	1.089	27.66			206.08	36.09
C1687-192-2000-M					2.000	50.80	1.405	35.69	1.137	28.88			170.9	29.930	C1687-192-2000-S	1.405	35.69			142.36	24.93
C1687-192-2500-M					2.500	63.50	1.721	43.71	1.340	34.04			130.5	22.850	C1687-192-2500-S	1.721	43.71			108.71	19.03
C1687-192-3000-M			0.192	4.88	3.000	76.20	2.037	51.74	1.543	39.19	101.60	451.92	105.6	18.490	C1687-192-3000-S	2.037	51.74	84.63	376.43	87.96	15.40
C1687-192-3500-M					3.500	88.90	2.353	59.77	1.747	44.37			88.6	15.510	C1687-192-3500-S	2.353	59.77			73.80	12.92
C1687-192-4000-M					4.000	101.60	2.669	67.79	1.950	49.53			76.4	13.380	C1687-192-4000-S	2.669	67.79			63.64	11.15
C1687-192-4500-M					4.500	114.30	2.985	75.82	2.153	54.69			67.1	11.750	C1687-192-4500-S	2.985	75.82			55.89	9.79
C1687-192-5000-M					5.000	127.00	3.302	83.87	2.356	59.84			59.8	10.470	C1687-192-5000-S	3.302	83.87			49.81	8.72
D13480					3.228	82.00	0.835	21.20	0.693	17.60			27.2	4.760	D23480	0.835	21.21			22.64	3.97
D13490					4.921	125.00	1.169	29.70	0.945	24.00			17.3	3.030	D23490	1.169	29.69			14.41	2.52
D13500	1.701	43.20	0.126	3.20	7.480	190.00	1.665	42.30	1.323	33.60	64.81	288.32	11.2	1.960	D23500	1.665	42.29	54.06	240.46	9.32	1.63
D13510					10.827	275.00	2.331	59.20	1.827	46.40			7.6	1.330	D23510	2.331	59.21			6.33	1.11
D13520					15.945	405.00	3.327	84.50	2.583	65.60			5.1	0.900	D23520	3.327	84.51			4.28	0.75
D13680					2.795	71.00	0.992	25.20	0.866	22.00			66.6	11.670	D23680	0.992	25.2			55.51	9.72
D13690					4.134	105.00	1.382	35.10	1.181	30.00			42.3	7.400	D23690	1.382	35.1			35.20	6.16
D13700			0.157	4.00	6.299	160.00	1.969	50.00	1.654	42.00	119.71	532.50	27.4	4.790	D23700	1.969	50.01	99.84	444.09	22.78	3.99
D13710					9.252	235.00	2.748	69.80	2.283	58.00			18.6	3.260	D23710	2.748	69.8			15.51	2.72
D13720	1.732	44.00			13.386	340.00	3.921	99.60	3.228	82.00			12.6	2.200	D23720	3.921	99.59			10.46	1.83
D13880					2.520	64.00	1.165	29.60	1.083												

MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)		Catalog Number	Load Length (L1)		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm		in	mm	lb	N	lb/in	N/mm
D13920	1.772	45.00	0.197	5.00	11.811	300.00	4.567	116.00	4.035	102.50	220.45	980.67	30.6	5.360	D23920	4.567	116	183.86	817.81	25.49	4.46
C1937-148-2000-M					2.000	50.80	1.158	29.41	0.716	18.19			51.6	9.040	C1937-148-2000-S	1.158	29.41			42.98	7.53
C1937-148-2500-M					2.500	63.50	1.411	35.84	0.817	20.75			39.9	6.990	C1937-148-2500-S	1.411	35.84			33.24	5.82
C1937-148-3000-M					3.000	76.20	1.664	42.27	0.919	23.34			32.5	5.690	C1937-148-3000-S	1.664	42.27			27.07	4.74
C1937-148-3500-M			0.148	3.76	3.500	88.90	1.917	48.69	1.020	25.91	43.42	193.13	27.4	4.800	C1937-148-3500-S	1.917	48.69	36.17	160.88	22.82	4.00
C1937-148-4000-M					4.000	101.60	2.170	55.12	1.122	28.50			23.7	4.150	C1937-148-4000-S	2.170	55.12			19.74	3.46
C1937-148-4500-M					4.500	114.30	2.422	61.52	1.223	31.06			20.9	3.660	C1937-148-4500-S	2.422	61.52			17.41	3.05
C1937-148-5000-M					5.000	127.00	2.675	67.95	1.324	33.63			18.7	3.270	C1937-148-5000-S	2.675	67.95			15.58	2.72
C1937-148-5500-M					5.500	139.70	2.928	74.37	1.426	36.22			16.9	2.960	C1937-148-5500-S	2.928	74.37			14.08	2.47
C1937-162-2000-M					2.000	50.80	1.212	30.78	0.810	20.57			70.8	12.400	C1937-162-2000-S	1.212	30.78			58.98	10.33
C1937-162-2500-M					2.500	63.50	1.477	37.52	0.931	23.65			54.5	9.540	C1937-162-2500-S	1.477	37.52			45.40	7.95
C1937-162-3000-M					3.000	76.20	1.742	44.25	1.052	26.72			44.3	7.760	C1937-162-3000-S	1.742	44.25			36.90	6.46
C1937-162-3500-M			0.162	4.11	3.500	88.90	2.007	50.98	1.173	29.79	55.80	248.20	37.4	6.550	C1937-162-3500-S	2.007	50.98	46.48	206.74	31.15	5.46
C1937-162-4000-M					4.000	101.60	2.272	57.71	1.293	32.84			32.3	5.660	C1937-162-4000-S	2.272	57.71			26.91	4.71
C1937-162-4500-M					4.500	114.30	2.537	64.44	1.414	35.92			28.4	4.970	C1937-162-4500-S	2.537	64.44			23.66	4.14
C1937-162-5000-M					5.000	127.00	2.801	71.15	1.535	38.99			25.4	4.450	C1937-162-5000-S	2.801	71.15			21.16	3.71
C1937-162-5500-M					5.500	139.70	3.066	77.88	1.656	42.06			22.9	4.010	C1937-162-5500-S	3.066	77.88			19.08	3.34
C1937-177-2500-M					2.500	63.50	1.549	39.34	1.054	26.77			74.9	13.120	C1937-177-2500-S	1.549	39.34			62.39	10.93
C1937-177-3000-M					3.000	76.20	1.827	46.41	1.196	30.38			60.8	10.650	C1937-177-3000-S	1.827	46.41			50.65	8.87
C1937-177-3500-M					3.500	88.90	2.105	53.47	1.339	34.01			51.1	8.950	C1937-177-3500-S	2.105	53.47			42.57	7.46
C1937-177-4000-M	1.937	49.20	0.177	4.50	4.000	101.60	2.383	60.53	1.481	37.62	71.29	317.10	44.1	7.720	C1937-177-4000-S	2.383	60.53	59.38	264.12	36.74	6.43
C1937-177-4500-M					4.500	114.30	2.662	67.61	1.624	41.25			38.8	6.790	C1937-177-4500-S	2.662	67.61			32.32	5.66
C1937-177-5000-M					5.000	127.00	2.940	74.68	1.766	44.86			34.6	6.060	C1937-177-5000-S	2.940	74.68			28.82	5.05
C1937-177-5500-M					5.500	139.70	3.218	81.74	1.908	48.46			31.2	5.460	C1937-177-5500-S	3.218	81.74			25.99	4.55
C1937-177-6000-M					6.000	152.40	3.497	88.82	2.051	52.10			28.5	4.990	C1937-177-6000-S	3.497	88.82			23.74	4.16
C1937-192-2500-M					2.500	63.50	1.620	41.15	1.176	29.87			101.4	17.760	C1937-192-2500-S	1.620	41.15			84.47	14.79
C1937-192-3000-M					3.000	76.20	1.912	48.56	1.341	34.06			82.0	14.360	C1937-192-3000-S	1.912	48.56			68.31	11.96
C1937-192-3500-M					3.500	88.90	2.204	55.98	1.505	38.23			68.8	12.050	C1937-192-3500-S	2.204	55.98			57.31	10.04
C1937-192-4000-M			0.192	4.88	4.000	101.60	2.496	63.40	1.670	42.42	89.23	396.90	59.3	10.380	C1937-192-4000-S	2.496	63.40	74.33	330.62	49.40	8.65
C1937-192-4500-M					4.500	114.30	2.788	70.82	1.834	46.58			52.1	9.120	C1937-192-4500-S	2.788	70.82			43.40	7.60
C1937-192-5000-M					5.000	127.00	3.080	78.23	1.999	50.77			46.5	8.140	C1937-192-5000-S	3.080	78.23			38.73	6.78
C1937-192-5500-M					5.500	139.70	3.372	85.65	2.164	54.97			41.9	7.340	C1937-192-5500-S	3.372	85.65			34.90	6.11
C1937-192-6000-M					6.000	152.40	3.664	93.07	2.328	59.13			38.2	6.690	C1937-192-6000-S	3.664	93.07			31.82	5.57
C1937-207-2500-M					2.500	63.50	1.690	42.93	1.297	32.94			135.4	23.710	C1937-207-2500-S	1.690	42.93			112.79	19.75
C1937-207-3000-M					3.000	76.20	1.995	50.67	1.483	37.67			109.2	19.120	C1937-207-3000-S	1.995	50.67			90.96	15.93
C1937-207-3500-M					3.500	88.90	2.301	58.45	1.670	42.42			91.5	16.020	C1937-207-3500-S	2.301	58.45			76.22	13.34
C1937-207-4000-M			0.207	5.26	4.000	101.60	2.607	66.22	1.857	47.17	109.73	488.08	78.8	13.800	C1937-207-4000-S	2.607	66.22	91.41	406.59	65.64	11.50
C1937-207-4500-M					4.500	114.30	2.913	73.99	2.044	51.92			69.1	12.100	C1937-207-4500-S	2.913	73.99			57.56	10.08
C1937-207-5000-M					5.000	127.00	3.219	81.76	2.230	56.64			61.6	10.790	C1937-207-5000-S	3.219	81.76			51.31	8.99
C1937-207-5500-M					5.500	139.70	3.524	89.51	2.417	61.39			55.5	9.720	C1937-207-5500-S	3.524	89.51			46.23	8.10
C1937-207-6000-M					6.000	152.40	3.830	97.28	2.604	66.14			50.6	8.860	C1937-207-6000-S	3.830	97.28			42.15	7.38
D13730					3.898	99.00	1.079	27.40	0.866	22.00			34.0	5.950	D23730	1.079	27.41			28.30	4.96
D13740					5.906	150.00	1.520	38.60	1.181	30.00			21.6	3.790	D23740	1.520	38.61			18.03	3.16
D13750	2.126	54.00	0.157	4.00	9.055	230.00	2.181	55.40	1.654	42.00	95.90	426.59	14.0	2.450	D23750	2.181	55.40	79.98	355.75	11.65	2.04
D13760					13.189	335.00	3.063	77.80	2.283	58.00			9.5	1.670	D23760	3.063	77.80			7.94	1.39
D13770					19.291	490.00	4.370	111.00	3.228	82.00			6.5	1.130	D23770	4.370	111.00			5.37	0.94
D13930					3.346	85.00	1.217	30.90	1.083	27.50			82.9	14.510	D23930	1.217	30.91			69.02	12.09
D13940					5.118	130.00	1.701	43.20	1.476	37.50			52.8	9.250	D23940	1.701	43.21			44.00	7.71
D13950	2.165	55.00			7.677	195.00	2.425	61.60	2.067	52.50	176.36	784.53	34.1	5.980	D23950	2.425	61.60	147.09	654.26	28.44	4.98
D13960					11.024	280.00	3.390	86.10	2.854	72.50			23.2	4.070	D23960	3.390	86.11			19.36	3.39
D13970			0.197	5.00	16.142	410.00	4.843	123.00	4.035	102.50			15.7	2.750	D23970	4.843	123.01			13.08	2.29
D13980					4.724	120.00	1.272	32.30	1.083	27.50			41.5	7.270	D23980	1.272	32.31			34.58	6.06
D13990					7.087	180.00	1.783	45.30	1.476	37.50			26.4	4.630	D23990	1.783	45.29			22.02	3.86
D14000	2.677	68.00			10.827	275.00	2.551	64.80	2.067	52.50	139.99	622.72	17.1	2.990	D24000	2.551	64.80</				

LOOK-UP TABLE FOR COMPRESSION SPRINGS – D TYPE (METRIC)

All Music Wire part numbers start with **D1** (Example: **D10100**).

All Stainless Steel part numbers start with **D2** (Example: **D20100**), and can be found on the same page as the Music Wire parts, as indicated below:



Looking for Part Number Range	See Page	Looking for Part Number Range	See Page
D10100 - D10290	5	D12300 - D12340	33
D10300 - D10340	6	D12350 - D12390	25
D10350 - D10440	5	D12400 - D12440	28
D10450 - D10540	6	D12450 - D12490	31
D10550 - D10550	8	D12500 - D12520	33
D10560 - D10590	9	D12530 - D12540	34
D10600 - D10640	5	D12550 - D12590	36
D10650 - D10740	6	D12600 - D12640	28
D10750 - D10840	9	D12650 - D12690	31
D10850 - D10940	6	D12700 - D12740	34
D10950 - D11040	9	D12750 - D12790	37
D11050 - D11090	13	D12800 - D12840	39
D11100 - D11140	7	D12850 - D12880	28
D11150 - D11190	9	D12890 - D12910	31
D11200 - D11240	10	D12920 - D12930	37
D11250 - D11290	13	D12940 - D12980	31
D11300 - D11340	17	D12990 - D13030	36
D11350 - D11390	9	D13040 - D13080	37
D11400 - D11440	12	D13090 - D13130	39
D11450 - D11490	13	D13140 - D13180	42
D11500 - D11540	17	D13190 - D13220	31
D11550 - D11590	21	D13230 - D13250	36
D11600 - D11640	12	D13260 - D13270	40
D11650 - D11670	13	D13280 - D13320	36
D11680 - D11690	14	D13330 - D13370	37
D11700 - D11740	17	D13380 - D13420	40
D11750 - D11790	21	D13430 - D13470	42
D11800 - D11840	27	D13480 - D13520	43
D11850 - D11890	14	D13530 - D13570	37
D11900 - D11940	17	D13580 - D13620	40
D11950 - D11990	21	D13630 - D13670	42
D12000 - D12040	27	D13680 - D13720	43
D12050 - D12090	31	D13730 - D13770	44
D12100 - D12140	17	D13780 - D13820	40
D12150 - D12190	25	D13830 - D13870	42
D12200 - D12240	28	D13880 - D13910	43
D12250 - D12290	31	D13920 - D14020	44

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TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

COMPRESSION SPRINGS – 316 STAINLESS STEEL

Stock sizes in 316 stainless steel

ASRaymond now offers a complete line of 316 Stainless Steel compression springs. 316 Stainless steel provides superior temperature and corrosion resistance, which makes it particularly suitable for:

- Medical, surgical, veterinary and pharmaceutical applications
- Food and food preparation machinery and equipment
- Marine, aircraft and aerospace uses
- Harsh environment projects

Materials

Stainless Steel: Type 316 per ASTM A313 (Chemical and Physical only)

Stainless steel is not recommended above 300 degrees C. (570 degrees F.).

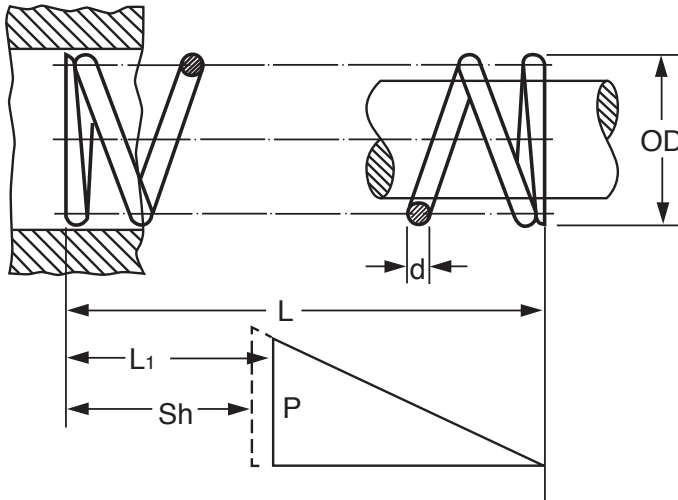
Stainless steel 316 is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not affect the function of the part.

Wire diameter is prior to forming.

No charge for certificate of compliance when requested; certificate of chemical analysis also available (an additional charge applies).

Coil Direction (helix)

Right hand. Coil count is for reference only.



- OD = Outside diameter
- d = Wire diameter
- Sh = Approx Solid Height
- L = Free length (reference use only)
- L₁ = Loaded length (minimum working length)
- P = Load at L₁

Free Length

Free length is reference only.

Ends

O.D. sizes from 0.057-0.088in (1.45-2.24mm): squared not ground.
O.D. sizes from 0.120-1.937in (3.05-49.20mm): squared and ground.
However springs with wire diameter ≤ 0.020" (.5mm) may be squared not ground.

Tolerances

O.D. English		O.D. Metric	
0.057 to 0.119"	+/- 0.003"	1.45 to 3.02 mm	+/- 0.08 mm
0.120 to 0.240"	+/- 0.005"	3.05 to 6.10 mm	+/- 0.13 mm
0.241 to 0.500"	+/- 0.008"	6.12 to 12.70 mm	+/- 0.20 mm
0.501 to 1.000"	+/- 0.015"	12.73 to 25.40 mm	+/- 0.38 mm
1.001 to 1.225"	+/- 0.020"	25.43 to 31.12 mm	+/- 0.51 mm
1.226 to 1.460"	+/- 0.030"	31.14 to 37.08 mm	+/- 0.76 mm
1.461 to 2.000"	+/- 0.040"	37.11 to 50.80 mm	+/- 1.02 mm

Loads & Spring Rate

Load P at L₁ and spring rate R are +/- 10.0% – load at any other point is for reference only.

For normal service, springs should not be compressed below L₁ (may take set beyond L₁). Load values at lengths other than L₁, can be approximated by multiplying the proposed deflection by the rate R. $P = (L - L_x) \times R$ where L_x is the new load height. Load at L_x should be reference only. Contact our engineering department if more stringent requirements are needed.

Surface Finish

Plain wire, passivated per ASTM A967

Special finishes available upon request. See page 312 for alternative finishes.

Packaging

Parts are bulk-packed. Due to physical characteristics, tangling can occur during transit on wire sizes under .035" (.89mm). Please inquire about ultrasonic cleaning and special packaging when ordering.



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0057-006-0120-X					0.120	3.05	0.082	2.07	0.044	1.12			3.2	0.56
C0057-006-0190-X					0.190	4.83	0.124	3.14	0.060	1.52			1.8	0.32
C0057-006-0250-X					0.250	6.35	0.159	4.03	0.075	1.91			1.3	0.23
C0057-006-0310-X					0.310	7.87	0.197	5.02	0.088	2.24			1.1	0.19
C0057-006-0380-X			0.006	0.15	0.380	9.65	0.247	6.27	0.100	2.54	0.12	0.53	0.9	0.16
C0057-006-0440-X					0.440	11.18	0.277	7.05	0.118	3.00			0.8	0.13
C0057-006-0500-X					0.500	12.70	0.317	8.06	0.130	3.30			0.7	0.12
C0057-006-0560-X					0.560	14.22	0.377	9.58	0.129	3.28			0.7	0.12
C0057-006-0620-X					0.620	15.75	0.411	10.44	0.142	3.61			0.6	0.10
C0057-007-0120-X					0.120	3.05	0.087	2.21	0.053	1.35			5.8	1.02
C0057-007-0190-X					0.190	4.83	0.133	3.37	0.074	1.88			3.3	0.58
C0057-007-0250-X					0.250	6.35	0.176	4.47	0.089	2.26			2.6	0.45
C0057-007-0310-X					0.310	7.87	0.214	5.44	0.108	2.74			2.0	0.35
C0057-007-0380-X	0.057	1.45	0.007	0.18	0.380	9.65	0.259	6.58	0.130	3.30	0.19	0.85	1.6	0.28
C0057-007-0440-X					0.440	11.18	0.305	7.74	0.143	3.63			1.4	0.25
C0057-007-0500-X					0.500	12.70	0.347	8.81	0.158	4.01			1.3	0.22
C0057-007-0560-X					0.560	14.22	0.383	9.73	0.179	4.55			1.1	0.19
C0057-007-0620-X					0.620	15.75	0.428	10.88	0.188	4.78			1.0	0.18
C0057-008-0120-X					0.120	3.05	0.093	2.36	0.061	1.55			10.4	1.82
C0057-008-0190-X					0.190	4.83	0.143	3.63	0.086	2.18			6.0	1.05
C0057-008-0250-X					0.250	6.35	0.186	4.72	0.106	2.69			4.4	0.77
C0057-008-0310-X					0.310	7.87	0.229	5.82	0.127	3.23			3.5	0.61
C0057-008-0380-X			0.008	0.20	0.380	9.65	0.280	7.12	0.150	3.81	0.28	1.25	2.8	0.50
C0057-008-0440-X					0.440	11.18	0.323	8.20	0.172	4.37			2.4	0.42
C0057-008-0500-X					0.500	12.70	0.364	9.25	0.195	4.95			2.1	0.36
C0057-008-0560-X					0.560	14.22	0.406	10.31	0.217	5.51			1.8	0.32
C0057-008-0620-X					0.620	15.75	0.450	11.44	0.224	5.69			1.7	0.29
C0088-008-0120-X					0.120	3.05	0.084	2.14	0.043	1.09			5.3	0.92
C0088-008-0190-X					0.190	4.83	0.125	3.18	0.055	1.40			2.9	0.51
C0088-008-0250-X					0.250	6.35	0.163	4.14	0.064	1.63			2.2	0.38
C0088-008-0310-X					0.310	7.87	0.202	5.14	0.073	1.85			1.8	0.31
C0088-008-0380-X			0.008	0.20	0.380	9.65	0.247	6.27	0.084	2.13	0.19	0.85	1.4	0.25
C0088-008-0440-X					0.440	11.18	0.289	7.34	0.092	2.34			1.3	0.22
C0088-008-0500-X					0.500	12.70	0.326	8.28	0.101	2.57			1.1	0.19
C0088-008-0560-X					0.560	14.22	0.354	9.00	0.115	2.92			0.9	0.16
C0088-008-0620-X					0.620	15.75	0.394	10.00	0.119	3.02			0.8	0.15
C0088-010-0120-X					0.120	3.05	0.085	2.16	0.060	1.52			10.3	1.79
C0088-010-0190-X					0.190	4.83	0.127	3.23	0.081	2.06			5.7	0.99
C0088-010-0250-X					0.250	6.35	0.164	4.18	0.098	2.49			4.2	0.73
C0088-010-0310-X					0.310	7.87	0.197	5.02	0.118	3.00			3.2	0.56
C0088-010-0380-X					0.380	9.65	0.250	6.36	0.130	3.30			2.8	0.48
C0088-010-0440-X	0.088	2.24	0.010	0.25	0.440	11.18	0.287	7.30	0.147	3.73	0.36	1.60	2.3	0.41
C0088-010-0500-X					0.500	12.70	0.314	7.98	0.172	4.37			1.9	0.34
C0088-010-0560-X					0.560	14.22	0.356	9.05	0.185	4.70			1.8	0.31
C0088-010-0620-X					0.620	15.75	0.395	10.03	0.201	5.11			1.6	0.28
C0088-010-0690-X					0.690	17.53	0.438	11.14	0.213	5.41			1.4	0.25
C0088-010-0750-X					0.750	19.05	0.483	12.26	0.228	5.79			1.3	0.23
C0088-012-0120-X					0.120	3.05	0.090	2.30	0.075	1.91			20.5	3.59
C0088-012-0190-X					0.190	4.83	0.140	3.55	0.100	2.54			12.1	2.12
C0088-012-0250-X					0.250	6.35	0.181	4.59	0.123	3.12			8.8	1.53
C0088-012-0310-X					0.310	7.87	0.219	5.56	0.148	3.76			6.7	1.17
C0088-012-0380-X					0.380	9.65	0.268	6.80	0.172	4.37			5.4	0.95
C0088-012-0440-X			0.012	0.30	0.440	11.18	0.312	7.93	0.191	4.85	0.61	2.71	4.8	0.83
C0088-012-0500-X					0.500	12.70	0.351	8.92	0.215	5.46			4.1	0.71
C0088-012-0560-X					0.560	14.22	0.394	10.02	0.235	5.97			3.7	0.64
C0088-012-0620-X					0.620	15.75	0.428	10.88	0.265	6.73			3.2	0.56
C0088-012-0690-X					0.690	17.53	0.482	12.24	0.266	6.76			2.9	0.51
C0088-012-0750-X					0.750	19.05	0.522	13.27	0.293	7.44			2.7	0.47
C0120-010-0250-X					0.250	6.35	0.150	3.82	0.064	1.63			2.7	0.47
C0120-010-0310-X					0.310	7.87	0.182	4.63	0.073	1.85			2.1	0.36
C0120-010-0380-X					0.380	9.65	0.221	5.60	0.083	2.11			1.7	0.29
C0120-010-0440-X					0.440	11.18	0.252	6.41	0.092	2.34			1.4	0.25
C0120-010-0500-X					0.500	12.70	0.287	7.30	0.101	2.57			1.3	0.22
C0120-010-0560-X					0.560	14.22	0.332	8.44	0.109	2.77			1.2	0.20
C0120-010-0620-X					0.620	15.75	0.354	9.00	0.118	3.00			1.0	0.18
C0120-010-0690-X	0.120	3.05	0.010	0.25	0.690	17.53	0.400	10.16	0.129	3.28	0.27	1.20	0.9	0.16
C0120-010-0750-X					0.750	19.05	0.431	10.95	0.137	3.48			0.8	0.15
C0120-010-0810-X					0.810	20.57	0.456	11.58	0.146	3.71			0.8	0.13
C0120-010-0880-X					0.880	22.35	0.526	13.35	0.156	3.96			0.8	0.13
C0120-010-0940-X					0.940	23.88	0.541	13.75	0.165	4.19			0.7	0.12
C0120-010-1000-X					1.000	25.40	0.545	13.83	0.174	4.42			0.6	0.10
C0120-010-1120-X					1.120	28.45	0.665	16.88	0.192	4.88			0.6	0.10
C0120-010-1250-X					1.250	31.75	0.719	18.25	0.211	5.36			0.5	0.09



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC



316 STAINLESS STEEL														
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0120-010-1500-X			0.010	0.25	1.500	38.10	0.862	21.90	0.248	6.30	0.27	1.20	0.4	0.07
C0120-012-0250-X					0.250	6.35	0.163	4.15	0.081	2.06			5.3	0.92
C0120-012-0310-X					0.310	7.87	0.201	5.10	0.093	2.36			4.2	0.73
C0120-012-0380-X					0.380	9.65	0.243	6.18	0.107	2.72			3.3	0.58
C0120-012-0440-X					0.440	11.18	0.279	7.10	0.119	3.02			2.8	0.50
C0120-012-0500-X					0.500	12.70	0.318	8.08	0.131	3.33			2.5	0.44
C0120-012-0560-X					0.560	14.22	0.350	8.89	0.143	3.63			2.2	0.38
C0120-012-0620-X					0.620	15.75	0.392	9.97	0.155	3.94			2.0	0.35
C0120-012-0690-X					0.690	17.53	0.430	10.92	0.169	4.29			1.8	0.31
C0120-012-0750-X			0.012	0.30	0.750	19.05	0.477	12.11	0.181	4.60	0.45	2.00	1.7	0.29
C0120-012-0810-X					0.810	20.57	0.507	12.87	0.193	4.90			1.5	0.26
C0120-012-0880-X					0.880	22.35	0.559	14.19	0.207	5.26			1.4	0.25
C0120-012-0940-X					0.940	23.88	0.576	14.63	0.219	5.56			1.3	0.22
C0120-012-1000-X					1.000	25.40	0.636	16.15	0.231	5.87			1.3	0.22
C0120-012-1120-X					1.120	28.45	0.700	17.78	0.255	6.48			1.1	0.19
C0120-012-1250-X					1.250	31.75	0.795	20.19	0.281	7.14			1.0	0.18
C0120-012-1500-X					1.500	38.10	0.954	24.23	0.331	8.41			0.8	0.15
C0120-014-0250-X					0.250	6.35	0.172	4.37	0.101	2.57			9.2	1.60
C0120-014-0310-X					0.310	7.87	0.210	5.34	0.117	2.97			7.2	1.25
C0120-014-0380-X					0.380	9.65	0.256	6.49	0.136	3.45			5.8	1.01
C0120-014-0440-X					0.440	11.18	0.294	7.48	0.152	3.86			4.9	0.86
C0120-014-0500-X					0.500	12.70	0.335	8.50	0.168	4.27			4.3	0.76
C0120-014-0560-X					0.560	14.22	0.373	9.48	0.184	4.67			3.8	0.67
C0120-014-0620-X					0.620	15.75	0.411	10.43	0.200	5.08			3.4	0.60
C0120-014-0690-X					0.690	17.53	0.458	11.63	0.219	5.56			3.1	0.54
C0120-014-0750-X			0.014	0.36	0.750	19.05	0.497	12.63	0.235	5.97	0.72	3.20	2.8	0.50
C0120-014-0810-X					0.810	20.57	0.533	13.54	0.251	6.38			2.6	0.45
C0120-014-0880-X					0.880	22.35	0.584	14.83	0.269	6.83			2.4	0.42
C0120-014-0940-X					0.940	23.88	0.622	15.80	0.285	7.24			2.3	0.39
C0120-014-1000-X					1.000	25.40	0.656	16.67	0.301	7.65			2.1	0.36
C0120-014-1120-X					1.120	28.45	0.730	18.53	0.333	8.46			1.8	0.32
C0120-014-1250-X					1.250	31.75	0.821	20.84	0.368	9.35			1.7	0.29
C0120-014-1500-X					1.500	38.10	0.995	25.27	0.434	11.02			1.4	0.25
C0120-016-0190-X					0.190	4.83	0.141	3.59	0.101	2.57			21.3	3.73
C0120-016-0250-X					0.250	6.35	0.179	4.55	0.119	3.02			14.6	2.55
C0120-016-0310-X					0.310	7.87	0.221	5.62	0.139	3.53			11.7	2.04
C0120-016-0380-X	0.120	3.05			0.380	9.65	0.270	6.86	0.163	4.14			9.4	1.65
C0120-016-0440-X					0.440	11.18	0.309	7.85	0.187	4.75			7.9	1.39
C0120-016-0500-X					0.500	12.70	0.350	8.90	0.208	5.28			6.9	1.21
C0120-016-0560-X					0.560	14.22	0.390	9.90	0.231	5.87			6.1	1.06
C0120-016-0620-X			0.016	0.41	0.620	15.75	0.432	10.97	0.251	6.38	1.04	4.63	5.5	0.96
C0120-016-0690-X					0.690	17.53	0.476	12.08	0.281	7.14			4.8	0.85
C0120-016-0750-X					0.750	19.05	0.516	13.10	0.303	7.70			4.4	0.77
C0120-016-1000-X					1.000	25.40	0.697	17.70	0.378	9.60			3.4	0.60
C0120-016-1120-X					1.120	28.45	0.775	19.68	0.419	10.64			3.0	0.53
C0120-016-1250-X					1.250	31.75	0.862	21.89	0.463	11.76			2.7	0.47
C0120-016-1500-X					1.500	38.10	1.056	26.83	0.544	13.82			2.3	0.41
C0120-018-0190-X					0.190	4.83	0.148	3.75	0.117	2.97			34.4	6.02
C0120-018-0250-X					0.250	6.35	0.188	4.77	0.139	3.53			23.5	4.11
C0120-018-0310-X					0.310	7.87	0.230	5.84	0.166	4.22			18.2	3.19
C0120-018-0380-X					0.380	9.65	0.282	7.17	0.194	4.93			14.9	2.61
C0120-018-0440-X					0.440	11.18	0.325	8.25	0.220	5.59			12.7	2.22
C0120-018-0500-X					0.500	12.70	0.366	9.31	0.248	6.30			10.9	1.91
C0120-018-0560-X					0.560	14.22	0.407	10.33	0.279	7.09			9.5	1.66
C0120-018-0620-X			0.018	0.46	0.620	15.75	0.455	11.56	0.297	7.54	1.46	6.49	8.8	1.55
C0120-018-0690-X					0.690	17.53	0.502	12.75	0.332	8.43			7.8	1.36
C0120-018-0750-X					0.750	19.05	0.544	13.82	0.359	9.12			7.1	1.24
C0120-018-1000-X					1.000	25.40	0.727	18.46	0.455	11.56			5.3	0.93
C0120-018-1120-X					1.120	28.45	0.813	20.65	0.505	12.83			4.8	0.83
C0120-018-1250-X					1.250	31.75	0.907	23.04	0.559	14.20			4.3	0.74
C0120-018-1500-X					1.500	38.10	1.083	27.52	0.663	16.84			3.5	0.61
C0120-020-0250-X					0.250	6.35	0.197	5.01	0.163	4.14			37.3	6.54
C0120-020-0310-X					0.310	7.87	0.242	6.14	0.192	4.88			29.0	5.08
C0120-020-0380-X					0.380	9.65	0.294	7.48	0.226	5.74			23.1	4.04
C0120-020-0440-X					0.440	11.18	0.339	8.61	0.256	6.50			19.6	3.43
C0120-020-0500-X					0.500	12.70	0.384	9.75	0.285	7.24			17.0	2.98
C0120-020-0560-X					0.560	14.22	0.429	10.90	0.314	7.98			15.1	2.64
C0120-020-0620-X			0.020	0.51	0.620	15.75	0.474	12.03	0.344	8.74	1.97	8.76	13.5	2.36
C0120-020-0690-X					0.690	17.53	0.527	13.37	0.378	9.60			12.1	2.12
C0120-020-0750-X					0.750	19.05	0.570	14.49	0.407	10.34			11.0	1.93
C0120-020-0810-X					0.810	20.57	0.616	15.64	0.437	11.10			10.2	1.78
C0120-020-0880-X					0.880	22.35	0.668	16.98	0.471	11.96			9.3	1.63
C0120-020-0940-X					0.940	23.88	0.712	18.09	0.500	12.70			8.7	1.52



316 STAINLESS STEEL														
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0120-020-1000-X					1.000	25.40	0.758	19.26	0.530	13.46			8.2	1.43
C0120-020-1120-X			0.020	0.51	1.120	28.45	0.848	21.53	0.588	14.94	1.97	8.76	7.3	1.27
C0120-020-1250-X					1.250	31.75	0.946	24.03	0.652	16.56			6.5	1.14
C0120-020-1500-X					1.500	38.10	1.130	28.69	0.774	19.66			5.3	0.93
C0120-022-0250-X					0.250	6.35	0.206	5.23	0.171	4.34			58.8	10.30
C0120-022-0310-X					0.310	7.87	0.252	6.39	0.209	5.31			44.4	7.78
C0120-022-0380-X					0.380	9.65	0.305	7.75	0.252	6.40			34.6	6.05
C0120-022-0440-X					0.440	11.18	0.354	9.00	0.280	7.11			30.3	5.31
C0120-022-0500-X					0.500	12.70	0.400	10.16	0.319	8.10			25.9	4.54
C0120-022-0560-X					0.560	14.22	0.450	11.42	0.346	8.79			23.5	4.11
C0120-022-0620-X					0.620	15.75	0.495	12.57	0.384	9.75			20.7	3.63
C0120-022-0690-X			0.022	0.56	0.690	17.53	0.543	13.80	0.442	11.23	2.59	11.52	17.7	3.09
C0120-022-0750-X					0.750	19.05	0.596	15.13	0.461	11.71			16.8	2.95
C0120-022-0810-X					0.810	20.57	0.643	16.34	0.494	12.55			15.6	2.73
C0120-022-0940-X					0.940	23.88	0.742	18.84	0.566	14.38			13.1	2.29
C0120-022-1000-X					1.000	25.40	0.788	20.02	0.600	15.24			12.3	2.15
C0120-022-1120-X					1.120	28.45	0.893	22.68	0.667	16.94			11.4	2.00
C0120-022-1250-X	0.120	3.05			1.250	31.75	0.984	24.99	0.739	18.77			9.8	1.71
C0120-022-1500-X					1.500	38.10	1.179	29.95	0.879	22.33			8.1	1.41
C0120-024-0310-X					0.310	7.87	0.262	6.64	0.229	5.82			68.6	12.01
C0120-024-0380-X					0.380	9.65	0.319	8.09	0.271	6.88			54.1	9.47
C0120-024-0440-X					0.440	11.18	0.368	9.34	0.307	7.80			45.8	8.02
C0120-024-0500-X					0.500	12.70	0.416	10.58	0.343	8.71			39.7	6.96
C0120-024-0560-X					0.560	14.22	0.465	11.82	0.379	9.63			35.1	6.14
C0120-024-0620-X					0.620	15.75	0.514	13.06	0.415	10.54			31.4	5.50
C0120-024-0690-X					0.690	17.53	0.571	14.51	0.457	11.61			28.0	4.90
C0120-024-0750-X			0.024	0.61	0.750	19.05	0.620	15.75	0.493	12.52	3.32	14.77	25.6	4.48
C0120-024-0810-X					0.810	20.57	0.669	17.00	0.529	13.44			23.6	4.13
C0120-024-0880-X					0.880	22.35	0.726	18.45	0.571	14.50			21.6	3.78
C0120-024-0940-X					0.940	23.88	0.775	19.69	0.607	15.42			20.2	3.53
C0120-024-1000-X					1.000	25.40	0.824	20.92	0.643	16.33			18.8	3.30
C0120-024-1120-X					1.120	28.45	0.922	23.41	0.715	18.16			16.7	2.93
C0120-024-1250-X					1.250	31.75	1.027	26.10	0.793	20.14			14.9	2.61
C0120-024-1500-X					1.500	38.10	1.233	31.31	0.943	23.95			12.4	2.17
C0148-021-0250-X					0.250	6.35	0.187	4.74	0.143	3.63			29.7	5.21
C0148-021-0310-X					0.310	7.87	0.228	5.80	0.166	4.22			23.1	4.04
C0148-021-0380-X					0.380	9.65	0.277	7.04	0.193	4.90			18.3	3.21
C0148-021-0440-X					0.440	11.18	0.319	8.10	0.217	5.51			15.6	2.73
C0148-021-0500-X					0.500	12.70	0.360	9.15	0.240	6.10			13.5	2.36
C0148-021-0560-X					0.560	14.22	0.402	10.20	0.263	6.68			11.9	2.09
C0148-021-0620-X					0.620	15.75	0.443	11.25	0.286	7.26			10.7	1.87
C0148-021-0690-X			0.021	0.53	0.690	17.53	0.493	12.52	0.313	7.95	1.89	8.41	9.6	1.68
C0148-021-0750-X					0.750	19.05	0.534	13.57	0.336	8.53			8.8	1.53
C0148-021-0810-X					0.810	20.57	0.576	14.64	0.359	9.12			8.1	1.41
C0148-021-0880-X					0.880	22.35	0.626	15.89	0.386	9.80			7.4	1.30
C0148-021-0940-X					0.940	23.88	0.667	16.94	0.410	10.41			6.9	1.21
C0148-021-1000-X					1.000	25.40	0.710	18.02	0.433	11.00			6.5	1.14
C0148-021-1250-X					1.250	31.75	0.879	22.32	0.529	13.44			5.1	0.89
C0148-021-1500-X					1.500	38.10	1.056	26.82	0.626	15.90			4.3	0.74
C0148-023-0250-X	0.148	3.76			0.250	6.35	0.193	4.91	0.160	4.06			43.3	7.59
C0148-023-0310-X					0.310	7.87	0.236	6.01	0.187	4.75			33.4	5.85
C0148-023-0380-X					0.380	9.65	0.287	7.29	0.218	5.54			26.4	4.62
C0148-023-0440-X					0.440	11.18	0.330	8.39	0.245	6.22			22.4	3.92
C0148-023-0500-X					0.500	12.70	0.373	9.49	0.272	6.91			19.4	3.40
C0148-023-0560-X					0.560	14.22	0.417	10.59	0.299	7.59			17.2	3.01
C0148-023-0620-X					0.620	15.75	0.461	11.70	0.326	8.28			15.4	2.70
C0148-023-0690-X			0.023	0.58	0.690	17.53	0.511	12.99	0.357	9.07	2.46	10.94	13.7	2.41
C0148-023-0750-X					0.750	19.05	0.555	14.09	0.384	9.75			12.6	2.20
C0148-023-0810-X					0.810	20.57	0.598	15.19	0.410	10.41			11.6	2.03
C0148-023-0880-X					0.880	22.35	0.648	16.46	0.442	11.23			10.6	1.85
C0148-023-0940-X					0.940	23.88	0.692	17.58	0.469	11.91			9.9	1.74
C0148-023-1000-X					1.000	25.40	0.734	18.65	0.495	12.57			9.3	1.62
C0148-023-1250-X					1.250	31.75	0.915	23.24	0.607	15.42			7.3	1.28
C0148-023-1500-X					1.500	38.10	1.096	27.84	0.719	18.26			6.1	1.06
C0180-012-0250-X					0.250	6.35	0.147	3.74	0.057	1.45			3.0	0.53
C0180-012-0310-X					0.310	7.87	0.182	4.63	0.062	1.57			2.4	0.42
C0180-012-0380-X					0.380	9.65	0.219	5.56	0.069	1.75			1.9	0.34
C0180-012-0440-X					0.440	11.18	0.255	6.47	0.074	1.88			1.7	0.29
C0180-012-0500-X	0.180	4.57	0.012	0.30	0.500	12.70	0.282	7.17	0.080	2.03	0.31	1.38	1.4	0.25
C0180-012-0560-X					0.560	14.22	0.313	7.95	0.085	2.16			1.3	0.22
C0180-012-0620-X					0.620	15.75	0.355	9.03	0.091	2.31			1.2	0.20
C0180-012-0690-X					0.690	17.53	0.381	9.69	0.097	2.46			1.0	0.18
C0180-012-0750-X					0.750	19.05	0.413	10.50	0.103	2.62			0.9	0.16

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0180-012-0810-X					0.810	20.57	0.440	11.17	0.109	2.77			0.8	0.15
C0180-012-0880-X					0.880	22.35	0.510	12.95	0.115	2.92			0.8	0.15
C0180-012-0940-X					0.940	23.88	0.529	13.42	0.121	3.07			0.8	0.13
C0180-012-1000-X			0.012	.030	1.000	25.40	0.537	13.64	0.126	3.20	0.31	1.38	0.7	0.12
C0180-012-1250-X					1.250	31.75	0.721	18.31	0.149	3.78			0.6	0.10
C0180-012-1500-X					1.500	38.10	0.883	22.42	0.172	4.37			0.5	0.09
C0180-014-0250-X					0.250	6.35	0.156	3.95	0.069	1.75			5.2	0.90
C0180-014-0310-X					0.310	7.87	0.191	4.84	0.076	1.93			4.1	0.71
C0180-014-0380-X					0.380	9.65	0.230	5.84	0.085	2.16			3.3	0.57
C0180-014-0440-X					0.440	11.18	0.268	6.81	0.092	2.34			2.8	0.50
C0180-014-0500-X					0.500	12.70	0.298	7.58	0.100	2.54			2.4	0.42
C0180-014-0560-X					0.560	14.22	0.335	8.51	0.107	2.72			2.2	0.38
C0180-014-0620-X					0.620	15.75	0.366	9.29	0.114	2.90			1.9	0.34
C0180-014-0690-X			0.014	0.36	0.690	17.53	0.411	10.45	0.123	3.12	0.49	2.20	1.8	0.31
C0180-014-0750-X					0.750	19.05	0.442	11.23	0.130	3.30			1.6	0.28
C0180-014-0880-X					0.880	22.35	0.514	13.07	0.146	3.71			1.3	0.23
C0180-014-1000-X					1.000	25.40	0.582	14.79	0.161	4.09			1.2	0.20
C0180-014-1250-X					1.250	31.75	0.718	18.24	0.191	4.85			0.9	0.16
C0180-014-1380-X					1.380	35.05	0.795	20.20	0.207	5.26			0.8	0.15
C0180-014-1500-X					1.500	38.10	0.850	21.59	0.222	5.64			0.8	0.13
C0180-016-0250-X					0.250	6.35	0.154	3.92	0.080	2.03			7.4	1.30
C0180-016-0310-X					0.310	7.87	0.197	5.00	0.087	2.21			6.3	1.09
C0180-016-0380-X					0.380	9.65	0.236	5.99	0.100	2.54			4.9	0.86
C0180-016-0440-X					0.440	11.18	0.267	6.77	0.112	2.84			4.1	0.71
C0180-016-0500-X					0.500	12.70	0.298	7.56	0.124	3.15			3.5	0.61
C0180-016-0560-X					0.560	14.22	0.330	8.39	0.136	3.45			3.1	0.54
C0180-016-0620-X					0.620	15.75	0.370	9.40	0.144	3.66			2.8	0.50
C0180-016-0690-X			0.016	0.41	0.690	17.53	0.416	10.56	0.155	3.94	0.71	3.16	2.6	0.45
C0180-016-0750-X					0.750	19.05	0.446	11.34	0.167	4.24			2.3	0.41
C0180-016-0880-X					0.880	22.35	0.540	13.72	0.185	4.70			2.1	0.36
C0180-016-1000-X					1.000	25.40	0.614	15.59	0.204	5.18			1.8	0.32
C0180-016-1250-X					1.250	31.75	0.750	19.05	0.245	6.22			1.4	0.25
C0180-016-1380-X					1.380	35.05	0.849	21.56	0.266	6.76			1.3	0.23
C0180-016-1500-X					1.500	38.10	0.893	22.68	0.285	7.24			1.2	0.20
C0180-016-1750-X					1.750	44.45	1.042	26.46	0.326	8.28			1.0	0.18
C0180-018-0250-X					0.250	6.35	0.161	4.09	0.094	2.39			11.3	1.97
C0180-018-0310-X	0.180	4.57			0.310	7.87	0.204	5.19	0.103	2.62			9.5	1.66
C0180-018-0380-X					0.380	9.65	0.251	6.37	0.116	2.95			7.8	1.36
C0180-018-0440-X					0.440	11.18	0.286	7.26	0.130	3.30			6.5	1.14
C0180-018-0500-X					0.500	12.70	0.320	8.14	0.144	3.66			5.6	0.98
C0180-018-0560-X					0.560	14.22	0.349	8.86	0.162	4.11			4.8	0.83
C0180-018-0620-X					0.620	15.75	0.384	9.76	0.175	4.45			4.3	0.74
C0180-018-0690-X			0.018	0.46	0.690	17.53	0.428	10.88	0.189	4.80	1.00	4.45	3.8	0.67
C0180-018-0750-X					0.750	19.05	0.457	11.60	0.207	5.26			3.4	0.60
C0180-018-0880-X					0.880	22.35	0.555	14.09	0.227	5.77			3.1	0.54
C0180-018-1000-X					1.000	25.40	0.624	15.85	0.252	6.40			2.7	0.47
C0180-018-1250-X					1.250	31.75	0.787	20.00	0.303	7.70			2.2	0.38
C0180-018-1380-X					1.380	35.05	0.857	21.77	0.330	8.38			1.9	0.34
C0180-018-1500-X					1.500	38.10	0.927	23.55	0.355	9.02			1.8	0.31
C0180-018-1750-X					1.750	44.45	1.082	27.47	0.406	10.31			1.5	0.26
C0180-020-0250-X					0.250	6.35	0.173	4.39	0.113	2.87			17.7	3.09
C0180-020-0310-X					0.310	7.87	0.211	5.35	0.128	3.25			13.7	2.41
C0180-020-0380-X					0.380	9.65	0.255	6.47	0.146	3.71			10.9	1.91
C0180-020-0440-X					0.440	11.18	0.292	7.42	0.161	4.09			9.3	1.62
C0180-020-0500-X					0.500	12.70	0.331	8.41	0.176	4.47			8.1	1.41
C0180-020-0560-X					0.560	14.22	0.369	9.38	0.191	4.85			7.2	1.25
C0180-020-0620-X					0.620	15.75	0.407	10.34	0.207	5.26			6.4	1.12
C0180-020-0690-X			0.020	0.51	0.690	17.53	0.449	11.40	0.224	5.69	1.37	6.09	5.7	0.99
C0180-020-0750-X					0.750	19.05	0.490	12.44	0.239	6.07			5.3	0.92
C0180-020-0880-X					0.880	22.35	0.571	14.49	0.272	6.91			4.4	0.77
C0180-020-1000-X					1.000	25.40	0.643	16.34	0.302	7.67			3.8	0.67
C0180-020-1250-X					1.250	31.75	0.807	20.49	0.366	9.30			3.1	0.54
C0180-020-1380-X					1.380	35.05	0.883	22.43	0.398	10.11			2.8	0.48
C0180-020-1500-X					1.500	38.10	0.953	24.21	0.429	10.90			2.5	0.44
C0180-020-1750-X					1.750	44.45	1.119	28.43	0.492	12.50			2.2	0.38
C0180-022-0250-X					0.250	6.35	0.177	4.49	0.121	3.07			24.7	4.32
C0180-022-0310-X					0.310	7.87	0.219	5.55	0.137	3.48			19.7	3.46
C0180-022-0380-X					0.380	9.65	0.270	6.87	0.154	3.91			16.5	2.89
C0180-022-0440-X					0.440	11.18	0.312	7.92	0.170	4.32			14.1	2.47
C0180-022-0500-X			0.022	0.56	0.500	12.70	0.347	8.82	0.192	4.88	1.81	8.05	11.8	2.07
C0180-022-0560-X					0.560	14.22	0.378	9.60	0.219	5.56			9.9	1.74
C0180-022-0620-X					0.620	15.75	0.413	10.50	0.241	6.12			8.8	1.53
C0180-022-0690-X					0.690	17.53	0.464	11.79	0.259	6.58			8.0	1.40



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0180-022-0750-X					0.750	19.05	0.501	12.72	0.280	7.11			7.3	1.27
C0180-022-0810-X					0.810	20.57	0.528	13.42	0.309	7.85			6.4	1.12
C0180-022-0940-X					0.940	23.88	0.626	15.89	0.337	8.56			5.8	1.01
C0180-022-1000-X			0.022	0.56	1.000	25.40	0.666	16.93	0.355	9.02	1.81	8.05	5.4	0.95
C0180-022-1120-X					1.120	28.45	0.746	18.95	0.391	9.93			4.8	0.85
C0180-022-1250-X					1.250	31.75	0.833	21.16	0.430	10.92			4.3	0.76
C0180-022-1500-X					1.500	38.10	0.996	25.29	0.506	12.85			3.6	0.63
C0180-022-1750-X					1.750	44.45	1.179	29.96	0.550	13.97			3.2	0.56
C0180-024-0250-X					0.250	6.35	0.184	4.67	0.143	3.63			35.2	6.17
C0180-024-0310-X					0.310	7.87	0.224	5.70	0.164	4.17			27.2	4.76
C0180-024-0380-X					0.380	9.65	0.271	6.89	0.189	4.80			21.4	3.75
C0180-024-0440-X					0.440	11.18	0.312	7.92	0.210	5.33			18.2	3.18
C0180-024-0500-X					0.500	12.70	0.352	8.94	0.232	5.89			15.7	2.76
C0180-024-0560-X					0.560	14.22	0.393	9.97	0.253	6.43			13.9	2.44
C0180-024-0620-X					0.620	15.75	0.432	10.98	0.274	6.96			12.4	2.17
C0180-024-0750-X			0.024	0.61	0.750	19.05	0.521	13.23	0.320	8.13	2.33	10.36	10.2	1.78
C0180-024-0880-X					0.880	22.35	0.609	15.46	0.366	9.30			8.6	1.50
C0180-024-1000-X					1.000	25.40	0.689	17.51	0.408	10.36			7.5	1.31
C0180-024-1120-X					1.120	28.45	0.771	19.57	0.450	11.43			6.7	1.17
C0180-024-1250-X					1.250	31.75	0.856	21.75	0.496	12.60			5.9	1.03
C0180-024-1500-X					1.500	38.10	1.026	26.06	0.585	14.86			4.9	0.86
C0180-024-1750-X					1.750	44.45	1.191	30.25	0.673	17.09			4.2	0.73
C0180-024-2000-X					2.000	50.80	1.365	34.66	0.761	19.33			3.7	0.64
C0180-026-0250-X					0.250	6.35	0.189	4.80	0.149	3.78			48.2	8.43
C0180-026-0310-X					0.310	7.87	0.235	5.97	0.168	4.27			39.2	6.86
C0180-026-0380-X					0.380	9.65	0.286	7.26	0.195	4.95			31.2	5.47
C0180-026-0440-X					0.440	11.18	0.327	8.30	0.221	5.61			26.0	4.55
C0180-026-0500-X					0.500	12.70	0.368	9.36	0.247	6.27			22.3	3.91
C0180-026-0560-X					0.560	14.22	0.410	10.41	0.272	6.91			19.6	3.43
C0180-026-0620-X					0.620	15.75	0.451	11.46	0.298	7.57			17.4	3.05
C0180-026-0690-X					0.690	17.53	0.502	12.76	0.324	8.23			15.7	2.74
C0180-026-0750-X			0.026	0.66	0.750	19.05	0.542	13.78	0.352	8.94	2.94	13.08	14.2	2.48
C0180-026-0810-X					0.810	20.57	0.584	14.83	0.377	9.58			13.0	2.27
C0180-026-0880-X					0.880	22.35	0.635	16.13	0.403	10.24			12.0	2.10
C0180-026-1000-X					1.000	25.40	0.711	18.05	0.461	11.71			10.2	1.78
C0180-026-1120-X					1.120	28.45	0.793	20.15	0.509	12.93			9.0	1.58
C0180-026-1250-X	0.180	4.57			1.250	31.75	0.886	22.51	0.562	14.27			8.1	1.41
C0180-026-1500-X					1.500	38.10	1.059	26.90	0.663	16.84			6.7	1.17
C0180-026-1750-X					1.750	44.45	1.231	31.27	0.764	19.41			5.7	0.99
C0180-026-2000-X					2.000	50.80	1.402	35.61	0.865	21.97			4.9	0.86
C0180-029-0250-X					0.250	6.35	0.198	5.03	0.172	4.37			77.6	13.58
C0180-029-0310-X					0.310	7.87	0.242	6.14	0.208	5.28			59.1	10.36
C0180-029-0380-X					0.380	9.65	0.293	7.44	0.241	6.12			46.2	8.10
C0180-029-0440-X					0.440	11.18	0.337	8.55	0.270	6.86			39.0	6.83
C0180-029-0500-X					0.500	12.70	0.381	9.67	0.299	7.59			33.7	5.91
C0180-029-0560-X					0.560	14.22	0.424	10.77	0.327	8.31			29.7	5.19
C0180-029-0620-X					0.620	15.75	0.468	11.88	0.356	9.04			26.5	4.64
C0180-029-0690-X					0.690	17.53	0.519	13.18	0.390	9.91			23.6	4.13
C0180-029-0750-X					0.750	19.05	0.562	14.29	0.418	10.62			21.5	3.76
C0180-029-0810-X			0.029	0.74	0.810	20.57	0.607	15.41	0.447	11.35	4.03	17.93	19.8	3.47
C0180-029-0880-X					0.880	22.35	0.658	16.71	0.481	12.22			18.2	3.18
C0180-029-0940-X					0.940	23.88	0.702	17.82	0.509	12.93			16.9	2.96
C0180-029-1000-X					1.000	25.40	0.745	18.93	0.538	13.67			15.8	2.77
C0180-029-1120-X					1.120	28.45	0.832	21.13	0.596	15.14			14.0	2.45
C0180-029-1250-X					1.250	31.75	0.927	23.56	0.658	16.71			12.5	2.19
C0180-029-1380-X					1.380	35.05	1.022	25.95	0.720	18.29			11.3	1.97
C0180-029-1500-X					1.500	38.10	1.110	28.19	0.778	19.76			10.3	1.81
C0180-029-1750-X					1.750	44.45	1.294	32.86	0.897	22.78			8.8	1.55
C0180-029-2000-X					2.000	50.80	1.474	37.44	1.017	25.83			7.7	1.34
C0180-032-0310-X					0.310	7.87	0.258	6.55	0.206	5.23			102.2	17.90
C0180-032-0380-X					0.380	9.65	0.314	7.97	0.240	6.10			80.8	14.15
C0180-032-0440-X					0.440	11.18	0.357	9.07	0.280	7.11			64.6	11.31
C0180-032-0500-X					0.500	12.70	0.401	10.19	0.319	8.10			54.1	9.47
C0180-032-0560-X					0.560	14.22	0.451	11.46	0.343	8.71			49.1	8.59
C0180-032-0620-X					0.620	15.75	0.495	12.57	0.382	9.70			42.7	7.48
C0180-032-0690-X			0.032	0.81	0.690	17.53	0.555	14.09	0.406	10.31	5.35	23.80	39.6	6.93
C0180-032-0750-X					0.750	19.05	0.595	15.10	0.456	11.58			34.4	6.02
C0180-032-0810-X					0.810	20.57	0.638	16.20	0.496	12.60			31.1	5.44
C0180-032-0880-X					0.880	22.35	0.688	17.49	0.543	13.79			27.9	4.89
C0180-032-0940-X					0.940	23.88	0.735	18.67	0.576	14.63			26.1	4.57
C0180-032-1000-X					1.000	25.40	0.782	19.86	0.608	15.44			24.5	4.29
C0180-032-1120-X					1.120	28.45	0.869	22.08	0.677	17.20			21.3	3.73
C0180-032-1250-X					1.250	31.75	0.969	24.60	0.748	19.00			19.0	3.33



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SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0180-032-1380-X					1.380	35.05	1.068	27.14	0.819	20.80			17.2	3.01
C0180-032-1500-X			0.032	0.81	1.500	38.10	1.159	29.43	0.885	22.48	5.35	23.80	15.7	2.74
C0180-032-1750-X					1.750	44.45	1.351	34.33	1.023	25.98			13.4	2.35
C0180-032-2000-X					2.000	50.80	1.542	39.16	1.160	29.46			11.7	2.04
C0180-035-0380-X					0.380	9.65	0.320	8.12	0.286	7.26			114.1	19.98
C0180-035-0440-X					0.440	11.18	0.368	9.34	0.321	8.15			95.6	16.73
C0180-035-0500-X					0.500	12.70	0.416	10.57	0.356	9.04			82.2	14.40
C0180-035-0560-X					0.560	14.22	0.464	11.80	0.391	9.93			72.1	12.63
C0180-035-0620-X					0.620	15.75	0.513	13.02	0.426	10.82			64.3	11.26
C0180-035-0690-X	0.180	4.57			0.690	17.53	0.569	14.46	0.467	11.86			57.1	9.99
C0180-035-0750-X					0.750	19.05	0.617	15.68	0.502	12.75			52.0	9.10
C0180-035-0810-X			0.035	0.89	0.810	20.57	0.666	16.91	0.537	13.64	6.90	30.69	47.8	8.37
C0180-035-0880-X					0.880	22.35	0.722	18.34	0.578	14.68			43.7	7.64
C0180-035-0940-X					0.940	23.88	0.770	19.57	0.613	15.57			40.7	7.12
C0180-035-1000-X					1.000	25.40	0.819	20.80	0.648	16.46			38.1	6.67
C0180-035-1120-X					1.120	28.45	0.915	23.24	0.718	18.24			33.7	5.89
C0180-035-1250-X					1.250	31.75	1.020	25.91	0.793	20.14			30.0	5.25
C0180-035-1500-X					1.500	38.10	1.221	31.02	0.939	23.85			24.7	4.33
C0180-035-1750-X					1.750	44.45	1.423	36.14	1.085	27.56			21.1	3.69
C0180-035-2000-X					2.000	50.80	1.624	41.24	1.231	31.27			18.3	3.21
C0210-018-0250-X					0.250	6.35	0.156	3.95	0.089	2.26			9.2	1.60
C0210-018-0310-X					0.310	7.87	0.189	4.81	0.099	2.51			7.2	1.25
C0210-018-0380-X					0.380	9.65	0.227	5.77	0.110	2.79			5.7	0.99
C0210-018-0440-X					0.440	11.18	0.261	6.63	0.120	3.05			4.8	0.85
C0210-018-0500-X					0.500	12.70	0.296	7.52	0.130	3.30			4.3	0.74
C0210-018-0560-X					0.560	14.22	0.329	8.36	0.140	3.56			3.8	0.66
C0210-018-0620-X					0.620	15.75	0.360	9.15	0.150	3.81			3.3	0.58
C0210-018-0690-X			0.018	0.46	0.690	17.53	0.401	10.19	0.161	4.09	0.87	3.87	3.0	0.53
C0210-018-0750-X					0.750	19.05	0.435	11.05	0.171	4.34			2.8	0.48
C0210-018-0810-X					0.810	20.57	0.464	11.78	0.181	4.60			2.5	0.44
C0210-018-0880-X					0.880	22.35	0.509	12.93	0.192	4.88			2.3	0.41
C0210-018-1000-X					1.000	25.40	0.567	14.40	0.212	5.38			2.0	0.35
C0210-018-1250-X					1.250	31.75	0.703	17.86	0.253	6.43			1.6	0.28
C0210-018-1500-X					1.500	38.10	0.851	21.60	0.294	7.47			1.3	0.23
C0210-018-1750-X					1.750	44.45	1.008	25.60	0.334	8.48			1.2	0.20
C0210-018-2000-X					2.000	50.80	1.134	28.81	0.375	9.53			1.0	0.18
C0210-022-0250-X					0.250	6.35	0.170	4.33	0.113	2.87			19.7	3.44
C0210-022-0310-X					0.310	7.87	0.207	5.27	0.127	3.23			15.2	2.67
C0210-022-0380-X					0.380	9.65	0.250	6.36	0.143	3.63			12.1	2.12
C0210-022-0440-X					0.440	11.18	0.287	7.30	0.157	3.99			10.3	1.79
C0210-022-0500-X					0.500	12.70	0.325	8.24	0.170	4.32			8.9	1.56
C0210-022-0560-X					0.560	14.22	0.360	9.15	0.184	4.67			7.8	1.37
C0210-022-0620-X					0.620	15.75	0.399	10.14	0.198	5.03			7.1	1.24
C0210-022-0690-X	0.210	5.33	0.022	0.56	0.690	17.53	0.440	11.17	0.214	5.44	1.56	6.94	6.3	1.09
C0210-022-0750-X					0.750	19.05	0.478	12.14	0.228	5.79			5.8	1.01
C0210-022-0810-X					0.810	20.57	0.517	13.12	0.241	6.12			5.3	0.93
C0210-022-0880-X					0.880	22.35	0.556	14.13	0.257	6.53			4.8	0.85
C0210-022-1000-X					1.000	25.40	0.632	16.05	0.285	7.24			4.3	0.74
C0210-022-1250-X					1.250	31.75	0.781	19.83	0.342	8.69			3.3	0.58
C0210-022-1500-X					1.500	38.10	0.931	23.65	0.399	10.13			2.8	0.48
C0210-022-1750-X					1.750	44.45	1.102	28.00	0.456	11.58			2.4	0.42
C0210-022-2000-X					2.000	50.80	1.249	31.72	0.514	13.06			2.1	0.36
C0210-026-0250-X					0.250	6.35	0.180	4.58	0.140	3.56			36.7	6.43
C0210-026-0310-X					0.310	7.87	0.220	5.58	0.159	4.04			28.2	4.95
C0210-026-0380-X					0.380	9.65	0.265	6.73	0.181	4.60			22.2	3.88
C0210-026-0440-X					0.440	11.18	0.304	7.72	0.200	5.08			18.7	3.28
C0210-026-0500-X					0.500	12.70	0.343	8.71	0.219	5.56			16.2	2.84
C0210-026-0560-X					0.560	14.22	0.382	9.70	0.237	6.02			14.3	2.51
C0210-026-0620-X					0.620	15.75	0.421	10.69	0.256	6.50			12.8	2.25
C0210-026-0690-X			0.026	0.66	0.690	17.53	0.466	11.84	0.278	7.06	2.55	11.34	11.4	2.00
C0210-026-0750-X					0.750	19.05	0.505	12.82	0.297	7.54			10.4	1.82
C0210-026-0810-X					0.810	20.57	0.543	13.80	0.316	8.03			9.6	1.68
C0210-026-0880-X					0.880	22.35	0.588	14.94	0.338	8.59			8.8	1.53
C0210-026-1000-X					1.000	25.40	0.667	16.94	0.376	9.55			7.7	1.34
C0210-026-1250-X					1.250	31.75	0.830	21.09	0.454	11.53			6.1	1.06
C0210-026-1500-X					1.500	38.10	0.989	25.12	0.533	13.54			5.0	0.88
C0210-026-1750-X					1.750	44.45	1.149	29.19	0.611	15.52			4.3	0.74
C0210-026-2000-X					2.000	50.80	1.319	33.50	0.689	17.50			3.8	0.66
C0240-016-0250-X					0.250	6.35	0.146	3.71	0.070	1.78			5.2	0.90
C0240-016-0310-X					0.310	7.87	0.176	4.46	0.076	1.93			4.0	0.70
C0240-016-0380-X	0.240	6.10	0.016	0.41	0.380	9.65	0.215	5.45	0.083	2.11	0.54	2.40	3.3	0.57
C0240-016-0440-X					0.440	11.18	0.245	6.21	0.089	2.26			2.8	0.48
C0240-016-0500-X					0.500	12.70	0.278	7.05	0.095	2.41			2.4	0.42



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0240-016-0560-X					0.560	14.22	0.302	7.67	0.101	2.57			2.1	0.36
C0240-016-0620-X					0.620	15.75	0.340	8.63	0.107	2.72			1.9	0.34
C0240-016-0690-X					0.690	17.53	0.368	9.34	0.114	2.90			1.7	0.29
C0240-016-0750-X					0.750	19.05	0.411	10.43	0.120	3.05			1.6	0.28
C0240-016-0810-X					0.810	20.57	0.431	10.94	0.126	3.20			1.4	0.25
C0240-016-0880-X			0.016	0.41	0.880	22.35	0.477	12.12	0.133	3.38	0.54	2.40	1.3	0.23
C0240-016-1000-X					1.000	25.40	0.540	13.70	0.145	3.68			1.2	0.20
C0240-016-1250-X					1.250	31.75	0.664	16.86	0.170	4.32			0.9	0.16
C0240-016-1500-X					1.500	38.10	0.784	19.91	0.195	4.95			0.8	0.13
C0240-016-1750-X					1.750	44.45	0.944	23.98	0.220	5.59			0.7	0.12
C0240-016-2000-X					2.000	50.80	1.079	27.41	0.245	6.22			0.6	0.10
C0240-018-0250-X					0.250	6.35	0.154	3.91	0.080	2.03			7.9	1.39
C0240-018-0310-X					0.310	7.87	0.186	4.74	0.088	2.24			6.2	1.08
C0240-018-0380-X					0.380	9.65	0.225	5.72	0.096	2.44			4.9	0.86
C0240-018-0440-X					0.440	11.18	0.257	6.53	0.103	2.62			4.2	0.73
C0240-018-0500-X					0.500	12.70	0.292	7.42	0.111	2.82			3.7	0.64
C0240-018-0560-X					0.560	14.22	0.326	8.27	0.118	3.00			3.3	0.57
C0240-018-0620-X					0.620	15.75	0.359	9.11	0.126	3.20			2.9	0.51
C0240-018-0690-X			0.018	0.46	0.690	17.53	0.395	10.04	0.134	3.40	0.76	3.38	2.6	0.45
C0240-018-0750-X					0.750	19.05	0.424	10.76	0.141	3.58			2.3	0.41
C0240-018-0810-X					0.810	20.57	0.458	11.64	0.149	3.78			2.2	0.38
C0240-018-0880-X					0.880	22.35	0.499	12.68	0.157	3.99			2.0	0.35
C0240-018-1000-X					1.000	25.40	0.565	14.34	0.172	4.37			1.8	0.31
C0240-018-1250-X					1.250	31.75	0.712	18.09	0.203	5.16			1.4	0.25
C0240-018-1500-X					1.500	38.10	0.847	21.51	0.233	5.92			1.2	0.20
C0240-018-1750-X					1.750	44.45	0.988	25.10	0.264	6.71			1.0	0.18
C0240-018-2000-X					2.000	50.80	1.086	27.58	0.294	7.47			0.8	0.15
C0240-020-0250-X					0.250	6.35	0.161	4.10	0.091	2.31			11.8	2.06
C0240-020-0310-X					0.310	7.87	0.196	4.99	0.099	2.51			9.2	1.60
C0240-020-0380-X					0.380	9.65	0.236	6.01	0.110	2.79			7.3	1.27
C0240-020-0440-X					0.440	11.18	0.271	6.89	0.118	3.00			6.2	1.08
C0240-020-0500-X					0.500	12.70	0.305	7.74	0.127	3.23			5.3	0.93
C0240-020-0560-X					0.560	14.22	0.341	8.66	0.136	3.45			4.8	0.83
C0240-020-0620-X					0.620	15.75	0.375	9.53	0.145	3.68			4.3	0.74
C0240-020-0690-X			0.020	0.51	0.690	17.53	0.419	10.63	0.155	3.94	1.04	4.63	3.8	0.67
C0240-020-0750-X					0.750	19.05	0.453	11.50	0.164	4.17			3.5	0.61
C0240-020-0810-X	0.240	6.10			0.810	20.57	0.481	12.23	0.172	4.37			3.2	0.56
C0240-020-0880-X					0.880	22.35	0.523	13.29	0.182	4.62			2.9	0.51
C0240-020-1000-X					1.000	25.40	0.597	15.17	0.200	5.08			2.6	0.45
C0240-020-1250-X					1.250	31.75	0.730	18.53	0.236	5.99			2.0	0.35
C0240-020-1500-X					1.500	38.10	0.876	22.24	0.273	6.93			1.7	0.29
C0240-020-1750-X					1.750	44.45	1.015	25.79	0.309	7.85			1.4	0.25
C0240-020-2000-X					2.000	50.80	1.168	29.65	0.346	8.79			1.3	0.22
C0240-022-0250-X					0.250	6.35	0.165	4.19	0.103	2.62			16.2	2.84
C0240-022-0310-X					0.310	7.87	0.200	5.09	0.113	2.87			12.6	2.20
C0240-022-0380-X					0.380	9.65	0.245	6.23	0.115	2.92			10.3	1.79
C0240-022-0440-X					0.440	11.18	0.269	6.84	0.131	3.33			8.1	1.41
C0240-022-0500-X					0.500	12.70	0.305	7.75	0.142	3.61			7.1	1.24
C0240-022-0560-X					0.560	14.22	0.339	8.62	0.154	3.91			6.3	1.09
C0240-022-0620-X					0.620	15.75	0.377	9.57	0.164	4.17			5.7	0.99
C0240-022-0690-X			0.022	0.56	0.690	17.53	0.423	10.75	0.175	4.45	1.38	6.14	5.2	0.90
C0240-022-0750-X					0.750	19.05	0.454	11.54	0.188	4.78			4.7	0.82
C0240-022-0810-X					0.810	20.57	0.492	12.49	0.198	5.03			4.3	0.76
C0240-022-1000-X					1.000	25.40	0.606	15.39	0.236	5.99			3.5	0.61
C0240-022-1250-X					1.250	31.75	0.749	19.01	0.280	7.11			2.8	0.48
C0240-022-1500-X					1.500	38.10	0.909	23.09	0.325	8.26			2.3	0.41
C0240-022-1750-X					1.750	44.45	1.060	26.94	0.369	9.37			2.0	0.35
C0240-022-2000-X					2.000	50.80	1.212	30.78	0.413	10.49			1.8	0.31
C0240-024-0380-X					0.380	9.65	0.248	6.30	0.142	3.61			13.5	2.36
C0240-024-0440-X					0.440	11.18	0.284	7.21	0.155	3.94			11.4	2.00
C0240-024-0500-X					0.500	12.70	0.320	8.13	0.168	4.27			9.9	1.74
C0240-024-0560-X					0.560	14.22	0.356	9.05	0.180	4.57			8.8	1.53
C0240-024-0620-X					0.620	15.75	0.392	9.97	0.193	4.90			7.8	1.37
C0240-024-0690-X					0.690	17.53	0.435	11.06	0.208	5.28			7.0	1.23
C0240-024-0750-X			0.024	0.61	0.750	19.05	0.469	11.90	0.221	5.61	1.78	7.92	6.3	1.11
C0240-024-0810-X					0.810	20.57	0.504	12.81	0.233	5.92			5.8	1.02
C0240-024-0880-X					0.880	22.35	0.546	13.86	0.248	6.30			5.3	0.93
C0240-024-1000-X					1.000	25.40	0.618	15.70	0.274	6.96			4.7	0.82
C0240-024-1250-X					1.250	31.75	0.775	19.68	0.327	8.31			3.8	0.66
C0240-024-1500-X					1.500	38.10	0.922	23.42	0.379	9.63			3.1	0.54
C0240-024-1750-X					1.750	44.45	1.082	27.47	0.432	10.97			2.7	0.47
C0240-024-2000-X					2.000	50.80	1.208	30.68	0.485	12.32			2.3	0.39
C0240-026-0310-X			0.026	0.66	0.310	7.87	0.216	5.48	0.138	3.51	2.25	10.01	23.9	4.19



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0240-026-0380-X					0.380	9.65	0.264	6.70	0.143	3.63			19.4	3.40
C0240-026-0440-X					0.440	11.18	0.304	7.72	0.156	3.96			16.6	2.90
C0240-026-0500-X					0.500	12.70	0.344	8.75	0.169	4.29			14.5	2.54
C0240-026-0560-X					0.560	14.22	0.376	9.55	0.188	4.78			12.3	2.15
C0240-026-0620-X					0.620	15.75	0.407	10.33	0.208	5.28			10.6	1.85
C0240-026-0690-X					0.690	17.53	0.446	11.33	0.228	5.79			9.3	1.62
C0240-026-0750-X			0.026	0.66	0.750	19.05	0.479	12.18	0.246	6.25	2.55	10.01	8.3	1.46
C0240-026-0810-X					0.810	20.57	0.519	13.18	0.260	6.60			7.8	1.36
C0240-026-0880-X					0.880	22.35	0.558	14.17	0.281	7.14			7.0	1.23
C0240-026-1000-X					1.000	25.40	0.634	16.11	0.313	7.95			6.2	1.08
C0240-026-1250-X					1.250	31.75	0.791	20.10	0.375	9.53			4.9	0.86
C0240-026-1500-X					1.500	38.10	0.948	24.07	0.437	11.10			4.1	0.71
C0240-026-1750-X					1.750	44.45	1.090	27.68	0.499	12.67			3.4	0.60
C0240-026-2000-X					2.000	50.80	1.248	31.70	0.561	14.25			3.0	0.53
C0240-029-0380-X					0.380	9.65	0.263	6.69	0.185	4.70			26.7	4.67
C0240-029-0440-X					0.440	11.18	0.302	7.67	0.203	5.16			22.5	3.94
C0240-029-0500-X					0.500	12.70	0.340	8.64	0.221	5.61			19.4	3.40
C0240-029-0560-X					0.560	14.22	0.379	9.63	0.240	6.10			17.2	3.01
C0240-029-0620-X					0.620	15.75	0.417	10.60	0.258	6.55			15.3	2.68
C0240-029-0690-X					0.690	17.53	0.461	11.72	0.279	7.09			13.6	2.38
C0240-029-0750-X					0.750	19.05	0.500	12.69	0.298	7.57			12.4	2.17
C0240-029-0810-X					0.810	20.57	0.538	13.66	0.316	8.03			11.4	2.00
C0240-029-0880-X			0.029	0.74	0.880	22.35	0.584	14.84	0.337	8.56	3.11	13.83	10.5	1.84
C0240-029-0940-X					0.940	23.88	0.621	15.78	0.355	9.02			9.8	1.71
C0240-029-1000-X					1.000	25.40	0.661	16.79	0.374	9.50			9.2	1.60
C0240-029-1120-X					1.120	28.45	0.736	18.69	0.410	10.41			8.1	1.41
C0240-029-1250-X					1.250	31.75	0.821	20.87	0.450	11.43			7.3	1.27
C0240-029-1380-X					1.380	35.05	0.902	22.91	0.489	12.42			6.5	1.14
C0240-029-1500-X					1.500	38.10	0.982	24.95	0.526	13.36			6.0	1.05
C0240-029-1750-X					1.750	44.45	1.139	28.93	0.602	15.29			5.1	0.89
C0240-029-2000-X					2.000	50.80	1.297	32.93	0.678	17.22			4.4	0.77
C0240-032-0310-X					0.310	7.87	0.232	5.90	0.167	4.24			53.2	9.31
C0240-032-0380-X					0.380	9.65	0.288	7.31	0.184	4.67			44.8	7.85
C0240-032-0440-X					0.440	11.18	0.325	8.25	0.209	5.31			36.0	6.30
C0240-032-0500-X					0.500	12.70	0.365	9.27	0.232	5.89			30.7	5.37
C0240-032-0560-X					0.560	14.22	0.404	10.27	0.255	6.48			26.6	4.65
C0240-032-0620-X	0.240	6.10			0.620	15.75	0.442	11.24	0.279	7.09			23.3	4.08
C0240-032-0690-X					0.690	17.53	0.491	12.48	0.303	7.70			20.8	3.65
C0240-032-0750-X					0.750	19.05	0.523	13.29	0.335	8.51			18.2	3.19
C0240-032-0810-X			0.032	0.81	0.810	20.57	0.561	14.26	0.359	9.12	4.14	18.41	16.7	2.92
C0240-032-0880-X					0.880	22.35	0.610	15.49	0.384	9.75			15.3	2.68
C0240-032-0940-X					0.940	23.88	0.649	16.49	0.407	10.34			14.2	2.49
C0240-032-1000-X					1.000	25.40	0.687	17.46	0.431	10.95			13.2	2.32
C0240-032-1250-X					1.250	31.75	0.852	21.65	0.526	13.36			10.4	1.82
C0240-032-1380-X					1.380	35.05	0.936	23.78	0.573	14.55			9.3	1.63
C0240-032-1500-X					1.500	38.10	1.017	25.84	0.616	15.65			8.6	1.50
C0240-032-1750-X					1.750	44.45	1.185	30.10	0.707	17.96			7.3	1.28
C0240-032-2000-X					2.000	50.80	1.346	34.19	0.797	20.24			6.3	1.11
C0240-035-0310-X					0.310	7.87	0.236	5.99	0.206	5.23			72.4	12.68
C0240-035-0380-X					0.380	9.65	0.284	7.22	0.235	5.97			56.1	9.82
C0240-035-0440-X					0.440	11.18	0.326	8.27	0.260	6.60			47.0	8.23
C0240-035-0500-X					0.500	12.70	0.367	9.32	0.286	7.26			40.4	7.07
C0240-035-0560-X					0.560	14.22	0.409	10.38	0.311	7.90			35.5	6.21
C0240-035-0620-X					0.620	15.75	0.450	11.43	0.336	8.53			31.6	5.53
C0240-035-0690-X					0.690	17.53	0.498	12.65	0.366	9.30			28.0	4.90
C0240-035-0750-X					0.750	19.05	0.540	13.71	0.391	9.93			25.6	4.48
C0240-035-0810-X					0.810	20.57	0.581	14.77	0.416	10.57			23.5	4.11
C0240-035-0880-X			0.035	0.89	0.880	22.35	0.629	15.98	0.445	11.30	5.37	23.89	21.4	3.75
C0240-035-0940-X					0.940	23.88	0.671	17.05	0.471	11.96			20.0	3.50
C0240-035-1000-X					1.000	25.40	0.712	18.09	0.496	12.60			18.7	3.27
C0240-035-1250-X					1.250	31.75	0.886	22.50	0.601	15.27			14.7	2.58
C0240-035-1380-X					1.380	35.05	0.974	24.75	0.656	16.66			13.2	2.32
C0240-035-1500-X					1.500	38.10	1.058	26.88	0.706	17.93			12.2	2.13
C0240-035-1750-X					1.750	44.45	1.230	31.24	0.811	20.60			10.3	1.81
C0240-035-2000-X					2.000	50.80	1.403	35.63	0.916	23.27			9.0	1.58
C0240-035-2250-X					2.250	57.15	1.578	40.09	1.021	25.93			8.0	1.40
C0240-035-2500-X					2.500	63.50	1.750	44.45	1.126	28.60			7.2	1.25
C0240-038-0310-X					0.310	7.87	0.246	6.24	0.208	5.28			105.9	18.54
C0240-038-0380-X					0.380	9.65	0.299	7.60	0.237	6.02			84.6	14.81
C0240-038-0440-X					0.440	11.18	0.343	8.71	0.265	6.73			70.3	12.31
C0240-038-0500-X			0.038	0.97	0.500	12.70	0.387	9.83	0.294	7.47	6.81	30.29	60.2	10.55
C0240-038-0560-X					0.560	14.22	0.431	10.94	0.323	8.20			52.7	9.22
C0240-038-0620-X					0.620	15.75	0.475	12.06	0.350	8.89			47.0	8.23



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0240-038-0690-X					0.690	17.53	0.529	13.43	0.379	9.63			42.2	7.40
C0240-038-0750-X					0.750	19.05	0.573	14.54	0.407	10.34			38.4	6.72
C0240-038-0810-X					0.810	20.57	0.616	15.65	0.436	11.07			35.2	6.16
C0240-038-0880-X					0.880	22.35	0.665	16.88	0.474	12.04			31.7	5.54
C0240-038-0940-X					0.940	23.88	0.704	17.87	0.511	12.98			28.8	5.05
C0240-038-1000-X					1.000	25.40	0.747	18.97	0.541	13.74			26.9	4.71
C0240-038-1120-X			0.038	0.97	1.120	28.45	0.835	21.21	0.597	15.16	6.81	30.29	23.9	4.19
C0240-038-1250-X					1.250	31.75	0.933	23.70	0.653	16.59			21.5	3.76
C0240-038-1380-X					1.380	35.05	1.030	26.17	0.711	18.06			19.5	3.41
C0240-038-1500-X					1.500	38.10	1.118	28.39	0.768	19.51			17.8	3.12
C0240-038-1750-X					1.750	44.45	1.277	32.44	0.912	23.16			14.4	2.52
C0240-038-2000-X					2.000	50.80	1.458	37.04	1.032	26.21			12.6	2.20
C0240-038-2250-X					2.250	57.15	1.635	41.53	1.151	29.24			11.1	1.94
C0240-038-2500-X					2.500	63.50	1.818	46.18	1.270	32.26			10.0	1.75
C0240-040-0310-X					0.310	7.87	0.249	6.33	0.220	5.59			129.8	22.73
C0240-040-0380-X					0.380	9.65	0.301	7.63	0.274	6.96			99.5	17.42
C0240-040-0440-X					0.440	11.18	0.345	8.76	0.305	7.75			82.9	14.51
C0240-040-0500-X					0.500	12.70	0.389	9.88	0.336	8.53			71.1	12.44
C0240-040-0560-X					0.560	14.22	0.433	11.00	0.366	9.30			62.2	10.90
C0240-040-0620-X					0.620	15.75	0.477	12.12	0.397	10.08			55.3	9.69
C0240-040-0690-X					0.690	17.53	0.528	13.42	0.433	11.00			48.9	8.56
C0240-040-0750-X					0.750	19.05	0.573	14.55	0.464	11.79			44.6	7.81
C0240-040-0810-X					0.810	20.57	0.617	15.67	0.495	12.57			40.9	7.16
C0240-040-0880-X			0.040	1.02	0.880	22.35	0.668	16.98	0.531	13.49	7.90	35.14	37.3	6.54
C0240-040-0940-X					0.940	23.88	0.713	18.10	0.562	14.27			34.7	6.08
C0240-040-1000-X					1.000	25.40	0.757	19.22	0.592	15.04			32.5	5.69
C0240-040-1120-X					1.120	28.45	0.845	21.47	0.654	16.61			28.7	5.03
C0240-040-1250-X					1.250	31.75	0.940	23.88	0.721	18.31			25.5	4.46
C0240-040-1380-X					1.380	35.05	1.036	26.32	0.788	20.02			23.0	4.03
C0240-040-1500-X					1.500	38.10	1.124	28.54	0.849	21.56			21.0	3.68
C0240-040-1750-X					1.750	44.45	1.309	33.25	0.977	24.82			17.9	3.14
C0240-040-2000-X					2.000	50.80	1.493	37.92	1.106	28.09			15.6	2.73
C0240-040-2250-X					2.250	57.15	1.675	42.55	1.417	35.99			13.7	2.41
C0240-040-2500-X	0.240	6.10			2.500	63.50	1.859	47.23	1.363	34.62			12.3	2.16
C0240-042-0380-X					0.380	9.65	0.309	7.86	0.272	6.91			125.8	22.03
C0240-042-0440-X					0.440	11.18	0.353	8.97	0.310	7.87			102.5	17.94
C0240-042-0500-X					0.500	12.70	0.399	10.14	0.343	8.71			88.3	15.46
C0240-042-0560-X					0.560	14.22	0.446	11.34	0.373	9.47			78.3	13.71
C0240-042-0620-X					0.620	15.75	0.494	12.56	0.401	10.19			70.8	12.40
C0240-042-0690-X					0.690	17.53	0.548	13.91	0.441	11.20			62.5	10.94
C0240-042-0750-X					0.750	19.05	0.583	14.81	0.499	12.67			53.3	9.34
C0240-042-0810-X					0.810	20.57	0.632	16.06	0.525	13.34			50.0	8.75
C0240-042-0880-X					0.880	22.35	0.689	17.51	0.556	14.12			46.7	8.17
C0240-042-0940-X			0.042	1.07	0.940	23.88	0.731	18.56	0.600	15.24	8.89	39.54	42.5	7.44
C0240-042-1000-X					1.000	25.40	0.778	19.75	0.631	16.03			40.0	7.00
C0240-042-1120-X					1.120	28.45	0.869	22.07	0.699	17.75			35.4	6.20
C0240-042-1250-X					1.250	31.75	0.965	24.52	0.778	19.76			31.2	5.47
C0240-042-1380-X					1.380	35.05	1.066	27.08	0.847	21.51			28.3	4.96
C0240-042-1500-X					1.500	38.10	1.150	29.21	0.933	23.70			25.4	4.45
C0240-042-1750-X					1.750	44.45	1.347	34.22	1.040	26.42			22.1	3.86
C0240-042-2000-X					2.000	50.80	1.536	39.01	1.177	29.90			19.2	3.36
C0240-042-2250-X					2.250	57.15	1.727	43.86	1.314	33.38			17.0	2.98
C0240-042-2500-X					2.500	63.50	1.917	48.68	1.452	36.88			15.2	2.67
C0240-045-0440-X					0.440	11.18	0.366	9.29	0.326	8.28			145.7	25.51
C0240-045-0500-X					0.500	12.70	0.413	10.49	0.361	9.17			124.4	21.78
C0240-045-0560-X					0.560	14.22	0.460	11.69	0.396	10.06			108.5	18.99
C0240-045-0620-X					0.620	15.75	0.507	12.89	0.436	11.07			96.2	16.85
C0240-045-0690-X					0.690	17.53	0.563	14.29	0.477	12.12			85.0	14.88
C0240-045-0750-X					0.750	19.05	0.610	15.49	0.516	13.11			77.2	13.52
C0240-045-0810-X					0.810	20.57	0.657	16.69	0.551	14.00			70.8	12.40
C0240-045-0880-X			0.045	1.14	0.880	22.35	0.712	18.09	0.594	15.09	10.82	48.13	64.6	11.31
C0240-045-1000-X					1.000	25.40	0.807	20.50	0.667	16.94			56.1	9.82
C0240-045-1250-X					1.250	31.75	1.004	25.50	0.813	20.65			44.0	7.70
C0240-045-1500-X					1.500	38.10	1.201	30.50	0.959	24.36			36.2	6.33
C0240-045-1750-X					1.750	44.45	1.398	35.51	1.105	28.07			30.7	5.38
C0240-045-2000-X					2.000	50.80	1.594	40.49	1.251	31.78			26.7	4.67
C0240-045-2250-X					2.250	57.15	1.791	45.49	1.397	35.48			23.6	4.13
C0240-045-2500-X					2.500	63.50	1.988	50.51	1.543	39.19			21.2	3.71
C0300-022-0380-X					0.380	9.65	0.232	5.88	0.100	2.54			7.5	1.31
C0300-022-0440-X					0.440	11.18	0.264	6.71	0.106	2.69			6.3	1.11
C0300-022-0500-X	0.300	7.62	0.022	0.56	0.500	12.70	0.298	7.56	0.109	2.77	1.11	4.94	5.5	0.96
C0300-022-0560-X					0.560	14.22	0.334	8.47	0.115	2.92			4.9	0.86
C0300-022-0620-X					0.620	15.75	0.353	8.96	0.126	3.20			4.2	0.73



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0300-022-0690-X					0.690	17.53	0.406	10.30	0.131	3.33			3.9	0.69
C0300-022-0750-X					0.750	19.05	0.424	10.77	0.142	3.61			3.4	0.60
C0300-022-0810-X					0.810	20.57	0.458	11.64	0.149	3.78			3.2	0.56
C0300-022-0880-X					0.880	22.35	0.509	12.92	0.154	3.91			3.0	0.53
C0300-022-1000-X					1.000	25.40	0.582	14.79	0.175	4.45			2.7	0.47
C0300-022-1250-X			0.022	0.56	1.250	31.75	0.715	18.17	0.204	5.18	1.11	4.94	2.1	0.36
C0300-022-1500-X					1.500	38.10	0.864	21.94	0.232	5.89			1.8	0.31
C0300-022-1750-X					1.750	44.45	1.008	25.59	0.261	6.63			1.5	0.26
C0300-022-2000-X					2.000	50.80	1.109	28.17	0.289	7.34			1.3	0.22
C0300-022-2250-X					2.250	57.15	1.295	32.91	0.308	7.82			1.2	0.20
C0300-022-2500-X					2.500	63.50	1.472	37.39	0.334	8.48			1.1	0.19
C0300-026-0440-X					0.440	11.18	0.275	6.99	0.130	3.30			11.1	1.94
C0300-026-0500-X					0.500	12.70	0.303	7.69	0.143	3.63			9.3	1.62
C0300-026-0560-X					0.560	14.22	0.347	8.82	0.148	3.76			8.6	1.50
C0300-026-0620-X					0.620	15.75	0.374	9.50	0.162	4.11			7.4	1.30
C0300-026-0690-X					0.690	17.53	0.409	10.39	0.176	4.47			6.5	1.14
C0300-026-0750-X					0.750	19.05	0.454	11.53	0.182	4.62			6.2	1.08
C0300-026-0810-X					0.810	20.57	0.483	12.27	0.194	4.93			5.6	0.98
C0300-026-0880-X			0.026	0.66	0.880	22.35	0.521	13.23	0.206	5.23	1.83	8.14	5.1	0.89
C0300-026-0940-X					0.940	23.88	0.542	13.76	0.222	5.64			4.6	0.80
C0300-026-1000-X					1.000	25.40	0.570	14.49	0.234	5.94			4.3	0.74
C0300-026-1250-X					1.250	31.75	0.740	18.81	0.272	6.91			3.6	0.63
C0300-026-1500-X					1.500	38.10	0.874	22.20	0.313	7.95			2.9	0.51
C0300-026-1750-X					1.750	44.45	1.020	25.90	0.354	8.99			2.5	0.44
C0300-026-2000-X					2.000	50.80	1.157	29.40	0.394	10.01			2.2	0.38
C0300-026-2250-X					2.250	57.15	1.374	34.89	0.416	10.57			2.1	0.36
C0300-026-2500-X					2.500	63.50	1.504	38.20	0.455	11.56			1.8	0.32
C0300-030-0440-X					0.440	11.18	0.285	7.23	0.172	4.37			17.9	3.14
C0300-030-0500-X					0.500	12.70	0.320	8.14	0.185	4.70			15.5	2.71
C0300-030-0560-X					0.560	14.22	0.356	9.05	0.198	5.03			13.7	2.39
C0300-030-0620-X					0.620	15.75	0.391	9.93	0.212	5.38			12.2	2.13
C0300-030-0690-X					0.690	17.53	0.433	11.00	0.227	5.77			10.8	1.90
C0300-030-0750-X					0.750	19.05	0.469	11.92	0.240	6.10			9.9	1.74
C0300-030-0810-X					0.810	20.57	0.503	12.79	0.253	6.43			9.1	1.59
C0300-030-0880-X			0.030	0.76	0.880	22.35	0.546	13.86	0.268	6.81	2.78	12.37	8.3	1.46
C0300-030-0940-X					0.940	23.88	0.581	14.75	0.281	7.14			7.8	1.36
C0300-030-1000-X	0.300	7.62			1.000	25.40	0.616	15.64	0.294	7.47			7.3	1.27
C0300-030-1250-X					1.250	31.75	0.766	19.45	0.348	8.84			5.8	1.01
C0300-030-1500-X					1.500	38.10	0.914	23.21	0.402	10.21			4.8	0.83
C0300-030-1750-X					1.750	44.45	1.054	26.77	0.457	11.61			4.0	0.70
C0300-030-2000-X					2.000	50.80	1.204	30.59	0.511	12.98			3.5	0.61
C0300-030-2250-X					2.250	57.15	1.347	34.21	0.565	14.35			3.1	0.54
C0300-030-2500-X					2.500	63.50	1.517	38.53	0.619	15.72			2.8	0.50
C0300-032-0440-X					0.440	11.18	0.292	7.42	0.175	4.45			22.7	3.98
C0300-032-0500-X					0.500	12.70	0.329	8.35	0.190	4.83			19.7	3.44
C0300-032-0560-X					0.560	14.22	0.362	9.19	0.208	5.28			17.0	2.98
C0300-032-0620-X					0.620	15.75	0.398	10.11	0.223	5.66			15.2	2.65
C0300-032-0690-X					0.690	17.53	0.442	11.23	0.240	6.10			13.6	2.38
C0300-032-0750-X					0.750	19.05	0.479	12.16	0.255	6.48			12.4	2.17
C0300-032-0810-X					0.810	20.57	0.513	13.03	0.272	6.91			11.3	1.98
C0300-032-0880-X			0.032	0.81	0.880	22.35	0.559	14.21	0.287	7.29	3.37	14.99	10.5	1.84
C0300-032-0940-X					0.940	23.88	0.582	14.79	0.311	7.90			9.4	1.65
C0300-032-1000-X					1.000	25.40	0.619	15.72	0.326	8.28			8.8	1.55
C0300-032-1250-X					1.250	31.75	0.780	19.82	0.388	9.86			7.2	1.25
C0300-032-1500-X					1.500	38.10	0.931	23.64	0.450	11.43			5.9	1.03
C0300-032-1750-X					1.750	44.45	1.077	27.34	0.511	12.98			5.0	0.88
C0300-032-2000-X					2.000	50.80	1.238	31.44	0.573	14.55			4.4	0.77
C0300-032-2250-X					2.250	57.15	1.425	36.20	0.608	15.44			4.1	0.71
C0300-032-2500-X					2.500	63.50	1.582	40.17	0.656	16.66			3.7	0.64
C0300-035-0380-X					0.380	9.65	0.266	6.75	0.193	4.90			38.3	6.71
C0300-035-0440-X					0.440	11.18	0.303	7.71	0.210	5.33			32.1	5.62
C0300-035-0500-X					0.500	12.70	0.342	8.68	0.227	5.77			27.7	4.84
C0300-035-0560-X					0.560	14.22	0.379	9.64	0.244	6.20			24.2	4.24
C0300-035-0620-X					0.620	15.75	0.417	10.59	0.262	6.65			21.6	3.78
C0300-035-0690-X					0.690	17.53	0.461	11.72	0.281	7.14			19.2	3.36
C0300-035-0750-X			0.035	0.89	0.750	19.05	0.500	12.69	0.298	7.57	4.38	19.48	17.5	3.06
C0300-035-0810-X					0.810	20.57	0.538	13.66	0.316	8.03			16.1	2.82
C0300-035-0880-X					0.880	22.35	0.581	14.77	0.335	8.51			14.7	2.57
C0300-035-0940-X					0.940	23.88	0.619	15.73	0.353	8.97			13.7	2.39
C0300-035-1000-X					1.000	25.40	0.656	16.67	0.370	9.40			12.7	2.23
C0300-035-1120-X					1.120	28.45	0.733	18.63	0.404	10.26			11.3	1.98
C0300-035-1250-X					1.250	31.75	0.816	20.72	0.441	11.20			10.1	1.77
C0300-035-1380-X					1.380	35.05	0.898	22.80	0.478	12.14			9.1	1.59



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0300-035-1500-X					1.500	38.10	0.974	24.75	0.512	13.00			8.3	1.46
C0300-035-1750-X					1.750	44.45	1.132	28.74	0.583	14.81			7.1	1.24
C0300-035-2000-X			0.035	0.89	2.000	50.80	1.290	32.76	0.654	16.61	4.38	19.48	6.2	1.08
C0300-035-2250-X					2.250	57.15	1.441	36.61	0.725	18.42			5.4	0.95
C0300-035-2500-X					2.500	63.50	1.609	40.87	0.796	20.22			4.9	0.86
C0300-038-0380-X					0.380	9.65	0.276	7.02	0.197	5.00			53.7	9.41
C0300-038-0440-X					0.440	11.18	0.315	8.00	0.218	5.54			44.6	7.81
C0300-038-0500-X					0.500	12.70	0.356	9.04	0.237	6.02			38.7	6.77
C0300-038-0560-X					0.560	14.22	0.388	9.85	0.265	6.73			32.3	5.66
C0300-038-0620-X					0.620	15.75	0.428	10.88	0.284	7.21			29.1	5.09
C0300-038-0690-X					0.690	17.53	0.469	11.92	0.313	7.95			25.2	4.42
C0300-038-0750-X					0.750	19.05	0.510	12.96	0.331	8.41			23.2	4.07
C0300-038-0810-X					0.810	20.57	0.551	13.99	0.351	8.92			21.5	3.76
C0300-038-0880-X					0.880	22.35	0.592	15.03	0.379	9.63			19.3	3.39
C0300-038-0940-X			0.038	0.97	0.940	23.88	0.633	16.09	0.398	10.11	5.57	24.78	18.2	3.18
C0300-038-1000-X					1.000	25.40	0.674	17.12	0.417	10.59			17.1	2.99
C0300-038-1120-X					1.120	28.45	0.755	19.17	0.456	11.58			15.2	2.67
C0300-038-1250-X					1.250	31.75	0.847	21.52	0.493	12.52			13.8	2.42
C0300-038-1380-X					1.380	35.05	0.937	23.80	0.532	13.51			12.6	2.20
C0300-038-1500-X					1.500	38.10	1.019	25.88	0.570	14.48			11.6	2.03
C0300-038-1750-X					1.750	44.45	1.153	29.29	0.680	17.27			9.3	1.63
C0300-038-2000-X					2.000	50.80	1.311	33.29	0.765	19.43			8.1	1.41
C0300-038-2250-X					2.250	57.15	1.507	38.28	0.806	20.47			7.5	1.31
C0300-038-2500-X					2.500	63.50	1.685	42.79	0.874	22.20			6.8	1.20
C0300-040-0380-X					0.380	9.65	0.277	7.04	0.231	5.87			62.9	11.01
C0300-040-0440-X					0.440	11.18	0.317	8.04	0.253	6.43			52.4	9.18
C0300-040-0500-X					0.500	12.70	0.356	9.04	0.275	6.99			44.9	7.86
C0300-040-0560-X					0.560	14.22	0.395	10.04	0.297	7.54			39.3	6.89
C0300-040-0620-X					0.620	15.75	0.435	11.04	0.320	8.13			34.9	6.11
C0300-040-0690-X					0.690	17.53	0.481	12.21	0.346	8.79			30.9	5.41
C0300-040-0750-X					0.750	19.05	0.520	13.21	0.368	9.35			28.2	4.93
C0300-040-0810-X					0.810	20.57	0.559	14.21	0.390	9.91			25.8	4.52
C0300-040-0880-X					0.880	22.35	0.606	15.38	0.416	10.57			23.6	4.13
C0300-040-0940-X			0.040	1.02	0.940	23.88	0.645	16.38	0.438	11.13	6.47	28.78	21.9	3.84
C0300-040-1000-X					1.000	25.40	0.684	17.38	0.460	11.68			20.5	3.59
C0300-040-1120-X					1.120	28.45	0.764	19.40	0.505	12.83			18.2	3.18
C0300-040-1250-X	0.300	7.62			1.250	31.75	0.850	21.58	0.553	14.05			16.2	2.83
C0300-040-1380-X					1.380	35.05	0.934	23.72	0.601	15.27			14.5	2.54
C0300-040-1500-X					1.500	38.10	1.015	25.77	0.645	16.38			13.3	2.33
C0300-040-1750-X					1.750	44.45	1.179	29.95	0.737	18.72			11.3	1.98
C0300-040-2000-X					2.000	50.80	1.342	34.08	0.830	21.08			9.8	1.72
C0300-040-2250-X					2.250	57.15	1.503	38.18	0.922	23.42			8.7	1.52
C0300-040-2500-X					2.500	63.50	1.674	42.52	1.015	25.78			7.8	1.37
C0300-042-0380-X					0.380	9.65	0.299	7.60	0.210	5.33			90.2	15.80
C0300-042-0440-X					0.440	11.18	0.344	8.73	0.230	5.84			75.6	13.25
C0300-042-0500-X					0.500	12.70	0.376	9.55	0.266	6.76			58.9	10.31
C0300-042-0560-X					0.560	14.22	0.414	10.53	0.294	7.47			50.2	8.78
C0300-042-0620-X					0.620	15.75	0.450	11.44	0.325	8.26			43.0	7.53
C0300-042-0690-X					0.690	17.53	0.496	12.59	0.357	9.07			37.6	6.58
C0300-042-0750-X					0.750	19.05	0.540	13.71	0.378	9.60			34.7	6.08
C0300-042-0810-X					0.810	20.57	0.576	14.62	0.409	10.39			31.2	5.45
C0300-042-0880-X					0.880	22.35	0.621	15.77	0.442	11.23			28.2	4.93
C0300-042-0940-X			0.042	1.07	0.940	23.88	0.665	16.90	0.462	11.73	7.30	32.47	26.6	4.65
C0300-042-1000-X					1.000	25.40	0.709	18.01	0.484	12.29			25.1	4.39
C0300-042-1120-X					1.120	28.45	0.797	20.24	0.526	13.36			22.6	3.95
C0300-042-1250-X					1.250	31.75	0.887	22.52	0.578	14.68			20.1	3.52
C0300-042-1380-X					1.380	35.05	0.976	24.80	0.630	16.00			18.1	3.17
C0300-042-1500-X					1.500	38.10	1.055	26.81	0.684	17.37			16.4	2.87
C0300-042-1750-X					1.750	44.45	1.216	30.88	0.794	20.17			13.7	2.39
C0300-042-2000-X					2.000	50.80	1.383	35.13	0.894	22.71			11.8	2.07
C0300-042-2250-X					2.250	57.15	1.555	39.49	0.995	25.27			10.5	1.84
C0300-042-2500-X					2.500	63.50	1.758	44.64	1.050	26.67			9.8	1.72
C0300-045-0380-X					0.380	9.65	0.293	7.45	0.247	6.27			102.9	18.02
C0300-045-0440-X					0.440	11.18	0.339	8.61	0.269	6.83			88.4	15.48
C0300-045-0500-X					0.500	12.70	0.384	9.76	0.292	7.42			77.1	13.51
C0300-045-0560-X					0.560	14.22	0.423	10.75	0.325	8.26			65.2	11.42
C0300-045-0620-X					0.620	15.75	0.462	11.73	0.359	9.12			56.3	9.86
C0300-045-0690-X			0.045	1.14	0.690	17.53	0.517	13.14	0.381	9.68	8.91	39.63	51.7	9.04
C0300-045-0750-X					0.750	19.05	0.555	14.11	0.415	10.54			45.8	8.02
C0300-045-0810-X					0.810	20.57	0.601	15.28	0.437	11.10			42.7	7.48
C0300-045-0880-X					0.880	22.35	0.649	16.49	0.472	11.99			38.7	6.77
C0300-045-0940-X					0.940	23.88	0.688	17.47	0.506	12.85			35.3	6.19
C0300-045-1000-X					1.000	25.40	0.734	18.64	0.527	13.39			33.5	5.86



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0300-045-1120-X					1.120	28.45	0.824	20.94	0.573	14.55			30.2	5.28
C0300-045-1250-X					1.250	31.75	0.919	23.33	0.629	15.98			26.9	4.71
C0300-045-1380-X					1.380	35.05	1.012	25.71	0.686	17.42			24.2	4.24
C0300-045-1500-X			0.045	1.15	1.500	38.10	1.096	27.84	0.742	18.85	8.91	39.63	22.1	3.86
C0300-045-1750-X					1.750	44.45	1.252	31.81	0.878	22.30			17.9	3.14
C0300-045-2000-X					2.000	50.80	1.428	36.26	0.990	25.15			15.6	2.73
C0300-045-2250-X					2.250	57.15	1.605	40.78	1.102	27.99			13.8	2.42
C0300-045-2500-X					2.500	63.50	1.814	46.08	1.170	29.72			13.0	2.27
C0300-047-0380-X					0.380	9.65	0.304	7.71	0.250	6.35			132.5	23.19
C0300-047-0440-X					0.440	11.18	0.348	8.83	0.279	7.09			109.5	19.17
C0300-047-0500-X					0.500	12.70	0.392	9.95	0.311	7.90			93.3	16.34
C0300-047-0560-X					0.560	14.22	0.436	11.07	0.343	8.71			81.3	14.24
C0300-047-0620-X					0.620	15.75	0.480	12.18	0.374	9.50			72.1	12.62
C0300-047-0690-X					0.690	17.53	0.531	13.49	0.408	10.36			63.6	11.13
C0300-047-0750-X					0.750	19.05	0.575	14.60	0.435	11.05			57.7	10.11
C0300-047-0810-X					0.810	20.57	0.619	15.72	0.461	11.71			52.9	9.26
C0300-047-0880-X					0.880	22.35	0.670	17.03	0.493	12.52			48.2	8.45
C0300-047-0940-X					0.940	23.88	0.714	18.15	0.520	13.21			44.8	7.85
C0300-047-1000-X			0.047	1.19	1.000	25.40	0.758	19.26	0.547	13.89	10.11	44.97	41.8	7.32
C0300-047-1120-X					1.120	28.45	0.846	21.49	0.600	15.24			36.9	6.46
C0300-047-1250-X					1.250	31.75	0.941	23.91	0.658	16.71			32.7	5.73
C0300-047-1380-X					1.380	35.05	1.037	26.35	0.717	18.21			29.5	5.16
C0300-047-1500-X					1.500	38.10	1.124	28.56	0.770	19.56			26.9	4.71
C0300-047-1750-X					1.750	44.45	1.309	33.24	0.882	22.40			22.9	4.01
C0300-047-2000-X					2.000	50.80	1.492	37.90	0.994	25.25			19.9	3.49
C0300-047-2250-X					2.250	57.15	1.675	42.54	1.106	28.09			17.6	3.08
C0300-047-2500-X					2.500	63.50	1.858	47.19	1.218	30.94			15.7	2.76
C0300-047-2750-X					2.750	69.85	2.040	51.83	1.330	33.78			14.2	2.49
C0300-047-3000-X					3.000	76.20	2.227	56.57	1.442	36.63			13.1	2.29
C0300-049-0380-X					0.380	9.65	0.309	7.86	0.263	6.68			157.9	27.64
C0300-049-0440-X					0.440	11.18	0.354	9.00	0.294	7.47			130.2	22.80
C0300-049-0500-X					0.500	12.70	0.399	10.14	0.328	8.33			110.8	19.40
C0300-049-0560-X					0.560	14.22	0.444	11.29	0.362	9.19			96.4	16.88
C0300-049-0620-X					0.620	15.75	0.489	12.43	0.395	10.03			85.3	14.94
C0300-049-0690-X					0.690	17.53	0.542	13.76	0.431	10.95			75.2	13.17
C0300-049-0750-X	0.300	7.62			0.750	19.05	0.587	14.90	0.460	11.68			68.3	11.96
C0300-049-0810-X					0.810	20.57	0.632	16.05	0.489	12.42			62.6	10.96
C0300-049-0880-X					0.880	22.35	0.684	17.38	0.523	13.28			57.0	9.98
C0300-049-0940-X					0.940	23.88	0.729	18.52	0.551	14.00			52.9	9.26
C0300-049-1000-X			0.049	1.24	1.000	25.40	0.774	19.67	0.580	14.73	11.15	49.60	49.4	8.65
C0300-049-1120-X					1.120	28.45	0.864	21.95	0.638	16.21			43.6	7.63
C0300-049-1250-X					1.250	31.75	0.962	24.42	0.700	17.78			38.7	6.77
C0300-049-1380-X					1.380	35.05	1.059	26.90	0.763	19.38			34.7	6.08
C0300-049-1500-X					1.500	38.10	1.149	29.18	0.821	20.85			31.7	5.56
C0300-049-1750-X					1.750	44.45	1.337	33.96	0.941	23.90			27.0	4.73
C0300-049-2000-X					2.000	50.80	1.524	38.70	1.061	26.95			23.4	4.10
C0300-049-2250-X					2.250	57.15	1.710	43.44	1.181	30.00			20.7	3.62
C0300-049-2500-X					2.500	63.50	1.900	48.25	1.301	33.05			18.6	3.25
C0300-049-2750-X					2.750	69.85	2.087	53.02	1.421	36.09			16.8	2.95
C0300-049-3000-X					3.000	76.20	2.273	57.72	1.541	39.14			15.3	2.68
C0300-051-0380-X					0.380	9.65	0.314	7.97	0.274	6.96			188.8	33.06
C0300-051-0440-X					0.440	11.18	0.359	9.13	0.308	7.82			155.3	27.19
C0300-051-0500-X					0.500	12.70	0.405	10.29	0.343	8.71			131.9	23.09
C0300-051-0560-X					0.560	14.22	0.451	11.45	0.379	9.63			114.5	20.06
C0300-051-0620-X					0.620	15.75	0.497	12.61	0.415	10.54			101.3	17.74
C0300-051-0690-X					0.690	17.53	0.550	13.96	0.453	11.51			89.2	15.62
C0300-051-0750-X					0.750	19.05	0.596	15.13	0.483	12.27			81.0	14.18
C0300-051-0810-X					0.810	20.57	0.641	16.29	0.514	13.06			74.1	12.98
C0300-051-0880-X					0.880	22.35	0.695	17.64	0.550	13.97			67.5	11.82
C0300-051-0940-X					0.940	23.88	0.740	18.80	0.580	14.73			62.6	10.97
C0300-051-1000-X			0.051	1.30	1.000	25.40	0.786	19.96	0.611	15.52	12.51	55.64	58.4	10.23
C0300-051-1120-X					1.120	28.45	0.877	22.29	0.672	17.07			51.6	9.03
C0300-051-1250-X					1.250	31.75	0.976	24.80	0.738	18.75			45.7	8.01
C0300-051-1380-X					1.380	35.05	1.075	27.32	0.805	20.45			41.1	7.19
C0300-051-1500-X					1.500	38.10	1.167	29.64	0.866	22.00			37.6	6.58
C0300-051-1750-X					1.750	44.45	1.357	34.47	0.993	25.22			31.8	5.57
C0300-051-2000-X					2.000	50.80	1.548	39.31	1.121	28.47			27.7	4.84
C0300-051-2250-X					2.250	57.15	1.737	44.13	1.248	31.70			24.4	4.27
C0300-051-2500-X					2.500	63.50	1.929	49.00	1.376	34.95			21.9	3.84
C0300-051-2750-X					2.750	69.85	2.119	53.82	1.503	38.18			19.8	3.47
C0300-051-3000-X					3.000	76.20	2.308	58.62	1.631	41.43			18.1	3.17
C0360-026-0500-X	0.360	9.14	0.026	0.66	0.500	12.70	0.300	7.62	0.117	2.97	1.53	6.81	7.7	1.34
C0360-026-0560-X					0.560	14.22	0.336	8.53	0.123	3.12			6.8	1.20



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0360-026-0620-X					0.620	15.75	0.371	9.44	0.129	3.28			6.2	1.08
C0360-026-0690-X					0.690	17.53	0.416	10.55	0.136	3.45			5.6	0.98
C0360-026-0750-X					0.750	19.05	0.449	11.39	0.143	3.63			5.1	0.89
C0360-026-0810-X					0.810	20.57	0.487	12.38	0.148	3.76			4.8	0.83
C0360-026-0880-X					0.880	22.35	0.505	12.82	0.162	4.11			4.1	0.71
C0360-026-0940-X			0.026	0.66	0.940	23.88	0.540	13.72	0.169	4.29	1.53	6.81	3.8	0.67
C0360-026-1000-X					1.000	25.40	0.551	14.01	0.181	4.60			3.4	0.60
C0360-026-1120-X					1.120	28.45	0.648	16.47	0.187	4.75			3.3	0.57
C0360-026-1250-X					1.250	31.75	0.709	18.01	0.213	5.41			2.8	0.50
C0360-026-1500-X					1.500	38.10	0.843	21.42	0.242	6.15			2.3	0.41
C0360-026-1750-X					1.750	44.45	0.984	24.99	0.270	6.86			2.0	0.35
C0360-026-2000-X					2.000	50.80	1.124	28.56	0.298	7.57			1.8	0.31
C0360-029-0500-X					0.500	12.70	0.303	7.70	0.150	3.81			10.8	1.88
C0360-029-0560-X					0.560	14.22	0.337	8.56	0.159	4.04			9.5	1.66
C0360-029-0620-X					0.620	15.75	0.371	9.42	0.167	4.24			8.5	1.49
C0360-029-0690-X					0.690	17.53	0.408	10.35	0.177	4.50			7.5	1.31
C0360-029-0750-X					0.750	19.05	0.440	11.18	0.186	4.72			6.8	1.20
C0360-029-0810-X					0.810	20.57	0.476	12.08	0.194	4.93			6.3	1.11
C0360-029-0880-X					0.880	22.35	0.512	13.00	0.204	5.18			5.8	1.01
C0360-029-0940-X			0.029	0.74	0.940	23.88	0.549	13.94	0.213	5.41	2.12	9.43	5.4	0.95
C0360-029-1000-X					1.000	25.40	0.583	14.82	0.221	5.61			5.1	0.89
C0360-029-1120-X					1.120	28.45	0.649	16.49	0.238	6.05			4.5	0.79
C0360-029-1250-X					1.250	31.75	0.721	18.30	0.257	6.53			4.0	0.70
C0360-029-1380-X					1.380	35.05	0.789	20.04	0.275	6.99			3.6	0.63
C0360-029-1500-X					1.500	38.10	0.865	21.96	0.292	7.42			3.3	0.58
C0360-029-1750-X					1.750	44.45	1.002	25.46	0.328	8.33			2.8	0.50
C0360-029-2000-X					2.000	50.80	1.124	28.54	0.364	9.25			2.4	0.42
C0360-032-0380-X					0.380	9.65	0.243	6.17	0.151	3.84			20.7	3.62
C0360-032-0440-X					0.440	11.18	0.277	7.02	0.162	4.11			17.3	3.03
C0360-032-0500-X					0.500	12.70	0.310	7.88	0.159	4.04			14.9	2.61
C0360-032-0560-X					0.560	14.22	0.351	8.93	0.167	4.24			13.6	2.38
C0360-032-0620-X					0.620	15.75	0.392	9.95	0.175	4.45			12.4	2.17
C0360-032-0690-X					0.690	17.53	0.424	10.78	0.191	4.85			10.7	1.87
C0360-032-0750-X					0.750	19.05	0.464	11.79	0.199	5.05			9.9	1.74
C0360-032-0810-X					0.810	20.57	0.506	12.86	0.207	5.26			9.3	1.63
C0360-032-0880-X					0.880	22.35	0.537	13.63	0.224	5.69			8.3	1.44
C0360-032-0940-X	0.360	9.14	0.032	0.81	0.940	23.88	0.578	14.69	0.231	5.87	2.83	12.59	7.8	1.37
C0360-032-1000-X					1.000	25.40	0.600	15.24	0.247	6.27			7.1	1.24
C0360-032-1120-X					1.120	28.45	0.667	16.93	0.270	6.86			6.3	1.09
C0360-032-1250-X					1.250	31.75	0.735	18.66	0.303	7.70			5.5	0.96
C0360-032-1380-X					1.380	35.05	0.813	20.66	0.317	8.05			5.0	0.88
C0360-032-1500-X					1.500	38.10	0.870	22.11	0.344	8.74			4.5	0.79
C0360-032-1750-X					1.750	44.45	1.011	25.68	0.391	9.93			3.8	0.67
C0360-032-2000-X					2.000	50.80	1.150	29.21	0.434	11.02			3.3	0.58
C0360-032-2250-X					2.250	57.15	1.355	34.42	0.464	11.79			3.2	0.56
C0360-032-2500-X					2.500	63.50	1.500	38.10	0.498	12.65			2.8	0.50
C0360-035-0440-X					0.440	11.18	0.284	7.21	0.182	4.62			23.7	4.14
C0360-035-0500-X					0.500	12.70	0.318	8.09	0.195	4.95			20.3	3.56
C0360-035-0560-X					0.560	14.22	0.353	8.97	0.208	5.28			17.8	3.12
C0360-035-0620-X					0.620	15.75	0.388	9.86	0.220	5.59			15.9	2.79
C0360-035-0690-X					0.690	17.53	0.428	10.87	0.235	5.97			14.1	2.47
C0360-035-0750-X					0.750	19.05	0.462	11.74	0.247	6.27			12.8	2.25
C0360-035-0810-X					0.810	20.57	0.498	12.65	0.260	6.60			11.8	2.07
C0360-035-0880-X					0.880	22.35	0.539	13.70	0.275	6.99			10.8	1.90
C0360-035-0940-X			0.035	0.89	0.940	23.88	0.574	14.58	0.287	7.29	3.69	16.41	10.1	1.77
C0360-035-1000-X					1.000	25.40	0.608	15.44	0.300	7.62			9.4	1.65
C0360-035-1120-X					1.120	28.45	0.677	17.20	0.325	8.26			8.3	1.46
C0360-035-1250-X					1.250	31.75	0.752	19.11	0.352	8.94			7.4	1.30
C0360-035-1380-X					1.380	35.05	0.826	20.99	0.379	9.63			6.7	1.17
C0360-035-1500-X					1.500	38.10	0.893	22.69	0.404	10.26			6.1	1.06
C0360-035-1750-X					1.750	44.45	1.047	26.59	0.457	11.61			5.3	0.92
C0360-035-2000-X					2.000	50.80	1.180	29.97	0.509	12.93			4.5	0.79
C0360-035-2250-X					2.250	57.15	1.327	33.71	0.562	14.27			4.0	0.70
C0360-035-2500-X					2.500	63.50	1.470	37.34	0.614	15.60			3.6	0.63
C0360-038-0440-X					0.440	11.18	0.289	7.34	0.190	4.83			31.2	5.45
C0360-038-0500-X					0.500	12.70	0.335	8.50	0.199	5.05			28.4	4.98
C0360-038-0560-X					0.560	14.22	0.364	9.25	0.218	5.54			24.0	4.20
C0360-038-0620-X					0.620	15.75	0.393	9.99	0.237	6.02			20.7	3.63
C0360-038-0690-X			0.038	0.97	0.690	17.53	0.435	11.04	0.256	6.50	4.70	20.91	18.4	3.22
C0360-038-0750-X					0.750	19.05	0.479	12.16	0.266	6.76			17.3	3.03
C0360-038-0810-X					0.810	20.57	0.508	12.91	0.285	7.24			15.6	2.73
C0360-038-0880-X					0.880	22.35	0.548	13.92	0.304	7.72			14.2	2.48
C0360-038-0940-X					0.940	23.88	0.578	14.69	0.323	8.20			13.0	2.27



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0360-038-1000-X					1.000	25.40	0.624	15.85	0.332	8.43			12.5	2.19
C0360-038-1120-X					1.120	28.45	0.683	17.34	0.370	9.40			10.8	1.88
C0360-038-1250-X					1.250	31.75	0.768	19.50	0.399	10.13			9.8	1.71
C0360-038-1380-X					1.380	35.05	0.837	21.27	0.437	11.10			8.7	1.52
C0360-038-1500-X			0.038	0.97	1.500	38.10	0.912	23.17	0.465	11.81	4.70	20.91	8.0	1.40
C0360-038-1750-X					1.750	44.45	1.070	27.18	0.526	13.36			6.9	1.21
C0360-038-2000-X					2.000	50.80	1.216	30.90	0.587	14.91			6.0	1.05
C0360-038-2250-X					2.250	57.15	1.368	34.76	0.649	16.48			5.3	0.93
C0360-038-2500-X					2.500	63.50	1.510	38.36	0.711	18.06			4.8	0.83
C0360-040-0440-X					0.440	11.18	0.297	7.55	0.218	5.54			38.3	6.71
C0360-040-0500-X					0.500	12.70	0.334	8.47	0.234	5.94			32.8	5.75
C0360-040-0560-X					0.560	14.22	0.370	9.39	0.250	6.35			28.7	5.03
C0360-040-0620-X					0.620	15.75	0.406	10.32	0.267	6.78			25.6	4.48
C0360-040-0690-X					0.690	17.53	0.448	11.38	0.286	7.26			22.6	3.95
C0360-040-0750-X					0.750	19.05	0.484	12.30	0.302	7.67			20.6	3.60
C0360-040-0810-X					0.810	20.57	0.521	13.23	0.318	8.08			18.9	3.31
C0360-040-0880-X					0.880	22.35	0.563	14.30	0.337	8.56			17.2	3.02
C0360-040-0940-X			0.040	1.02	0.940	23.88	0.598	15.20	0.353	8.97	5.46	24.29	16.0	2.80
C0360-040-1000-X					1.000	25.40	0.636	16.14	0.370	9.40			15.0	2.63
C0360-040-1120-X					1.120	28.45	0.707	17.97	0.402	10.21			13.2	2.32
C0360-040-1250-X					1.250	31.75	0.785	19.93	0.438	11.13			11.8	2.06
C0360-040-1380-X					1.380	35.05	0.863	21.93	0.473	12.01			10.6	1.85
C0360-040-1500-X					1.500	38.10	0.939	23.86	0.505	12.83			9.8	1.71
C0360-040-1750-X					1.750	44.45	1.087	27.62	0.573	14.55			8.3	1.44
C0360-040-2000-X					2.000	50.80	1.237	31.43	0.641	16.28			7.2	1.25
C0360-040-2250-X					2.250	57.15	1.387	35.23	0.709	18.01			6.3	1.11
C0360-040-2500-X					2.500	63.50	1.535	39.00	0.777	19.74			5.7	0.99
C0360-042-0440-X					0.440	11.18	0.312	7.94	0.209	5.31			48.4	8.48
C0360-042-0500-X					0.500	12.70	0.347	8.80	0.231	5.87			40.2	7.05
C0360-042-0560-X					0.560	14.22	0.381	9.67	0.252	6.40			34.4	6.02
C0360-042-0620-X					0.620	15.75	0.428	10.87	0.262	6.65			32.2	5.63
C0360-042-0690-X					0.690	17.53	0.472	11.99	0.284	7.21			28.3	4.96
C0360-042-0750-X					0.750	19.05	0.510	12.96	0.301	7.65			25.7	4.51
C0360-042-0810-X					0.810	20.57	0.541	13.73	0.326	8.28			22.9	4.01
C0360-042-0880-X					0.880	22.35	0.586	14.89	0.346	8.79			21.0	3.68
C0360-042-0940-X			0.042	1.07	0.940	23.88	0.619	15.73	0.368	9.35	6.17	27.44	19.2	3.37
C0360-042-1000-X	0.360	9.14			1.000	25.40	0.655	16.65	0.388	9.86			17.9	3.14
C0360-042-1120-X					1.120	28.45	0.724	18.39	0.430	10.92			15.6	2.73
C0360-042-1250-X					1.250	31.75	0.814	20.68	0.463	11.76			14.2	2.48
C0360-042-1380-X					1.380	35.05	0.905	22.99	0.495	12.57			13.0	2.27
C0360-042-1500-X					1.500	38.10	0.989	25.12	0.525	13.34			12.1	2.12
C0360-042-1750-X					1.750	44.45	1.122	28.50	0.621	15.77			9.8	1.72
C0360-042-2000-X					2.000	50.80	1.281	32.53	0.695	17.65			8.6	1.50
C0360-042-2250-X					2.250	57.15	1.436	36.47	0.770	19.56			7.6	1.33
C0360-042-2500-X					2.500	63.50	1.585	40.27	0.844	21.44			6.8	1.18
C0360-045-0440-X					0.440	11.18	0.325	8.26	0.224	5.69			65.8	11.52
C0360-045-0500-X					0.500	12.70	0.362	9.20	0.247	6.27			54.7	9.58
C0360-045-0560-X					0.560	14.22	0.399	10.13	0.270	6.86			46.8	8.20
C0360-045-0620-X					0.620	15.75	0.435	11.06	0.292	7.42			40.9	7.16
C0360-045-0690-X					0.690	17.53	0.483	12.27	0.314	7.98			36.5	6.39
C0360-045-0750-X					0.750	19.05	0.520	13.21	0.337	8.56			32.8	5.75
C0360-045-0810-X					0.810	20.57	0.557	14.14	0.359	9.12			29.8	5.22
C0360-045-0880-X					0.880	22.35	0.604	15.33	0.382	9.70			27.3	4.78
C0360-045-0940-X					0.940	23.88	0.641	16.28	0.404	10.26			25.2	4.42
C0360-045-1000-X			0.045	1.14	1.000	25.40	0.677	17.21	0.427	10.85	7.55	33.58	23.4	4.10
C0360-045-1120-X					1.120	28.45	0.751	19.09	0.472	11.99			20.5	3.59
C0360-045-1250-X					1.250	31.75	0.836	21.24	0.516	13.11			18.2	3.19
C0360-045-1380-X					1.380	35.05	0.920	23.36	0.562	14.27			16.4	2.87
C0360-045-1500-X					1.500	38.10	0.994	25.24	0.607	15.42			14.9	2.61
C0360-045-1750-X					1.750	44.45	1.154	29.30	0.694	17.63			12.7	2.22
C0360-045-2000-X					2.000	50.80	1.313	33.36	0.778	19.76			11.0	1.93
C0360-045-2250-X					2.250	57.15	1.475	37.47	0.862	21.89			9.8	1.71
C0360-045-2500-X					2.500	63.50	1.637	41.57	0.946	24.03			8.8	1.53
C0360-045-2750-X					2.750	69.85	1.834	46.59	0.990	25.15			8.3	1.44
C0360-047-0440-X					0.440	11.18	0.329	8.35	0.257	6.53			77.1	13.51
C0360-047-0500-X					0.500	12.70	0.370	9.39	0.277	7.04			65.7	11.51
C0360-047-0560-X					0.560	14.22	0.410	10.42	0.297	7.54			57.2	10.02
C0360-047-0620-X					0.620	15.75	0.451	11.45	0.318	8.08			50.7	8.88
C0360-047-0690-X			0.047	1.19	0.690	17.53	0.498	12.66	0.341	8.66	8.57	38.12	44.7	7.83
C0360-047-0750-X					0.750	19.05	0.539	13.69	0.361	9.17			40.7	7.12
C0360-047-0810-X					0.810	20.57	0.580	14.73	0.381	9.68			37.2	6.52
C0360-047-0880-X					0.880	22.35	0.627	15.93	0.405	10.29			33.9	5.94
C0360-047-0940-X					0.940	23.88	0.668	16.98	0.425	10.80			31.6	5.53



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0360-047-1000-X					1.000	25.40	0.708	17.99	0.445	11.30			29.4	5.15
C0360-047-1120-X					1.120	28.45	0.790	20.07	0.485	12.32			26.0	4.55
C0360-047-1250-X					1.250	31.75	0.878	22.31	0.529	13.44			23.1	4.04
C0360-047-1380-X					1.380	35.05	0.967	24.55	0.573	14.55			20.7	3.63
C0360-047-1500-X					1.500	38.10	1.049	26.63	0.613	15.57			19.0	3.33
C0360-047-1750-X					1.750	44.45	1.217	30.90	0.697	17.70			16.1	2.82
C0360-047-2000-X			0.047	1.19	2.000	50.80	1.387	35.24	0.781	19.84	8.57	38.12	14.0	2.45
C0360-047-2250-X					2.250	57.15	1.559	39.60	0.865	21.97			12.4	2.17
C0360-047-2500-X					2.500	63.50	1.726	43.84	0.949	24.10			11.1	1.94
C0360-047-2750-X					2.750	69.85	1.899	48.24	1.033	26.24			10.1	1.77
C0360-047-3000-X					3.000	76.20	2.064	52.43	1.117	28.37			9.2	1.60
C0360-047-3250-X					3.250	82.55	2.231	56.66	1.201	30.51			8.4	1.47
C0360-047-3500-X					3.500	88.90	2.405	61.09	1.284	32.61			7.8	1.37
C0360-049-0440-X					0.440	11.18	0.335	8.52	0.271	6.88			90.6	15.86
C0360-049-0500-X					0.500	12.70	0.377	9.58	0.293	7.44			77.1	13.49
C0360-049-0560-X					0.560	14.22	0.419	10.64	0.315	8.00			67.1	11.74
C0360-049-0620-X					0.620	15.75	0.460	11.69	0.336	8.53			59.3	10.39
C0360-049-0690-X					0.690	17.53	0.509	12.93	0.362	9.19			52.3	9.16
C0360-049-0750-X					0.750	19.05	0.551	13.98	0.384	9.75			47.5	8.31
C0360-049-0810-X					0.810	20.57	0.592	15.04	0.405	10.29			43.5	7.61
C0360-049-0880-X					0.880	22.35	0.641	16.29	0.431	10.95			39.7	6.94
C0360-049-0940-X					0.940	23.88	0.683	17.34	0.453	11.51			36.8	6.45
C0360-049-1000-X			0.049	1.24	1.000	25.40	0.724	18.39	0.474	12.04	9.47	42.12	34.3	6.01
C0360-049-1120-X					1.120	28.45	0.808	20.51	0.518	13.16			30.3	5.31
C0360-049-1250-X					1.250	31.75	0.898	22.81	0.565	14.35			26.9	4.71
C0360-049-1380-X					1.380	35.05	0.988	25.09	0.612	15.54			24.2	4.23
C0360-049-1500-X					1.500	38.10	1.071	27.20	0.656	16.66			22.1	3.86
C0360-049-1750-X					1.750	44.45	1.245	31.62	0.747	18.97			18.7	3.28
C0360-049-2000-X					2.000	50.80	1.420	36.07	0.837	21.26			16.3	2.86
C0360-049-2250-X					2.250	57.15	1.593	40.46	0.928	23.57			14.4	2.52
C0360-049-2500-X					2.500	63.50	1.766	44.87	1.019	25.88			12.9	2.26
C0360-049-2750-X					2.750	69.85	1.938	49.22	1.110	28.19			11.7	2.04
C0360-049-3000-X					3.000	76.20	2.112	53.64	1.200	30.48			10.7	1.87
C0360-049-3250-X					3.250	82.55	2.286	58.08	1.291	32.79			9.8	1.72
C0360-049-3500-X					3.500	88.90	2.457	62.41	1.382	35.10			9.1	1.59
C0360-051-0440-X	0.360	9.14			0.440	11.18	0.339	8.62	0.286	7.26			105.6	18.50
C0360-051-0500-X					0.500	12.70	0.381	9.69	0.309	7.85			89.7	15.71
C0360-051-0560-X					0.560	14.22	0.424	10.76	0.333	8.46			78.0	13.65
C0360-051-0620-X					0.620	15.75	0.466	11.83	0.356	9.04			68.9	12.06
C0360-051-0690-X					0.690	17.53	0.515	13.08	0.384	9.75			60.7	10.63
C0360-051-0750-X					0.750	19.05	0.557	14.14	0.407	10.34			55.1	9.64
C0360-051-0810-X					0.810	20.57	0.599	15.21	0.431	10.95			50.4	8.83
C0360-051-0880-X					0.880	22.35	0.648	16.46	0.458	11.63			45.9	8.04
C0360-051-0940-X					0.940	23.88	0.690	17.53	0.482	12.24			42.6	7.45
C0360-051-1000-X					1.000	25.40	0.732	18.60	0.505	12.83			39.7	6.96
C0360-051-1120-X			0.051	1.30	1.120	28.45	0.817	20.74	0.552	14.02	10.64	47.33	35.1	6.14
C0360-051-1250-X					1.250	31.75	0.908	23.05	0.603	15.32			31.1	5.44
C0360-051-1380-X					1.380	35.05	0.999	25.37	0.654	16.61			27.9	4.89
C0360-051-1500-X					1.500	38.10	1.084	27.53	0.701	17.81			25.6	4.48
C0360-051-1750-X					1.750	44.45	1.259	31.97	0.800	20.32			21.7	3.79
C0360-051-2000-X					2.000	50.80	1.435	36.45	0.898	22.81			18.8	3.30
C0360-051-2250-X					2.250	57.15	1.608	40.85	0.996	25.30			16.6	2.90
C0360-051-2500-X					2.500	63.50	1.786	45.38	1.094	27.79			14.9	2.61
C0360-051-2750-X					2.750	69.85	1.962	49.82	1.192	30.28			13.5	2.36
C0360-051-3000-X					3.000	76.20	2.137	54.28	1.290	32.77			12.3	2.16
C0360-051-3250-X					3.250	82.55	2.311	58.70	1.388	35.26			11.3	1.98
C0360-051-3500-X					3.500	88.90	2.486	63.15	1.486	37.74			10.5	1.84
C0360-055-0440-X					0.440	11.18	0.351	8.93	0.310	7.87			146.3	25.61
C0360-055-0500-X					0.500	12.70	0.395	10.04	0.337	8.56			123.8	21.68
C0360-055-0560-X					0.560	14.22	0.439	11.16	0.363	9.22			107.3	18.79
C0360-055-0620-X					0.620	15.75	0.483	12.27	0.389	9.88			94.6	16.57
C0360-055-0690-X					0.690	17.53	0.534	13.57	0.420	10.67			83.2	14.57
C0360-055-0750-X					0.750	19.05	0.578	14.69	0.447	11.35			75.5	13.22
C0360-055-0810-X					0.810	20.57	0.622	15.81	0.473	12.01			69.0	12.08
C0360-055-0880-X			0.055	1.40	0.880	22.35	0.674	17.11	0.504	12.80	12.95	57.60	62.7	10.98
C0360-055-0940-X					0.940	23.88	0.717	18.22	0.530	13.46			58.1	10.18
C0360-055-1000-X					1.000	25.40	0.761	19.34	0.557	14.15			54.2	9.50
C0360-055-1120-X					1.120	28.45	0.849	21.57	0.609	15.47			47.8	8.37
C0360-055-1250-X					1.250	31.75	0.944	23.98	0.667	16.94			42.3	7.41
C0360-055-1380-X					1.380	35.05	1.039	26.39	0.724	18.39			38.0	6.65
C0360-055-1500-X					1.500	38.10	1.127	28.63	0.777	19.74			34.7	6.08
C0360-055-1750-X					1.750	44.45	1.310	33.27	0.887	22.53			29.4	5.15
C0360-055-2000-X					2.000	50.80	1.494	37.94	0.997	25.32			25.6	4.48



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0360-055-2250-X					2.250	57.15	1.676	42.58	1.107	28.12			22.6	3.95
C0360-055-2500-X					2.500	63.50	1.858	47.19	1.217	30.91			20.2	3.53
C0360-055-2750-X			0.055	1.40	2.750	69.85	2.043	51.90	1.327	33.71	12.95	57.60	18.3	3.21
C0360-055-3000-X					3.000	76.20	2.227	56.56	1.437	36.50			16.7	2.93
C0360-055-3250-X					3.250	82.55	2.410	61.21	1.547	39.29			15.4	2.70
C0360-055-3500-X					3.500	88.90	2.591	65.81	1.657	42.09			14.2	2.49
C0360-059-0440-X					0.440	11.18	0.360	9.14	0.321	8.15			198.3	34.72
C0360-059-0500-X					0.500	12.70	0.405	10.29	0.356	9.04			167.1	29.26
C0360-059-0560-X					0.560	14.22	0.450	11.44	0.388	9.86			144.4	25.29
C0360-059-0620-X					0.620	15.75	0.495	12.58	0.421	10.69			127.2	22.28
C0360-059-0690-X					0.690	17.53	0.548	13.92	0.458	11.63			111.6	19.55
C0360-059-0750-X					0.750	19.05	0.593	15.06	0.488	12.40			101.0	17.69
C0360-059-0810-X					0.810	20.57	0.638	16.21	0.517	13.13			92.3	16.16
C0360-059-0880-X	0.360	9.14			0.880	22.35	0.691	17.55	0.552	14.02			83.8	14.67
C0360-059-0940-X					0.940	23.88	0.736	18.69	0.581	14.76			77.6	13.60
C0360-059-1000-X					1.000	25.40	0.781	19.84	0.611	15.52			72.4	12.68
C0360-059-1120-X			0.059	1.50	1.120	28.45	0.871	22.13	0.670	17.02	15.85	70.50	63.7	11.16
C0360-059-1250-X					1.250	31.75	0.969	24.61	0.734	18.64			56.4	9.87
C0360-059-1380-X					1.380	35.05	1.066	27.09	0.797	20.24			50.6	8.85
C0360-059-1500-X					1.500	38.10	1.157	29.39	0.856	21.74			46.2	8.10
C0360-059-1750-X					1.750	44.45	1.345	34.16	0.979	24.87			39.2	6.86
C0360-059-2000-X					2.000	50.80	1.532	38.92	1.102	27.99			33.9	5.94
C0360-059-2250-X					2.250	57.15	1.721	43.72	1.225	31.12			30.0	5.25
C0360-059-2500-X					2.500	63.50	1.909	48.49	1.348	34.24			26.8	4.70
C0360-059-2750-X					2.750	69.85	2.096	53.24	1.471	37.36			24.2	4.24
C0360-059-3000-X					3.000	76.20	2.284	58.03	1.594	40.49			22.2	3.88
C0360-059-3250-X					3.250	82.55	2.473	62.82	1.717	43.61			20.4	3.57
C0360-059-3500-X					3.500	88.90	2.662	67.60	1.840	46.74			18.9	3.31
C0390-043-0500-X					0.500	12.70	0.337	8.57	0.241	6.12			37.7	6.61
C0390-043-0560-X					0.560	14.22	0.374	9.50	0.257	6.53			33.0	5.78
C0390-043-0620-X					0.620	15.75	0.410	10.42	0.273	6.93			29.2	5.12
C0390-043-0690-X					0.690	17.53	0.452	11.49	0.292	7.42			25.8	4.52
C0390-043-0750-X					0.750	19.05	0.489	12.42	0.308	7.82			23.5	4.11
C0390-043-0810-X					0.810	20.57	0.526	13.35	0.324	8.23			21.6	3.78
C0390-043-0880-X					0.880	22.35	0.568	14.42	0.343	8.71			19.7	3.44
C0390-043-0940-X			0.043	1.09	0.940	23.88	0.607	15.41	0.359	9.12	6.14	27.31	18.4	3.22
C0390-043-1000-X					1.000	25.40	0.641	16.27	0.376	9.55			17.1	2.99
C0390-043-1120-X					1.120	28.45	0.713	18.11	0.408	10.36			15.1	2.64
C0390-043-1250-X					1.250	31.75	0.792	20.13	0.443	11.25			13.4	2.35
C0390-043-1380-X					1.380	35.05	0.872	22.15	0.478	12.14			12.1	2.12
C0390-043-1500-X					1.500	38.10	0.946	24.03	0.510	12.95			11.1	1.94
C0390-043-1750-X					1.750	44.45	1.098	27.89	0.578	14.68			9.4	1.65
C0390-043-2000-X	0.390	9.91			2.000	50.80	1.248	31.71	0.645	16.38			8.2	1.43
C0390-047-0500-X					0.500	12.70	0.349	8.86	0.270	6.86			52.7	9.23
C0390-047-0560-X					0.560	14.22	0.387	9.82	0.289	7.34			46.0	8.05
C0390-047-0620-X					0.620	15.75	0.424	10.78	0.308	7.82			40.7	7.13
C0390-047-0690-X					0.690	17.53	0.468	11.89	0.330	8.38			35.9	6.29
C0390-047-0750-X					0.750	19.05	0.506	12.86	0.350	8.89			32.7	5.72
C0390-047-0810-X					0.810	20.57	0.544	13.81	0.369	9.37			29.9	5.24
C0390-047-0880-X					0.880	22.35	0.588	14.93	0.391	9.93			27.2	4.77
C0390-047-0940-X			0.047	1.19	0.940	23.88	0.626	15.89	0.410	10.41	7.96	35.41	25.3	4.43
C0390-047-1000-X					1.000	25.40	0.663	16.85	0.429	10.90			23.7	4.14
C0390-047-1120-X					1.120	28.45	0.739	18.77	0.467	11.86			20.9	3.66
C0390-047-1250-X					1.250	31.75	0.819	20.81	0.508	12.90			18.5	3.24
C0390-047-1380-X					1.380	35.05	0.902	22.91	0.550	13.97			16.7	2.92
C0390-047-1500-X					1.500	38.10	0.978	24.83	0.588	14.94			15.2	2.67
C0390-047-1750-X					1.750	44.45	1.133	28.78	0.667	16.94			12.9	2.26
C0390-047-2000-X					2.000	50.80	1.292	32.81	0.747	18.97			11.3	1.97
C0420-035-0500-X					0.500	12.70	0.306	7.77	0.172	4.37			16.4	2.87
C0420-035-0620-X					0.620	15.75	0.372	9.44	0.191	4.85			12.8	2.25
C0420-035-0750-X			0.035	0.89	0.750	19.05	0.444	11.28	0.211	5.36	3.19	14.19	10.4	1.82
C0420-035-0880-X					0.880	22.35	0.516	13.10	0.231	5.87			8.8	1.53
C0420-035-1000-X					1.000	25.40	0.580	14.73	0.250	6.35			7.6	1.33
C0420-035-1250-X					1.250	31.75	0.719	18.26	0.289	7.34			6.0	1.05
C0420-035-1500-X					1.500	38.10	0.852	21.64	0.328	8.33			4.9	0.86
C0420-035-1750-X	0.420	10.67			1.750	44.45	1.000	25.40	0.367	9.32			4.3	0.74
C0420-038-0500-X					0.500	12.70	0.278	7.07	0.172	4.37			18.3	3.21
C0420-038-0560-X					0.560	14.22	0.316	8.03	0.186	4.72			16.7	2.92
C0420-038-0625-X					0.620	15.75	0.349	8.87	0.194	4.93			15.0	2.63
C0420-038-0750-X			0.038	0.97	0.750	19.05	0.414	10.51	0.223	5.66	4.06	18.06	12.1	2.12
C0420-038-0880-X					0.880	22.35	0.490	12.44	0.246	6.25			10.4	1.82
C0420-038-1000-X					1.000	25.40	0.557	14.14	0.269	6.83			9.2	1.60
C0420-038-1250-X					1.250	31.75	0.676	17.18	0.326	8.28			7.1	1.24



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0420-038-1500-X					1.500	38.10	0.823	20.90	0.372	9.45			6.0	1.05
C0420-038-1750-X					1.750	44.45	1.011	25.68	0.423	10.74			5.5	0.96
C0420-038-2000-X			0.038	0.97	2.000	50.80	1.201	30.50	0.456	11.58	4.06	18.06	5.1	0.89
C0420-038-2250-X					2.250	57.15	1.347	34.21	0.494	12.55			4.5	0.79
C0420-038-2500-X					2.500	63.50	1.484	37.70	0.532	13.51			4.0	0.70
C0420-042-0500-X					0.500	12.70	0.311	7.91	0.190	4.83			28.3	4.96
C0420-042-0560-X					0.560	14.22	0.353	8.97	0.201	5.11			25.8	4.52
C0420-042-0625-X					0.620	15.75	0.391	9.93	0.213	5.41			23.3	4.08
C0420-042-0750-X					0.750	19.05	0.459	11.65	0.248	6.30			18.3	3.21
C0420-042-0880-X					0.880	22.35	0.533	13.55	0.280	7.11			15.4	2.70
C0420-042-1000-X			0.042	1.07	1.000	25.40	0.599	15.22	0.310	7.87	5.34	23.75	13.3	2.33
C0420-042-1250-X					1.250	31.75	0.757	19.22	0.363	9.22			10.8	1.90
C0420-042-1500-X					1.500	38.10	0.889	22.59	0.429	10.90			8.8	1.53
C0420-042-1750-X					1.750	44.45	1.061	26.94	0.501	12.73			7.8	1.36
C0420-042-2000-X					2.000	50.80	1.209	30.70	0.558	14.17			6.8	1.18
C0420-042-2250-X					2.250	57.15	1.417	36.00	0.592	15.04			6.4	1.12
C0420-042-2500-X					2.500	63.50	1.571	39.90	0.630	16.00			5.8	1.01
C0420-045-0500-X					0.500	12.70	0.313	7.95	0.214	5.44			35.0	6.13
C0420-045-0625-X					0.620	15.75	0.389	9.88	0.244	6.20			28.3	4.96
C0420-045-0750-X					0.750	19.05	0.459	11.66	0.284	7.21			22.5	3.94
C0420-045-0880-X					0.880	22.35	0.539	13.68	0.318	8.08			19.2	3.36
C0420-045-1000-X					1.000	25.40	0.607	15.43	0.352	8.94			16.7	2.92
C0420-045-1250-X			0.045	1.14	1.250	31.75	0.759	19.28	0.418	10.62	6.54	29.09	13.3	2.33
C0420-045-1500-X					1.500	38.10	0.896	22.76	0.493	12.52			10.8	1.90
C0420-045-1750-X					1.750	44.45	1.084	27.55	0.563	14.30			9.8	1.72
C0420-045-2000-X					2.000	50.80	1.230	31.24	0.627	15.93			8.5	1.49
C0420-045-2250-X					2.250	57.15	1.377	34.99	0.691	17.55			7.5	1.31
C0420-045-2500-X					2.500	63.50	1.530	38.87	0.756	19.20			6.8	1.18
C0420-048-0500-X					0.500	12.70	0.347	8.81	0.261	6.63			50.5	8.84
C0420-048-0750-X					0.750	19.05	0.502	12.74	0.334	8.48			31.2	5.45
C0420-048-1000-X					1.000	25.40	0.657	16.70	0.407	10.34			22.6	3.95
C0420-048-1250-X			0.048	1.22	1.250	31.75	0.812	20.62	0.480	12.19	7.73	34.38	17.7	3.09
C0420-048-1500-X					1.500	38.10	0.966	24.55	0.552	14.02			14.5	2.54
C0420-048-1750-X					1.750	44.45	1.123	28.51	0.625	15.88			12.3	2.16
C0420-048-2000-X					2.000	50.80	1.280	32.52	0.698	17.73			10.8	1.88
C0420-051-0500-X					0.500	12.70	0.355	9.01	0.282	7.16			63.6	11.14
C0420-051-0620-X	0.420	10.67			0.620	15.75	0.431	10.95	0.321	8.15			48.9	8.56
C0420-051-0750-X					0.750	19.05	0.514	13.04	0.363	9.22			39.1	6.84
C0420-051-0880-X					0.880	22.35	0.596	15.15	0.406	10.31			32.6	5.70
C0420-051-1000-X					1.000	25.40	0.673	17.09	0.445	11.30			28.2	4.95
C0420-051-1250-X			0.051	1.30	1.250	31.75	0.832	21.12	0.526	13.36	9.24	41.10	22.1	3.86
C0420-051-1500-X					1.500	38.10	0.989	25.12	0.607	15.42			18.1	3.17
C0420-051-1750-X					1.750	44.45	1.147	29.14	0.688	17.48			15.3	2.68
C0420-051-2000-X					2.000	50.80	1.307	33.19	0.769	19.53			13.3	2.33
C0420-051-2250-X					2.250	57.15	1.469	37.31	0.850	21.59			11.8	2.07
C0420-051-2500-X					2.500	63.50	1.627	41.32	0.932	23.67			10.6	1.85
C0420-055-0500-X					0.500	12.70	0.358	9.09	0.273	6.93			79.1	13.86
C0420-055-0625-X					0.620	15.75	0.440	11.17	0.316	8.03			62.5	10.94
C0420-055-0750-X					0.750	19.05	0.532	13.51	0.360	9.14			51.7	9.04
C0420-055-0880-X					0.880	22.35	0.620	15.75	0.408	10.36			43.3	7.59
C0420-055-1000-X					1.000	25.40	0.700	17.77	0.454	11.53			37.5	6.57
C0420-055-1250-X			0.055	1.40	1.250	31.75	0.864	21.94	0.553	14.05	11.26	50.08	29.2	5.11
C0420-055-1500-X					1.500	38.10	1.034	26.26	0.645	16.38			24.2	4.23
C0420-055-1750-X					1.750	44.45	1.198	30.43	0.772	19.61			20.4	3.57
C0420-055-2000-X					2.000	50.80	1.365	34.68	0.865	21.97			17.7	3.11
C0420-055-2250-X					2.250	57.15	1.531	38.88	0.957	24.31			15.7	2.74
C0420-055-2500-X					2.500	63.50	1.695	43.06	1.050	26.67			14.0	2.45
C0420-059-0500-X					0.500	12.70	0.379	9.62	0.322	8.18			113.9	19.94
C0420-059-0625-X					0.620	15.75	0.459	11.66	0.380	9.65			85.8	15.03
C0420-059-0750-X					0.750	19.05	0.549	13.95	0.439	11.15			68.8	12.05
C0420-059-0880-X					0.880	22.35	0.638	16.20	0.496	12.60			57.1	9.99
C0420-059-1000-X					1.000	25.40	0.720	18.28	0.546	13.87			49.3	8.64
C0420-059-1250-X			0.059	1.50	1.250	31.75	0.890	22.61	0.651	16.54	13.82	61.47	38.4	6.72
C0420-059-1500-X					1.500	38.10	1.061	26.95	0.755	19.18			31.5	5.51
C0420-059-1750-X					1.750	44.45	1.232	31.28	0.860	21.84			26.7	4.67
C0420-059-2000-X					2.000	50.80	1.401	35.59	0.965	24.51			23.1	4.04
C0420-059-2250-X					2.250	57.15	1.573	39.95	1.069	27.15			20.4	3.57
C0420-059-2500-X					2.500	63.50	1.743	44.26	1.174	29.82			18.2	3.19
C0420-063-0500-X					0.500	12.70	0.392	9.97	0.345	8.76			151.7	26.56
C0420-063-0620-X					0.620	15.75	0.478	12.14	0.416	10.57			114.9	20.12
C0420-063-0750-X			0.063	1.60	0.750	19.05	0.570	14.49	0.476	12.09	16.33	72.64	91.0	15.93
C0420-063-0880-X					0.880	22.35	0.663	16.84	0.536	13.61			75.2	13.17
C0420-063-1000-X					1.000	25.40	0.748	19.01	0.591	15.01			64.9	11.36



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0420-063-1250-X					1.250	31.75	0.926	23.53	0.706	17.93			50.5	8.84
C0420-063-1500-X					1.500	38.10	1.105	28.06	0.821	20.85			41.3	7.24
C0420-063-1750-X			0.063	1.60	1.750	44.45	1.282	32.56	0.937	23.80	16.33	72.64	34.9	6.11
C0420-063-2000-X					2.000	50.80	1.460	37.08	1.052	26.72			30.2	5.30
C0420-063-2250-X					2.250	57.15	1.639	41.64	1.167	29.64			26.7	4.68
C0420-063-2500-X					2.500	63.50	1.817	46.15	1.282	32.56			23.9	4.19
C0420-067-0750-X					0.750	19.05	0.588	14.93	0.507	12.88			120.2	21.05
C0420-067-1000-X					1.000	25.40	0.772	19.61	0.631	16.03			85.6	14.98
C0420-067-1250-X					1.250	31.75	0.956	24.29	0.755	19.18			66.4	11.63
C0420-067-1500-X			0.067	1.70	1.500	38.10	1.140	28.96	0.879	22.33	19.51	86.78	54.2	9.50
C0420-067-1750-X	0.420	10.67			1.750	44.45	1.324	33.63	1.003	25.48			45.8	8.02
C0420-067-2000-X					2.000	50.80	1.508	38.30	1.127	28.63			39.7	6.94
C0420-067-2250-X					2.250	57.15	1.692	42.98	1.251	31.78			35.0	6.13
C0420-067-2500-X					2.500	63.50	1.877	47.68	1.375	34.93			31.3	5.48
C0420-072-1000-X					1.000	25.40	0.798	20.27	0.690	17.53			116.0	20.30
C0420-072-1250-X					1.250	31.75	0.989	25.11	0.829	21.06			89.7	15.71
C0420-072-1500-X					1.500	38.10	1.180	29.97	0.967	24.56			73.2	12.82
C0420-072-1750-X			0.072	1.83	1.750	44.45	1.371	34.82	1.105	28.07	23.44	104.26	61.8	10.82
C0420-072-2000-X					2.000	50.80	1.562	39.67	1.244	31.60			53.5	9.37
C0420-072-2250-X					2.250	57.15	1.753	44.52	1.382	35.10			47.2	8.26
C0420-072-2500-X					2.500	63.50	1.944	49.38	1.521	38.63			42.2	7.38
C0455-039-0500-X					0.500	12.70	0.309	7.86	0.187	4.75			21.3	3.73
C0455-039-0620-X					0.620	15.75	0.375	9.52	0.207	5.26			16.6	2.90
C0455-039-0750-X					0.750	19.05	0.447	11.35	0.229	5.82			13.4	2.35
C0455-039-0880-X			0.039	0.99	0.880	22.35	0.519	13.17	0.251	6.38	4.06	18.07	11.3	1.97
C0455-039-1000-X					1.000	25.40	0.583	14.81	0.271	6.88			9.8	1.71
C0455-039-1250-X					1.250	31.75	0.720	18.28	0.312	7.92			7.7	1.34
C0455-039-1500-X					1.500	38.10	0.858	21.80	0.354	8.99			6.3	1.11
C0455-039-1750-X	0.455	11.56			1.750	44.45	1.000	25.39	0.396	10.06			5.4	0.95
C0455-046-0500-X					0.500	12.70	0.330	8.37	0.233	5.92			38.0	6.65
C0455-046-0620-X					0.620	15.75	0.400	10.16	0.261	6.63			29.4	5.15
C0455-046-0750-X					0.750	19.05	0.475	12.08	0.291	7.39			23.6	4.13
C0455-046-0880-X			0.046	1.17	0.880	22.35	0.551	13.99	0.321	8.15	6.47	28.79	19.7	3.44
C0455-046-1000-X					1.000	25.40	0.621	15.77	0.349	8.86			17.1	2.99
C0455-046-1250-X					1.250	31.75	0.767	19.49	0.407	10.34			13.4	2.35
C0455-046-1500-X					1.500	38.10	0.911	23.15	0.465	11.81			11.0	1.93
C0455-046-1750-X					1.750	44.45	1.056	26.83	0.523	13.28			9.3	1.63
C0480-035-0500-X					0.500	12.70	0.286	7.26	0.160	4.06			13.1	2.29
C0480-035-0620-X					0.620	15.75	0.344	8.74	0.175	4.45			10.2	1.78
C0480-035-0750-X					0.750	19.05	0.410	10.42	0.192	4.88			8.3	1.44
C0480-035-0880-X					0.880	22.35	0.475	12.06	0.208	5.28			6.9	1.21
C0480-035-1000-X					1.000	25.40	0.533	13.53	0.223	5.66			6.0	1.05
C0480-035-1250-X			0.035	0.89	1.250	31.75	0.660	16.76	0.255	6.48	2.80	18.07	4.8	0.83
C0480-035-1500-X					1.500	38.10	0.784	19.92	0.287	7.29			3.9	0.69
C0480-035-1750-X					1.750	44.45	0.909	23.09	0.319	8.10			3.3	0.58
C0480-035-2000-X					2.000	50.80	1.039	26.39	0.351	8.92			2.9	0.51
C0480-035-2500-X					2.500	63.50	1.299	32.99	0.414	10.52			2.3	0.41
C0480-035-3000-X					3.000	76.20	1.538	39.05	0.478	12.14			1.9	0.34
C0480-038-0500-X					0.500	12.70	0.285	7.25	0.144	3.66			16.7	2.92
C0480-038-0625-X					0.620	15.75	0.334	8.48	0.167	4.24			12.5	2.19
C0480-038-0750-X					0.750	19.05	0.407	10.33	0.185	4.70			10.4	1.82
C0480-038-0880-X					0.880	22.35	0.471	11.97	0.207	5.26			8.8	1.53
C0480-038-1000-X					1.000	25.40	0.548	13.93	0.220	5.59			7.9	1.39
C0480-038-1250-X					1.250	31.75	0.678	17.22	0.259	6.58			6.3	1.09
C0480-038-1500-X	0.480	12.19	0.038	0.97	1.500	38.10	0.785	19.93	0.305	7.75	3.57	15.90	5.0	0.88
C0480-038-1750-X					1.750	44.45	0.970	24.63	0.352	8.94			4.6	0.80
C0480-038-2000-X					2.000	50.80	1.106	28.09	0.388	9.86			4.0	0.70
C0480-038-2250-X					2.250	57.15	1.337	33.96	0.397	10.08			3.9	0.69
C0480-038-2500-X					2.500	63.50	1.478	37.55	0.429	10.90			3.5	0.61
C0480-038-2750-X					2.750	69.85	1.621	41.16	0.462	11.73			3.2	0.56
C0480-038-3000-X					3.000	76.20	1.774	45.06	0.494	12.55			2.9	0.51
C0480-042-0500-X					0.500	12.70	0.298	7.58	0.167	4.24			23.3	4.08
C0480-042-0625-X					0.620	15.75	0.351	8.92	0.194	4.93			17.5	3.06
C0480-042-0750-X					0.750	19.05	0.436	11.08	0.213	5.41			15.0	2.63
C0480-042-0880-X					0.880	22.35	0.504	12.79	0.239	6.07			12.5	2.19
C0480-042-1000-X					1.000	25.40	0.566	14.37	0.263	6.68			10.8	1.90
C0480-042-1250-X			0.042	1.07	1.250	31.75	0.685	17.41	0.317	8.05	4.70	20.92	8.3	1.46
C0480-042-1500-X					1.500	38.10	0.836		0.358	9.09			7.1	1.24
C0480-042-1750-X					1.750	44.45	1.017	25.82	0.418	10.62			6.4	1.12
C0480-042-2000-X					2.000	50.80	1.157	29.39	0.462	11.73			5.6	0.98
C0480-042-2250-X					2.250	57.15	1.293	32.84	0.505	12.83			4.9	0.86
C0480-042-2500-X					2.500	63.50	1.509	38.34	0.520	13.21			4.8	0.83
C0480-042-2750-X					2.750	69.85	1.643	41.73	0.561	14.25			4.3	0.74



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0480-042-3000-X			0.042	1.07	3.000	76.20	1.798	45.68	0.602	15.29	4.70	20.92	3.9	0.69
C0480-045-0500-X					0.500	12.70	0.302	7.68	0.185	4.70			29.2	5.11
C0480-045-0625-X					0.620	15.75	0.373	9.47	0.209	5.31			23.3	4.08
C0480-045-0750-X					0.750	19.05	0.435	11.06	0.242	6.15			18.3	3.21
C0480-045-0880-X					0.880	22.35	0.516	13.10	0.266	6.76			15.8	2.77
C0480-045-1000-X					1.000	25.40	0.593	15.06	0.287	7.29			14.2	2.48
C0480-045-1250-X					1.250	31.75	0.717	18.22	0.348	8.84			10.8	1.90
C0480-045-1500-X			0.045	1.14	1.500	38.10	0.871	22.11	0.395	10.03	5.77	25.65	9.2	1.60
C0480-045-1750-X					1.750	44.45	1.029	26.13	0.469	11.91			8.0	1.40
C0480-045-2000-X					2.000	50.80	1.176	29.87	0.520	13.21			7.0	1.23
C0480-045-2250-X					2.250	57.15	1.314	33.39	0.570	14.48			6.2	1.08
C0480-045-2500-X					2.500	63.50	1.451	36.86	0.620	15.75			5.5	0.96
C0480-045-2750-X					2.750	69.85	1.596	40.54	0.671	17.04			5.0	0.88
C0480-045-3000-X					3.000	76.20	1.741	44.23	0.721	18.31			4.6	0.80
C0480-051-0500-X					0.500	12.70	0.340	8.64	0.255	6.48			51.1	8.94
C0480-051-0620-X					0.620	15.75	0.412	10.47	0.286	7.26			39.2	6.87
C0480-051-0750-X					0.750	19.05	0.490	12.45	0.320	8.13			31.4	5.50
C0480-051-0880-X					0.880	22.35	0.568	14.43	0.353	8.97			26.2	4.58
C0480-051-1000-X					1.000	25.40	0.640	16.26	0.384	9.75			22.7	3.97
C0480-051-1250-X					1.250	31.75	0.790	20.07	0.448	11.38			17.7	3.11
C0480-051-1500-X			0.051	1.30	1.500	38.10	0.941	23.89	0.513	13.03	8.16	36.28	14.6	2.55
C0480-051-1750-X					1.750	44.45	1.088	27.65	0.577	14.66			12.3	2.16
C0480-051-2000-X					2.000	50.80	1.241	31.52	0.641	16.28			10.8	1.88
C0480-051-2250-X					2.250	57.15	1.391	35.34	0.706	17.93			9.5	1.66
C0480-051-2500-X					2.500	63.50	1.540	39.12	0.770	19.56			8.5	1.49
C0480-051-2750-X					2.750	69.85	1.686	42.82	0.834	21.18			7.7	1.34
C0480-051-3000-X					3.000	76.20	1.834	46.59	0.899	22.83			7.0	1.23
C0480-055-0500-X					0.500	12.70	0.334	8.48	0.246	6.25			60.0	10.50
C0480-055-0625-X					0.620	15.75	0.407	10.33	0.285	7.24			46.7	8.17
C0480-055-0750-X					0.750	19.05	0.496	12.59	0.319	8.10			39.2	6.86
C0480-055-0880-X					0.880	22.35	0.566	14.36	0.368	9.35			31.7	5.54
C0480-055-1000-X					1.000	25.40	0.659	16.73	0.391	9.93			29.2	5.11
C0480-055-1250-X					1.250	31.75	0.807	20.51	0.474	12.04			22.5	3.94
C0480-055-1500-X			0.055	1.40	1.500	38.10	0.957	24.30	0.557	14.15	9.95	44.27	18.3	3.21
C0480-055-1750-X					1.750	44.45	1.134	28.80	0.651	16.54			16.2	2.83
C0480-055-2000-X					2.000	50.80	1.289	32.73	0.725	18.42			14.0	2.45
C0480-055-2250-X	0.480	12.19			2.250	57.15	1.448	36.78	0.799	20.29			12.4	2.17
C0480-055-2500-X					2.500	63.50	1.602	40.68	0.874	22.20			11.1	1.94
C0480-055-2750-X					2.750	69.85	1.802	45.76	0.911	23.14			10.5	1.84
C0480-055-3000-X					3.000	76.20	1.961	49.81	0.981	24.92			9.6	1.68
C0480-059-0500-X					0.500	12.70	0.363	9.22	0.305	7.75			89.3	15.64
C0480-059-0620-X					0.620	15.75	0.440	11.18	0.346	8.79			68.0	11.90
C0480-059-0750-X					0.750	19.05	0.524	13.30	0.390	9.91			54.0	9.45
C0480-059-1000-X					1.000	25.40	0.684	17.37	0.474	12.04			38.7	6.77
C0480-059-1250-X					1.250	31.75	0.845	21.45	0.558	14.17			30.2	5.28
C0480-059-1500-X			0.059	1.50	1.500	38.10	1.004	25.51	0.642	16.31	12.23	54.38	24.7	4.32
C0480-059-1750-X					1.750	44.45	1.165	29.60	0.726	18.44			20.9	3.66
C0480-059-2000-X					2.000	50.80	1.327	33.70	0.810	20.57			18.2	3.18
C0480-059-2250-X					2.250	57.15	1.486	37.73	0.894	22.71			16.0	2.80
C0480-059-2500-X					2.500	63.50	1.647	41.83	0.978	24.84			14.3	2.51
C0480-059-2750-X					2.750	69.85	1.809	45.95	1.062	26.97			13.0	2.27
C0480-059-3000-X					3.000	76.20	1.966	49.95	1.146	29.11			11.8	2.07
C0480-063-0500-X					0.500	12.70	0.355	9.02	0.296	7.52			100.0	17.50
C0480-063-0625-X					0.620	15.75	0.437	11.10	0.342	8.69			79.1	13.86
C0480-063-0750-X					0.750	19.05	0.527	13.39	0.388	9.86			65.0	11.38
C0480-063-0880-X					0.880	22.35	0.617	15.67	0.436	11.07			55.0	9.63
C0480-063-1000-X					1.000	25.40	0.695	17.66	0.485	12.32			47.5	8.31
C0480-063-1250-X					1.250	31.75	0.864	21.94	0.582	14.78			37.5	6.57
C0480-063-1380-X			0.063	1.60	1.380	35.05	0.973	24.72	0.655	16.64	14.47	64.37	35.6	6.23
C0480-063-1500-X					1.500	38.10	1.043	26.49	0.665	16.89			31.7	5.54
C0480-063-1750-X					1.750	44.45	1.210	30.75	0.801	20.35			26.8	4.70
C0480-063-2000-X					2.000	50.80	1.377	34.98	0.895	22.73			23.2	4.07
C0480-063-2250-X					2.250	57.15	1.544	39.21	0.989	25.12			20.5	3.59
C0480-063-2500-X					2.500	63.50	1.710	43.44	1.083	27.51			18.3	3.21
C0480-063-2750-X					2.750	69.85	1.877	47.68	1.177	29.90			16.6	2.90
C0480-063-3000-X					3.000	76.20	2.045	51.96	1.271	32.28			15.2	2.65
C0480-067-0500-X					0.500	12.70	0.385	9.78	0.336	8.53			150.5	26.36
C0480-067-0620-X					0.620	15.75	0.467	11.87	0.403	10.24			113.4	19.85
C0480-067-0750-X					0.750	19.05	0.556	14.13	0.458	11.63			89.5	15.67
C0480-067-0880-X			0.067	1.70	0.880	22.35	0.646	16.40	0.512	13.00	17.31	77.00	73.9	12.94
C0480-067-1000-X					1.000	25.40	0.728	18.49	0.562	14.27			63.6	11.14
C0480-067-1250-X					1.250	31.75	0.900	22.85	0.666	16.92			49.4	8.65
C0480-067-1500-X					1.500	38.10	1.071	27.19	0.770	19.56			40.3	7.06



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0480-067-1750-X					1.750	44.45	1.242	31.54	0.874	22.20			34.1	5.97
C0480-067-2000-X					2.000	50.80	1.413	35.89	0.978	24.84			29.5	5.16
C0480-067-2250-X			0.67	1.71	2.250	57.15	1.586	40.28	1.082	27.48	17.31	77.00	26.1	4.57
C0480-067-2500-X					2.500	63.50	1.758	44.65	1.187	30.15			23.3	4.08
C0480-067-2750-X					2.750	69.85	1.929	48.99	1.291	32.79			21.1	3.69
C0480-067-3000-X					3.000	76.20	2.100	53.35	1.395	35.43			19.2	3.37
C0480-072-0500-X					0.500	12.70	0.402	10.21	0.358	9.09			212.9	37.28
C0480-072-0620-X					0.620	15.75	0.489	12.43	0.419	10.64			159.3	27.89
C0480-072-0750-X					0.750	19.05	0.583	14.82	0.485	12.32			125.1	21.91
C0480-072-0880-X					0.880	22.35	0.678	17.22	0.547	13.89			103.0	18.04
C0480-072-1000-X					1.000	25.40	0.765	19.42	0.601	15.27			88.6	15.51
C0480-072-1250-X					1.250	31.75	0.946	24.03	0.714	18.14			68.6	12.01
C0480-072-1500-X					1.500	38.10	1.127	28.63	0.826	20.98			55.9	9.79
C0480-072-1750-X			0.072	1.83	1.750	44.45	1.309	33.24	0.939	23.85	20.84	92.68	47.2	8.27
C0480-072-2000-X					2.000	50.80	1.490	37.83	1.051	26.70			40.8	7.15
C0480-072-2250-X					2.250	57.15	1.671	42.44	1.164	29.57			36.0	6.30
C0480-072-2500-X					2.500	63.50	1.852	47.04	1.276	32.41			32.2	5.63
C0480-072-2750-X					2.750	69.85	2.033	51.65	1.389	35.28			29.1	5.09
C0480-072-3000-X					3.000	76.20	2.216	56.28	1.501	38.13			26.6	4.65
C0480-072-3250-X					3.250	82.55	2.396	60.87	1.614	41.00			24.4	4.27
C0480-072-3500-X					3.500	88.90	2.577	65.46	1.726	43.84			22.6	3.95
C0480-074-0500-X					0.500	12.70	0.406	10.32	0.350	8.89			240.8	42.17
C0480-074-0620-X					0.620	15.75	0.494	12.56	0.421	10.69			179.6	31.45
C0480-074-0750-X					0.750	19.05	0.590	14.98	0.482	12.24			140.9	24.67
C0480-074-0880-X					0.880	22.35	0.685	17.40	0.546	13.87			115.8	20.28
C0480-074-1000-X	0.480	12.19			1.000	25.40	0.773	19.64	0.610	15.49			99.5	17.42
C0480-074-1250-X					1.250	31.75	0.957	24.30	0.734	18.64			76.9	13.46
C0480-074-1500-X					1.500	38.10	1.140	28.97	0.855	21.72			62.7	10.98
C0480-074-1750-X			0.074	1.88	1.750	44.45	1.324	33.62	0.972	24.69	22.55	100.32	52.9	9.26
C0480-074-2000-X					2.000	50.80	1.508	38.30	1.089	27.66			45.8	8.02
C0480-074-2250-X					2.250	57.15	1.691	42.94	1.206	30.63			40.3	7.06
C0480-074-2500-X					2.500	63.50	1.875	47.62	1.324	33.63			36.1	6.32
C0480-074-2750-X					2.750	69.85	2.058	52.26	1.441	36.60			32.6	5.70
C0480-074-3000-X					3.000	76.20	2.242	56.94	1.558	39.57			29.7	5.21
C0480-074-3250-X					3.250	82.55	2.425	61.58	1.675	42.55			27.3	4.78
C0480-074-3500-X					3.500	88.90	2.609	66.28	1.792	45.52			25.3	4.43
C0480-081-0500-X					0.500	12.70	0.423	10.75	0.379	9.63			372.1	65.16
C0480-081-0620-X					0.620	15.75	0.516	13.11	0.458	11.63			274.6	48.09
C0480-081-0750-X					0.750	19.05	0.616	15.66	0.526	13.36			213.9	37.46
C0480-081-0880-X					0.880	22.35	0.717	18.21	0.598	15.19			175.2	30.68
C0480-081-1000-X					1.000	25.40	0.810	20.57	0.669	16.99			150.1	26.29
C0480-081-1250-X					1.250	31.75	1.003	25.47	0.808	20.52			115.6	20.25
C0480-081-1500-X					1.500	38.10	1.196	30.39	0.942	23.93			94.1	16.47
C0480-081-1750-X			0.081	2.06	1.750	44.45	1.389	35.29	1.073	27.25	28.56	127.05	79.2	13.87
C0480-081-2000-X					2.000	50.80	1.583	40.20	1.204	30.58			68.5	11.99
C0480-081-2250-X					2.250	57.15	1.776	45.10	1.334	33.88			60.2	10.55
C0480-081-2500-X					2.500	63.50	1.969	50.02	1.465	37.21			53.8	9.42
C0480-081-2750-X					2.750	69.85	2.162	54.91	1.595	40.51			48.6	8.50
C0480-081-3000-X					3.000	76.20	2.355	59.83	1.726	43.84			44.3	7.76
C0480-081-3250-X					3.250	82.55	2.549	64.74	1.857	47.17			40.7	7.13
C0480-081-3500-X					3.500	88.90	2.741	69.63	1.987	50.47			37.7	6.59
C0600-045-0500-X					0.500	12.70	0.274	6.95	0.153	3.89			20.6	3.60
C0600-045-0625-X					0.620	15.75	0.309	7.86	0.179	4.55			15.0	2.63
C0600-045-0750-X					0.750	19.05	0.351	8.90	0.205	5.21			11.7	2.04
C0600-045-0880-X					0.880	22.35	0.414	10.52	0.224	5.69			10.0	1.75
C0600-045-1000-X					1.000	25.40	0.441	11.20	0.251	6.38			8.3	1.46
C0600-045-1250-X					1.250	31.75	0.551	14.00	0.292	7.42			6.7	1.17
C0600-045-1380-X					1.380	35.05	0.592	15.05	0.306	7.77			5.9	1.03
C0600-045-1500-X			0.045	1.14	1.500	38.10	0.640	16.25	0.338	8.59	4.66	20.72	5.4	0.95
C0600-045-1750-X					1.750	44.45	0.915	23.25	0.366	9.30			5.6	0.98
C0600-045-2000-X					2.000	50.80	1.036	26.31	0.401	10.19			4.8	0.85
C0600-045-2250-X					2.250	57.15	1.175	29.84	0.436	11.07			4.3	0.76
C0600-045-2500-X	0.600	15.24			2.500	63.50	1.284	32.62	0.471	11.96			3.8	0.67
C0600-045-2750-X					2.750	69.85	1.278	32.47	0.540	13.72			3.2	0.56
C0600-045-3000-X					3.000	76.20	1.402	35.62	0.585	14.86			2.9	0.51
C0600-045-3500-X					3.500	88.90	1.636	41.56	0.659	16.74			2.5	0.44
C0600-049-0620-X					0.620	15.75	0.369	9.36	0.234	5.94			23.3	4.08
C0600-049-0750-X					0.750	19.05	0.436	11.07	0.255	6.48			18.7	3.27
C0600-049-1000-X					1.000	25.40	0.565	14.36	0.297	7.54			13.5	2.36
C0600-049-1250-X			0.049	1.24	1.250	31.75	0.696	17.67	0.338	8.59	5.86	26.08	10.6	1.85
C0600-049-1500-X					1.500	38.10	0.823	20.91	0.380	9.65			8.7	1.52
C0600-049-1750-X					1.750	44.45	0.950	24.13	0.422	10.72			7.3	1.28
C0600-049-2000-X					2.000	50.80	1.086	27.58	0.463	11.76			6.4	1.12



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0600-049-2250-X					2.250	57.15	1.215	30.86	0.505	12.83			5.7	0.99
C0600-049-2500-X			0.049	1.24	2.500	63.50	1.346	34.19	0.546	13.87	5.86	26.08	5.1	0.89
C0600-049-2750-X					2.750	69.85	1.470	37.34	0.558688	14.94			4.6	0.80
C0600-049-3000-X					3.000	76.20	1.592	40.44	0.629	15.98			4.2	0.73
C0600-055-0625-X					0.620	15.75	0.378	9.60	0.226	5.74			33.3	5.83
C0600-055-0750-X					0.750	19.05	0.457	11.60	0.251	6.38			27.5	4.81
C0600-055-0880-X					0.880	22.35	0.534	13.57	0.276	7.01			23.3	4.08
C0600-055-1000-X					1.000	25.40	0.597	15.15	0.304	7.72			20.0	3.50
C0600-055-1250-X					1.250	31.75	0.712	18.09	0.369	9.37			15.0	2.63
C0600-055-1500-X			0.055	1.40	1.500	38.10	0.854	21.70	0.420	10.67	8.07	35.88	12.5	2.19
C0600-055-1750-X					1.750	44.45	1.005	25.53	0.509	12.93			10.8	1.90
C0600-055-2000-X					2.000	50.80	1.143	29.04	0.562	14.27			9.4	1.65
C0600-055-2250-X					2.250	57.15	1.282	32.56	0.614	15.60			8.3	1.46
C0600-055-2500-X					2.500	63.50	1.412	35.87	0.667	16.94			7.4	1.30
C0600-055-2750-X					2.750	69.85	1.583	40.22	0.701	17.81			6.9	1.21
C0600-055-3000-X					3.000	76.20	1.726	43.84	0.752	19.10			6.3	1.11
C0600-059-0620-X					0.620	15.75	0.398	10.11	0.298	7.57			44.7	7.83
C0600-059-0750-X					0.750	19.05	0.471	11.97	0.329	8.36			35.6	6.23
C0600-059-0880-X					0.880	22.35	0.544	13.81	0.360	9.14			29.5	5.16
C0600-059-1000-X					1.000	25.40	0.611	15.51	0.389	9.88			25.5	4.46
C0600-059-1250-X					1.250	31.75	0.750	19.04	0.449	11.40			19.8	3.47
C0600-059-1500-X			0.059	1.50	1.500	38.10	0.889	22.59	0.510	12.95	9.92	44.13	16.2	2.84
C0600-059-1750-X					1.750	44.45	1.028	26.12	0.570	14.48			13.7	2.41
C0600-059-2000-X					2.000	50.80	1.167	29.65	0.630	16.00			11.9	2.09
C0600-059-2250-X					2.250	57.15	1.305	33.14	0.690	17.53			10.5	1.84
C0600-059-2500-X					2.500	63.50	1.446	36.73	0.750	19.05			9.4	1.65
C0600-059-2750-X					2.750	69.85	1.582	40.19	0.811	20.60			8.5	1.49
C0600-059-3000-X					3.000	76.20	1.733	44.02	0.871	22.12			7.8	1.37
C0600-063-0625-X					0.620	15.75	0.392	9.96	0.280	7.11			51.7	9.04
C0600-063-0750-X					0.750	19.05	0.473	12.02	0.314	7.98			42.5	7.44
C0600-063-0880-X					0.880	22.35	0.559	14.20	0.343	8.71			36.7	6.42
C0600-063-1000-X					1.000	25.40	0.628	15.96	0.378	9.60			31.7	5.54
C0600-063-1250-X					1.250	31.75	0.795	20.18	0.435	11.05			25.8	4.52
C0600-063-1500-X					1.500	38.10	0.912	23.16	0.526	13.36			20.0	3.50
C0600-063-1750-X			0.063	1.60	1.750	44.45	1.071	27.21	0.632	16.05	11.76	52.31	17.3	3.03
C0600-063-2000-X					2.000	50.80	1.216	30.88	0.700	17.78			15.0	2.63
C0600-063-2250-X	0.600	15.24			2.250	57.15	1.362	34.60	0.768	19.51			13.2	2.32
C0600-063-2500-X					2.500	63.50	1.506	38.25	0.836	21.23			11.8	2.07
C0600-063-2750-X					2.750	69.85	1.719	43.67	0.863	21.92			11.4	2.00
C0600-063-3000-X					3.000	76.20	1.871	47.51	0.927	23.55			10.4	1.82
C0600-063-3500-X					3.500	88.90	2.168	55.07	1.055	26.80			8.8	1.55
C0600-067-0625-X					0.620	15.75	0.409	10.38	0.300	7.62			66.6	11.67
C0600-067-0750-X					0.750	19.05	0.494	12.54	0.336	8.53			55.0	9.63
C0600-067-0880-X					0.880	22.35	0.542	13.76	0.401	10.19			41.7	7.29
C0600-067-1000-X					1.000	25.40	0.624	15.85	0.430	10.92			37.5	6.57
C0600-067-1250-X					1.250	31.75	0.780	19.81	0.505	12.83			30.0	5.25
C0600-067-1500-X			0.067	1.70	1.500	38.10	0.917	23.28	0.594	15.09	14.09	62.68	24.2	4.23
C0600-067-1750-X					1.750	44.45	1.014	25.77	0.715	18.16			19.2	3.36
C0600-067-2000-X					2.000	50.80	1.248	31.70	0.771	19.58			18.7	3.28
C0600-067-2250-X					2.250	57.15	1.396	35.45	0.847	21.51			16.5	2.89
C0600-067-2500-X					2.500	63.50	1.544	39.22	0.923	23.44			14.7	2.58
C0600-067-2750-X					2.750	69.85	1.737	44.12	0.966	24.54			13.9	2.44
C0600-067-3000-X					3.000	76.20	1.894	48.12	1.040	26.42			12.7	2.23
C0600-072-0620-X					0.620	15.75	0.442	11.22	0.381	9.68			95.4	16.70
C0600-072-0750-X					0.750	19.05	0.488	12.41	0.396	10.06			65.0	11.38
C0600-072-0880-X					0.880	22.35	0.580	14.73	0.433	11.00			56.6	9.92
C0600-072-1000-X					1.000	25.40	0.629	15.98	0.502	12.75			45.8	8.02
C0600-072-1250-X					1.250	31.75	0.797	20.23	0.581	14.76			37.5	6.57
C0600-072-1500-X			0.072	1.83	1.500	38.10	0.933	23.70	0.691	17.55	17.00	75.60	30.0	5.25
C0600-072-1750-X					1.750	44.45	1.070	27.17	0.801	20.35			25.0	4.38
C0600-072-2000-X					2.000	50.80	1.271	32.29	0.848	21.54			23.3	4.08
C0600-072-2250-X					2.250	57.15	1.462	37.14	0.946	24.03			21.6	3.78
C0600-072-2500-X					2.500	63.50	1.617	41.06	1.033	26.24			19.2	3.37
C0600-072-2750-X					2.750	69.85	1.774	45.05	1.119	28.42			17.4	3.05
C0600-072-3000-X					3.000	76.20	1.932	49.06	1.206	30.63			15.9	2.79
C0600-081-0620-X					0.620	15.75	0.488	12.39	0.412	10.46			177.1	31.01
C0600-081-0750-X					0.750	19.05	0.580	14.74	0.459	11.66			137.9	24.16
C0600-081-0880-X					0.880	22.35	0.673	17.09	0.507	12.88			113.0	19.78
C0600-081-1000-X			0.081	2.06	1.000	25.40	0.758	19.26	0.552	14.02	23.40	104.10	96.8	16.95
C0600-081-1250-X					1.250	31.75	0.936	23.78	0.644	16.36			74.6	13.06
C0600-081-1500-X					1.500	38.10	1.114	28.30	0.736	18.69			60.6	10.62
C0600-081-1750-X					1.750	44.45	1.292	32.81	0.828	21.03			51.1	8.94
C0600-081-2000-X					2.000	50.80	1.470	37.34	0.920	23.37			44.2	7.73



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0600-081-2250-X					2.250	57.15	1.647	41.84	1.012	25.70			38.8	6.80
C0600-081-2500-X					2.500	63.50	1.826	46.39	1.104	28.04			34.7	6.08
C0600-081-2750-X					2.750	69.85	2.003	50.87	1.196	30.38			31.3	5.48
C0600-081-3000-X			0.081	2.06	3.000	76.20	2.181	55.39	1.288	32.72	23.40	104.10	28.6	5.00
C0600-081-3250-X					3.250	82.55	2.358	59.89	1.380	35.05			26.2	4.60
C0600-081-3500-X					3.500	88.90	2.538	64.46	1.472	37.39			24.3	4.26
C0600-081-3750-X					3.750	95.25	2.713	68.92	1.564	39.73			22.6	3.95
C0600-081-4000-X					4.000	101.60	2.894	73.50	1.656	42.06			21.2	3.71
C0600-085-0620-X					0.620	15.75	0.497	12.62	0.433	11.00			218.7	38.29
C0600-085-0750-X					0.750	19.05	0.591	15.02	0.484	12.29			169.6	29.70
C0600-085-0880-X					0.880	22.35	0.686	17.42	0.536	13.61			138.6	24.27
C0600-085-1000-X					1.000	25.40	0.773	19.63	0.583	14.81			118.5	20.76
C0600-085-1250-X					1.250	31.75	0.955	24.24	0.682	17.32			91.1	15.96
C0600-085-1500-X					1.500	38.10	1.136	28.85	0.781	19.84			74.0	12.95
C0600-085-1750-X					1.750	44.45	1.318	33.47	0.880	22.35			62.3	10.91
C0600-085-2000-X			0.085	2.16	2.000	50.80	1.499	38.07	0.978	24.84	26.93	119.77	53.7	9.41
C0600-085-2250-X					2.250	57.15	1.681	42.69	1.077	27.36			47.3	8.28
C0600-085-2500-X					2.500	63.50	1.862	47.31	1.176	29.87			42.2	7.40
C0600-085-2750-X					2.750	69.85	2.044	51.92	1.275	32.39			38.2	6.68
C0600-085-3000-X					3.000	76.20	2.225	56.51	1.374	34.90			34.7	6.08
C0600-085-3250-X					3.250	82.55	2.406	61.11	1.473	37.41			31.9	5.59
C0600-085-3500-X					3.500	88.90	2.589	65.77	1.572	39.93			29.6	5.18
C0600-085-3750-X					3.750	95.25	2.770	70.37	1.670	42.42			27.5	4.81
C0600-085-4000-X					4.000	101.60	2.950	74.94	1.769	44.93			25.7	4.49
C0600-092-0750-X					0.750	19.05	0.611	15.51	0.524	13.31			242.8	42.52
C0600-092-0880-X					0.880	22.35	0.708	17.99	0.581	14.76			197.4	34.57
C0600-092-1000-X	0.600	15.24			1.000	25.40	0.799	20.29	0.633	16.08			168.4	29.50
C0600-092-1250-X					1.250	31.75	0.987	25.07	0.743	18.87			128.9	22.57
C0600-092-1500-X					1.500	38.10	1.176	29.86	0.853	21.67			104.5	18.29
C0600-092-1750-X					1.750	44.45	1.364	34.64	0.962	24.43			87.7	15.36
C0600-092-2000-X					2.000	50.80	1.552	39.43	1.072	27.23			75.6	13.25
C0600-092-2250-X			0.092	2.34	2.250	57.15	1.741	44.21	1.181	30.00	33.87	150.64	66.5	11.64
C0600-092-2500-X					2.500	63.50	1.929	49.00	1.291	32.79			59.3	10.39
C0600-092-2750-X					2.750	69.85	2.118	53.79	1.400	35.56			53.6	9.38
C0600-092-3000-X					3.000	76.20	2.306	58.58	1.510	38.35			48.8	8.55
C0600-092-3250-X					3.250	82.55	2.494	63.35	1.619	41.12			44.8	7.85
C0600-092-3500-X					3.500	88.90	2.682	68.12	1.729	43.92			41.4	7.25
C0600-092-3750-X					3.750	95.25	2.872	72.95	1.838	46.69			38.6	6.75
C0600-092-4000-X					4.000	101.60	3.059	77.69	1.948	49.48			36.0	6.30
C0600-098-0750-X					0.750	19.05	0.627	15.93	0.559	14.20			323.0	56.57
C0600-098-0880-X					0.880	22.35	0.728	18.50	0.621	15.77			261.7	45.82
C0600-098-1000-X					1.000	25.40	0.822	20.88	0.678	17.22			222.6	38.98
C0600-098-1250-X					1.250	31.75	1.017	25.82	0.798	20.27			169.9	29.74
C0600-098-1500-X					1.500	38.10	1.211	30.76	0.917	23.29			137.3	24.04
C0600-098-1750-X					1.750	44.45	1.406	35.71	1.037	26.34			115.2	20.17
C0600-098-2000-X					2.000	50.80	1.600	40.65	1.156	29.36			99.2	17.37
C0600-098-2250-X			0.098	2.49	2.250	57.15	1.795	45.59	1.276	32.41	39.65	176.35	87.1	15.26
C0600-098-2500-X					2.500	63.50	1.990	50.54	1.395	35.43			77.7	13.61
C0600-098-2750-X					2.750	69.85	2.184	55.48	1.515	38.48			70.1	12.27
C0600-098-3000-X					3.000	76.20	2.379	60.42	1.634	41.50			63.8	11.17
C0600-098-3250-X					3.250	82.55	2.574	65.38	1.754	44.55			58.6	10.27
C0600-098-3500-X					3.500	88.90	2.768	70.30	1.873	47.57			54.2	9.48
C0600-098-3750-X					3.750	95.25	2.963	75.27	1.993	50.62			50.4	8.83
C0600-098-4000-X					4.000	101.60	3.158	80.20	2.112	53.64			47.1	8.24
C0720-055-0620-X					0.620	15.75	0.370	9.39	0.241	6.12			27.1	4.74
C0720-055-0750-X					0.750	19.05	0.396	10.07	0.221	5.61			19.2	3.36
C0720-055-0880-X					0.880	22.35	0.473	12.02	0.238	6.05			16.7	2.92
C0720-055-1000-X					1.000	25.40	0.560	14.23	0.248	6.30			15.4	2.70
C0720-055-1250-X					1.250	31.75	0.708	17.98	0.281	7.14			12.5	2.19
C0720-055-1500-X			0.055	1.40	1.500	38.10	0.793	20.14	0.333	8.46	6.77	30.13	9.6	1.68
C0720-055-1750-X					1.750	44.45	0.866	22.00	0.388	9.86			7.7	1.34
C0720-055-2000-X					2.000	50.80	1.043	26.50	0.411	10.44			7.1	1.24
C0720-055-2250-X					2.250	57.15	1.207	30.67	0.482	12.24			6.5	1.14
C0720-055-2500-X	0.720	18.29			2.500	63.50	1.321	33.56	0.519	13.18			5.8	1.01
C0720-055-2750-X					2.750	69.85	1.459	37.06	0.556	14.12			5.3	0.92
C0720-055-3000-X					3.000	76.20	1.573	39.96	0.593	15.06			4.8	0.83
C0720-059-0750-X					0.750	19.05	0.446	11.32	0.285	7.24			27.4	4.80
C0720-059-0880-X					0.880	22.35	0.513	13.04	0.308	7.82			22.7	3.98
C0720-059-1000-X					1.000	25.40	0.574	14.58	0.328	8.33			19.6	3.43
C0720-059-1250-X			0.059	1.50	1.250	31.75	0.703	17.86	0.371	9.42	8.34	37.09	15.2	2.67
C0720-059-1500-X					1.500	38.10	0.833	21.15	0.414	10.52			12.5	2.19
C0720-059-1750-X					1.750	44.45	0.962	24.43	0.457	11.61			10.6	1.85
C0720-059-2000-X					2.000	50.80	1.090	27.68	0.499	12.67			9.2	1.60



316 STAINLESS STEEL

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	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0720-059-2250-X			0.059	1.50	2.250	57.15	1.218	30.94	0.542	13.77	8.34	37.09	8.1	1.41
C0720-059-2500-X					2.500	63.50	1.349	34.27	0.585	14.86			7.3	1.27
C0720-063-0620-X					0.620	15.75	0.392	9.95	0.286	7.26			43.3	7.59
C0720-063-0750-X					0.750	19.05	0.390	9.91	0.284	7.21			27.5	4.81
C0720-063-0880-X					0.880	22.35	0.456	11.58	0.313	7.95			23.3	4.08
C0720-063-1000-X					1.000	25.40	0.505	12.83	0.344	8.74			20.0	3.50
C0720-063-1250-X					1.250	31.75	0.608	15.44	0.409	10.39			15.4	2.70
C0720-063-1500-X			0.063	1.60	1.500	38.10	0.708	17.99	0.475	12.07	9.89	44.01	12.5	2.19
C0720-063-1750-X					1.750	44.45	0.836	21.24	0.529	13.44			10.8	1.90
C0720-063-2000-X					2.000	50.80	0.920	23.37	0.602	15.29			9.2	1.60
C0720-063-2250-X					2.250	57.15	1.268	32.22	0.605	15.37			10.1	1.77
C0720-063-2500-X					2.500	63.50	1.400	35.57	0.654	16.61			9.0	1.58
C0720-063-2750-X					2.750	69.85	1.538	39.07	0.702	17.83			8.2	1.43
C0720-063-3000-X					3.000	76.20	1.665	42.30	0.751	19.08			7.4	1.30
C0720-065-0750-X					0.750	19.05	0.467	11.86	0.324	8.23			38.3	6.71
C0720-065-0880-X					0.880	22.35	0.537	13.65	0.351	8.92			31.7	5.54
C0720-065-1000-X					1.000	25.40	0.603	15.31	0.376	9.55			27.3	4.78
C0720-065-1250-X					1.250	31.75	0.737	18.72	0.428	10.87			21.2	3.71
C0720-065-1500-X					1.500	38.10	0.874	22.19	0.480	12.19			17.3	3.03
C0720-065-1750-X			0.065	1.65	1.750	44.45	1.010	25.65	0.532	13.51	10.85	48.26	14.7	2.57
C0720-065-2000-X					2.000	50.80	1.143	29.03	0.584	14.83			12.7	2.22
C0720-065-2250-X					2.250	57.15	1.278	32.46	0.636	16.15			11.2	1.95
C0720-065-2500-X					2.500	63.50	1.415	35.93	0.689	17.50			10.0	1.75
C0720-065-2750-X					2.750	69.85	1.555	39.50	0.714	18.14			9.1	1.59
C0720-065-3000-X					3.000	76.20	1.684	42.78	0.793	20.14			8.3	1.44
C0720-067-0750-X					0.750	19.05	0.465	11.81	0.279	7.09			41.7	7.29
C0720-067-0880-X					0.880	22.35	0.524	13.31	0.315	8.00			33.3	5.83
C0720-067-1000-X					1.000	25.40	0.568	14.44	0.354	8.99			27.5	4.81
C0720-067-1250-X					1.250	31.75	0.722	18.35	0.403	10.24			22.5	3.94
C0720-067-1500-X					1.500	38.10	0.853	21.65	0.464	11.79			18.3	3.21
C0720-067-1750-X			0.067	1.70	1.750	44.45	0.959	24.35	0.538	13.67	11.87	52.78	15.0	2.63
C0720-067-2000-X					2.000	50.80	1.081	27.46	0.603	15.32			12.9	2.26
C0720-067-2250-X					2.250	57.15	1.294	32.87	0.669	16.99			12.4	2.17
C0720-067-2500-X					2.500	63.50	1.429	36.30	0.724	18.39			11.1	1.94
C0720-067-3000-X					3.000	76.20	1.705	43.31	0.835	21.21			9.2	1.60
C0720-067-3250-X					3.250	82.55	1.919	48.74	0.850	21.59			8.9	1.56
C0720-067-3500-X	0.720	18.29			3.500	88.90	2.076	52.72	0.902	22.91			8.3	1.46
C0720-072-0750-X					0.750	19.05	0.494	12.56	0.368	9.35			56.1	9.82
C0720-072-0880-X					0.880	22.35	0.522	13.25	0.365	9.27			40.0	7.00
C0720-072-1000-X					1.000	25.40	0.590	15.00	0.397	10.08			35.0	6.13
C0720-072-1250-X					1.250	31.75	0.759	19.27	0.448	11.38			29.2	5.11
C0720-072-1500-X					1.500	38.10	0.838	21.30	0.554	14.07			21.7	3.79
C0720-072-1750-X					1.750	44.45	0.968	24.59	0.628	15.95			18.3	3.21
C0720-072-2000-X			0.072	1.83	2.000	50.80	1.140	28.95	0.677	17.20	14.33	63.73	16.7	2.92
C0720-072-2250-X					2.250	57.15	1.349	34.27	0.751	19.08			15.9	2.79
C0720-072-2500-X					2.500	63.50	1.494	37.95	0.815	20.70			14.2	2.49
C0720-072-2750-X					2.750	69.85	1.633	41.48	0.878	22.30			12.8	2.25
C0720-072-3000-X					3.000	76.20	1.780	45.21	0.942	23.93			11.8	2.06
C0720-072-3250-X					3.250	82.55	1.927	48.94	1.005	25.53			10.8	1.90
C0720-072-3500-X					3.500	88.90	2.067	52.49	1.069	27.15			10.0	1.75
C0720-072-4000-X					4.000	101.60	2.377	60.38	1.182	30.02			8.8	1.55
C0720-081-0750-X					0.750	19.05	0.521	13.22	0.429	10.90			86.2	15.10
C0720-081-0880-X					0.880	22.35	0.600	15.23	0.470	11.94			70.6	12.36
C0720-081-1000-X					1.000	25.40	0.673	17.09	0.508	12.90			60.5	10.59
C0720-081-1250-X					1.250	31.75	0.825	20.96	0.587	14.91			46.6	8.15
C0720-081-1500-X					1.500	38.10	0.978	24.85	0.665	16.89			37.9	6.64
C0720-081-1750-X					1.750	44.45	1.130	28.71	0.744	18.90			31.9	5.59
C0720-081-2000-X			0.081	2.06	2.000	50.80	1.283	32.58	0.823	20.90	19.78	87.96	27.6	4.83
C0720-081-2250-X					2.250	57.15	1.434	36.43	0.902	22.91			24.2	4.24
C0720-081-2500-X					2.500	63.50	1.587	40.31	0.981	24.92			21.7	3.79
C0720-081-2750-X					2.750	69.85	1.740	44.19	1.060	26.92			19.6	3.43
C0720-081-3000-X					3.000	76.20	1.891	48.02	1.139	28.93			17.8	3.12
C0720-081-3500-X					3.500	88.90	2.196	55.77	1.297	32.94			15.2	2.65
C0720-081-4000-X					4.000	101.60	2.507	63.68	1.455	36.96			13.2	2.32
C0720-085-0750-X					0.750	19.05	0.553	14.05	0.434	11.02			115.8	20.28
C0720-085-0880-X					0.880	22.35	0.639	16.23	0.474	12.04			94.6	16.56
C0720-085-1000-X					1.000	25.40	0.718	18.25	0.512	13.00			80.9	14.16
C0720-085-1250-X					1.250	31.75	0.883	22.44	0.589	14.96			62.1	10.88
C0720-085-1500-X			0.085	2.16	1.500	38.10	1.049	26.64	0.666	16.92	22.78	101.31	50.5	8.84
C0720-085-1750-X					1.750	44.45	1.214	30.83	0.743	18.87			42.5	7.44
C0720-085-2000-X					2.000	50.80	1.379	35.02	0.821	20.85			36.7	6.42
C0720-085-2250-X					2.250	57.15	1.543	39.20	0.898	22.81			32.2	5.65
C0720-085-2500-X					2.500	63.50	1.710	43.43	0.975	24.77			28.8	5.05



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SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0720-085-2750-X					2.750	69.85	1.874	47.59	1.052	26.72			26.0	4.55
C0720-085-3000-X			0.085	2.16	3.000	76.20	2.041	51.83	1.130	28.70	22.78	101.31	23.7	4.16
C0720-085-3500-X					3.500	88.90	2.370	60.20	1.284	32.61			20.2	3.53
C0720-085-4000-X					4.000	101.60	2.698	68.53	1.439	36.55			17.5	3.06
C0720-096-0750-X					0.750	19.05	0.590	15.00	0.490	12.45			198.8	34.80
C0720-096-0880-X					0.880	22.35	0.683	17.36	0.537	13.64			161.3	28.24
C0720-096-1000-X					1.000	25.40	0.769	19.53	0.581	14.76			137.3	24.04
C0720-096-1250-X					1.250	31.75	0.948	24.07	0.671	17.04			104.9	18.36
C0720-096-1500-X					1.500	38.10	1.126	28.60	0.762	19.35			84.8	14.85
C0720-096-1750-X					1.750	44.45	1.305	33.14	0.852	21.64			71.2	12.47
C0720-096-2000-X			0.096	2.44	2.000	50.80	1.483	37.68	0.943	23.95	31.71	141.05	61.4	10.75
C0720-096-2250-X					2.250	57.15	1.662	42.20	1.034	26.26			53.9	9.44
C0720-096-2500-X					2.500	63.50	1.840	46.74	1.124	28.55			48.1	8.42
C0720-096-2750-X					2.750	69.85	2.019	51.29	1.215	30.86			43.4	7.60
C0720-096-3000-X					3.000	76.20	2.197	55.80	1.305	33.15			39.5	6.91
C0720-096-3500-X					3.500	88.90	2.555	64.91	1.486	37.74			33.6	5.88
C0720-096-4000-X					4.000	101.60	2.912	73.97	1.668	42.37			29.2	5.11
C0720-105-0750-X					0.750	19.05	0.611	15.51	0.537	13.64			295.5	51.74
C0720-105-0880-X					0.880	22.35	0.707	17.96	0.591	15.01			238.2	41.70
C0720-105-1000-X					1.000	25.40	0.796	20.23	0.640	16.26			202.0	35.37
C0720-105-1250-X					1.250	31.75	0.982	24.94	0.743	18.87			153.4	26.87
C0720-105-1500-X	0.720	18.29			1.500	38.10	1.167	29.65	0.846	21.49			123.7	21.66
C0720-105-1750-X					1.750	44.45	1.353	34.36	0.949	24.10			103.6	18.15
C0720-105-2000-X			0.105	2.67	2.000	50.80	1.538	39.07	1.052	26.72	41.15	183.03	89.1	15.61
C0720-105-2250-X					2.250	57.15	1.724	43.79	1.155	29.34			78.2	13.70
C0720-105-2500-X					2.500	63.50	1.909	48.49	1.258	31.95			69.6	12.20
C0720-105-2750-X					2.750	69.85	2.095	53.21	1.361	34.57			62.8	11.00
C0720-105-3000-X					3.000	76.20	2.281	57.94	1.464	37.19			57.2	10.02
C0720-105-3500-X					3.500	88.90	2.651	67.34	1.670	42.42			48.5	8.49
C0720-105-4000-X					4.000	101.60	3.022	76.75	1.876	47.65			42.1	7.37
C0720-112-0750-X					0.750	19.05	0.626	15.90	0.576	14.63			390.5	68.39
C0720-112-0880-X					0.880	22.35	0.726	18.43	0.636	16.15			313.1	54.83
C0720-112-1000-X					1.000	25.40	0.817	20.76	0.691	17.55			264.6	46.34
C0720-112-1250-X					1.250	31.75	1.008	25.61	0.805	20.45			200.2	35.05
C0720-112-1500-X					1.500	38.10	1.200	30.47	0.919	23.34			160.9	28.18
C0720-112-1750-X					1.750	44.45	1.391	35.33	1.034	26.26			134.6	23.57
C0720-112-2000-X			0.112	2.84	2.000	50.80	1.582	40.18	1.148	29.16	48.36	215.10	115.6	20.25
C0720-112-2250-X					2.250	57.15	1.773	45.03	1.262	32.05			101.4	17.75
C0720-112-2500-X					2.500	63.50	1.964	49.88	1.376	34.95			90.2	15.80
C0720-112-2750-X					2.750	69.85	2.155	54.74	1.491	37.87			81.3	14.24
C0720-112-3000-X					3.000	76.20	2.346	59.59	1.605	40.77			74.0	12.95
C0720-112-3500-X					3.500	88.90	2.729	69.32	1.834	46.58			62.7	10.98
C0720-112-4000-X					4.000	101.60	3.111	79.02	2.062	52.37			54.4	9.52
C0850-068-0750-X					0.750	19.05	0.396	10.06	0.292	7.42			29.9	5.24
C0850-068-0875-X					0.880	22.35	0.454	11.53	0.317	8.05			24.8	4.35
C0850-068-1000-X					1.000	25.40	0.502	12.75	0.342	8.69			21.2	3.72
C0850-068-1250-X					1.250	31.75	0.609	15.46	0.391	9.93			16.5	2.89
C0850-068-1500-X					1.500	38.10	0.711	18.06	0.441	11.20			13.4	2.35
C0850-068-1750-X			0.068	1.73	1.750	44.45	0.816	20.73	0.490	12.45	10.58	47.06	11.3	1.98
C0850-068-2000-X					2.000	50.80	0.924	23.46	0.540	13.72			9.8	1.72
C0850-068-2250-X					2.250	57.15	1.029	26.13	0.590	14.99			8.7	1.52
C0850-068-2500-X					2.500	63.50	1.134	28.81	0.639	16.23			7.8	1.36
C0850-068-3000-X					3.000	76.20	1.351	34.31	0.739	18.77			6.4	1.12
C0850-068-3500-X					3.500	88.90	1.546	39.27	0.838	21.29			5.4	0.95
C0850-068-4000-X					4.000	101.60	1.772	45.01	0.937	23.80			4.8	0.83
C0850-074-0875-X					0.880	22.35	0.483	12.26	0.355	9.02			33.4	5.85
C0850-074-1000-X					1.000	25.40	0.534	13.57	0.384	9.75			28.5	4.99
C0850-074-1250-X	0.850	21.59			1.250	31.75	0.649	16.48	0.443	11.25			22.1	3.86
C0850-074-1500-X			0.074	1.88	1.500	38.10	0.763	19.37	0.501	12.73	13.27	59.02	18.0	3.15
C0850-074-2000-X					2.000	50.80	0.992	25.19	0.618	15.70			13.2	2.30
C0850-074-2500-X					2.500	63.50	1.215	30.87	0.735	18.67			10.3	1.81
C0850-074-3000-X					3.000	76.20	1.438	36.53	0.852	21.64			8.5	1.49
C0850-074-3500-X					3.500	88.90	1.669	42.40	0.969	24.61			7.3	1.27
C0850-081-0750-X					0.750	19.05	0.450	11.43	0.365	9.27			56.4	9.87
C0850-081-0875-X					0.880	22.35	0.516	13.11	0.400	10.16			46.5	8.14
C0850-081-1000-X					1.000	25.40	0.573	14.54	0.435	11.05			39.6	6.93
C0850-081-1250-X					1.250	31.75	0.695	17.66	0.504	12.80			30.5	5.34
C0850-081-1500-X			0.081	2.06	1.500	38.10	0.816	20.74	0.573	14.55	16.91	75.23	24.7	4.33
C0850-081-1750-X					1.750	44.45	0.941	23.90	0.642	16.31			20.9	3.66
C0850-081-2000-X					2.000	50.80	1.060	26.92	0.712	18.08			18.0	3.15
C0850-081-2250-X					2.250	57.15	1.187	30.15	0.781	19.84			15.9	2.79
C0850-081-2500-X					2.500	63.50	1.306	33.16	0.850	21.59			14.2	2.48
C0850-081-2750-X					2.750	69.85	1.432	36.36	0.920	23.37			12.8	2.25



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0850-081-3000-X			0.081	2.06	3.000	76.20	1.550	39.36	0.989	25.12	16.91	75.23	11.7	2.04
C0850-081-3500-X					3.500	88.90	1.794	45.56	1.127	28.63			9.9	1.74
C0850-085-0750-X					0.750	19.05	0.462	11.74	0.388	9.86			67.7	11.86
C0850-085-0875-X					0.880	22.35	0.530	13.47	0.426	10.82			55.7	9.76
C0850-085-1000-X					1.000	25.40	0.588	14.93	0.463	11.76			47.3	8.28
C0850-085-1250-X					1.250	31.75	0.713	18.12	0.539	13.69			36.3	6.36
C0850-085-1500-X					1.500	38.10	0.839	21.31	0.615	15.62			29.5	5.16
C0850-085-1750-X					1.750	44.45	0.965	24.50	0.690	17.53			24.8	4.35
C0850-085-2000-X			0.085	2.16	2.000	50.80	1.093	27.76	0.766	19.46	19.49	86.71	21.5	3.76
C0850-085-2250-X					2.250	57.15	1.219	30.96	0.841	21.36			18.9	3.31
C0850-085-2500-X					2.500	63.50	1.341	34.07	0.917	23.29			16.8	2.95
C0850-085-2750-X					2.750	69.85	1.471	37.37	0.992	25.20			15.2	2.67
C0850-085-3000-X					3.000	76.20	1.599	40.60	1.068	27.13			13.9	2.44
C0850-085-3250-X					3.250	82.55	1.720	43.70	1.144	29.06			12.7	2.23
C0850-085-3500-X					3.500	88.90	1.852	47.04	1.219	30.96			11.8	2.07
C0850-085-4000-X					4.000	101.60	2.097	53.27	1.370	34.80			10.3	1.79
C0850-092-0880-X					0.880	22.35	0.552	14.03	0.471	11.96			75.1	13.14
C0850-092-1000-X					1.000	25.40	0.616	15.64	0.513	13.03			64.1	11.22
C0850-092-1250-X	0.850	21.59			1.250	31.75	0.748	18.99	0.600	15.24			49.0	8.58
C0850-092-1500-X					1.500	38.10	0.881	22.37	0.686	17.42			39.7	6.96
C0850-092-1750-X					1.750	44.45	1.012	25.69	0.773	19.63			33.3	5.83
C0850-092-2000-X			0.092	2.34	2.000	50.80	1.144	29.05	0.860	21.84	24.60	109.44	28.7	5.03
C0850-092-2250-X					2.250	57.15	1.278	32.47	0.947	24.05			25.3	4.43
C0850-092-2500-X					2.500	63.50	1.410	35.82	1.033	26.24			22.6	3.95
C0850-092-2750-X					2.750	69.85	1.539	39.10	1.120	28.45			20.3	3.56
C0850-092-3000-X					3.000	76.20	1.675	42.56	1.207	30.66			18.6	3.25
C0850-092-3500-X					3.500	88.90	1.937	49.20	1.380	35.05			15.7	2.76
C0850-098-1000-X					1.000	25.40	0.649	16.47	0.555	14.10			82.2	14.40
C0850-098-1250-X					1.250	31.75	0.789	20.05	0.651	16.54			62.7	10.98
C0850-098-1500-X					1.500	38.10	0.929	23.61	0.747	18.97			50.7	8.87
C0850-098-1750-X					1.750	44.45	1.071	27.21	0.843	21.41			42.6	7.45
C0850-098-2000-X			0.098	2.49	2.000	50.80	1.212	30.78	0.940	23.88	28.90	128.53	36.7	6.42
C0850-098-2250-X					2.250	57.15	1.351	34.32	1.036	26.31			32.2	5.63
C0850-098-2500-X					2.500	63.50	1.492	37.89	1.132	28.75			28.7	5.02
C0850-098-2750-X					2.750	69.85	1.635	41.52	1.229	31.22			25.9	4.54
C0850-098-3000-X					3.000	76.20	1.774	45.07	1.325	33.66			23.6	4.13
C0850-098-3500-X					3.500	88.90	2.055	52.19	1.517	38.53			20.0	3.50
C0975-074-0750-X					0.750	19.05	0.399	10.14	0.295	7.49			33.2	5.81
C0975-074-0875-X					0.880	22.35	0.457	11.60	0.317	8.05			27.5	4.81
C0975-074-1000-X					1.000	25.40	0.503	12.78	0.340	8.64			23.4	4.10
C0975-074-1250-X					1.250	31.75	0.606	15.40	0.386	9.80			18.1	3.17
C0975-074-1500-X			0.074	1.88	1.500	38.10	0.711	18.06	0.431	10.95	11.63	51.74	14.7	2.58
C0975-074-2000-X					2.000	50.80	0.917	23.30	0.522	13.26			10.8	1.88
C0975-074-2500-X					2.500	63.50	1.131	28.72	0.613	15.57			8.5	1.49
C0975-074-3000-X					3.000	76.20	1.337	33.97	0.704	17.88			7.0	1.23
C0975-074-3500-X					3.500	88.90	1.533		0.795	20.19			5.9	1.03
C0975-074-4000-X					4.000	101.60	1.748	44.39	0.886	22.50			5.2	0.90
C0975-085-0875-X					0.880	22.35	0.498	12.65	0.381	9.68			44.8	7.85
C0975-085-1000-X					1.000	25.40	0.550	13.98	0.411	10.44			38.1	6.67
C0975-085-1250-X					1.250	31.75	0.665	16.88	0.470	11.94			29.2	5.12
C0975-085-1500-X			0.085	2.16	1.500	38.10	0.779	19.79	0.530	13.46	17.11	76.12	23.7	4.16
C0975-085-2000-X					2.000	50.80	1.008	25.59	0.649	16.48			17.2	3.02
C0975-085-2500-X					2.500	63.50	1.240	31.49	0.769	19.53			13.6	2.38
C0975-085-3000-X					3.000	76.20	1.467	37.26	0.888	22.56			11.2	1.95
C0975-085-3500-X					3.500	88.90	1.698	43.13	1.007	25.58			9.5	1.66
C0975-092-0875-X	0.975	24.77			0.880	22.35	0.520	13.20	0.421	10.69			60.0	10.50
C0975-092-1000-X					1.000	25.40	0.575	14.59	0.456	11.58			50.8	8.90
C0975-092-1250-X					1.250	31.75	0.694	17.64	0.525	13.34			38.9	6.81
C0975-092-1500-X					1.500	38.10	0.814	20.66	0.594	15.09			31.5	5.51
C0975-092-2000-X			0.092	2.34	2.000	50.80	1.053	26.74	0.732	18.59	21.62	96.15	22.8	4.00
C0975-092-2500-X					2.500	63.50	1.293	32.84	0.871	22.12			17.9	3.14
C0975-092-3000-X					3.000	76.20	1.534	38.96	1.009	25.63			14.7	2.58
C0975-092-3500-X					3.500	88.90	1.770	44.96	1.147	29.13			12.5	2.19
C0975-092-4000-X					4.000	101.60	2.004	50.90	1.286	32.66			10.8	1.90
C0975-096-0875-X					0.880	22.35	0.541	13.74	0.444	11.28			70.5	12.34
C0975-096-1000-X					1.000	25.40	0.599	15.20	0.481	12.22			59.6	10.43
C0975-096-1250-X					1.250	31.75	0.724	18.40	0.556	14.12			45.5	7.96
C0975-096-1500-X			0.096	2.44	1.500	38.10	0.851	21.61	0.631	16.03	23.91	106.34	36.8	6.45
C0975-096-2000-X					2.000	50.80	1.100	27.95	0.780	19.81			26.6	4.65
C0975-096-2500-X					2.500	63.50	1.352	34.34	0.930	23.62			20.8	3.65
C0975-096-3000-X					3.000	76.20	1.607	40.81	1.079	27.41			17.2	3.01
C0975-096-3500-X					3.500	88.90	1.860	47.24	1.228	31.19			14.6	2.55
C0975-105-0880-X			0.105	2.67	0.880	22.35	0.566	14.38	0.496	12.60	31.12	138.42	99.2	17.37



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C0975-105-1000-X					1.000	25.40	0.630	16.00	0.538	13.67			84.1	14.73
C0975-105-1250-X					1.250	31.75	0.763	19.38	0.626	15.90			63.9	11.19
C0975-105-1500-X					1.500	38.10	0.895	22.75	0.713	18.11			51.5	9.02
C0975-105-1750-X					1.750	44.45	1.029	26.13	0.800	20.32			43.2	7.56
C0975-105-2000-X					2.000	50.80	1.162	29.52	0.888	22.56			37.2	6.51
C0975-105-2250-X			0.105	2.67	2.250	57.15	1.295	32.88	0.975	24.77	31.12	138.42	32.6	5.70
C0975-105-2500-X					2.500	63.50	1.426	36.23	1.062	26.97			29.0	5.08
C0975-105-2750-X					2.750	69.85	1.560	39.63	1.149	29.18			26.2	4.58
C0975-105-3000-X					3.000	76.20	1.694	43.02	1.237	31.42			23.8	4.17
C0975-105-3500-X					3.500	88.90	1.963	49.85	1.411	35.84			20.2	3.54
C0975-105-4000-X					4.000	101.60	2.229	56.63	1.586	40.28			17.6	3.08
C0975-112-0880-X					0.880	22.35	0.595	15.12	0.535	13.59			128.9	22.57
C0975-112-1000-X					1.000	25.40	0.663	16.85	0.581	14.76			109.0	19.08
C0975-112-1250-X					1.250	31.75	0.805	20.44	0.679	17.25			82.4	14.43
C0975-112-1500-X			0.112	2.84	1.500	38.10	0.946	24.03	0.776	19.71	36.67	163.12	66.2	11.60
C0975-112-2000-X					2.000	50.80	1.229	31.22	0.970	24.64			47.6	8.33
C0975-112-2500-X					2.500	63.50	1.513	38.43	1.164	29.57			37.2	6.51
C0975-112-3000-X					3.000	76.20	1.797	45.65	1.358	34.49			30.5	5.34
C0975-112-3500-X					3.500	88.90	2.080	52.83	1.553	39.45			25.8	4.52
C0975-125-0880-X					0.880	22.35	0.646	16.42	0.602	15.29			205.4	35.97
C0975-125-1000-X					1.000	25.40	0.722	18.34	0.657	16.69			172.6	30.23
C0975-125-1250-X					1.250	31.75	0.879	22.34	0.772	19.61			129.5	22.67
C0975-125-1500-X					1.500	38.10	1.037	26.33	0.887	22.53			103.5	18.13
C0975-125-1750-X					1.750	44.45	1.194	30.33	1.002	25.45			86.3	15.11
C0975-125-2000-X			0.125	3.18	2.000	50.80	1.351	34.33	1.117	28.37	47.98	213.39	74.0	12.95
C0975-125-2250-X	0.975	24.77			2.250	57.15	1.509	38.32	1.232	31.29			64.7	11.33
C0975-125-2500-X					2.500	63.50	1.667	42.33	1.347	34.21			57.6	10.08
C0975-125-2750-X					2.750	69.85	1.824	46.33	1.462	37.13			51.8	9.07
C0975-125-3000-X					3.000	76.20	1.981	50.31	1.577	40.06			47.1	8.24
C0975-125-3500-X					3.500	88.90	2.295	58.30	1.807	45.90			39.8	6.97
C0975-125-4000-X					4.000	101.60	2.609	66.26	2.037	51.74			34.5	6.04
C0975-135-0880-X					0.880	22.35	0.678	17.22	0.643	16.33			297.1	52.02
C0975-135-1000-X					1.000	25.40	0.758	19.26	0.703	17.86			248.2	43.47
C0975-135-1500-X					1.500	38.10	1.092	27.75	0.953	24.21			147.3	25.79
C0975-135-2000-X			0.135	3.43	2.000	50.80	1.092	27.75	1.203	30.56	60.04	267.04	104.7	18.34
C0975-135-2500-X					2.500	63.50	1.761	46.71	1.453	36.91			81.22	14.22
C0975-135-3000-X					3.000	76.20	2.096	55.65	1.703	43.26			66.39	11.63
C0975-135-3500-X					3.500	88.90	2.429	64.59	1.953	49.61			56.06	9.82
C0975-135-4000-X					4.000	101.60	2.764	73.53	2.203	55.96			48.56	8.50
C0975-148-1000-X					1.000	25.40	0.795	20.83	0.763	19.38			382.35	66.96
C0975-148-1500-X					1.500	38.10	1.149	30.30	1.042	26.47			223.58	39.15
C0975-148-2000-X					2.000	50.80	1.504	39.75	1.322	33.58			157.94	27.66
C0975-148-2500-X			0.148	3.76	2.500	63.50	1.858	49.20	1.601	40.67	78.39	348.67	122.12	21.39
C0975-148-3000-X					3.000	76.20	2.213	58.65	1.880	47.75			99.54	17.43
C0975-148-3500-X					3.500	88.90	2.567	68.12	2.159	54.84			84.05	14.72
C0975-148-4000-X					4.000	101.60	2.921	77.57	2.439	61.95			72.64	12.72
C0975-162-1500-X					1.500	38.10	1.214	31.65	1.124	28.55			345.86	60.57
C0975-162-2000-X					2.000	50.80	1.592	41.61	1.430	36.32			242.65	42.49
C0975-162-2500-X			0.162	4.11	2.500	63.50	1.971	51.56	1.735	44.07	98.98	440.25	186.93	32.73
C0975-162-3000-X					3.000	76.20	2.349	61.52	2.041	51.84			152.02	26.62
C0975-162-3500-X					3.500	88.90	2.727	71.48	2.347	59.61			128.03	22.42
C0975-162-4000-X					4.000	101.60	3.105	81.43	2.652	67.36			110.62	19.37
C1100-085-0875-X					0.875	22.35	0.474	13.39	0.348	8.84			37.57	6.58
C1100-085-1000-X					1.000	25.40	0.522	14.83	0.372	9.45			31.90	5.59
C1100-085-1250-X					1.250	31.75	0.630	18.01	0.420	10.67			24.57	4.30
C1100-085-1500-X					1.500	38.10	0.734	21.16	0.467	11.86			19.91	3.49
C1100-085-2000-X					2.000	50.80	0.948	27.51	0.563	14.30			14.49	2.54
C1100-085-2500-X			0.085	2.16	2.500	63.50	1.164	33.83	0.659	16.74	15.24	67.81	11.41	2.00
C1100-085-3000-X					3.000	76.20	1.366	40.06	0.755	19.18			9.33	1.63
C1100-085-3500-X					3.500	88.90	1.594	46.51	0.851	21.62			8.00	1.40
C1100-085-4000-X					4.000	101.60	1.795	52.86	0.947	24.05			6.91	1.21
C1100-085-4500-X					4.500	114.30	1.993	59.18	1.043	26.49			6.08	1.06
C1100-085-5000-X	1.100	27.94			5.000	127.00	2.227	65.53	1.139	28.93			5.50	0.96
C1100-096-0875-X					0.880	22.35	0.513	14.20	0.406	10.31			58.14	10.18
C1100-096-1000-X					1.000	25.40	0.566	15.77	0.436	11.07			49.15	8.61
C1100-096-1250-X					1.250	31.75	0.683	19.13	0.497	12.62			37.57	6.58
C1100-096-1500-X					1.500	38.10	0.799	22.50	0.558	14.17			30.40	5.32
C1100-096-2000-X			0.096	2.44	2.000	50.80	1.031	29.24	0.679	17.25	21.32	94.82	21.99	3.85
C1100-096-2500-X					2.500	63.50	1.264	35.99	0.800	20.32			17.24	3.02
C1100-096-3000-X					3.000	76.20	1.495	42.72	0.922	23.42			14.16	2.48
C1100-096-3500-X					3.500	88.90	1.723	49.45	1.043	26.49			12.00	2.10
C1100-096-4000-X					4.000	101.60	1.953	56.18	1.165	29.59			10.41	1.82
C1100-096-4500-X					4.500	114.30	2.194	62.94	1.286	32.66			9.25	1.62



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C1100-105-0875-X					0.880	22.35	0.539	14.88	0.453	11.51			81.38	14.25
C1100-105-1000-X					1.000	25.40	0.594	16.54	0.489	12.42			68.47	11.99
C1100-105-1250-X					1.250	31.75	0.717	20.07	0.561	14.25			52.06	9.12
C1100-105-1500-X			0.105	2.67	1.500	38.10	0.838	23.62	0.632	16.05	27.77	123.53	41.98	7.35
C1100-105-2000-X					2.000	50.80	1.082	30.68	0.776	19.71			30.24	5.30
C1100-105-2500-X					2.500	63.50	1.326	37.77	0.919	23.34			23.66	4.14
C1100-105-3000-X					3.000	76.20	1.569	44.86	1.062	26.97			19.41	3.40
C1100-105-3500-X					3.500	88.90	1.808	51.94	1.206	30.63			16.41	2.87
C1100-112-0875-X					0.880	22.35	0.567	15.39	0.489	12.42			104.54	18.31
C1100-112-1000-X					1.000	25.40	0.627	17.12	0.530	13.46			87.71	15.36
C1100-112-1250-X					1.250	31.75	0.756	20.78	0.610	15.49			66.31	11.61
C1100-112-1500-X					1.500	38.10	0.886	24.46	0.690	17.53			53.31	9.34
C1100-112-1750-X					1.750	44.45	1.015	28.14	0.771	19.58			44.57	7.81
C1100-112-2000-X			0.112	2.84	2.000	50.80	1.145	31.83	0.851	21.62	32.75	145.66	38.32	6.71
C1100-112-2250-X					2.250	57.15	1.274	35.51	0.932	23.67			33.57	5.88
C1100-112-2500-X					2.500	63.50	1.405	39.19	1.012	25.70			29.90	5.24
C1100-112-3000-X					3.000	76.20	1.663	46.53	1.173	29.79			24.49	4.29
C1100-112-3500-X					3.500	88.90	1.921	53.90	1.333	33.86			20.74	3.63
C1100-112-4000-X					4.000	101.60	2.180	61.26	1.494	37.95			17.99	3.15
C1100-112-4500-X	1.100	27.94			4.500	114.30	2.442	68.61	1.655	42.04			15.91	2.79
C1100-125-0880-X					0.880	22.35	0.615	16.26	0.556	14.12			161.85	28.34
C1100-125-1000-X					1.000	25.40	0.684	18.16	0.603	15.32			135.95	23.81
C1100-125-1250-X					1.250	31.75	0.829	22.10	0.699	17.75			101.96	17.86
C1100-125-1500-X					1.500	38.10	0.974	26.04	0.796	20.22			81.55	14.28
C1100-125-1750-X					1.750	44.45	1.119	29.97	0.893	22.68			67.97	11.90
C1100-125-2000-X			0.125	3.18	2.000	50.80	1.263	33.91	0.989	25.12	42.90	190.82	58.23	10.20
C1100-125-2250-X					2.250	57.15	1.408	37.85	1.086	27.58			50.98	8.93
C1100-125-2500-X					2.500	63.50	1.553	41.76	1.183	30.05			45.32	7.94
C1100-125-3000-X					3.000	76.20	1.843	49.63	1.376	34.95			37.07	6.49
C1100-125-3500-X					3.500	88.90	2.134	57.51	1.569	39.85			31.40	5.50
C1100-125-4000-X					4.000	101.60	2.420	65.38	1.763	44.78			27.16	4.76
C1100-125-4500-X					4.500	114.30	2.712	73.25	1.956	49.68			23.99	4.20
C1100-135-1500-X					1.500	38.10	1.017	27.18	0.874	22.20			111.37	19.50
C1100-135-2000-X					2.000	50.80	1.321	35.43	1.092	27.74			79.22	13.87
C1100-135-2500-X					2.500	63.50	1.626	43.69	1.310	33.27			61.48	10.77
C1100-135-3000-X			0.135	3.43	3.000	76.20	1.930	51.94	1.528	38.81	53.75	239.08	50.23	8.80
C1100-135-3500-X					3.500	88.90	2.232	60.22	1.746	44.35			42.40	7.43
C1100-135-4000-X					4.000	101.60	2.537	68.48	1.964	49.89			36.74	6.43
C1100-135-4500-X					4.500	114.30	2.841	76.73	2.182	55.42			32.40	5.67
C1100-135-5000-X					5.000	127.00	3.146	84.99	2.400	60.96			28.99	5.08
C1225-085-0875-X					0.880	22.35	0.429	12.37	0.330	8.38			30.49	5.34
C1225-085-1000-X					1.000	25.40	0.470	13.64	0.351	8.92			25.91	4.54
C1225-085-1500-X					1.500	38.10	0.650	19.28	0.434	11.02			16.16	2.83
C1225-085-2000-X					2.000	50.80	0.830	24.89	0.518	13.16			11.75	2.06
C1225-085-2500-X			0.085	2.16	2.500	63.50	1.014	30.51	0.601	15.27	13.74	61.12	9.25	1.62
C1225-085-3000-X					3.000	76.20	1.187	36.14	0.684	17.37			7.58	1.33
C1225-085-3500-X					3.500	88.90	1.385	41.76	0.768	19.51			6.50	1.14
C1225-085-4000-X					4.000	101.60	1.538	47.37	0.851	21.62			5.58	0.98
C1225-085-4500-X					4.500	114.30	1.751	53.01	0.934	23.72			5.00	0.88
C1225-085-5000-X					5.000	127.00	1.887	58.62	1.018	25.86			4.41	0.77
C1225-096-0875-X					0.880	22.35	0.493	13.74	0.377	9.58			49.65	8.69
C1225-096-1000-X					1.000	25.40	0.542	15.21	0.402	10.21			41.98	7.35
C1225-096-1250-X					1.250	31.75	0.650	18.42	0.452	11.48			32.07	5.62
C1225-096-1500-X					1.500	38.10	0.758	21.62	0.502	12.75			25.91	4.54
C1225-096-1750-X					1.750	44.45	0.866	24.82	0.552	14.02			21.74	3.81
C1225-096-2000-X					2.000	50.80	0.974	28.02	0.602	15.29			18.74	3.28
C1225-096-2250-X	1.225	31.12	0.096	2.44	2.250	57.15	1.084	31.22	0.652	16.56	19.23	85.53	16.49	2.89
C1225-096-2500-X					2.500	63.50	1.188	34.42	0.702	17.83			14.66	2.57
C1225-096-2750-X					2.750	69.85	1.298	37.62	0.752	19.10			13.24	2.32
C1225-096-3000-X					3.000	76.20	1.408	40.82	0.802	20.37			12.08	2.12
C1225-096-3500-X					3.500	88.90	1.623	47.22	0.902	22.91			10.25	1.79
C1225-096-4000-X					4.000	101.60	1.843	53.62	1.002	25.45			8.91	1.56
C1225-096-4500-X					4.500	114.30	2.070	60.02	1.102	27.99			7.91	1.39
C1225-096-5000-X					5.000	127.00	2.284	66.42	1.202	30.53			7.08	1.24
C1225-105-0875-X					0.880	22.35	0.515	14.38	0.421	10.69			68.72	12.03
C1225-105-1000-X					1.000	25.40	0.567	15.93	0.450	11.43			57.89	10.14
C1225-105-1250-X					1.250	31.75	0.680	19.28	0.510	12.95			43.98	7.70
C1225-105-1500-X					1.500	38.10	0.792	22.63	0.569	14.45			35.40	6.20
C1225-105-2000-X			0.105	2.67	2.000	50.80	1.020	29.31	0.688	17.48	25.07	111.50	25.57	4.48
C1225-105-2500-X					2.500	63.50	1.246	36.02	0.807	20.50			19.99	3.50
C1225-105-3000-X					3.000	76.20	1.472	42.72	0.926	23.52			16.41	2.87
C1225-105-3500-X					3.500	88.90	1.698	49.43	1.045	26.54			13.91	2.44
C1225-105-4000-X					4.000	101.60	1.925	56.11	1.164	29.57			12.08	2.12



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C1225-105-4500-X			0.105	2.67	4.500	114.30	2.149	62.81	1.283	32.59	25.07	111.50	10.66	1.87
C1225-105-5000-X					5.000	127.00	2.383	69.52	1.402	35.61			9.58	1.68
C1225-112-0875-X					0.880	22.35	0.542	14.86	0.455	11.56			87.55	15.33
C1225-112-1000-X					1.000	25.40	0.597	16.46	0.488	12.40			73.47	12.87
C1225-112-1250-X					1.250	31.75	0.718	19.94	0.556	14.12			55.56	9.73
C1225-112-1500-X					1.500	38.10	0.838	23.39	0.623	15.82			44.65	7.82
C1225-112-2000-X			0.112	2.84	2.000	50.80	1.078	30.35	0.757	19.23	29.57	131.54	32.07	5.62
C1225-112-2500-X					2.500	63.50	1.321	37.29	0.891	22.63			25.07	4.39
C1225-112-3000-X					3.000	76.20	1.557	44.22	1.026	26.06			20.49	3.59
C1225-112-3500-X					3.500	88.90	1.801	51.16	1.160	29.46			17.41	3.05
C1225-112-4000-X					4.000	101.60	2.039	58.12	1.294	32.87			15.08	2.64
C1225-125-0875-X					0.880	22.35	0.591	15.72	0.517	13.13			134.36	23.53
C1225-125-1000-X					1.000	25.40	0.654	17.45	0.558	14.17			111.96	19.61
C1225-125-1250-X					1.250	31.75	0.788	21.16	0.639	16.23			83.97	14.70
C1225-125-1500-X					1.500	38.10	0.922	24.84	0.721	18.31			67.14	11.76
C1225-125-1750-X					1.750	44.45	1.057	28.55	0.803	20.40			55.98	9.80
C1225-125-2000-X					2.000	50.80	1.192	32.26	0.885	22.48			47.98	8.40
C1225-125-2250-X			0.125	3.18	2.250	57.15	1.326	35.94	0.966	24.54	38.78	172.49	41.98	7.35
C1225-125-2500-X					2.500	63.50	1.461	39.65	1.048	26.62			37.32	6.54
C1225-125-2750-X					2.750	69.85	1.595	43.36	1.130	28.70			33.57	5.88
C1225-125-3000-X					3.000	76.20	1.732	47.04	1.212	30.78			30.57	5.35
C1225-125-3500-X					3.500	88.90	1.998	54.46	1.375	34.93			25.82	4.52
C1225-125-4000-X					4.000	101.60	2.269	61.85	1.539	39.09			22.41	3.92
C1225-125-4500-X					4.500	114.30	2.536	69.24	1.702	43.23			19.74	3.46
C1225-125-5000-X					5.000	127.00	2.804	76.66	1.865	47.37			17.66	3.09
C1225-135-0880-X					0.880	22.35	0.614	16.33	0.565	14.35			182.59	31.97
C1225-135-1000-X					1.000	25.40	0.681	18.19	0.609	15.47			152.52	26.71
C1225-135-1250-X					1.250	31.75	0.822	22.07	0.702	17.83			113.62	19.90
C1225-135-1500-X			0.135	3.43	1.500	38.10	0.963	25.93	0.795	20.19	48.63	216.29	90.55	15.86
C1225-135-2000-X					2.000	50.80	1.245	33.71	0.982	24.94			64.39	11.28
C1225-135-2500-X					2.500	63.50	1.527	41.45	1.168	29.67			49.98	8.75
C1225-135-3000-X					3.000	76.20	1.809	49.23	1.354	34.39			40.82	7.15
C1225-135-3500-X					3.500	88.90	2.090	56.97	1.540	39.12			34.49	6.04
C1225-148-0880-X					0.880	22.35	0.645	17.12	0.621	15.77			270.73	47.41
C1225-148-1000-X					1.000	25.40	0.716	19.08	0.673	17.09			224.58	39.33
C1225-148-1250-X					1.250	31.75	0.866	23.19	0.781	19.84			165.68	29.01
C1225-148-1500-X	1.225	31.12			1.500	38.10	1.015	27.31	0.888	22.56			131.28	22.99
C1225-148-2000-X					2.000	50.80	1.314	35.51	1.104	28.04			92.80	16.25
C1225-148-2500-X			0.148	3.76	2.500	63.50	1.612	43.74	1.319	33.50	63.67	283.20	71.72	12.56
C1225-148-3000-X					3.000	76.20	1.911	51.94	1.534	38.96			58.48	10.24
C1225-148-3500-X					3.500	88.90	2.209	60.17	1.749	44.42			49.31	8.64
C1225-148-4000-X					4.000	101.60	2.507	68.38	1.965	49.91			42.65	7.47
C1225-148-4500-X					4.500	114.30	2.805	76.61	2.180	55.37			37.57	6.58
C1225-148-5000-X					5.000	127.00	3.103	84.81	2.395	60.83			33.57	5.88
C1225-162-1000-X					1.000	25.40	0.766	20.14	0.727	18.47			345.36	60.48
C1225-162-1500-X					1.500	38.10	1.094	28.96	0.965	24.51			198.50	34.76
C1225-162-2000-X					2.000	50.80	1.421	37.74	1.204	30.58			139.28	24.39
C1225-162-2500-X					2.500	63.50	1.748	46.56	1.442	36.63			107.29	18.79
C1225-162-3000-X			0.162	4.11	3.000	76.20	2.075	55.37	1.680	42.67	80.67	358.80	87.22	15.27
C1225-162-3500-X					3.500	88.90	2.402	64.16	1.918	48.72			73.47	12.87
C1225-162-4000-X					4.000	101.60	2.729	72.97	2.157	54.79			63.47	11.11
C1225-162-4500-X					4.500	114.30	3.057	81.79	2.395	60.83			55.89	9.79
C1225-162-5000-X					5.000	127.00	3.383	90.60	2.633	66.88			49.90	8.74
C1225-177-1500-X					1.500	38.10	1.165	30.23	1.057	26.85			294.05	51.49
C1225-177-2000-X					2.000	50.80	1.519	39.50	1.325	33.66			204.75	35.86
C1225-177-2500-X					2.500	63.50	1.872	48.77	1.594	40.49			157.02	27.50
C1225-177-3000-X			0.177	4.5	3.000	76.20	2.226	58.04	1.862	47.29	98.57	438.42	127.37	22.30
C1225-177-3500-X					3.500	88.90	2.580	67.31	2.130	54.10			107.12	18.76
C1225-177-4000-X					4.000	101.60	2.933	76.56	2.398	60.91			92.38	16.18
C1225-177-4500-X					4.500	114.30	3.288	85.83	2.666	67.72			81.30	14.24
C1225-177-5000-X					5.000	127.00	3.641	95.10	2.934	74.52			72.55	12.70
C1225-192-1500-X					1.500	38.10	1.227	31.39	1.139	28.93			429.91	75.29
C1225-192-2000-X					2.000	50.80	1.605	41.10	1.435	36.45			296.88	51.99
C1225-192-2500-X					2.500	63.50	1.982	50.80	1.730	43.94			226.74	39.71
C1225-192-3000-X			0.192	4.88	3.000	76.20	2.360	60.50	2.025	51.44	117.39	522.17	183.43	32.12
C1225-192-3500-X					3.500	88.90	2.737	70.21	2.321	58.95			153.94	26.96
C1225-192-4000-X					4.000	101.60	3.115	79.88	2.616	66.45			132.70	23.24
C1225-192-4500-X					4.500	114.30	3.493	89.59	2.912	73.96			116.54	20.41
C1225-192-5000-X					5.000	127.00	3.871	99.29	3.207	81.46			103.96	18.21
C1225-207-2000-X					2.000	50.80	1.653	42.39	1.543	39.19			420.50	73.64
C1225-207-2500-X			0.207	5.26	2.500	63.50	2.044	52.45	1.867	47.42	145.77	648.39	319.71	55.99
C1225-207-3000-X					3.000	76.20	2.435	62.51	2.190	55.63			257.90	45.16
C1225-207-3500-X					3.500	88.90	2.825	72.57	2.514	63.86			216.08	37.84



316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C1225-207-4000-X					4.000	101.60	3.216	82.60	2.837	72.06			185.93	32.56
C1225-207-4500-X	1.225	31.12	0.207	5.26	4.500	114.30	3.607	92.66	3.161	80.29	145.77	648.39	163.18	28.58
C1225-207-5000-X					5.000	127.00	3.998	102.72	3.484	88.49			145.44	25.47
C1460-112-1500-X					1.500	38.10	0.773	21.95	0.531	13.49			34.40	6.02
C1460-112-2000-X					2.000	50.80	0.986	28.32	0.629	15.98			24.66	4.32
C1460-112-2500-X					2.500	63.50	1.201	34.70	0.727	18.47			19.24	3.37
C1460-112-3000-X			0.112	2.84	3.000	76.20	1.420	41.07	0.825	20.96	25.00	111.20	15.83	2.77
C1460-112-3500-X					3.500	88.90	1.636	47.45	0.924	23.47			13.41	2.35
C1460-112-4000-X					4.000	101.60	1.841	53.82	1.022	25.96			11.58	2.03
C1460-125-1500-X					1.500	38.10	0.851	23.19	0.616	15.65			50.56	8.85
C1460-125-2000-X					2.000	50.80	1.092	29.95	0.738	18.75			36.15	6.33
C1460-125-2500-X					2.500	63.50	1.331	36.68	0.859	21.82			28.07	4.92
C1460-125-3000-X			0.125	3.18	3.000	76.20	1.572	43.41	0.981	24.92	32.83	146.01	22.99	4.03
C1460-125-3500-X					3.500	88.90	1.809	50.17	1.102	27.99			19.41	3.40
C1460-125-4000-X					4.000	101.60	2.049	56.90	1.224	31.09			16.83	2.95
C1460-135-1500-X					1.500	38.10	0.884	24.16	0.682	17.32			66.89	11.71
C1460-135-2000-X					2.000	50.80	1.134	31.19	0.823	20.90			47.56	8.33
C1460-135-2500-X					2.500	63.50	1.383	38.23	0.963	24.46			36.90	6.46
C1460-135-3000-X			0.135	3.43	3.000	76.20	1.634	45.26	1.103	28.02	41.20	183.27	30.15	5.28
C1460-135-3500-X	1.460	37.08			3.500	88.90	1.884	52.30	1.243	31.57			25.49	4.46
C1460-135-4000-X					4.000	101.60	2.134	59.33	1.393	35.38			22.07	3.86
C1460-148-1500-X					1.500	38.10	0.930	25.40	0.768	19.51			94.71	16.59
C1460-148-2000-X					2.000	50.80	1.192	32.82	0.933	23.70			66.89	11.71
C1460-148-2500-X					2.500	63.50	1.456	40.26	1.098	27.89			51.73	9.06
C1460-148-3000-X			0.148	3.76	3.000	76.20	1.718	47.68	1.263	32.08	54.03	240.31	42.15	7.38
C1460-148-3500-X					3.500	88.90	1.981	55.09	1.428	36.27			35.57	6.23
C1460-148-4000-X					4.000	101.60	2.247	62.53	1.593	40.46			30.82	5.40
C1460-162-1500-X					1.500	38.10	0.993	26.70	0.857	21.77			135.28	23.69
C1460-162-2000-X					2.000	50.80	1.278	34.54	1.049	26.64			94.96	16.63
C1460-162-2500-X					2.500	63.50	1.563	42.39	1.241	31.52			73.14	12.81
C1460-162-3000-X					3.000	76.20	1.847	50.24	1.433	36.40			59.48	10.42
C1460-162-3500-X			0.162	4.11	3.500	88.90	2.130	58.09	1.625	41.28	68.57	304.98	50.06	8.77
C1460-162-4000-X					4.000	101.60	2.417	65.94	1.817	46.15			43.32	7.59
C1460-162-4500-X					4.500	114.30	2.699	73.79	2.009	51.03			38.07	6.67
C1460-162-5000-X					5.000	127.00	2.983	81.64	2.201	55.91			33.99	5.95
C1687-135-1500-X					1.500	38.10	0.831	22.94	0.605	15.37			53.65	9.40
C1687-135-2000-X					2.000	50.80	1.059	29.49	0.714	18.14			38.15	6.68
C1687-135-2500-X					2.500	63.50	1.286	36.02	0.823	20.90			29.57	5.18
C1687-135-3000-X					3.000	76.20	1.514	42.57	0.932	23.67			24.16	4.23
C1687-135-3500-X			0.135	3.43	3.500	88.90	1.741	49.10	1.041	26.44	35.89	159.63	20.41	3.57
C1687-135-4000-X					4.000	101.60	1.968	55.65	1.150	29.21			17.66	3.09
C1687-135-4500-X					4.500	114.30	2.196	62.20	1.259	31.98			15.58	2.73
C1687-135-5000-X					5.000	127.00	2.420	68.73	1.368	34.75			13.91	2.44
C1687-148-1500-X					1.500	38.10	0.870	24.05	0.682	17.32			74.72	13.08
C1687-148-2000-X					2.000	50.80	1.108	30.94	0.812	20.62			52.81	9.25
C1687-148-2500-X					2.500	63.50	1.346	37.80	0.942	23.93			40.82	7.15
C1687-148-3000-X					3.000	76.20	1.583	44.65	1.071	27.20			33.24	5.82
C1687-148-3500-X			0.148	3.76	3.500	88.90	1.822	51.54	1.201	30.51	47.10	209.50	28.07	4.92
C1687-148-4000-X					4.000	101.60	2.057	58.39	1.331	33.81			24.24	4.24
C1687-148-4500-X					4.500	114.30	2.300	65.28	1.461	37.11			21.41	3.75
C1687-148-5000-X					5.000	127.00	2.531	72.14	1.590	40.39			19.08	3.34
C1687-162-1500-X					1.500	38.10	0.929	25.25	0.765	19.43			104.79	18.35
C1687-162-2000-X					2.000	50.80	1.186	32.49	0.918	23.32			73.47	12.87
C1687-162-2500-X					2.500	63.50	1.444	39.70	1.070	27.18			56.64	9.92
C1687-162-3000-X	1.687	42.85			3.000	76.20	1.701	46.94	1.223	31.06			46.06	8.07
C1687-162-3500-X			0.162	4.11	3.500	88.90	1.959	54.18	1.376	34.95	59.84	266.15	38.82	6.80
C1687-162-4000-X					4.000	101.60	2.213	61.42	1.529	38.84			33.49	5.86
C1687-162-4500-X					4.500	114.30	2.471	68.66	1.682	42.72			29.49	5.16
C1687-162-5000-X					5.000	127.00	2.727	75.87	1.835	46.61			26.32	4.61
C1687-177-1500-X					1.500	38.10	1.004	26.49	0.851	21.62			148.02	25.92
C1687-177-2000-X					2.000	50.80	1.288	34.11	1.029	26.14			103.04	18.04
C1687-177-2500-X					2.500	63.50	1.572	41.76	1.207	30.66			79.05	13.84
C1687-177-3000-X					3.000	76.20	1.855	49.38	1.385	35.18			64.06	11.22
C1687-177-3500-X			0.177	4.50	3.500	88.90	2.139	57.00	1.563	39.70	73.35	326.25	53.90	9.44
C1687-177-4000-X					4.000	101.60	2.422	64.64	1.741	44.22			46.48	8.14
C1687-177-4500-X					4.500	114.30	2.707	72.26	1.920	48.77			40.90	7.16
C1687-177-5000-X					5.000	127.00	2.990	79.91	2.098	53.29			36.49	6.39
C1687-192-1500-X					1.500	38.10	1.075	27.66	0.934	23.72			206.08	36.09
C1687-192-2000-X					2.000	50.80	1.384	35.69	1.137	28.88			142.36	24.93
C1687-192-2500-X					2.500	63.50	1.694	43.71	1.340	34.04			108.71	19.04
C1687-192-3000-X			0.192	4.88	3.000	76.20	2.003	51.74	1.543	39.19	87.66	389.93	87.96	15.40
C1687-192-3500-X					3.500	88.90	2.312	59.77	1.747	44.37			73.80	12.92
C1687-192-4000-X					4.000	101.60	2.623	67.79	1.950	49.53			63.64	11.14



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C1687-192-4500-X	1.687	42.85	0.192	4.88	4.500	114.30	2.932	75.82	2.153	54.69	87.66	389.93	55.89	9.79
C1687-192-5000-X					5.000	127.00	3.240	83.87	2.356	59.84			49.81	8.72
C1937-148-2000-X					2.000	50.80	1.040	29.41	0.716	18.19			42.98	7.53
C1937-148-2500-X					2.500	63.50	1.259	35.84	0.817	20.75			33.24	5.82
C1937-148-3000-X					3.000	76.20	1.476	42.27	0.919	23.34			27.07	4.74
C1937-148-3500-X					3.500	88.90	1.692	48.69	1.020	25.91			22.82	4.00
C1937-148-4000-X			0.148	3.76	4.000	101.60	1.910	55.12	1.122	28.50	41.26	183.52	19.74	3.46
C1937-148-4500-X					4.500	114.30	2.130	61.52	1.223	31.06			17.41	3.05
C1937-148-5000-X					5.000	127.00	2.351	67.95	1.324	33.63			15.58	2.73
C1937-148-5500-X					5.500	139.70	2.569	74.37	1.426	36.22			14.08	2.47
C1937-162-2000-X					2.000	50.80	1.111	30.78	0.810	20.57			58.98	10.33
C1937-162-2500-X					2.500	63.50	1.345	37.52	0.931	23.65			45.40	7.95
C1937-162-3000-X					3.000	76.20	1.579	44.25	1.052	26.72			36.90	6.46
C1937-162-3500-X					3.500	88.90	1.816	50.98	1.173	29.79			31.15	5.45
C1937-162-4000-X			0.162	4.11	4.000	101.60	2.050	57.71	1.293	32.84	52.46	233.32	26.91	4.71
C1937-162-4500-X					4.500	114.30	2.283	64.44	1.414	35.92			23.66	4.14
C1937-162-5000-X					5.000	127.00	2.521	71.15	1.535	38.99			21.16	3.71
C1937-162-5500-X					5.500	139.70	2.750	77.88	1.656	42.06			19.08	3.34
C1937-177-2500-X					2.500	63.50	1.469	39.34	1.054	26.77			62.39	10.93
C1937-177-3000-X					3.000	76.20	1.729	46.41	1.196	30.38			50.65	8.87
C1937-177-3500-X					3.500	88.90	1.988	53.47	1.339	34.01			42.57	7.45
C1937-177-4000-X					4.000	101.60	2.248	60.53	1.481	37.62			36.74	6.43
C1937-177-4500-X	1.937	49.19	0.177	4.50	4.500	114.30	2.509	67.61	1.624	41.25	64.36	286.25	32.32	5.66
C1937-177-5000-X					5.000	127.00	2.767	74.68	1.766	44.86			28.82	5.05
C1937-177-5500-X					5.500	139.70	3.024	81.74	1.908	48.46			25.99	4.55
C1937-177-6000-X					6.000	152.40	3.289	88.82	2.051	52.10			23.74	4.16
C1937-192-2500-X					2.500	63.50	1.589	41.15	1.176	29.87			84.47	14.79
C1937-192-3000-X					3.000	76.20	1.873	48.56	1.341	34.06			68.31	11.96
C1937-192-3500-X					3.500	88.90	2.157	55.98	1.505	38.23			57.31	10.04
C1937-192-4000-X					4.000	101.60	2.441	63.40	1.670	42.42			49.40	8.65
C1937-192-4500-X			0.192	4.88	4.500	114.30	2.726	70.82	1.834	46.58	76.99	342.45	43.40	7.60
C1937-192-5000-X					5.000	127.00	3.012	78.23	1.999	50.77			38.73	6.78
C1937-192-5500-X					5.500	139.70	3.294	85.65	2.164	54.97			34.90	6.11
C1937-192-6000-X					6.000	152.40	3.581	93.07	2.328	59.13			31.82	5.57
C1937-207-2500-X					2.500	63.50	1.648	42.93	1.297	32.94			112.79	19.75
C1937-207-3000-X					3.000	76.20	1.944	50.67	1.483	37.67			90.96	15.93
C1937-207-3500-X					3.500	88.90	2.240	58.45	1.670	42.42			76.22	13.35
C1937-207-4000-X					4.000	101.60	2.537	66.22	1.857	47.17			65.64	11.49
C1937-207-4500-X			0.207	5.26	4.500	114.30	2.831	73.99	2.044	51.92	96.06	427.29	57.56	10.08
C1937-207-5000-X					5.000	127.00	3.128	81.76	2.230	56.64			51.31	8.99
C1937-207-5500-X					5.500	139.70	3.422	89.51	2.417	61.39			46.23	8.10
C1937-207-6000-X					6.000	152.40	3.721	97.28	2.604	66.14			42.15	7.38



Blank lined area for notes.

**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
COMPRESSION SPRINGS, SEE PAGE 48.**

COMPRESSION SPRINGS – INCONEL® X750

Stock sizes in Inconel® X750

ASRaymond now offers a complete line of Inconel® X750 compression springs. Inconel® X750 is corrosion-resistant at elevated temperatures, which makes it particularly suitable for the following applications:

- Nuclear reactors
- Gas turbines
- Pressure vessels
- Aircraft structures

Materials

Inconel® X750: Spring Temper to AMS-5699

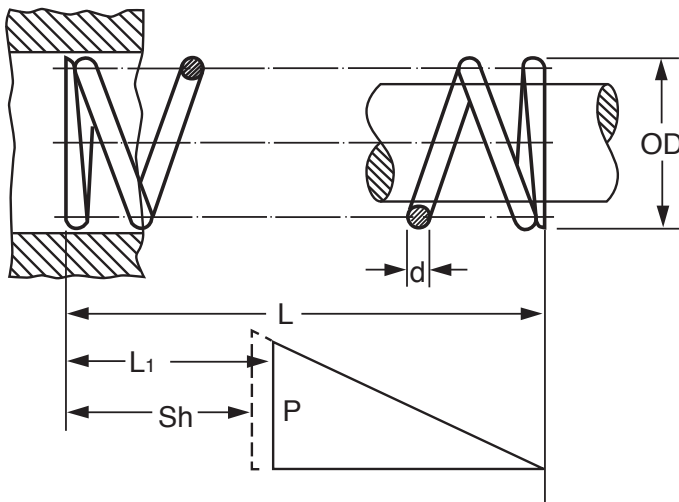
Inconel® is non-magnetic

Wire diameter is prior to forming.

No charge for certificate of compliance when requested; certificate of chemical analysis also available (an additional charge applies).

Coil Direction (helix)

Right hand. Coil count is for reference only.



- OD = Outside diameter
- d = Wire diameter
- Sh = Approx Solid Height
- L = Free length (reference use only)
- L₁ = Loaded length (minimum working length)
- P = Load at L₁

Free Length

Free length is reference only.

Ends

O.D. sizes from 0.120-1.937in (3.05-49.20mm): squared and ground. However springs with wire diameter ≤ 0.020" (.5mm) may be squared not ground.

Tolerances

O.D. English	O.D. Metric
0.057 to 0.119" +/- 0.003"	1.45 to 3.02 mm +/- 0.08 mm
0.120 to 0.240" +/- 0.005"	3.05 to 6.10 mm +/- 0.13 mm
0.241 to 0.500" +/- 0.008"	6.12 to 12.70 mm +/- 0.20 mm
0.501 to 1.000" +/- 0.015"	12.73 to 25.40 mm +/- 0.38 mm
1.001 to 1.225" +/- 0.020"	25.43 to 31.12 mm +/- 0.51 mm
1.226 to 1.460" +/- 0.030"	31.14 to 37.08 mm +/- 0.76 mm
1.461 to 2.000" +/- 0.040"	37.11 to 50.80 mm +/- 1.02 mm

Loads & Spring Rate

Load P at L₁ and spring rate R are +/- 10.0% – load at any other point is for reference only.

For normal service, springs should not be compressed below L₁ (may take set beyond L₁). Load values at lengths other than L₁ can be approximated by multiplying the proposed deflection by the rate R. $P = (L - L_x) \times R$ where L_x is the new load height. Load at L_x should be reference only. Contact our engineering department if more stringent requirements are needed.

Surface Finish

Plain finish is standard. See page 312 for alternative finishes.

Packaging

Parts are bulk-packed. Due to physical characteristics, tangling can occur during transit on wire sizes under .035" (.89mm). Please inquire about ultrasonic cleaning and special packaging when ordering.

Notes

Larger preconfigured sizes are available. Please call (800) 872-7732. We can custom-design to specific market or application if no standard design exists.

Due to volatile raw material markets for Inconel, all orders and deliveries will be quoted at time of order.

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0120-020-0250-I					0.250	6.35	0.207	5.26	0.178	4.52			37.32	6.54
C0120-020-0310-I					0.310	7.87	0.255	6.48	0.212	5.38			28.99	5.08
C0120-020-0380-I					0.380	9.65	0.311	7.9	0.251	6.37			23.07	4.04
C0120-020-0440-I					0.440	11.18	0.359	9.12	0.285	7.23			19.58	3.43
C0120-020-0500-I					0.500	12.70	0.406	10.31	0.319	8.1			16.99	2.98
C0120-020-0560-I					0.560	14.22	0.454	11.53	0.352	8.94			15.08	2.64
C0120-020-0620-I					0.620	15.75	0.502	12.75	0.386	9.81			13.49	2.36
C0120-020-0690-I			0.020	0.51	0.690	17.53	0.558	14.17	0.424	10.78	1.59	7.09	12.08	2.12
C0120-020-0750-I					0.750	19.05	0.605	15.37	0.46	11.69			11.00	1.93
C0120-020-0810-I					0.810	20.57	0.653	16.59	0.493	12.52			10.16	1.78
C0120-020-0880-I					0.880	22.35	0.709	18.01	0.532	13.5			9.33	1.63
C0120-020-0940-I					0.940	23.88	0.756	19.2	0.568	14.42			8.66	1.52
C0120-020-1000-I					1.000	25.40	0.805	20.45	0.599	15.21			8.16	1.43
C0120-020-1120-I					1.120	28.45	0.9	22.86	0.667	16.95			7.25	1.27
C0120-020-1250-I					1.250	31.75	1.005	25.53	0.737	18.72			6.50	1.14
C0120-020-1500-I					1.500	38.10	1.201	30.51	0.885	22.49			5.33	0.93
C0120-022-0250-I					0.250	6.35	0.214	5.44	0.172	4.37			58.81	10.30
C0120-022-0310-I					0.310	7.87	0.263	6.68	0.214	5.42			44.40	7.78
C0120-022-0380-I					0.380	9.65	0.319	8.1	0.262	6.65			34.57	6.05
C0120-022-0440-I					0.440	11.18	0.371	9.42	0.292	7.42			30.32	5.31
C0120-022-0500-I					0.500	12.70	0.419	10.64	0.335	8.5			25.91	4.54
C0120-022-0560-I					0.560	14.22	0.471	11.96	0.365	9.26			23.49	4.11
C0120-022-0620-I	0.120	3.05			0.620	15.75	0.519	13.18	0.407	10.34			20.74	3.63
C0120-022-0690-I			0.022	0.56	0.690	17.53	0.571	14.5	0.47	11.95	2.09	9.31	17.66	3.09
C0120-022-0750-I					0.750	19.05	0.626	15.9	0.491	12.48			16.83	2.95
C0120-022-0810-I					0.810	20.57	0.676	17.17	0.527	13.39			15.58	2.73
C0120-022-0940-I					0.940	23.88	0.78	19.81	0.62	15.74			13.08	2.29
C0120-022-1000-I					1.000	25.40	0.829	21.06	0.659	16.74			12.25	2.14
C0120-022-1120-I					1.120	28.45	0.937	23.8	0.704	17.87			11.41	2.00
C0120-022-1250-I					1.250	31.75	1.035	26.29	0.817	20.74			9.75	1.71
C0120-022-1500-I					1.500	38.10	1.241	31.52	0.976	24.79			8.08	1.42
C0120-024-0310-I					0.310	7.87	0.271	6.88	0.229	5.8			68.56	12.01
C0120-024-0380-I					0.380	9.65	0.33	8.38	0.277	7.03			54.06	9.47
C0120-024-0440-I					0.440	11.18	0.382	9.7	0.318	8.08			45.82	8.02
C0120-024-0500-I					0.500	12.70	0.433	11	0.359	9.13			39.73	6.96
C0120-024-0560-I					0.560	14.22	0.484	12.29	0.401	10.18			35.07	6.14
C0120-024-0620-I					0.620	15.75	0.535	13.59	0.442	11.23			31.40	5.50
C0120-024-0690-I			0.024	0.61	0.690	17.53	0.594	15.09	0.49	12.45	2.68	11.92	27.99	4.90
C0120-024-0750-I					0.750	19.05	0.645	16.38	0.532	13.51			25.57	4.48
C0120-024-0810-I					0.810	20.57	0.696	17.68	0.573	14.55			23.57	4.13
C0120-024-0880-I					0.880	22.35	0.756	19.2	0.622	15.79			21.57	3.78
C0120-024-0940-I					0.940	23.88	0.807	20.5	0.662	16.81			20.16	3.53
C0120-024-1000-I					1.000	25.40	0.858	21.79	0.705	17.92			18.83	3.30
C0120-024-1120-I					1.120	28.45	0.96	24.38	0.787	19.99			16.74	2.93
C0120-024-1250-I					1.250	31.75	1.07	27.18	0.878	22.3			14.91	2.61



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0120-024-1500-I	0.120	3.05	0.024	0.61	1.500	38.10	1.284	32.61	1.045	26.54	2.68	11.92	12.41	2.17
C0148-022-0250-I					0.250	6.35	0.21	5.33	0.126	3.19			43.32	7.59
C0148-022-0310-I					0.310	7.87	0.258	6.55	0.15	3.81			33.40	5.85
C0148-022-0380-I					0.380	9.65	0.314	7.98	0.178	4.53			26.41	4.62
C0148-022-0440-I					0.440	11.18	0.362	9.19	0.202	5.13			22.41	3.92
C0148-022-0500-I					0.500	12.70	0.41	10.41	0.227	5.75			19.41	3.40
C0148-022-0560-I					0.560	14.22	0.458	11.63	0.25	6.36			17.16	3.01
C0148-022-0620-I					0.620	15.75	0.507	12.88	0.274	6.96			15.41	2.70
C0148-022-0690-I	0.148	3.76	0.022	0.56	0.690	17.53	0.563	14.3	0.302	7.66	1.74	7.75	13.74	2.41
C0148-022-0750-I					0.750	19.05	0.611	15.52	0.326	8.27			12.58	2.20
C0148-022-0810-I					0.810	20.57	0.659	16.74	0.35	8.89			11.58	2.03
C0148-022-0880-I					0.880	22.35	0.715	18.16	0.379	9.62			10.58	1.85
C0148-022-0940-I					0.940	23.88	0.764	19.41	0.401	10.19			9.91	1.74
C0148-022-1000-I					1.000	25.40	0.811	20.6	0.427	10.85			9.25	1.62
C0148-022-1250-I					1.250	31.75	1.012	25.7	0.527	13.39			7.33	1.28
C0148-022-1500-I					1.500	38.10	1.213	30.81	0.627	15.91			6.08	1.06
C0180-020-0250-I					0.250	6.35	0.188	4.78	0.121	3.07			17.66	3.09
C0180-020-0310-I					0.310	7.87	0.23	5.84	0.138	3.51			13.74	2.41
C0180-020-0380-I					0.380	9.65	0.279	7.09	0.158	4.02			10.91	1.91
C0180-020-0440-I					0.440	11.18	0.321	8.15	0.176	4.47			9.25	1.62
C0180-020-0500-I					0.500	12.70	0.364	9.25	0.193	4.9			8.08	1.42
C0180-020-0560-I					0.560	14.22	0.406	10.31	0.21	5.33			7.16	1.25
C0180-020-0620-I					0.620	15.75	0.448	11.38	0.227	5.78			6.41	1.12
C0180-020-0690-I			0.020	0.51	0.690	17.53	0.495	12.57	0.25	6.34	1.10	4.91	5.66	0.99
C0180-020-0750-I					0.750	19.05	0.54	13.72	0.265	6.72			5.25	0.92
C0180-020-0880-I					0.880	22.35	0.63	16	0.303	7.7			4.41	0.77
C0180-020-1000-I					1.000	25.40	0.712	18.08	0.34	8.64			3.83	0.67
C0180-020-1250-I					1.250	31.75	0.892	22.66	0.409	10.38			3.08	0.54
C0180-020-1380-I					1.380	35.05	0.979	24.87	0.451	11.45			2.75	0.48
C0180-020-1500-I					1.500	38.10	1.059	26.9	0.49	12.44			2.50	0.44
C0180-020-1750-I	0.180	4.57			1.750	44.45	1.241	31.52	0.556	14.12			2.17	0.38
C0180-022-0250-I					0.250	6.35	0.191	4.85	0.117	2.97			24.66	4.32
C0180-022-0310-I					0.310	7.87	0.236	5.99	0.135	3.43			19.74	3.46
C0180-022-0380-I					0.380	9.65	0.292	7.42	0.153	3.88			16.49	2.89
C0180-022-0440-I					0.440	11.18	0.336	8.53	0.172	4.36			14.08	2.47
C0180-022-0500-I					0.500	12.70	0.377	9.58	0.196	4.98			11.83	2.07
C0180-022-0560-I					0.560	14.22	0.413	10.49	0.225	5.72			9.91	1.74
C0180-022-0620-I			0.022	0.56	0.620	15.75	0.453	11.51	0.249	6.33	1.46	6.49	8.75	1.53
C0180-022-0690-I					0.690	17.53	0.508	12.9	0.269	6.82			8.00	1.40
C0180-022-0750-I					0.750	19.05	0.549	13.94	0.292	7.41			7.25	1.27
C0180-022-0810-I					0.810	20.57	0.583	14.81	0.324	8.23			6.41	1.12
C0180-022-0940-I					0.940	23.88	0.686	17.42	0.357	9.06			5.75	1.01
C0180-022-1000-I					1.000	25.40	0.731	18.57	0.376	9.55			5.41	0.95
C0180-022-1120-I					1.120	28.45	0.818	20.78	0.416	10.56			4.83	0.85
C0180-022-1250-I					1.250	31.75	0.913	23.19	0.459	11.65			4.33	0.76

COMPRESSION SPRINGS
INCONEL® X750

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0180-022-1500-I			0.022	0.56	1.500	38.10	1.093	27.76	0.546	13.86	1.46	6.49	3.58	0.63
C0180-022-1750-I					1.750	44.45	1.289	32.74	0.612	15.53			3.17	0.55
C0180-024-0250-I					0.250	6.35	0.197	5	0.13	3.3			35.24	6.17
C0180-024-0310-I					0.310	7.87	0.241	6.12	0.154	3.92			27.16	4.76
C0180-024-0380-I					0.380	9.65	0.292	7.42	0.183	4.64			21.41	3.75
C0180-024-0440-I					0.440	11.18	0.336	8.53	0.207	5.25			18.16	3.18
C0180-024-0500-I					0.500	12.70	0.381	9.68	0.231	5.87			15.74	2.76
C0180-024-0560-I					0.560	14.22	0.425	10.8	0.255	6.48			13.91	2.44
C0180-024-0620-I					0.620	15.75	0.469	11.91	0.28	7.12			12.41	2.17
C0180-024-0750-I			0.024	0.61	0.750	19.05	0.565	14.35	0.332	8.43	1.88	8.36	10.16	1.78
C0180-024-0880-I					0.880	22.35	0.661	16.79	0.384	9.76			8.58	1.50
C0180-024-1000-I					1.000	25.40	0.749	19.02	0.433	10.99			7.50	1.31
C0180-024-1120-I					1.120	28.45	0.838	21.29	0.481	12.21			6.66	1.17
C0180-024-1250-I					1.250	31.75	0.932	23.67	0.536	13.6			5.91	1.04
C0180-024-1500-I					1.500	38.10	1.117	28.37	0.635	16.12			4.91	0.86
C0180-024-1750-I					1.750	44.45	1.299	32.99	0.74	18.81			4.17	0.73
C0180-024-2000-I					2.000	50.80	1.487	37.77	0.835	21.2			3.67	0.64
C0180-026-0250-I					0.250	6.35	0.201	5.11	0.145	3.68			48.15	8.43
C0180-026-0310-I					0.310	7.87	0.249	6.32	0.166	4.22			39.15	6.86
C0180-026-0380-I					0.380	9.65	0.304	7.72	0.195	4.96			31.24	5.47
C0180-026-0440-I					0.440	11.18	0.349	8.86	0.224	5.69			25.99	4.55
C0180-026-0500-I					0.500	12.70	0.394	10.01	0.252	6.41			22.32	3.91
C0180-026-0560-I	0.180	4.57			0.560	14.22	0.439	11.15	0.281	7.12			19.58	3.43
C0180-026-0620-I					0.620	15.75	0.484	12.29	0.309	7.85			17.41	3.05
C0180-026-0690-I					0.690	17.53	0.538	13.67	0.338	8.58			15.66	2.74
C0180-026-0750-I			0.026	0.66	0.750	19.05	0.582	14.78	0.368	9.34	2.37	10.55	14.16	2.48
C0180-026-0810-I					0.810	20.57	0.627	15.93	0.396	10.06			12.99	2.28
C0180-026-0880-I					0.880	22.35	0.682	17.32	0.425	10.79			12.00	2.10
C0180-026-1000-I					1.000	25.40	0.767	19.48	0.492	12.5			10.16	1.78
C0180-026-1120-I					1.120	28.45	0.856	21.74	0.549	13.95			9.00	1.58
C0180-026-1250-I					1.250	31.75	0.956	24.28	0.606	15.38			8.08	1.42
C0180-026-1500-I					1.500	38.10	1.144	29.06	0.723	18.37			6.66	1.17
C0180-026-1750-I					1.750	44.45	1.331	33.81	0.842	21.38			5.66	0.99
C0180-026-2000-I					2.000	50.80	1.517	38.53	0.962	24.44			4.91	0.86
C0180-029-0250-I					0.250	6.35	0.208	5.28	0.164	4.16			77.55	13.58
C0180-029-0310-I					0.310	7.87	0.255	6.48	0.197	4.99			59.14	10.36
C0180-029-0380-I					0.380	9.65	0.31	7.87	0.235	5.97			46.23	8.10
C0180-029-0440-I					0.440	11.18	0.357	9.07	0.268	6.81			38.98	6.83
C0180-029-0500-I					0.500	12.70	0.404	10.26	0.301	7.64			33.74	5.91
C0180-029-0560-I			0.029	0.74	0.560	14.22	0.45	11.43	0.334	8.49	3.25	14.47	29.65	5.19
C0180-029-0620-I					0.620	15.75	0.497	12.62	0.367	9.33			26.49	4.64
C0180-029-0690-I					0.690	17.53	0.552	14.02	0.405	10.3			23.57	4.13
C0180-029-0750-I					0.750	19.05	0.599	15.21	0.439	11.15			21.49	3.76
C0180-029-0810-I					0.810	20.57	0.646	16.41	0.471	11.97			19.83	3.47
C0180-029-0880-I					0.880	22.35	0.701	17.81	0.509	12.93			18.16	3.18



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SPEC

INCONEL® X750 COMPRESSION SPRINGS

COMPRESSION SPRINGS
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Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0180-029-0940-I					0.940	23.88	0.748	19	0.542	13.78			16.91	2.96
C0180-029-1000-I					1.000	25.40	0.794	20.17	0.576	14.62			15.83	2.77
C0180-029-1120-I					1.120	28.45	0.888	22.56	0.643	16.34			13.99	2.45
C0180-029-1250-I					1.250	31.75	0.99	25.15	0.714	18.12	3.25	14.47	12.50	2.19
C0180-029-1380-I					1.380	35.05	1.091	27.71	0.786	19.98			11.25	1.97
C0180-029-1500-I					1.500	38.10	1.185	30.1	0.851	21.62			10.33	1.81
C0180-029-1750-I					1.750	44.45	1.382	35.1	0.986	25.04			8.83	1.55
C0180-029-2000-I					2.000	50.80	1.575	40.01	1.127	28.62			7.66	1.34
C0180-032-0310-I					0.310	7.87	0.268	6.81	0.203	5.16			102.21	17.90
C0180-032-0380-I					0.380	9.65	0.327	8.31	0.24	6.1			80.80	14.15
C0180-032-0440-I					0.440	11.18	0.373	9.47	0.284	7.23			64.56	11.31
C0180-032-0500-I					0.500	12.70	0.42	10.67	0.327	8.31			54.06	9.47
C0180-032-0560-I					0.560	14.22	0.472	11.99	0.354	8.99			49.06	8.59
C0180-032-0620-I					0.620	15.75	0.519	13.18	0.397	10.08			42.73	7.48
C0180-032-0690-I					0.690	17.53	0.581	14.76	0.424	10.76			39.57	6.93
C0180-032-0750-I					0.750	19.05	0.625	15.88	0.478	12.13			34.40	6.02
C0180-032-0810-I			0.032	0.81	0.810	20.57	0.671	17.04	0.522	13.26	4.32	19.19	31.07	5.44
C0180-032-0880-I					0.880	22.35	0.725	18.42	0.574	14.58			27.91	4.89
C0180-032-0940-I					0.940	23.88	0.774	19.66	0.61	15.49			26.07	4.57
C0180-032-1000-I					1.000	25.40	0.824	20.93	0.645	16.39			24.49	4.29
C0180-032-1120-I	0.180	4.57			1.120	28.45	0.918	23.32	0.731	18.58			21.32	3.73
C0180-032-1250-I					1.250	31.75	1.023	25.98	0.813	20.66			18.99	3.33
C0180-032-1380-I					1.380	35.05	1.129	28.68	0.893	22.69			17.16	3.01
C0180-032-1500-I					1.500	38.10	1.224	31.09	0.973	24.71			15.66	2.74
C0180-032-1750-I					1.750	44.45	1.428	36.27	1.125	28.58			13.41	2.35
C0180-032-2000-I					2.000	50.80	1.63	41.4	1.284	32.62			11.66	2.04
C0180-035-0380-I					0.380	9.65	0.331	8.41	0.278	7.05			114.12	19.99
C0180-035-0440-I					0.440	11.18	0.382	9.7	0.318	8.08			95.55	16.73
C0180-035-0500-I					0.500	12.70	0.432	10.97	0.358	9.1			82.22	14.40
C0180-035-0560-I					0.560	14.22	0.483	12.27	0.398	10.12			72.14	12.63
C0180-035-0620-I					0.620	15.75	0.533	13.54	0.438	11.13			64.31	11.26
C0180-035-0690-I					0.690	17.53	0.592	15.04	0.485	12.32			57.06	9.99
C0180-035-0750-I					0.750	19.05	0.643	16.33	0.526	13.35			51.98	9.10
C0180-035-0810-I			0.035	0.89	0.810	20.57	0.694	17.63	0.565	14.36	5.57	24.76	47.81	8.37
C0180-035-0880-I					0.880	22.35	0.752	19.1	0.613	15.56			43.65	7.64
C0180-035-0940-I					0.940	23.88	0.803	20.4	0.653	16.58			40.65	7.12
C0180-035-1000-I					1.000	25.40	0.854	21.69	0.692	17.58			38.07	6.67
C0180-035-1120-I					1.120	28.45	0.955	24.26	0.774	19.66			33.65	5.89
C0180-035-1250-I					1.250	31.75	1.064	27.03	0.86	21.84			29.99	5.25
C0180-035-1500-I					1.500	38.10	1.275	32.39	1.027	26.1			24.74	4.33
C0180-035-1750-I					1.750	44.45	1.486	37.74	1.194	30.33			21.07	3.69
C0180-035-2000-I					2.000	50.80	1.696	43.08	1.363	34.61			18.33	3.21
C0210-022-0250-I					0.250	6.35	0.186	4.72	0.098	2.5			19.66	3.44
C0210-022-0310-I	0.210	5.33	0.022	0.56	0.310	7.87	0.227	5.77	0.114	2.89	1.26	5.62	15.24	2.67
C0210-022-0380-I					0.380	9.65	0.275	6.99	0.132	3.36			12.08	2.12

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0210-022-0440-I					0.440	11.18	0.317	8.05	0.148	3.76			10.25	1.79
C0210-022-0500-I					0.500	12.70	0.358	9.09	0.164	4.16			8.91	1.56
C0210-022-0560-I					0.560	14.22	0.399	10.13	0.18	4.58			7.83	1.37
C0210-022-0620-I					0.620	15.75	0.442	11.23	0.195	4.94			7.08	1.24
C0210-022-0690-I					0.690	17.53	0.488	12.4	0.215	5.45			6.25	1.09
C0210-022-0750-I					0.750	19.05	0.53	13.46	0.23	5.83	1.26	5.62	5.75	1.01
C0210-022-0810-I			0.022	0.56	0.810	20.57	0.573	14.55	0.244	6.2			5.33	0.93
C0210-022-0880-I					0.880	22.35	0.619	15.72	0.265	6.72			4.83	0.85
C0210-022-1000-I					1.000	25.40	0.703	17.86	0.295	7.49			4.25	0.74
C0210-022-1250-I					1.250	31.75	0.871	22.12	0.364	9.25			3.33	0.58
C0210-022-1500-I					1.500	38.10	1.041	26.44	0.432	10.97			2.75	0.48
C0210-022-1750-I					1.750	44.45	1.227	31.17	0.485	12.33			2.42	0.42
C0210-022-2000-I					2.000	50.80	1.394	35.41	0.556	14.13			2.08	0.36
C0210-026-0250-I					0.250	6.35	0.194	4.93	0.123	3.13			36.74	6.43
C0210-026-0310-I	0.210	5.33			0.310	7.87	0.237	6.02	0.145	3.68			28.24	4.95
C0210-026-0380-I					0.380	9.65	0.287	7.29	0.17	4.33			22.16	3.88
C0210-026-0440-I					0.440	11.18	0.33	8.38	0.192	4.87			18.74	3.28
C0210-026-0500-I					0.500	12.70	0.373	9.47	0.213	5.42			16.24	2.84
C0210-026-0560-I					0.560	14.22	0.416	10.57	0.235	5.97			14.33	2.51
C0210-026-0620-I					0.620	15.75	0.459	11.66	0.256	6.51			12.83	2.25
C0210-026-0690-I			0.026	0.66	0.690	17.53	0.509	12.93	0.282	7.16	2.06	9.17	11.41	2.00
C0210-026-0750-I					0.750	19.05	0.552	14.02	0.304	7.72			10.41	1.82
C0210-026-0810-I					0.810	20.57	0.595	15.11	0.326	8.27			9.58	1.68
C0210-026-0880-I					0.880	22.35	0.644	16.36	0.352	8.94			8.75	1.53
C0210-026-1000-I					1.000	25.40	0.731	18.57	0.394	10.01			7.66	1.34
C0210-026-1250-I					1.250	31.75	0.911	23.14	0.483	12.28			6.08	1.06
C0210-026-1500-I					1.500	38.10	1.088	27.64	0.577	14.65			5.00	0.88
C0210-026-1750-I					1.750	44.45	1.265	32.13	0.669	17			4.25	0.74
C0210-026-2000-I					2.000	50.80	1.45	36.83	0.752	19.09			3.75	0.66
C0240-020-0250-I					0.250	6.35	0.179	4.55	0.095	2.42			11.75	2.06
C0240-020-0310-I					0.310	7.87	0.218	5.54	0.105	2.67			9.16	1.60
C0240-020-0380-I					0.380	9.65	0.264	6.71	0.117	2.97			7.25	1.27
C0240-020-0440-I					0.440	11.18	0.304	7.72	0.127	3.23			6.16	1.08
C0240-020-0500-I					0.500	12.70	0.342	8.69	0.138	3.49			5.33	0.93
C0240-020-0560-I					0.560	14.22	0.383	9.73	0.147	3.73			4.75	0.83
C0240-020-0620-I					0.620	15.75	0.422	10.72	0.157	3.99			4.25	0.74
C0240-020-0690-I	0.240	6.10	0.020	0.51	0.690	17.53	0.471	11.96	0.168	4.26	0.84	3.73	3.83	0.67
C0240-020-0750-I					0.750	19.05	0.51	12.95	0.178	4.52			3.50	0.61
C0240-020-0810-I					0.810	20.57	0.545	13.84	0.191	4.84			3.17	0.55
C0240-020-0880-I					0.880	22.35	0.592	15.04	0.202	5.12			2.92	0.51
C0240-020-1000-I					1.000	25.40	0.675	17.15	0.22	5.59			2.58	0.45
C0240-020-1250-I					1.250	31.75	0.83	21.08	0.267	6.77			2.00	0.35
C0240-020-1500-I					1.500	38.10	0.996	25.3	0.308	7.82			1.67	0.29
C0240-020-1750-I					1.750	44.45	1.157	29.39	0.352	8.94			1.42	0.25
C0240-020-2000-I					2.000	50.80	1.328	33.73	0.391	9.92			1.25	0.22



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0240-022-0250-I					0.250	6.35	0.181	4.6	0.086	2.19			16.24	2.84
C0240-022-0310-I					0.310	7.87	0.222	5.64	0.098	2.5			12.58	2.20
C0240-022-0380-I					0.380	9.65	0.271	6.88	0.111	2.81			10.25	1.79
C0240-022-0440-I					0.440	11.18	0.302	7.67	0.129	3.27			8.08	1.42
C0240-022-0500-I					0.500	12.70	0.343	8.71	0.141	3.57			7.08	1.24
C0240-022-0560-I					0.560	14.22	0.382	9.7	0.153	3.9			6.25	1.09
C0240-022-0620-I					0.620	15.75	0.424	10.77	0.165	4.18			5.66	0.99
C0240-022-0690-I			0.022	0.56	0.690	17.53	0.475	12.07	0.176	4.48	1.11	4.95	5.16	0.90
C0240-022-0750-I					0.750	19.05	0.511	12.98	0.191	4.84			4.66	0.82
C0240-022-0810-I					0.810	20.57	0.553	14.05	0.202	5.13			4.33	0.76
C0240-022-1000-I					1.000	25.40	0.682	17.32	0.24	6.08			3.50	0.61
C0240-022-1250-I					1.250	31.75	0.845	21.46	0.293	7.44			2.75	0.48
C0240-022-1500-I					1.500	38.10	1.023	25.98	0.337	8.57			2.33	0.41
C0240-022-1750-I					1.750	44.45	1.193	30.3	0.386	9.81			2.00	0.35
C0240-022-2000-I					2.000	50.80	1.364	34.65	0.435	11.05			1.75	0.31
C0240-025-0380-I					0.380	9.65	0.26	6.6	0.15	3.81			13.49	2.36
C0240-025-0440-I					0.440	11.18	0.298	7.57	0.168	4.28			11.41	2.00
C0240-025-0500-I					0.500	12.70	0.336	8.53	0.186	4.73			9.91	1.74
C0240-025-0560-I					0.560	14.22	0.375	9.53	0.204	5.19			8.75	1.53
C0240-025-0620-I					0.620	15.75	0.413	10.49	0.223	5.65			7.83	1.37
C0240-025-0690-I					0.690	17.53	0.458	11.63	0.243	6.17			7.00	1.23
C0240-025-0750-I			0.025	0.64	0.750	19.05	0.494	12.55	0.263	6.69	1.62	7.21	6.33	1.11
C0240-025-0810-I	0.240	6.01			0.810	20.57	0.532	13.51	0.282	7.16			5.83	1.02
C0240-025-0880-I					0.880	22.35	0.576	14.63	0.303	7.71			5.33	0.93
C0240-025-1000-I					1.000	25.40	0.652	16.56	0.34	8.63			4.66	0.82
C0240-025-1250-I					1.250	31.75	0.817	20.75	0.41	10.43			3.75	0.66
C0240-025-1500-I					1.500	38.10	0.974	24.74	0.488	12.4			3.08	0.54
C0240-025-1750-I					1.750	44.45	1.142	29.01	0.557	14.14			2.67	0.47
C0240-025-2000-I					2.000	50.80	1.279	32.49	0.651	16.53			2.25	0.39
C0240-027-0380-I					0.380	9.65	0.304	7.72	0.131	3.32			26.66	4.67
C0240-027-0440-I					0.440	11.18	0.35	8.89	0.145	3.68			22.49	3.94
C0240-027-0500-I					0.500	12.70	0.395	10.03	0.159	4.04			19.41	3.40
C0240-027-0560-I					0.560	14.22	0.442	11.23	0.173	4.39			17.16	3.01
C0240-027-0620-I					0.620	15.75	0.487	12.37	0.187	4.76			15.33	2.68
C0240-027-0690-I					0.690	17.53	0.54	13.72	0.204	5.19			13.58	2.38
C0240-027-0750-I					0.750	19.05	0.586	14.88	0.218	5.55			12.41	2.17
C0240-027-0810-I			0.027	0.69	0.810	20.57	0.632	16.05	0.233	5.92	2.03	9.04	11.41	2.00
C0240-027-0880-I					0.880	22.35	0.686	17.42	0.249	6.31			10.50	1.84
C0240-027-0940-I					0.940	23.88	0.731	18.57	0.263	6.69			9.75	1.71
C0240-027-1000-I					1.000	25.40	0.778	19.76	0.277	7.03			9.16	1.60
C0240-027-1120-I					1.120	28.45	0.868	22.05	0.307	7.79			8.08	1.42
C0240-027-1250-I					1.250	31.75	0.969	24.61	0.336	8.53			7.25	1.27
C0240-027-1380-I					1.380	35.05	1.067	27.1	0.368	9.35			6.50	1.14
C0240-027-1500-I					1.500	38.10	1.161	29.49	0.394	10.02			6.00	1.05
C0240-027-1750-I					1.750	44.45	1.35	34.29	0.456	11.58			5.08	0.89

COMPRESSION SPRINGS
 INCONEL® X750

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0240-027-2000-I			0.027	0.69	2.000	50.80	1.539	39.09	0.516	13.12	2.03	9.04	4.41	0.77
C0240-032-0310-I					0.310	7.87	0.247	6.27	0.16	4.08			53.15	9.31
C0240-032-0380-I					0.380	9.65	0.305	7.75	0.178	4.53			44.82	7.85
C0240-032-0440-I					0.440	11.18	0.347	8.81	0.206	5.24			35.99	6.30
C0240-032-0500-I					0.500	12.70	0.391	9.93	0.231	5.87			30.65	5.37
C0240-032-0560-I					0.560	14.22	0.434	11.02	0.257	6.53			26.57	4.65
C0240-032-0620-I					0.620	15.75	0.477	12.12	0.284	7.21			23.32	4.08
C0240-032-0690-I					0.690	17.53	0.53	13.46	0.31	7.88			20.83	3.65
C0240-032-0750-I					0.750	19.05	0.567	14.4	0.345	8.76			18.24	3.19
C0240-032-0810-I			0.032	0.81	0.810	20.57	0.609	15.47	0.372	9.44	3.34	14.87	16.66	2.92
C0240-032-0880-I					0.880	22.35	0.662	16.81	0.399	10.12			15.33	2.68
C0240-032-0940-I					0.940	23.88	0.705	17.91	0.424	10.77			14.24	2.49
C0240-032-1000-I					1.000	25.40	0.748	19	0.451	11.46			13.24	2.32
C0240-032-1250-I					1.250	31.75	0.929	23.6	0.556	14.13			10.41	1.82
C0240-032-1380-I					1.380	35.05	1.022	25.96	0.614	15.58			9.33	1.63
C0240-032-1500-I					1.500	38.10	1.11	28.19	0.662	16.8			8.58	1.50
C0240-032-1750-I					1.750	44.45	1.294	32.87	0.763	19.39			7.33	1.28
C0240-032-2000-I					2.000	50.80	1.472	37.39	0.874	22.2			6.33	1.11
C0240-038-0310-I	0.240	6.10			0.310	7.87	0.258	6.55	0.201	5.1			105.87	18.54
C0240-038-0380-I					0.380	9.65	0.315	8	0.232	5.9			84.55	14.81
C0240-038-0440-I					0.440	11.18	0.362	9.19	0.264	6.71			70.31	12.31
C0240-038-0500-I					0.500	12.70	0.409	10.39	0.295	7.51			60.23	10.55
C0240-038-0560-I					0.560	14.22	0.456	11.58	0.327	8.31			52.65	9.22
C0240-038-0620-I					0.620	15.75	0.503	12.78	0.357	9.08			46.98	8.23
C0240-038-0690-I					0.690	17.53	0.56	14.22	0.389	9.88			42.23	7.40
C0240-038-0750-I					0.750	19.05	0.607	15.42	0.42	10.67			38.40	6.73
C0240-038-0810-I					0.810	20.57	0.654	16.61	0.452	11.48			35.15	6.16
C0240-038-0880-I			0.038	0.97	0.880	22.35	0.706	17.93	0.494	12.54	5.50	24.47	31.65	5.54
C0240-038-0940-I					0.940	23.88	0.749	19.02	0.535	13.58			28.82	5.05
C0240-038-1000-I					1.000	25.40	0.796	20.22	0.567	14.41			26.91	4.71
C0240-038-1120-I					1.120	28.45	0.89	22.61	0.629	15.97			23.91	4.19
C0240-038-1250-I					1.250	31.75	0.994	25.25	0.691	17.55			21.49	3.76
C0240-038-1380-I					1.380	35.05	1.098	27.89	0.754	19.15			19.49	3.41
C0240-038-1500-I					1.500	38.10	1.191	30.25	0.817	20.76			17.83	3.12
C0240-038-1750-I					1.750	44.45	1.368	34.75	0.993	25.23			14.41	2.52
C0240-038-2000-I					2.000	50.80	1.563	39.7	1.127	28.62			12.58	2.20
C0240-038-2250-I					2.250	57.15	1.753	44.53	1.269	32.23			11.08	1.94
C0240-038-2500-I					2.500	63.50	1.95	49.53	1.398	35.52			10.00	1.75
C0300-022-0380-I					0.380	9.65	0.26	6.6	0.088	2.24			7.50	1.31
C0300-022-0440-I					0.440	11.18	0.298	7.57	0.096	2.44			6.33	1.11
C0300-022-0500-I					0.500	12.70	0.337	8.56	0.104	2.64			5.50	0.96
C0300-022-0560-I	0.300	7.62	0.022	0.56	0.560	14.22	0.377	9.58	0.111	2.82	0.90	4.00	4.91	0.86
C0300-022-0620-I					0.620	15.75	0.404	10.26	0.123	3.13			4.17	0.73
C0300-022-0690-I					0.690	17.53	0.46	11.68	0.128	3.26			3.92	0.69
C0300-022-0750-I					0.750	19.05	0.487	12.37	0.141	3.57			3.42	0.60



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SPEC

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0300-022-0810-I					0.810	20.57	0.526	13.36	0.148	3.76			3.17	0.55
C0300-022-0880-I					0.880	22.35	0.58	14.73	0.154	3.91			3.00	0.53
C0300-022-1000-I					1.000	25.40	0.663	16.84	0.168	4.26			2.67	0.47
C0300-022-1250-I					1.250	31.75	0.819	20.8	0.202	5.14			2.08	0.36
C0300-022-1500-I			0.022	0.56	1.500	38.10	0.986	25.04	0.233	5.91	0.90	4.00	1.75	0.31
C0300-022-1750-I					1.750	44.45	1.151	29.24	0.264	6.7			1.50	0.26
C0300-022-2000-I					2.000	50.80	1.281	32.54	0.308	7.82			1.25	0.22
C0300-022-2250-I					2.250	57.15	1.479	37.57	0.327	8.3			1.17	0.20
C0300-022-2500-I					2.500	63.50	1.67	42.42	0.349	8.85			1.08	0.19
C0300-027-0440-I					0.440	11.18	0.291	7.39	0.142	3.59			11.08	1.94
C0300-027-0500-I					0.500	12.70	0.322	8.18	0.159	4.04			9.25	1.62
C0300-027-0560-I					0.560	14.22	0.368	9.35	0.167	4.24			8.58	1.50
C0300-027-0620-I					0.620	15.75	0.398	10.11	0.185	4.69			7.41	1.30
C0300-027-0690-I					0.690	17.53	0.437	11.1	0.203	5.16			6.50	1.14
C0300-027-0750-I					0.750	19.05	0.483	12.27	0.211	5.37			6.16	1.08
C0300-027-0810-I					0.810	20.57	0.515	13.08	0.228	5.78			5.58	0.98
C0300-027-0880-I			0.027	0.69	0.880	22.35	0.556	14.12	0.245	6.22	1.65	7.33	5.08	0.89
C0300-027-0940-I					0.940	23.88	0.58	14.73	0.266	6.75			4.58	0.80
C0300-027-1000-I					1.000	25.40	0.612	15.54	0.282	7.17			4.25	0.74
C0300-027-1250-I					1.250	31.75	0.79	20.07	0.325	8.25			3.58	0.63
C0300-027-1500-I					1.500	38.10	0.935	23.75	0.387	9.82			2.92	0.51
C0300-027-1750-I					1.750	44.45	1.091	27.71	0.442	11.23			2.50	0.44
C0300-027-2000-I	0.300	7.62			2.000	50.80	1.24	31.5	0.502	12.74			2.17	0.38
C0300-027-2250-I					2.250	57.15	1.459	37.06	0.52	13.2			2.08	0.36
C0300-027-2500-I					2.500	63.50	1.601	40.67	0.583	14.81			1.83	0.32
C0300-032-0440-I					0.440	11.18	0.321	8.15	0.169	4.3			22.74	3.98
C0300-032-0500-I					0.500	12.70	0.362	9.19	0.186	4.72			19.66	3.44
C0300-032-0560-I					0.560	14.22	0.4	10.16	0.205	5.21			16.99	2.98
C0300-032-0620-I					0.620	15.75	0.441	11.2	0.222	5.64			15.16	2.66
C0300-032-0690-I					0.690	17.53	0.49	12.45	0.241	6.11			13.58	2.38
C0300-032-0750-I					0.750	19.05	0.531	13.49	0.257	6.53			12.41	2.17
C0300-032-0810-I					0.810	20.57	0.57	14.48	0.276	7			11.33	1.98
C0300-032-0880-I			0.032	0.81	0.880	22.35	0.621	15.77	0.292	7.43	2.72	12.09	10.50	1.84
C0300-032-0940-I					0.940	23.88	0.651	16.54	0.319	8.09			9.41	1.65
C0300-032-1000-I					1.000	25.40	0.692	17.58	0.335	8.52			8.83	1.55
C0300-032-1250-I					1.250	31.75	0.871	22.12	0.399	10.12			7.16	1.25
C0300-032-1500-I					1.500	38.10	1.041	26.44	0.469	11.92			5.91	1.04
C0300-032-1750-I					1.750	44.45	1.206	30.63	0.544	13.81			5.00	0.88
C0300-032-2000-I					2.000	50.80	1.385	35.18	0.607	15.42			4.41	0.77
C0300-032-2250-I					2.250	57.15	1.584	40.23	0.651	16.54			4.08	0.71
C0300-032-2500-I					2.500	63.50	1.759	44.68	0.718	18.24			3.67	0.64
C0300-038-0380-I					0.380	9.65	0.296	7.52	0.189	4.79			53.73	9.41
C0300-038-0440-I			0.038	0.97	0.440	11.18	0.339	8.61	0.212	5.38	4.50	20.00	44.57	7.80
C0300-038-0500-I					0.500	12.70	0.384	9.75	0.233	5.91			38.65	6.77
C0300-038-0560-I					0.560	14.22	0.421	10.69	0.263	6.69			32.32	5.66

COMPRESSION SPRINGS
 INCONEL® X750

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0300-038-0620-I					0.620	15.75	0.465	11.81	0.284	7.22			29.07	5.09
C0300-038-0690-I					0.690	17.53	0.512	13	0.316	8.03			25.24	4.42
C0300-038-0750-I					0.750	19.05	0.557	14.15	0.337	8.55			23.24	4.07
C0300-038-0810-I					0.810	20.57	0.601	15.27	0.358	9.09			21.49	3.76
C0300-038-0880-I					0.880	22.35	0.647	16.43	0.389	9.89			19.33	3.38
C0300-038-0940-I					0.940	23.88	0.692	17.58	0.41	10.4			18.16	3.18
C0300-038-1000-I					1.000	25.40	0.737	18.72	0.431	10.94			17.08	2.99
C0300-038-1120-I			0.038	0.97	1.120	28.45	0.825	20.96	0.473	12.02	4.50	20.00	15.24	2.67
C0300-038-1250-I					1.250	31.75	0.925	23.5	0.514	13.06			13.83	2.42
C0300-038-1380-I					1.380	35.05	1.023	25.98	0.558	14.16			12.58	2.20
C0300-038-1500-I					1.500	38.10	1.112	28.24	0.599	15.22			11.58	2.03
C0300-038-1750-I					1.750	44.45	1.268	32.21	0.725	18.42			9.33	1.63
C0300-038-2000-I					2.000	50.80	1.444	36.68	0.826	20.97			8.08	1.42
C0300-038-2250-I					2.250	57.15	1.65	41.91	0.884	22.45			7.50	1.31
C0300-038-2500-I					2.500	63.50	1.842	46.79	0.963	24.46			6.83	1.20
C0300-048-0380-I					0.380	9.65	0.315	8	0.251	6.37			132.45	23.20
C0300-048-0440-I					0.440	11.18	0.361	9.17	0.284	7.21			109.46	19.17
C0300-048-0500-I					0.500	12.70	0.408	10.36	0.316	8.04			93.30	16.34
C0300-048-0560-I					0.560	14.22	0.454	11.53	0.349	8.87			81.30	14.24
C0300-048-0620-I					0.620	15.75	0.501	12.73	0.382	9.69			72.05	12.62
C0300-048-0690-I					0.690	17.53	0.555	14.1	0.42	10.67			63.56	11.13
C0300-048-0750-I					0.750	19.05	0.601	15.27	0.453	11.5			57.73	10.11
C0300-048-0810-I	0.300	7.62			0.810	20.57	0.647	16.43	0.485	12.33			52.90	9.26
C0300-048-0880-I					0.880	22.35	0.702	17.83	0.523	13.29			48.23	8.45
C0300-048-0940-I					0.940	23.88	0.748	19	0.556	14.12			44.82	7.85
C0300-048-1000-I			0.048	1.21	1.000	25.40	0.794	20.17	0.589	14.96	8.60	38.23	41.82	7.32
C0300-048-1120-I					1.120	28.45	0.887	22.53	0.655	16.63			36.90	6.46
C0300-048-1250-I					1.250	31.75	0.987	25.07	0.726	18.44			32.74	5.73
C0300-048-1380-I					1.380	35.05	1.088	27.64	0.795	20.2			29.49	5.16
C0300-048-1500-I					1.500	38.10	1.181	30	0.863	21.91			26.91	4.71
C0300-048-1750-I					1.750	44.45	1.375	34.93	0.997	25.31			22.91	4.01
C0300-048-2000-I					2.000	50.80	1.568	39.83	1.132	28.76			19.91	3.49
C0300-048-2250-I					2.250	57.15	1.761	44.73	1.27	32.26			17.58	3.08
C0300-048-2500-I					2.500	63.50	1.954	49.63	1.407	35.73			15.74	2.76
C0300-048-2750-I					2.750	69.85	2.147	54.53	1.545	39.24			14.24	2.49
C0300-048-3000-I					3.000	76.20	2.343	59.51	1.674	42.53			13.08	2.29
C0300-050-0380-I					0.380	9.65	0.317	8.05	0.274	6.96			157.85	27.64
C0300-050-0440-I					0.440	11.18	0.363	9.22	0.311	7.9			130.20	22.80
C0300-050-0500-I					0.500	12.70	0.41	10.41	0.348	8.84			110.79	19.40
C0300-050-0560-I					0.560	14.22	0.457	11.61	0.385	9.79			96.38	16.88
C0300-050-0620-I			0.050	1.27	0.620	15.75	0.503	12.78	0.422	10.73	9.96	44.32	85.30	14.94
C0300-050-0690-I					0.690	17.53	0.558	14.17	0.466	11.83			75.22	13.17
C0300-050-0750-I					0.750	19.05	0.604	15.34	0.503	12.77			68.31	11.96
C0300-050-0810-I					0.810	20.57	0.651	16.54	0.54	13.71			62.56	10.96
C0300-050-0880-I					0.880	22.35	0.705	17.91	0.583	14.8			56.98	9.98



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

INCONEL® X750 COMPRESSION SPRINGS

COMPRESSION SPRINGS
INCONEL® X750

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0300-050-0940-I					0.940	23.88	0.752	19.1	0.62	15.75			52.90	9.26
C0300-050-1000-I					1.000	25.40	0.798	20.27	0.657	16.68			49.40	8.65
C0300-050-1120-I					1.120	28.45	0.891	22.63	0.731	18.57			43.57	7.63
C0300-050-1250-I					1.250	31.75	0.992	25.2	0.811	20.61			38.65	6.77
C0300-050-1380-I					1.380	35.05	1.093	27.76	0.892	22.65			34.74	6.08
C0300-050-1500-I	.300	7.62	0.050	1.27	1.500	38.10	1.186	30.12	0.966	24.55	9.96	44.32	31.74	5.56
C0300-050-1750-I					1.750	44.45	1.381	35.08	1.119	28.42			26.99	4.73
C0300-050-2000-I					2.000	50.80	1.574	39.98	1.275	32.38			23.41	4.10
C0300-050-2250-I					2.250	57.15	1.768	44.91	1.431	36.35			20.66	3.62
C0300-050-2500-I					2.500	63.50	1.964	49.89	1.58	40.14			18.58	3.25
C0300-050-2750-I					2.750	69.85	2.158	54.81	1.734	44.05			16.83	2.95
C0300-050-3000-I					3.000	76.20	2.35	59.69	1.894	48.11			15.33	2.68
C0360-027-0500-I					0.500	12.70	0.32	8.13	0.124	3.14			7.66	1.34
C0360-027-0560-I					0.560	14.22	0.358	9.09	0.132	3.36			6.83	1.20
C0360-027-0620-I					0.620	15.75	0.396	10.06	0.141	3.57			6.16	1.08
C0360-027-0690-I					0.690	17.53	0.442	11.23	0.15	3.8			5.58	0.98
C0360-027-0750-I					0.750	19.05	0.478	12.14	0.159	4.04			5.08	0.89
C0360-027-0810-I					0.810	20.57	0.519	13.18	0.167	4.23			4.75	0.83
C0360-027-0880-I			0.027	0.69	0.880	22.35	0.541	13.74	0.185	4.7	1.38	6.15	4.08	0.71
C0360-027-0940-I					0.940	23.88	0.579	14.71	0.193	4.91			3.83	0.67
C0360-027-1000-I					1.000	25.40	0.595	15.11	0.21	5.35			3.42	0.60
C0360-027-1120-I					1.120	28.45	0.694	17.63	0.218	5.55			3.25	0.57
C0360-027-1250-I					1.250	31.75	0.762	19.35	0.243	6.16			2.83	0.50
C0360-027-1500-I					1.500	38.10	0.907	23.04	0.283	7.19			2.33	0.41
C0360-027-1750-I					1.750	44.45	1.058	26.87	0.321	8.16			2.00	0.35
C0360-027-2000-I					2.000	50.80	1.209	30.71	0.359	9.13			1.75	0.31
C0360-032-0380-I					0.380	9.65	0.269	6.83	0.127	3.23			20.66	3.62
C0360-032-0440-I					0.440	11.18	0.308	7.82	0.139	3.54			17.33	3.03
C0360-032-0500-I	0.360	9.14			0.500	12.70	0.347	8.81	0.152	3.85			14.91	2.61
C0360-032-0560-I					0.560	14.22	0.392	9.96	0.16	4.07			13.58	2.38
C0360-032-0620-I					0.620	15.75	0.436	11.07	0.169	4.3			12.41	2.17
C0360-032-0690-I					0.690	17.53	0.476	12.09	0.187	4.74			10.66	1.87
C0360-032-0750-I					0.750	19.05	0.519	13.18	0.196	4.98			9.91	1.74
C0360-032-0810-I					0.810	20.57	0.565	14.35	0.204	5.19			9.33	1.63
C0360-032-0880-I					0.880	22.35	0.603	15.32	0.223	5.65			8.25	1.44
C0360-032-0940-I			0.032	0.81	0.940	23.88	0.648	16.46	0.231	5.87	2.29	10.17	7.83	1.37
C0360-032-1000-I					1.000	25.40	0.677	17.2	0.249	6.32			7.08	1.24
C0360-032-1120-I					1.120	28.45	0.754	19.15	0.273	6.94			6.25	1.09
C0360-032-1250-I					1.250	31.75	0.834	21.18	0.302	7.67			5.50	0.96
C0360-032-1380-I					1.380	35.05	0.923	23.44	0.326	8.27			5.00	0.88
C0360-032-1500-I					1.500	38.10	0.992	25.2	0.355	9.01			4.50	0.79
C0360-032-1750-I					1.750	44.45	1.153	29.29	0.405	10.29			3.83	0.67
C0360-032-2000-I					2.000	50.80	1.314	33.38	0.456	11.59			3.33	0.58
C0360-032-2250-I					2.250	57.15	1.528	38.81	0.477	12.12			3.17	0.55
C0360-032-2500-I					2.500	63.50	1.693	43	0.526	13.35			2.83	0.50

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0360-038-0440-I					0.440	11.18	0.318	8.08	0.181	4.59			31.15	5.46
C0360-038-0500-I					0.500	12.70	0.366	9.3	0.191	4.85			28.41	4.97
C0360-038-0560-I					0.560	14.22	0.402	10.21	0.212	5.39			23.99	4.20
C0360-038-0620-I					0.620	15.75	0.437	11.1	0.233	5.93			20.74	3.63
C0360-038-0690-I					0.690	17.53	0.484	12.29	0.253	6.43			18.41	3.22
C0360-038-0750-I					0.750	19.05	0.531	13.49	0.264	6.71			17.33	3.03
C0360-038-0810-I					0.810	20.57	0.566	14.38	0.285	7.25			15.58	2.73
C0360-038-0880-I					0.880	22.35	0.612	15.54	0.306	7.78			14.16	2.48
C0360-038-0940-I			0.038	0.97	0.940	23.88	0.648	16.46	0.327	8.31	3.79	16.88	12.99	2.28
C0360-038-1000-I					1.000	25.40	0.696	17.68	0.337	8.56			12.50	2.19
C0360-038-1120-I					1.120	28.45	0.767	19.48	0.38	9.64			10.75	1.88
C0360-038-1250-I					1.250	31.75	0.861	21.87	0.411	10.44			9.75	1.71
C0360-038-1380-I					1.380	35.05	0.942	23.93	0.453	11.5			8.66	1.52
C0360-038-1500-I					1.500	38.10	1.026	26.06	0.484	12.3			8.00	1.40
C0360-038-1750-I					1.750	44.45	1.201	30.51	0.548	13.92			6.91	1.21
C0360-038-2000-I					2.000	50.80	1.367	34.72	0.62	15.75			6.00	1.05
C0360-038-2250-I					2.250	57.15	1.538	39.07	0.688	17.48			5.33	0.93
C0360-038-2500-I					2.500	63.50	1.701	43.21	0.763	19.39			4.75	0.83
C0360-048-0440-I					0.440	11.18	0.345	8.76	0.236	6			77.14	13.51
C0360-048-0500-I					0.500	12.70	0.389	9.88	0.261	6.62			65.72	11.51
C0360-048-0560-I					0.560	14.22	0.433	11	0.285	7.25			57.23	10.02
C0360-048-0620-I					0.620	15.75	0.476	12.09	0.31	7.87			50.73	8.88
C0360-048-0690-I	0.360	9.14			0.690	17.53	0.527	13.39	0.339	8.6			44.73	7.83
C0360-048-0750-I					0.750	19.05	0.571	14.5	0.363	9.22			40.65	7.12
C0360-048-0810-I					0.810	20.57	0.614	15.6	0.388	9.84			37.24	6.52
C0360-048-0880-I					0.880	22.35	0.665	16.89	0.416	10.58			33.90	5.94
C0360-048-0940-I					0.940	23.88	0.709	18.01	0.44	11.18			31.57	5.53
C0360-048-1000-I					1.000	25.40	0.752	19.1	0.466	11.82			29.40	5.15
C0360-048-1120-I			0.048	1.21	1.120	28.45	0.839	21.31	0.514	13.06	7.29	32.44	25.99	4.55
C0360-048-1250-I					1.250	31.75	0.934	23.72	0.567	14.41			23.07	4.04
C0360-048-1380-I					1.380	35.05	1.028	26.11	0.62	15.75			20.74	3.63
C0360-048-1500-I					1.500	38.10	1.116	28.35	0.669	16.98			18.99	3.33
C0360-048-1750-I					1.750	44.45	1.296	32.92	0.773	19.63			16.08	2.82
C0360-048-2000-I					2.000	50.80	1.479	37.57	0.874	22.19			13.99	2.45
C0360-048-2250-I					2.250	57.15	1.662	42.21	0.973	24.71			12.41	2.17
C0360-048-2500-I					2.500	63.50	1.842	46.79	1.078	27.39			11.08	1.94
C0360-048-2750-I					2.750	69.85	2.026	51.46	1.176	29.87			10.08	1.77
C0360-048-3000-I					3.000	76.20	2.204	55.98	1.284	32.61			9.16	1.60
C0360-048-3250-I					3.250	82.55	2.383	60.53	1.39	35.3			8.41	1.47
C0360-048-3500-I					3.500	88.90	2.569	65.25	1.486	37.75			7.83	1.37
C0360-050-0440-I					0.440	11.18	0.346	8.79	0.259	6.59			90.55	15.86
C0360-050-0500-I					0.500	12.70	0.39	9.91	0.287	7.29			77.05	13.49
C0360-050-0560-I			0.050	1.27	0.560	14.22	0.434	11.02	0.315	8	8.47	37.67	67.06	11.74
C0360-050-0620-I					0.620	15.75	0.477	12.12	0.343	8.72			59.31	10.39
C0360-050-0690-I					0.690	17.53	0.528	13.41	0.376	9.54			52.31	9.16



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

INCONEL® X750 COMPRESSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Load Length (L1)		Solid Height (Sh) Approx.		Load (P) at L1		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb/in	N/mm
C0360-050-0750-I					0.750	19.05	0.572	14.53	0.404	10.26			47.48	8.32
C0360-050-0810-I					0.810	20.57	0.615	15.62	0.432	10.97			43.48	7.61
C0360-050-0880-I					0.880	22.35	0.666	16.92	0.464	11.78			39.65	6.94
C0360-050-0940-I					0.940	23.88	0.71	18.03	0.492	12.49			36.82	6.45
C0360-050-1000-I					1.000	25.40	0.753	19.13	0.52	13.21			34.32	6.01
C0360-050-1120-I					1.120	28.45	0.841	21.36	0.576	14.62			30.32	5.31
C0360-050-1250-I					1.250	31.75	0.935	23.75	0.636	16.16			26.91	4.71
C0360-050-1380-I					1.380	35.05	1.029	26.14	0.697	17.71			24.16	4.23
C0360-050-1500-I			0.050	1.27	1.500	38.10	1.116	28.35	0.753	19.14	8.47	37.67	22.07	3.87
C0360-050-1750-I					1.750	44.45	1.298	32.97	0.87	22.09			18.74	3.28
C0360-050-2000-I					2.000	50.80	1.481	37.62	0.983	24.98			16.33	2.86
C0360-050-2250-I					2.250	57.15	1.662	42.21	1.101	27.96			14.41	2.52
C0360-050-2500-I					2.500	63.50	1.844	46.84	1.217	30.91			12.91	2.26
C0360-050-2750-I					2.750	69.85	2.024	51.41	1.337	33.95			11.66	2.04
C0360-050-3000-I					3.000	76.20	2.206	56.03	1.453	36.9			10.66	1.87
C0360-050-3250-I					3.250	82.55	2.388	60.66	1.567	39.81			9.83	1.72
C0360-050-3500-I					3.500	88.90	2.567	65.2	1.689	42.89			9.08	1.59
C0360-054-0440-I					0.440	11.18	0.368	9.35	0.259	6.57			146.27	25.62
C0360-054-0500-I					0.500	12.70	0.414	10.52	0.286	7.26			123.78	21.68
C0360-054-0560-I	0.360	9.14			0.560	14.22	0.461	11.71	0.313	7.96			107.29	18.79
C0360-054-0620-I					0.620	15.75	0.508	12.9	0.341	8.66			94.63	16.57
C0360-054-0690-I					0.690	17.53	0.563	14.3	0.373	9.47			83.22	14.57
C0360-054-0750-I					0.750	19.05	0.61	15.49	0.4	10.16			75.47	13.22
C0360-054-0810-I					0.810	20.57	0.656	16.66	0.427	10.86			68.97	12.08
C0360-054-0880-I					0.880	22.35	0.711	18.06	0.459	11.67			62.72	10.98
C0360-054-0940-I					0.940	23.88	0.758	19.25	0.487	12.37			58.14	10.18
C0360-054-1000-I					1.000	25.40	0.805	20.45	0.514	13.06			54.23	9.50
C0360-054-1120-I			0.054	1.37	1.120	28.45	0.899	22.83	0.569	14.45	10.59	47.09	47.81	8.37
C0360-054-1250-I					1.250	31.75	1	25.4	0.629	15.97			42.32	7.41
C0360-054-1380-I					1.380	35.05	1.101	27.97	0.688	17.48			37.98	6.65
C0360-054-1500-I					1.500	38.10	1.195	30.35	0.742	18.86			34.74	6.08
C0360-054-1750-I					1.750	44.45	1.39	35.31	0.857	21.78			29.40	5.15
C0360-054-2000-I					2.000	50.80	1.586	40.28	0.97	24.63			25.57	4.48
C0360-054-2250-I					2.250	57.15	1.781	45.24	1.084	27.54			22.57	3.95
C0360-054-2500-I					2.500	63.50	1.975	50.17	1.201	30.51			20.16	3.53
C0360-054-2750-I					2.750	69.85	2.172	55.17	1.31	33.28			18.33	3.21
C0360-054-3000-I					3.000	76.20	2.368	60.15	1.424	36.17			16.74	2.93
C0360-054-3250-I					3.250	82.55	2.563	65.1	1.538	39.06			15.41	2.70
C0360-054-3500-I					3.500	88.90	2.757	70.03	1.655	42.03			14.24	2.49

Additional parts available, please view online at www.asraymond.com or contact ASRaymond.



[Lined area for notes]

**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
COMPRESSION SPRINGS. SEE PAGE 48.**

HIGH PERFORMANCE COMPRESSION SPRINGS

Stock sizes in chromium alloy steel

ASRaymond now offers an additional line to complement our current line of music wire and stainless steel springs. These items offer high performance, in dimensions not available in our standard music wire and stainless steel line.

Materials

Either Chrome Vanadium or Chrome Silicon will be supplied, based on availability at time of shipment. Not recommended for applications where the temperature exceeds 425 F (220 C).

Wire diameter is prior to forming.

Certificate of Conformance is available at no charge. Certificate of chemical analysis is not available.

Coil Direction

Right Hand (RH) or Left Hand (LH) as per the following tables.

Free Length

Free length is reference or approximate only.

Ends

Part numbers starting with C00168, C00170, C00186, C00200, C00257, C00309, C00347 and C00395 are squared only. All others are squared and ground.

Loads and Spring Rates

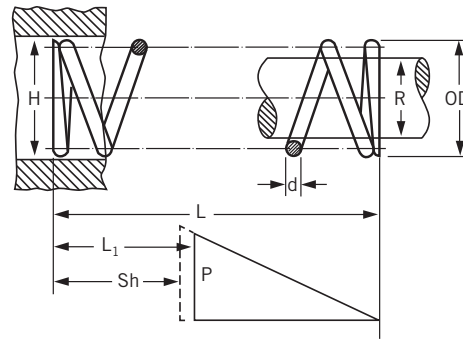
Rate is calculated and should be used as a reference only. Load (P) at L_1 is $\pm 10\%$.

ID and OD tolerances

High performance springs are designed to fit in a hole and over a shaft as specified in the table.

Finish & Packaging

Standard finish is shot peen and oil. Special finishes upon request. See page 312 for alternative finishes. Parts are bulk packed, so tangling can occur during transit on wire sizes under 0.89mm (0.035"). Please inquire about special packaging when ordering.



OD = Outside diameter
 d = Wire diameter
 Sh = Approx Solid Height
 L = Free length (reference use only)
 L_1 = Load length (minimum working length)
 P = Load at L_1
 H = Hole Diameter
 R = Shaft Diameter

ADDITIONAL DIMENSIONS ARE AVAILABLE BY CALLING 1-800-872-7732.

HIGH PERFORMANCE COMPRESSION SPRINGS																			
Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L_1)		Solid Height (Sh) Approx.		Load (P) at L_1 $\pm 10\%$		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00168003003						0.126	3.2					0.087	2.2	0.063	1.6			14.00	2.45
C00168003004						0.157	4					0.108	2.8	0.079	2.0			11.20	1.96
C00168003005						0.197	5					0.134	3.4	0.098	2.5			8.75	1.53
C00168003006						0.248	6.3					0.169	4.3	0.122	3.1			7.00	1.23
C00168003008	LH	0.066	1.68	0.010	0.25	0.315	8			0.043	1.1	0.217	5.5	0.157	4.0	0.55	2.45	5.60	0.98
C00168003010						0.394	10					0.268	6.8	0.197	5.0			4.38	0.77
C00168003013						0.492	12.5					0.335	8.5	0.244	6.2			3.50	0.61
C00168003016						0.630	16					0.433	11.0	0.315	8.0			2.80	0.49
C00168003020						0.787	20					0.539	13.7	0.394	10.0			2.22	0.39
C00168003025						0.984	25	0.071	1.8			0.669	17.0	0.492	12.5			1.75	0.31
C00170003003						0.126	3.2					0.099	2.5	0.083	2.1			36.36	6.37
C00170003004						0.157	4					0.123	3.1	0.102	2.6			28.57	5.00
C00170003005						0.197	5					0.152	3.9	0.126	3.2			22.22	3.89
C00170003006						0.248	6.3					0.193	4.9	0.161	4.1			18.18	3.18
C00170003008	RH	0.067	1.7	0.013	0.32	0.315	8					0.246	6.2	0.205	5.2	0.99	4.41	14.29	2.50
C00170003010						0.394	10					0.304	7.7	0.252	6.4			11.11	1.95
C00170003013						0.492	12.5			0.039	1.0	0.381	9.7	0.315	8.0			8.89	1.56
C00170003016						0.630	16					0.491	12.5	0.409	10.4			7.14	1.25
C00170003020						0.787	20					0.614	15.6	0.512	13.0			5.71	1.00
C00170003025						0.984	25					0.761	19.3	0.630	16.0			4.44	0.78
C00186004010						0.394	10					0.327	8.3	0.287	7.3			26.34	4.61
C00186004013	LH	0.073	1.86	0.016	0.4	0.492	12.5					0.413	10.5	0.366	9.3	1.76	7.85	22.22	3.89
C00186004016						0.630	16					0.531	13.5	0.472	12.0			17.78	3.11
C00186004020						0.787	20					0.663	16.9	0.591	15.0			14.22	2.49
C00188003003						0.126	3.2	0.079	2.0			0.087	2.2	0.063	1.6			17.92	3.14
C00188003004						0.157	4					0.108	2.8	0.079	2.0			14.34	2.51
C00188003005	RH	0.074	1.88	0.011	0.28	0.197	5			0.049	1.3	0.134	3.4	0.098	2.5	0.71	3.14	11.20	1.96
C00188003006						0.248	6.3					0.169	4.3	0.122	3.1			8.96	1.57
C00188003008						0.315	8					0.217	5.5	0.157	4.0			7.17	1.26
C00188003010						0.394	10					0.268	6.8	0.197	5.0			5.60	0.98

SPEC

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00188003013						0.492	12.5					0.335	8.5	0.244	6.2			4.48	0.78
C00188003016	RH	0.074	1.88	0.011	0.28	0.630	16			0.049	1.3	0.433	11.0	0.315	8.0	0.71	3.14	3.58	0.63
C00188003020						0.787	20					0.539	13.7	0.394	10.0			2.84	0.50
C00188003025						0.984	25					0.669	17.0	0.492	12.5			2.24	0.39
C00190004010						0.394	10					0.304	7.7	0.252	6.4			13.83	2.42
C00190004013						0.492	12.5	0.079	2.0			0.381	9.7	0.315	8.0			11.06	1.94
C00190004016						0.630	16					0.491	12.5	0.409	10.4			8.89	1.56
C00190004020		0.075	1.9	0.014	0.36	0.787	20			0.043	1.1	0.614	15.6	0.512	13.0	1.23	5.49	7.11	1.25
C00190004025						0.984	25					0.761	19.3	0.630	16.0			5.53	0.97
C00190004032						1.260	32					0.982	24.9	0.819	20.8			4.44	0.78
C00190004040						1.575	40					1.228	31.2	1.024	26.0			3.56	0.62
C00200003006						0.248	6.3					0.154	3.9	0.098	2.5			5.13	0.90
C00200003008						0.315	8					0.197	5.0	0.126	3.2			4.11	0.72
C00200003010						0.394	10					0.244	6.2	0.157	4.0			3.24	0.57
C00200003013		0.079	2	0.010	0.25	0.492	12.5	0.083	2.1	0.055	1.4	0.303	7.7	0.197	5.0	0.49	2.16	2.57	0.45
C00200003016	LH					0.630	16					0.394	10.0	0.252	6.4			2.05	0.36
C00200003020						0.787	20					0.492	12.5	0.315	8.0			1.64	0.29
C00200003025						0.984	25					0.606	15.4	0.394	10.0			1.28	0.22
C00200003032						1.260	32					0.787	20.0	0.512	13.0			1.03	0.18
C00208005003						0.126	3.2					0.106	2.7	0.094	2.4			111.11	19.46
C00208005004						0.157	4					0.133	3.4	0.118	3.0			88.89	15.57
C00208005005						0.197	5					0.166	4.2	0.148	3.8			71.11	12.46
C00208005006						0.248	6.3					0.208	5.3	0.185	4.7			55.56	9.73
C00208005008		0.082	2.08	0.018	0.45	0.315	8			0.043	1.1	0.265	6.7	0.236	6.0	2.21	9.81	44.44	7.78
C00208005010						0.394	10					0.327	8.3	0.287	7.3			32.92	5.77
C00208005013						0.492	12.5					0.413	10.5	0.366	9.3			27.78	4.87
C00208005016						0.630	16					0.531	13.5	0.472	12.0			22.22	3.89
C00208005020						0.787	20					0.663	16.9	0.591	15.0			17.78	3.11
C00212004004						0.157	4					0.123	3.1	0.102	2.6			44.44	7.78
C00212004005						0.197	5					0.152	3.9	0.126	3.2			34.57	6.05
C00212004006						0.248	6.3					0.193	4.9	0.161	4.1			28.28	4.95
C00212004008						0.315	8					0.246	6.2	0.205	5.2			22.22	3.89
C00212004010						0.394	10					0.304	7.7	0.252	6.4			17.28	3.03
C00212004013		0.083	2.12	0.016	0.4	0.492	12.5			0.049	1.3	0.381	9.7	0.315	8.0	1.54	6.86	13.83	2.42
C00212004016						0.630	16	0.089	2.3			0.491	12.5	0.409	10.4			11.11	1.95
C00212004020						0.787	20					0.614	15.6	0.512	13.0			8.89	1.56
C00212004025						0.984	25					0.761	19.3	0.630	16.0			6.91	1.21
C00212004032						1.260	32					0.982	24.9	0.819	20.8			5.56	0.97
C00212004040						1.575	40					1.228	31.2	1.024	26.0			4.44	0.78
C00214003003						0.126	3.2					0.087	2.2	0.063	1.6			22.40	3.92
C00214003004						0.157	4					0.108	2.8	0.079	2.0			17.92	3.14
C00214003005						0.197	5					0.134	3.4	0.098	2.5			14.00	2.45
C00214003006						0.248	6.3					0.169	4.3	0.122	3.1			11.20	1.96
C00214003008	RH	0.084	2.14	0.013	0.32	0.315	8			0.055	1.4	0.217	5.5	0.157	4.0	0.88	3.92	8.96	1.57
C00214003010						0.394	10					0.268	6.8	0.197	5.0			7.00	1.23
C00214003013						0.492	12.5					0.335	8.5	0.244	6.2			5.60	0.98
C00214003016						0.630	16					0.433	11.0	0.315	8.0			4.48	0.78
C00214003020						0.787	20					0.539	13.7	0.394	10.0			3.56	0.62
C00214003025						0.984	25					0.669	17.0	0.492	12.5			2.80	0.49
C00232005004						0.157	4					0.133	3.4	0.118	3.0			111.11	19.46
C00232005005						0.197	5					0.166	4.2	0.148	3.8			88.89	15.57
C00232005006						0.248	6.3					0.208	5.3	0.185	4.7			69.44	12.16
C00232005008						0.315	8					0.265	6.7	0.236	6.0			55.56	9.73
C00232005010		0.091	2.32	0.020	0.5	0.394	10	0.098	2.5	0.049	1.3	0.327	8.3	0.287	7.3	2.76	12.26	41.15	7.21
C00232005013						0.492	12.5					0.413	10.5	0.366	9.3			34.72	6.08
C00232005016						0.630	16					0.531	13.5	0.472	12.0			27.78	4.87
C00232005020						0.787	20					0.663	16.9	0.591	15.0			22.22	3.89
C00232005025						0.984	25					0.828	21.0	0.736	18.7			17.64	3.09
C00240003040		0.094	2.4	0.010	0.25	1.575	40			0.071	1.8	0.866	22.0	0.472	12.0	0.40	1.77	0.56	0.10

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00240003050	RH			0.010	0.25	1.969	50			0.071	1.8	1.083	27.5	0.551	14.0	0.40	1.77	0.45	0.08
C00240003063						2.480	63					1.378	35.0	0.709	18.0			0.36	0.06
C00240005013						0.492	12.5					0.381	9.7	0.315	8.0			17.78	3.11
C00240005016						0.630	16					0.491	12.5	0.409	10.4			14.29	2.50
C00240005020	LH	0.094	2.4	0.018	0.45	0.787	20			0.055	1.4	0.614	15.6	0.512	13.0	1.98	8.83	11.43	2.00
C00240005025						0.984	25					0.761	19.3	0.630	16.0			8.89	1.56
C00240005032						1.260	32					0.982	24.9	0.819	20.8			7.14	1.25
C00240005040						1.575	40					1.228	31.2	1.024	26.0			5.71	1.00
C00242004003						0.126	3.2					0.087	2.2	0.063	1.6			28.00	4.90
C00242004004						0.157	4					0.108	2.8	0.079	2.0			22.40	3.92
C00242004005						0.197	5	0.098	2.5			0.134	3.4	0.098	2.5			17.50	3.07
C00242004006						0.248	6.3					0.169	4.3	0.122	3.1			14.00	2.45
C00242004008						0.315	8					0.217	5.5	0.157	4.0			11.20	1.96
C00242004010						0.394	10					0.268	6.8	0.197	5.0			8.75	1.53
C00242004013		0.095	2.42	0.014	0.36	0.492	12.5			0.063	1.6	0.335	8.5	0.244	6.2	1.10	4.90	7.00	1.23
C00242004016						0.630	16					0.433	11.0	0.315	8.0			5.60	0.98
C00242004020						0.787	20					0.539	13.7	0.394	10.0			4.44	0.78
C00242004025						0.984	25					0.669	17.0	0.492	12.5			3.50	0.61
C00242004032						1.260	32					0.866	22.0	0.630	16.0			2.80	0.49
C00242004040						1.575	40					1.083	27.5	0.787	20.0			2.24	0.39
C00242004050						1.969	50					1.339	34.0	0.984	25.0			1.75	0.31
C00257003008						0.315	8					0.197	5.0	0.126	3.2			6.72	1.18
C00257003010						0.394	10					0.244	6.2	0.157	4.0			5.31	0.93
C00257003013						0.492	12.5					0.303	7.7	0.197	5.0			4.20	0.74
C00257003016		0.101	2.57	0.013	0.32	0.630	16	0.106	2.7	0.071	1.8	0.394	10.0	0.252	6.4	0.79	3.53	3.36	0.59
C00257003020						0.787	20					0.492	12.5	0.315	8.0			2.69	0.47
C00257003025						0.984	25					0.606	15.4	0.394	10.0			2.10	0.37
C00257003032						1.260	32					0.787	20.0	0.512	13.0			1.68	0.29
C00257003040						1.575	40					0.984	25.0	0.630	16.0			1.34	0.24
C00262005005	RH					0.197	5					0.166	4.2	0.148	3.8			113.78	19.93
C00262005006						0.248	6.3					0.208	5.3	0.185	4.7			88.89	15.57
C00262005008						0.315	8					0.265	6.7	0.236	6.0			71.11	12.46
C00262005010		0.103	2.62	0.022	0.56	0.394	10			0.055	1.4	0.327	8.3	0.287	7.3	3.53	15.69	52.67	9.23
C00262005013						0.492	12.5					0.413	10.5	0.366	9.3			44.44	7.78
C00262005016						0.630	16					0.531	13.5	0.472	12.0			35.56	6.23
C00262005020						0.787	20					0.663	16.9	0.591	15.0			28.44	4.98
C00262005025						0.984	25					0.828	21.0	0.736	18.7			22.57	3.95
C00268003004						0.157	4					0.087	2.2	0.047	1.2			6.84	1.20
C00268003016						0.630	16					0.354	9.0	0.189	4.8			1.76	0.31
C00268003020						0.787	20					0.433	11.0	0.236	6.0			1.37	0.24
C00268003025			2.68	0.011	0.28	0.984	25			0.079	2.0	0.543	13.8	0.276	7.0	0.49	2.16	1.10	0.19
C00268003032						1.260	32					0.709	18.0	0.374	9.5			0.88	0.15
C00268003040						1.575	40					0.866	22.0	0.472	12.0			0.68	0.12
C00268003050						1.969	50					1.083	27.5	0.551	14.0			0.55	0.10
C00268003063						2.480	63					1.378	35.0	0.709	18.0			0.44	0.08
C00270004005						0.197	5	0.110	2.8			0.134	3.4	0.098	2.5			22.05	3.86
C00270004006						0.248	6.3					0.169	4.3	0.122	3.1			17.64	3.09
C00270004008		0.106				0.315	8					0.217	5.5	0.157	4.0			14.11	2.47
C00270004010						0.394	10					0.268	6.8	0.197	5.0			11.03	1.93
C00270004013						0.492	12.5					0.335	8.5	0.244	6.2			8.82	1.54
C00270004016				0.016	0.4	0.630	16			0.071	1.8	0.433	11.0	0.315	8.0	1.39	6.18	7.06	1.24
C00270004020			2.7			0.787	20					0.539	13.7	0.394	10.0			5.60	0.98
C00270004025						0.984	25					0.669	17.0	0.492	12.5			4.41	0.77
C00270004032						1.260	32					0.866	22.0	0.630	16.0			3.53	0.62
C00270004040						1.575	40					1.083	27.5	0.787	20.0			2.82	0.49
C00270004050						1.969	50					1.339	34.0	0.984	25.0			2.21	0.39
C00270005005						0.197	5					0.152	3.9	0.126	3.2			54.32	9.51
C00270005006				0.020	0.5	0.248	6.3			0.063	1.6	0.193	4.9	0.161	4.1	2.43	10.79	44.44	7.78
C00270005008						0.315	8					0.246	6.2	0.205	5.2			34.92	6.12



SPEC

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00270005010						0.394	10					0.304	7.7	0.252	6.4			27.16	4.76
C00270005013						0.492	12.5					0.381	9.7	0.315	8.0			21.73	3.81
C00270005016						0.630	16					0.491	12.5	0.409	10.4			17.46	3.06
C00270005020	RH	0.106	2.7	0.020	0.5	0.787	20	0.110	2.8	0.063	1.6	0.614	15.6	0.512	13.0	2.43	10.79	13.97	2.45
C00270005025						0.984	25					0.761	19.3	0.630	16.0			10.86	1.90
C00270005032						1.260	32					0.982	24.9	0.819	20.8			8.73	1.53
C00270005040						1.575	40					1.228	31.2	1.024	26.0			6.98	1.22
C00284004008		0.112	2.84	0.014	0.36	0.315	8	0.118	3.0	0.079	2.0	0.197	5.0	0.126	3.2	0.99	4.41	8.40	1.47
C00300003004						0.157	4					0.087	2.2	0.047	1.2			8.71	1.53
C00300003005						0.197	5					0.110	2.8	0.055	1.4			7.13	1.25
C00300003006						0.248	6.3					0.138	3.5	0.071	1.8			5.60	0.98
C00300003008						0.315	8					0.173	4.4	0.094	2.4			4.36	0.76
C00300003010						0.394	10					0.217	5.5	0.118	3.0			3.48	0.61
C00300003013						0.492	12.5					0.272	6.9	0.177	4.5			2.80	0.49
C00300003016				0.013	0.32	0.630	16			0.087	2.2	0.354	9.0	0.189	4.8	0.62	2.75	2.24	0.39
C00300003020						0.787	20					0.433	11.0	0.236	6.0			1.74	0.31
C00300003025						0.984	25					0.543	13.8	0.276	7.0			1.40	0.25
C00300003032						1.260	32					0.709	18.0	0.374	9.5			1.12	0.20
C00300003040						1.575	40					0.866	22.0	0.472	12.0			0.87	0.15
C00300003050						1.969	50					1.083	27.5	0.551	14.0			0.70	0.12
C00300003063						2.480	63					1.378	35.0	0.709	18.0			0.56	0.10
C00300005016						0.630	16					0.491	12.5	0.409	10.4			22.22	3.89
C00300005020		0.118	3	0.022	0.56	0.787	20	0.126	3.2	0.071	1.8	0.614	15.6	0.512	13.0			17.78	3.11
C00300005025						0.984	25					0.761	19.3	0.630	16.0	3.09	13.73	13.83	2.42
C00300005032						1.260	32					0.982	24.9	0.819	20.8			11.11	1.95
C00300005040						1.575	40					1.228	31.2	1.024	26.0			8.89	1.56
C00300006005						0.197	5					0.166	4.2	0.148	3.8			142.22	24.91
C00300006006	LH					0.248	6.3					0.208	5.3	0.185	4.7			111.11	19.46
C00300006008						0.315	8					0.265	6.7	0.236	6.0			88.89	15.57
C00300006010						0.394	10					0.327	8.3	0.287	7.3			65.84	11.53
C00300006013						0.492	12.5					0.413	10.5	0.366	9.3			55.56	9.73
C00300006016				0.025	0.63	0.630	16			0.063	1.6	0.531	13.5	0.472	12.0	4.41	19.61	44.44	7.78
C00300006020						0.787	20					0.663	16.9	0.591	15.0			35.56	6.23
C00300006025						0.984	25					0.828	21.0	0.736	18.7			28.22	4.94
C00300006032						1.260	32					1.061	27.0	0.945	24.0			22.22	3.89
C00300006040						1.575	40					1.327	33.7	1.181	30.0			17.78	3.11
C00300006050						1.969	50					1.658	42.1	1.476	37.5			14.22	2.49
C00300006063						2.480	63					2.083	52.9	1.850	47.0			11.11	1.95
C00309003010						0.394	10					0.197	5.0	0.079	2.0			1.40	0.25
C00309003013						0.492	12.5					0.244	6.2	0.098	2.5			1.11	0.19
C00309003016						0.630	16					0.315	8.0	0.126	3.2			0.88	0.15
C00309003020		0.122	3.09	0.010	0.25	0.787	20	0.130	3.3	0.098	2.5	0.394	10.0	0.157	4.0	0.28	1.23	0.70	0.12
C00309003025						0.984	25					0.492	12.5	0.197	5.0			0.56	0.10
C00309003032						1.260	32					0.630	16.0	0.252	6.4			0.44	0.08
C00309003040						1.575	40					0.787	20.0	0.315	8.0			0.35	0.06
C00320004010						0.394	10					0.244	6.2	0.157	4.0			8.25	1.45
C00320004013						0.492	12.5					0.303	7.7	0.197	5.0			6.53	1.14
C00320004016						0.630	16					0.394	10.0	0.252	6.4			5.23	0.92
C00320004020	RH	0.126	3.2	0.016	0.4	0.787	20	0.134	3.4	0.089	2.3	0.492	12.5	0.315	8.0	1.23	5.49	4.18	0.73
C00320004025						0.984	25					0.606	15.4	0.394	10.0			3.27	0.57
C00320004032						1.260	32					0.787	20.0	0.512	13.0			2.61	0.46
C00320004040						1.575	40					0.984	25.0	0.630	16.0			2.09	0.37
C00320004050						1.969	50					1.220	31.0	0.787	20.0			1.65	0.29
C00330007005						0.197	5					0.166	4.2	0.148	3.8			177.78	31.14
C00330007006						0.248	6.3					0.208	5.3	0.185	4.7			138.89	24.33
C00330007008	LH	0.130	3.3	0.028	0.7	0.315	8	0.142	3.6	0.071	1.8	0.265	6.7	0.236	6.0	5.51	24.52	111.11	19.46
C00330007010						0.394	10					0.327	8.3	0.287	7.3			82.30	14.42
C00330007013						0.492	12.5					0.413	10.5	0.366	9.3			69.44	12.16
C00330007016						0.630	16					0.531	13.5	0.472	12.0			55.56	9.73

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00330007020						0.787	20					0.663	16.9	0.591	15.0			44.44	7.78
C00330007025						0.984	25					0.828	21.0	0.736	18.7			35.27	6.18
C00330007032		0.130	3.3	0.028	0.7	1.260	32			0.071	1.8	1.061	27.0	0.945	24.0	5.51	24.52	27.78	4.87
C00330007040						1.575	40					1.327	33.7	1.181	30.0			22.22	3.89
C00330007050						1.969	50					1.658	42.1	1.476	37.5			17.78	3.11
C00330007063						2.480	63					2.083	52.9	1.850	47.0			13.89	2.43
C00332005006						0.248	6.3					0.169	4.3	0.122	3.1			28.00	4.90
C00332005008	LH					0.315	8					0.217	5.5	0.157	4.0			22.40	3.92
C00332005010						0.394	10					0.268	6.8	0.197	5.0			17.50	3.07
C00332005013						0.492	12.5					0.335	8.5	0.244	6.2			14.00	2.45
C00332005016		0.131	3.32	0.020	0.5	0.630	16			0.089	2.3	0.433	11.0	0.315	8.0	2.21	9.81	11.20	1.96
C00332005020						0.787	20					0.539	13.7	0.394	10.0			8.89	1.56
C00332005025						0.984	25					0.669	17.0	0.492	12.5			7.00	1.23
C00332005032						1.260	32					0.866	22.0	0.630	16.0			5.60	0.98
C00332005040						1.575	40					1.083	27.5	0.787	20.0			4.48	0.78
C00332005050						1.969	50					1.339	34.0	0.984	25.0			3.50	0.61
C00336006006						0.248	6.3					0.193	4.9	0.161	4.1			72.73	12.74
C00336006008						0.315	8					0.246	6.2	0.205	5.2			57.14	10.01
C00336006010						0.394	10	0.142	3.6			0.304	7.7	0.252	6.4			44.44	7.78
C00336006013						0.492	12.5					0.381	9.7	0.315	8.0			35.56	6.23
C00336006016						0.630	16					0.491	12.5	0.409	10.4			28.57	5.00
C00336006020	RH	0.132	3.36	0.025	0.63	0.787	20			0.079	2.0	0.614	15.6	0.512	13.0	3.97	17.65	22.86	4.00
C00336006025						0.984	25					0.761	19.3	0.630	16.0			17.78	3.11
C00336006032						1.260	32					0.982	24.9	0.819	20.8			14.29	2.50
C00336006040						1.575	40					1.228	31.2	1.024	26.0			11.43	2.00
C00336006050						1.969	50					1.522	38.7	1.260	32.0			8.89	1.56
C00336006063						2.480	63					1.922	48.8	1.594	40.5			7.11	1.25
C00337004005						0.197	5					0.110	2.8	0.055	1.4			9.16	1.61
C00337004006						0.248	6.3					0.138	3.5	0.071	1.8			7.20	1.26
C00337004008						0.315	8					0.173	4.4	0.094	2.4			5.60	0.98
C00337004010						0.394	10					0.217	5.5	0.118	3.0			4.48	0.78
C00337004013						0.492	12.5					0.272	6.9	0.177	4.5			3.60	0.63
C00337004016	LH	0.133	3.37	0.014	0.36	0.630	16			0.098	2.5	0.354	9.0	0.189	4.8	0.79	3.53	2.88	0.50
C00337004020						0.787	20					0.433	11.0	0.236	6.0			2.24	0.39
C00337004025						0.984	25					0.543	13.8	0.276	7.0			1.80	0.32
C00337004032						1.260	32					0.709	18.0	0.374	9.5			1.44	0.25
C00337004040						1.575	40					0.866	22.0	0.472	12.0			1.12	0.20
C00337004050						1.969	50					1.083	27.5	0.551	14.0			0.90	0.16
C00337004063						2.480	63					1.378	35.0	0.709	18.0			0.72	0.13
C00347003010						0.394	10					0.197	5.0	0.079	2.0			1.79	0.31
C00347003013						0.492	12.5					0.244	6.2	0.098	2.5			1.42	0.25
C00347003016						0.630	16					0.315	8.0	0.126	3.2			1.12	0.20
C00347003020		0.137	3.47	0.012	0.3	0.787	20	0.146	3.7	0.110	2.8	0.394	10.0	0.157	4.0	0.35	1.57	0.90	0.16
C00347003025						0.984	25					0.492	12.5	0.197	5.0			0.72	0.13
C00347003032						1.260	32					0.630	16.0	0.252	6.4			0.56	0.10
C00347003040						1.575	40					0.787	20.0	0.315	8.0			0.45	0.08
C00347003050	RH					1.969	50					0.984	25.0	0.394	10.0			0.36	0.06
C00355005013						0.492	12.5					0.303	7.7	0.197	5.0			8.17	1.43
C00355005016						0.630	16					0.394	10.0	0.252	6.4			6.53	1.14
C00355005020						0.787	20					0.492	12.5	0.315	8.0			5.23	0.92
C00355005025		0.140	3.55	0.018	0.45	0.984	25	0.150	3.8	0.098	2.5	0.606	15.4	0.394	10.0	1.54	6.86	4.08	0.72
C00355005032						1.260	32					0.787	20.0	0.512	13.0			3.27	0.57
C00355005040						1.575	40					0.984	25.0	0.630	16.0			2.61	0.46
C00355005050						1.969	50					1.220	31.0	0.787	20.0			2.06	0.36
C00355005063						2.480	63					1.535	39.0	0.984	25.0			1.63	0.29
C00376007032						1.260	32					0.982	24.9	0.819	20.8			17.86	3.13
C00376007040	LH	0.148	3.76	0.028	0.7	1.575	40	0.157	4.0	0.089	2.3	1.228	31.2	1.024	26.0	4.96	22.07	14.29	2.50
C00376007050						1.969	50					1.522	38.7	1.260	32.0			11.11	1.95
C00376007063						2.480	63					1.922	48.8	1.594	40.5			8.89	1.56



SPEC

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HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00377005006						0.248	6.3					0.169	4.3	0.122	3.1			35.00	6.13
C00377005008						0.315	8					0.217	5.5	0.157	4.0			28.00	4.90
C00377005010						0.394	10					0.268	6.8	0.197	5.0			21.88	3.83
C00377005013						0.492	12.5					0.335	8.5	0.244	6.2			17.50	3.07
C00377005016						0.630	16					0.433	11.0	0.315	8.0			14.00	2.45
C00377005020		0.148	3.77	0.022	0.56	0.787	20			0.098	2.5	0.539	13.7	0.394	10.0	2.76	12.26	11.11	1.95
C00377005025						0.984	25					0.669	17.0	0.492	12.5			8.75	1.53
C00377005032						1.260	32					0.866	22.0	0.630	16.0			7.00	1.23
C00377005040						1.575	40					1.083	27.5	0.787	20.0			5.60	0.98
C00377005050						1.969	50					1.339	34.0	0.984	25.0			4.38	0.77
C00377005063						2.480	63					1.693	43.0	1.220	31.0			3.50	0.61
C00377005080						3.150	80					2.165	55.0	1.575	40.0			2.80	0.49
C00380004005	LH					0.197	5	0.157	4.0			0.110	2.8	0.055	1.4			11.45	2.01
C00380004006						0.248	6.3					0.138	3.5	0.071	1.8			9.00	1.58
C00380004008						0.315	8					0.173	4.4	0.094	2.4			7.00	1.23
C00380004010						0.394	10					0.217	5.5	0.118	3.0			5.60	0.98
C00380004013						0.492	12.5					0.272	6.9	0.177	4.5			4.50	0.79
C00380004016						0.630	16					0.354	9.0	0.189	4.8			3.60	0.63
C00380004020		0.150	3.8	0.016	0.4	0.787	20			0.110	2.8	0.433	11.0	0.236	6.0	0.99	4.41	2.80	0.49
C00380004025						0.984	25					0.543	13.8	0.276	7.0			2.25	0.39
C00380004032						1.260	32					0.709	18.0	0.374	9.5			1.80	0.32
C00380004040						1.575	40					0.866	22.0	0.472	12.0			1.40	0.25
C00380004050						1.969	50					1.083	27.5	0.551	14.0			1.12	0.20
C00380004063						2.480	63					1.378	35.0	0.709	18.0			0.90	0.16
C00380004080						3.150	80					1.732	44.0	0.945	24.0			0.70	0.12
C00395003010						0.394	10					0.197	5.0	0.079	2.0			2.24	0.39
C00395003013						0.492	12.5					0.244	6.2	0.098	2.5			1.78	0.31
C00395003016						0.630	16					0.315	8.0	0.126	3.2			1.40	0.25
C00395003020	RH	0.156	3.95	0.013	0.32	0.787	20	0.169	4.3	0.126	3.2	0.394	10.0	0.157	4.0	0.44	1.96	1.12	0.20
C00395003025						0.984	25					0.492	12.5	0.197	5.0			0.90	0.16
C00395003032						1.260	32					0.630	16.0	0.252	6.4			0.70	0.12
C00395003040						1.575	40					0.787	20.0	0.315	8.0			0.56	0.10
C00395003050						1.969	50					0.984	25.0	0.394	10.0			0.45	0.08
C00400005013						0.492	12.5					0.303	7.7	0.197	5.0			10.50	1.84
C00400005016						0.630	16					0.394	10.0	0.252	6.4			8.40	1.47
C00400005020						0.787	20					0.492	12.5	0.315	8.0			6.72	1.18
C00400005025	LH	0.157	4	0.020	0.5	0.984	25	0.165	4.2	0.110	2.8	0.606	15.4	0.394	10.0	1.98	8.83	5.25	0.92
C00400005032						1.260	32					0.787	20.0	0.512	13.0			4.20	0.74
C00400005040						1.575	40					0.984	25.0	0.630	16.0			3.36	0.59
C00400005050						1.969	50					1.220	31.0	0.787	20.0			2.65	0.46
C00400005063						2.480	63					1.535	39.0	0.984	25.0			2.10	0.37
C00416009006						0.248	6.3					0.208	5.3	0.185	4.7			222.22	38.92
C00416009008						0.315	8					0.265	6.7	0.236	6.0			177.78	31.14
C00416009010						0.394	10					0.327	8.3	0.287	7.3			131.69	23.07
C00416009013						0.492	12.5					0.413	10.5	0.366	9.3			111.11	19.46
C00416009016						0.630	16					0.531	13.5	0.472	12.0			88.89	15.57
C00416009020		0.164	4.16	0.035	0.9	0.787	20			0.089	2.3	0.663	16.9	0.591	15.0	8.82	39.23	71.11	12.46
C00416009025						0.984	25					0.828	21.0	0.736	18.7			56.44	9.89
C00416009032						1.260	32					1.061	27.0	0.945	24.0			44.44	7.78
C00416009040						1.575	40	0.177	4.5			1.327	33.7	1.181	30.0			35.56	6.23
C00416009050	RH					1.969	50					1.658	42.1	1.476	37.5			28.44	4.98
C00416009063						2.480	63					2.083	52.9	1.850	47.0			22.22	3.89
C00420005006						0.248	6.3					0.138	3.5	0.071	1.8			11.20	1.96
C00420005008						0.315	8					0.173	4.4	0.094	2.4			8.71	1.53
C00420005010						0.394	10					0.217	5.5	0.118	3.0			6.97	1.22
C00420005013		0.165	4.2	0.018	0.45	0.492	12.5			0.126	3.2	0.272	6.9	0.177	4.5	1.23	5.49	5.60	0.98
C00420005016						0.630	16					0.354	9.0	0.189	4.8			4.48	0.78
C00420005020						0.787	20					0.433	11.0	0.236	6.0			3.48	0.61
C00420005025						0.984	25					0.543	13.8	0.276	7.0			2.80	0.49

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HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00420005032						1.260	32					0.709	18.0	0.374	9.5			2.24	0.39
C00420005040						1.575	40					0.866	22.0	0.472	12.0			1.74	0.31
C00420005050		0.165	4.2	0.018	0.45	1.969	50			0.126	3.2	1.083	27.5	0.551	14.0	1.23	5.49	1.39	0.24
C00420005063						2.480	63					1.378	35.0	0.709	18.0			1.12	0.20
C00420005080						3.150	80					1.732	44.0	0.945	24.0			0.87	0.15
C00425008006						0.248	6.3					0.193	4.9	0.161	4.1			113.13	19.82
C00425008008						0.315	8					0.246	6.2	0.205	5.2			88.89	15.57
C00425008010	RH					0.394	10					0.304	7.7	0.252	6.4			69.14	12.11
C00425008013						0.492	12.5					0.381	9.7	0.315	8.0			55.31	9.69
C00425008016						0.630	16					0.491	12.5	0.409	10.4			44.44	7.78
C00425008020		0.167	4.25	0.031	0.8	0.787	20			0.098	2.5	0.614	15.6	0.512	13.0	6.17	27.46	35.56	6.23
C00425008025						0.984	25					0.761	19.3	0.630	16.0			27.65	4.84
C00425008032						1.260	32					0.982	24.9	0.819	20.8			22.22	3.89
C00425008040						1.575	40					1.228	31.2	1.024	26.0			17.78	3.11
C00425008050						1.969	50	0.177	4.5			1.522	38.7	1.260	32.0			13.83	2.42
C00425008063						2.480	63					1.922	48.8	1.594	40.5			11.06	1.94
C00426006006						0.248	6.3					0.169	4.3	0.122	3.1			44.80	7.85
C00426006008						0.315	8					0.217	5.5	0.157	4.0			35.84	6.28
C00426006010						0.394	10					0.268	6.8	0.197	5.0			28.00	4.90
C00426006013						0.492	12.5					0.335	8.5	0.244	6.2			22.40	3.92
C00426006016						0.630	16					0.433	11.0	0.315	8.0			17.92	3.14
C00426006020		0.168	4.26	0.025	0.63	0.787	20			0.110	2.8	0.539	13.7	0.394	10.0	3.53	15.69	14.22	2.49
C00426006025						0.984	25					0.669	17.0	0.492	12.5			11.20	1.96
C00426006032						1.260	32					0.866	22.0	0.630	16.0			8.96	1.57
C00426006040	LH					1.575	40					1.083	27.5	0.787	20.0			7.17	1.26
C00426006050						1.969	50					1.339	34.0	0.984	25.0			5.60	0.98
C00426006063						2.480	63					1.693	43.0	1.220	31.0			4.48	0.78
C00426006080						3.150	80					2.165	55.0	1.575	40.0			3.58	0.63
C00465010020						0.787	20					0.663	16.9	0.591	15.0			88.89	15.57
C00465010025						0.984	25					0.828	21.0	0.736	18.7			70.55	12.36
C00465010032		0.183	4.65	0.039	1	1.260	32			0.098	2.5	1.061	27.0	0.945	24.0	11.03	49.04	55.56	9.73
C00465010040						1.575	40					1.327	33.7	1.181	30.0			44.44	7.78
C00465010050						1.969	50					1.658	42.1	1.476	37.5			35.56	6.23
C00465010063						2.480	63					2.083	52.9	1.850	47.0			27.78	4.87
C00470007008						0.315	8					0.217	5.5	0.157	4.0			44.80	7.85
C00470007010						0.394	10					0.268	6.8	0.197	5.0			35.00	6.13
C00470007013						0.492	12.5					0.335	8.5	0.244	6.2			28.00	4.90
C00470007016						0.630	16					0.433	11.0	0.315	8.0			22.40	3.92
C00470007020						0.787	20					0.539	13.7	0.394	10.0			17.78	3.11
C00470007025	RH	0.185	4.7	0.028	0.7	0.984	25	0.197	5.0	0.126	3.2	0.669	17.0	0.492	12.5	4.41	19.61	14.00	2.45
C00470007032						1.260	32					0.866	22.0	0.630	16.0			11.20	1.96
C00470007040						1.575	40					1.083	27.5	0.787	20.0			8.96	1.57
C00470007050						1.969	50					1.339	34.0	0.984	25.0			7.00	1.23
C00470007063						2.480	63					1.693	43.0	1.220	31.0			5.60	0.98
C00470007080						3.150	80					2.165	55.0	1.575	40.0			4.48	0.78
C00470007100						3.937	100					2.677	68.0	1.969	50.0			3.50	0.61
C00480009020						0.787	20					0.614	15.6	0.512	13.0			45.71	8.01
C00480009025						0.984	25					0.761	19.3	0.630	16.0			35.56	6.23
C00480009032						1.260	32					0.982	24.9	0.819	20.8			28.57	5.00
C00480009040	LH	0.189	4.8	0.035	0.9	1.575	40			0.110	2.8	1.228	31.2	1.024	26.0	7.94	35.31	22.86	4.00
C00480009050						1.969	50					1.522	38.7	1.260	32.0			17.78	3.11
C00480009063						2.480	63					1.922	48.8	1.594	40.5			14.22	2.49
C00480009080						3.150	80					2.455	62.4	2.047	52.0			11.43	2.00
C00494004013						0.492	12.5					0.244	6.2	0.098	2.5			2.84	0.50
C00494004016						0.630	16					0.315	8.0	0.126	3.2			2.24	0.39
C00494004020	LH	0.194	4.94	0.016	0.4	0.787	20	0.205	5.2	0.157	4.0	0.394	10.0	0.157	4.0	0.71	3.14	1.79	0.31
C00494004025						0.984	25					0.492	12.5	0.197	5.0			1.43	0.25
C00494004032						1.260	32					0.630	16.0	0.252	6.4			1.12	0.20
C00494004040						1.575	40					0.787	20.0	0.315	8.0			0.90	0.16



HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
		0.194 4.94		0.016 0.4		1.969 50		0.205 5.2		0.157 4.0		0.984 25.0		0.394 10.0		0.71 3.14		0.72 0.13	
C00494004050						2.480 63						1.220 31.0		0.496 12.6				0.56 0.10	
C00494004063						0.630 16						0.394 10.0		0.252 6.4				13.07 2.29	
C00510007016						0.787 20						0.492 12.5		0.315 8.0				10.45 1.83	
C00510007020						0.984 25						0.606 15.4		0.394 10.0				8.17 1.43	
C00510007025						1.260 32						0.787 20.0		0.512 13.0				6.53 1.14	
C00510007032						1.575 40		0.213 5.4		0.142 3.6		0.984 25.0		0.630 16.0		3.09 13.73		5.23 0.92	
C00510007040		0.201 5.1		0.026 0.65		1.969 50						1.220 31.0		0.787 20.0				4.13 0.72	
C00510007050						2.480 63						1.535 39.0		0.984 25.0				3.27 0.57	
C00510007063						3.150 80						1.969 50.0		1.260 32.0				2.61 0.46	
C00510007080						3.937 100						2.441 62.0		1.575 40.0				2.06 0.36	
C00512011006	LH					0.248 6.3						0.208 5.3		0.185 4.7				350.00 61.30	
C00512011008						0.315 8						0.265 6.7		0.236 6.0				280.00 49.04	
C00512011010						0.394 10						0.327 8.3		0.287 7.3				207.41 36.33	
C00512011013						0.492 12.5						0.413 10.5		0.366 9.3				175.00 30.65	
C00512011016						0.630 16						0.531 13.5		0.472 12.0				140.00 24.52	
C00512011020		0.202 5.12		0.044 1.12		0.787 20		0.220 5.6		0.110 2.8		0.663 16.9		0.591 15.0		13.89 61.78		112.00 19.62	
C00512011025						0.984 25						0.828 21.0		0.736 18.7				88.89 15.57	
C00512011032						1.260 32						1.061 27.0		0.945 24.0				70.00 12.26	
C00512011040						1.575 40						1.327 33.7		1.181 30.0				56.00 9.81	
C00512011050						1.969 50						1.658 42.1		1.476 37.5				44.80 7.85	
C00512011063						2.480 63						2.083 52.9		1.850 47.0				35.00 6.13	
C00512011080						3.150 80						2.654 67.4		2.362 60.0				28.00 4.90	
C00640008025						0.984 25						0.606 15.4		0.394 10.0				12.83 2.25	
C00640008032						1.260 32						0.787 20.0		0.512 13.0				10.27 1.80	
C00640008040						1.575 40						0.984 25.0		0.630 16.0				8.21 1.44	
C00640008050		0.252 6.4		0.031 0.8		1.969 50		0.268 6.8		0.177 4.5		1.220 31.0		0.787 20.0		4.85 21.58		6.48 1.14	
C00640008063						2.480 63						1.535 39.0		0.984 25.0				5.13 0.90	
C00640008080						3.150 80						1.969 50.0		1.260 32.0				4.11 0.72	
C00640008100						3.937 100						2.441 62.0		1.575 40.0				3.24 0.57	
C00640008125						4.921 125						3.031 77.0		1.969 50.0				2.57 0.45	
C00660014008						0.315 8						0.265 6.7		0.236 6.0				444.44 77.85	
C00660014010	RH					0.394 10						0.327 8.3		0.287 7.3				329.22 57.66	
C00660014013						0.492 12.5						0.413 10.5		0.366 9.3				277.78 48.65	
C00660014016						0.630 16						0.531 13.5		0.472 12.0				222.22 38.92	
C00660014020						0.787 20						0.663 16.9		0.591 15.0				177.78 31.14	
C00660014025		0.260 6.6		0.055 1.4		0.984 25				0.142 3.6		0.828 21.0		0.736 18.7		22.05 98.07		141.09 24.71	
C00660014032						1.260 32						1.061 27.0		0.945 24.0				111.11 19.46	
C00660014040						1.575 40						1.327 33.7		1.181 30.0				88.89 15.57	
C00660014050						1.969 50						1.658 42.1		1.476 37.5				71.11 12.46	
C00660014063						2.480 63						2.083 52.9		1.850 47.0				55.56 9.73	
C00660014080						3.150 80						2.654 67.4		2.362 60.0				44.44 7.78	
C00670007010						0.394 10		0.276 7.0				0.217 5.5		0.118 3.0				17.42 3.05	
C00670007013						0.492 12.5						0.272 6.9		0.177 4.5				14.00 2.45	
C00670007016						0.630 16						0.354 9.0		0.189 4.8				11.20 1.96	
C00670007020						0.787 20						0.433 11.0		0.236 6.0				8.71 1.53	
C00670007025						0.984 25						0.543 13.8		0.276 7.0				7.00 1.23	
C00670007032						1.260 32						0.709 18.0		0.374 9.5				5.60 0.98	
C00670007040	LH	0.264 6.7		0.028 0.7		1.575 40				0.197 5.0		0.866 22.0		0.472 12.0		3.09 13.73		4.36 0.76	
C00670007050						1.969 50						1.083 27.5		0.551 14.0				3.48 0.61	
C00670007063						2.480 63						1.378 35.0		0.709 18.0				2.80 0.49	
C00670007080						3.150 80						1.732 44.0		0.945 24.0				2.18 0.38	
C00670007100						3.937 100						2.165 55.0		1.181 30.0				1.74 0.31	
C00670007125						4.921 125						2.717 69.0		1.378 35.0				1.40 0.25	
C00670007160						6.299 160						3.543 90.0		1.890 48.0				1.12 0.20	
C00800010025						0.984 25						0.606 15.4		0.394 10.0				21.00 3.68	
C00800010032	RH	0.315 8		0.039 1		1.260 32		0.331 8.4		0.220 5.6		0.787 20.0		0.512 13.0		7.94 35.31		16.80 2.94	
C00800010040						1.575 40						0.984 25.0		0.630 16.0				13.44 2.35	
C00800010050						1.969 50						1.220 31.0		0.787 20.0				10.61 1.86	

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HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C00800010063						2.480	63					1.535	39.0	0.984	25.0			8.40	1.47
C00800010080	RH	0.315	8	0.039	1	3.150	80	0.331	8.4	0.220	5.6	1.969	50.0	1.260	32.0	7.94	35.31	6.72	1.18
C00800010100						3.937	100					2.441	62.0	1.575	40.0			5.31	0.93
C00800010125						4.921	125					3.031	77.0	1.969	50.0			4.20	0.74
C00850016016						0.630	16					0.491	12.5	0.409	10.4			177.78	31.14
C00850016020						0.787	20					0.614	15.6	0.512	13.0			142.22	24.91
C00850016025						0.984	25					0.761	19.3	0.630	16.0			110.62	19.38
C00850016032						1.260	32					0.982	24.9	0.819	20.8			88.89	15.57
C00850016040	LH	0.335	8.5	0.063	1.6	1.575	40			0.197	5.0	1.228	31.2	1.024	26.0	24.70	109.84	71.11	12.46
C00850016050						1.969	50					1.522	38.7	1.260	32.0			55.31	9.69
C00850016063						2.480	63					1.922	48.8	1.594	40.5			44.25	7.75
C00850016080						3.150	80					2.455	62.4	2.047	52.0			35.56	6.23
C00850016100						3.937	100					3.044	77.3	2.520	64.0			27.65	4.84
C00850016125						4.921	125					3.805	96.7	3.150	80.0			22.12	3.88
C00860009010						0.394	10					0.217	5.5	0.118	3.0			27.38	4.80
C00860009013						0.492	12.5	0.354	9.0			0.272	6.9	0.177	4.5			22.00	3.85
C00860009016						0.630	16					0.354	9.0	0.189	4.8			17.60	3.08
C00860009020						0.787	20					0.433	11.0	0.236	6.0			13.69	2.40
C00860009025						0.984	25					0.543	13.8	0.276	7.0			11.00	1.93
C00860009032						1.260	32					0.709	18.0	0.374	9.5			8.80	1.54
C00860009040						1.575	40					0.866	22.0	0.472	12.0			6.84	1.20
C00860009050		0.339	8.6	0.035	0.9	1.969	50			0.248	6.3	1.083	27.5	0.551	14.0	4.85	21.58	5.48	0.96
C00860009063						2.480	63					1.378	35.0	0.709	18.0			4.40	0.77
C00860009080						3.150	80					1.732	44.0	0.945	24.0			3.42	0.60
C00860009100	RH					3.937	100					2.165	55.0	1.181	30.0			2.74	0.48
C00860009125						4.921	125					2.717	69.0	1.378	35.0			2.20	0.39
C00860009160						6.299	160					3.543	90.0	1.890	48.0			1.76	0.31
C00860009200						7.874	200					4.331	110.0	2.362	60.0			1.37	0.24
C00860009250						9.843	250					5.433	138.0	2.756	70.0			1.10	0.19
C00865007025						0.984	25					0.492	12.5	0.197	5.0			4.48	0.78
C00865007032						1.260	32					0.630	16.0	0.252	6.4			3.50	0.61
C00865007040						1.575	40					0.787	20.0	0.315	8.0			2.80	0.49
C00865007050		0.341	8.65	0.028	0.7	1.969	50	0.358	9.1	0.276	7.0	0.984	25.0	0.394	10.0	2.21	9.81	2.24	0.39
C00865007063						2.480	63					1.220	31.0	0.496	12.6			1.75	0.31
C00865007080						3.150	80					1.575	40.0	0.630	16.0			1.40	0.25
C00865007100						3.937	100					1.969	50.0	0.787	20.0			1.12	0.20
C00865007125						4.921	125					2.441	62.0	0.984	25.0			0.89	0.16
C00990008025						0.984	25					0.492	12.5	0.197	5.0			5.60	0.98
C00990008032						1.260	32					0.630	16.0	0.252	6.4			4.38	0.77
C00990008040						1.575	40					0.787	20.0	0.315	8.0			3.50	0.61
C00990008050		0.390	9.9	0.031	0.8	1.969	50			0.315	8.0	0.984	25.0	0.394	10.0	2.76	12.26	2.80	0.49
C00990008063						2.480	63					1.220	31.0	0.496	12.6			2.19	0.38
C00990008080						3.150	80					1.575	40.0	0.630	16.0			1.75	0.31
C00990008100						3.937	100					1.969	50.0	0.787	20.0			1.40	0.25
C00990008125						4.921	125					2.441	62.0	0.984	25.0			1.11	0.19
C01000013032						1.260	32	0.413	10.5			0.787	20.0	0.512	13.0			26.13	4.58
C01000013040						1.575	40					0.984	25.0	0.630	16.0			20.91	3.66
C01000013050						1.969	50					1.220	31.0	0.787	20.0			16.51	2.89
C01000013063	LH	0.394	10	0.049	1.25	2.480	63			0.276	7.0	1.535	39.0	0.984	25.0			13.07	2.29
C01000013080						3.150	80					1.969	50.0	1.260	32.0			10.45	1.83
C01000013100						3.937	100					2.441	62.0	1.575	40.0			8.25	1.45
C01000013125						4.921	125					3.031	77.0	1.969	50.0	12.35	54.92	6.53	1.14
C01000013160						6.299	160					3.937	100.0	2.520	64.0			5.23	0.92
C01340014016						0.630	16					0.354	9.0	0.189	4.8			44.80	7.85
C01340014020						0.787	20					0.433	11.0	0.236	6.0			34.84	6.10
C01340014025		0.528	13.4	0.055	1.4	0.984	25	0.551	14.0	0.394	10.0	0.543	13.8	0.276	7.0			28.00	4.90
C01340014032						1.260	32					0.709	18.0	0.374	9.5			22.40	3.92
C01340014040						1.575	40					0.866	22.0	0.472	12.0			17.42	3.05
C01340014050						1.969	50					1.083	27.5	0.551	14.0			13.94	2.44



SPEC

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

HIGH PERFORMANCE COMPRESSION SPRINGS

Catalog Number	Coil Dir.	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Fits in Hole Size (H)		Fits over Shaft (R)		Load Length (L ₁)		Solid Height (Sh) Approx.		Load (P) at L ₁ ±10%		Spring Rate (R) Reference Only	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	lb/in	N/mm
C01340014063						2.480	63					1.378	35.0	0.709	18.0			11.20	1.96
C01340014080						3.150	80					1.732	44.0	0.945	24.0			8.71	1.53
C01340014100						3.937	100					2.165	55.0	1.181	30.0			6.97	1.22
C01340014125	LH	0.528	13.4	0.055	1.4	4.921	125	0.551	14.0	0.394	10.0	2.717	69.0	1.378	35.0	12.35	54.92	5.60	0.98
C01340014160						6.299	160					3.543	90.0	1.890	48.0			4.48	0.78
C01340014200						7.874	200					4.331	110.0	2.362	60.0			3.48	0.61
C01340014250						9.843	250					5.433	138.0	2.756	70.0			2.80	0.49
C01380011040						1.575	40					0.787	20.0	0.315	8.0			7.00	1.23
C01380011050						1.969	50					0.984	25.0	0.394	10.0			5.60	0.98
C01380011063						2.480	63					1.220	31.0	0.496	12.6			4.38	0.77
C01380011080	RH	0.543	13.8	0.043	1.1	3.150	80	0.575	14.6	0.441	11.2	1.575	40.0	0.630	16.0	5.51	24.52	3.50	0.61
C01380011100						3.937	100					1.969	50.0	0.787	20.0			2.80	0.49
C01380011125						4.921	125					2.441	62.0	0.984	25.0			2.22	0.39
C01380011160						6.299	160					3.150	80.0	1.260	32.0			1.75	0.31
C01380011200						7.874	200					3.937	100.0	1.575	40.0			1.40	0.25

ADDITIONAL DIMENSIONS ARE AVAILABLE BY CALLING 1-800-872-7732.



HEAVY DUTY COMPRESSION SPRINGS

Stock sizes in chrome alloy steel

The use of high quality chrome alloy steel combines maximum load with long life.

Designed to work in a pocket or over a shaft, our SPEC heavy duty springs are ideally suited for applications where high loads are needed, and limited space is available.

Material

Chrome Silicon per SV 9254 - rectangular wire with rounded corners.

Direction of Helix

Right hand.

Ends

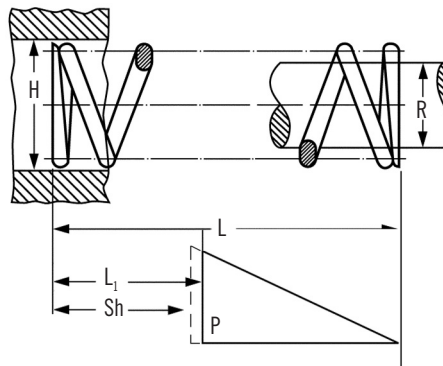
Squared and ground.

Finish

Standard finish is that of the normal wire. Due to residual stresses induced during the manufacturing process. Electroplating is not recommended. Other finishes available on request. See page 312 for alternative finishes.

Tolerances

Free length is for reference only. O.D. and I.D. are designed to fit in hole or over rod as specified in the table below. Outside diameters are dimensioned to allow a minimum of .020" (.51mm) clearance in the specified hole diameter when the spring is in the free state.



L= Free Length
 L₁= Load Length
 P= Load at L₁
 H= Hole Diameter
 R= Rod Diameter
 Sh= Solid Height (Approx.)

STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV0375-1000-039							1.00	25.40	15.0	66.72	0.750	19.050	0.50	12.70	60	10.5
CV0375-1250-039							1.25	31.75	15.6	69.39	0.938	23.830	0.63	15.88	50	8.8
CV0375-1500-039							1.50	38.10	15.8	70.28	1.125	28.580	0.75	19.05	42	7.4
CV0375-1750-039					0.039 X 0.070	0.991 X 1.778	1.75	44.45	16.2	72.06	1.313	33.350	0.88	22.23	37	6.5
CV0375-2000-039							2.00	50.80	15.5	68.94	1.500	38.100	1.00	25.40	31	5.4
CV0375-2500-039							2.50	63.50	16.3	72.50	1.875	47.630	1.25	31.75	26	4.6
CV0375-3000-039							3.00	76.20	15.8	70.28	2.250	57.150	1.50	38.10	21	3.7
CV0375-12000-039							12.00	304.80	18.0	80.06	9.000	228.600	6.00	152.40	6	1.1
CV0375-1000-046							1.00	25.40	21.0	93.41	0.750	19.050	0.63	16.00	84	14.7
CV0375-1250-046							1.25	31.75	22.8	101.41	0.938	23.830	0.79	20.00	73	12.8
CV0375-1500-046							1.50	38.10	25.1	111.64	1.125	28.580	0.95	24.00	67	11.7
CV0375-1750-046					0.046 X 0.073	1.168 X 1.854	1.75	44.45	25.3	112.53	1.313	33.350	1.10	28.00	58	10.2
CV0375-2000-046							2.00	50.80	25.0	111.20	1.500	38.100	1.26	32.00	50	8.8
CV0375-2500-046							2.50	63.50	23.1	102.75	1.875	47.630	1.58	40.01	37	6.5
CV0375-3000-046	0.375	9.530	0.187	4.75			3.00	76.20	22.5	100.08	2.250	57.150	1.89	48.01	30	5.3
CV0375-12000-046							12.00	304.80	24.0	106.75	9.000	228.600	7.56	192.02	8	1.4
CV0375-1000-054							1.00	25.40	17.4	77.40	0.850	21.590	0.70	17.78	116	20.3
CV0375-1250-054							1.25	31.75	18.3	81.40	1.063	27.000	0.88	22.23	98	17.2
CV0375-1500-054							1.50	38.10	18.0	80.06	1.275	32.380	1.05	26.67	80	14
CV0375-1750-054					0.054 X 0.072	1.372 X 1.829	1.75	44.45	19.7	87.63	1.488	37.790	1.23	31.12	75	13.1
CV0375-2000-054							2.00	50.80	18.6	82.73	1.700	43.180	1.40	35.56	62	10.9
CV0375-2500-054							2.50	63.50	18.8	83.62	2.125	53.970	1.75	44.45	50	8.8
CV0375-3000-054							3.00	76.20	18.5	82.29	2.550	64.770	2.10	53.34	41	7.2
CV0375-12000-054							12.00	304.80	19.8	88.07	10.200	259.080	8.40	213.36	11	1.9
CV0375-1000-059							1.00	25.40	31.5	140.11	0.850	21.590	0.75	19.05	210	36.8
CV0375-1250-059							1.25	31.75	27.3	121.43	1.063	27.000	0.94	23.81	146	25.6
CV0375-1500-059							1.50	38.10	28.1	124.99	1.275	32.380	1.13	28.58	125	21.9
CV0375-1750-059					0.059 X 0.080	1.499 X 2.032	1.75	44.45	27.5	122.32	1.488	37.790	1.31	33.34	105	18.4
CV0375-2000-059							2.00	50.80	27.0	120.10	1.700	43.180	1.50	38.10	90	15.8
CV0375-2500-059							2.50	63.50	28.1	124.99	2.125	53.970	1.88	47.63	75	13.1
CV0375-3000-059							3.00	76.20	28.4	126.32	2.550	64.770	2.25	57.15	63	11
CV0375-12000-059							12.00	304.80	27.0	120.10	10.200	259.080	9.00	228.60	15	2.6
CV0500-1000-052							1.00	25.40	27.5	122.32	0.750	19.050	0.50	12.70	110	19.3
CV0500-1250-052	0.500	12.700	0.281	7.14	0.052 X 0.093	1.321 X 2.362	1.25	31.75	25.6	113.87	0.938	23.830	0.63	15.88	82	14.4
CV0500-1500-052							1.50	38.10	25.5	113.42	1.125	28.580	0.75	19.05	68	11.9
CV0500-1750-052							1.75	44.45	26.2	116.54	1.313	33.350	0.88	22.23	60	10.5

STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV0500-2000-052							2.00	50.80	27.5	122.32	1.500	38.100	1.00	25.40	55	9.6
CV0500-2500-052							2.50	63.50	28.1	124.99	1.875	47.630	1.25	31.75	45	7.9
CV0500-3000-052							3.00	76.20	26.3	116.98	2.250	57.150	1.50	38.10	35	6.1
CV0500-3500-052					0.052 X 0.093	1.321 X 2.362	3.50	88.90	26.3	116.98	2.625	66.680	1.75	44.45	30	5.3
CV0500-4500-052							4.50	114.30	25.9	115.20	3.375	85.720	2.25	57.15	23	4
CV0500-5500-052							5.50	139.70	27.5	122.32	4.125	104.780	2.75	69.85	20	3.5
CV0500-6500-052							6.50	165.10	22.8	101.41	4.875	123.820	3.25	82.55	14	2.5
CV0500-7500-052							7.50	190.50	22.5	100.08	5.625	142.880	3.75	95.25	12	2.1
CV0500-12000-052							12.00	304.80	21.0	93.41	9.000	228.600	6.00	152.40	7	1.2
CV0500-1000-061							1.00	25.40	38.8	172.58	0.750	19.050	0.63	16.00	155	27.1
CV0500-1250-061							1.25	31.75	38.1	169.47	0.938	23.830	0.79	20.00	122	21.4
CV0500-1500-061							1.50	38.10	36.8	163.69	1.125	28.580	0.95	24.00	98	17.2
CV0500-1750-061							1.75	44.45	37.1	165.02	1.313	33.350	1.10	28.00	85	14.9
CV0500-2000-061					0.061 X 0.094	1.549 X 2.388	2.00	50.80	37.5	166.80	1.500	38.100	1.26	32.00	75	13.1
CV0500-2500-061							2.50	63.50	37.5	166.80	1.875	47.630	1.58	40.01	60	10.5
CV0500-3000-061							3.00	76.20	38.3	170.36	2.250	57.150	1.89	48.01	51	8.9
CV0500-3500-061							3.50	88.90	35.0	155.68	2.625	66.680	2.21	56.01	40	7
CV0500-12000-061	0.500	12.700	0.281	7.14			12.00	304.80	33.0	146.78	9.000	228.600	7.56	192.02	11	1.9
CV0500-1000-072							1.00	25.40	33.8	150.34	0.850	21.590	0.70	17.78	225	39.4
CV0500-1250-072							1.25	31.75	34.2	152.12	1.062	26.980	0.88	22.23	182	31.9
CV0500-1500-072							1.50	38.10	33.3	148.12	1.275	32.380	1.05	26.67	148	25.9
CV0500-1750-072							1.75	44.45	33.1	147.23	1.487	37.770	1.23	31.12	126	22.1
CV0500-2000-072					0.072 X 0.095	1.829 X 2.413	2.00	50.80	33.0	146.78	1.700	43.180	1.40	35.56	110	19.3
CV0500-2500-072							2.50	63.50	32.3	143.67	2.125	53.970	1.75	44.45	86	15.1
CV0500-3000-072							3.00	76.20	33.3	148.12	2.550	64.770	2.10	53.34	74	13
CV0500-3500-072							3.50	88.90	31.5	140.11	2.975	75.570	2.45	62.23	60	10.5
CV0500-12000-072							12.00	304.80	30.6	136.11	10.200	259.080	8.40	213.36	17	3
CV0500-1000-084							1.00	25.40	46.5	206.83	0.850	21.590	0.75	19.05	310	54.3
CV0500-1250-084							1.25	31.75	45.1	200.60	1.062	26.980	0.94	23.81	240	42
CV0500-1500-084							1.50	38.10	43.2	192.15	1.275	32.380	1.13	28.58	192	33.6
CV0500-1750-084							1.75	44.45	44.7	198.83	1.487	37.770	1.31	33.34	170	29.8
CV0500-2000-084					0.084 X 0.097	2.134 X 2.464	2.00	50.80	42.0	186.82	1.700	43.180	1.50	38.10	140	24.5
CV0500-2500-084							2.50	63.50	43.1	191.71	2.125	53.970	1.88	47.63	115	20.1
CV0500-3000-084							3.00	76.20	42.3	188.15	2.550	64.770	2.25	57.15	94	16.5
CV0500-3500-084							3.50	88.90	42.0	186.82	2.975	75.570	2.63	66.68	80	14
CV0500-12000-084							12.00	304.80	43.2	192.15	10.200	259.080	9.00	228.60	24	4.2
CV0625-1000-069							1.00	25.40	41.0	182.37	0.750	19.050	0.53	13.46	164	28.7
CV0625-1250-069							1.25	31.75	38.8	172.58	0.937	23.800	0.68	17.27	124	21.7
CV0625-1500-069							1.50	38.10	40.5	180.14	1.125	28.580	0.75	19.05	108	18.9
CV0625-1750-069							1.75	44.45	42.0	186.82	1.312	33.330	0.88	22.23	96	16.8
CV0625-2000-069					0.069 X 0.109	1.753 X 2.769	2.00	50.80	43.0	191.26	1.500	38.100	1.00	25.40	86	15.1
CV0625-2500-069							2.50	63.50	40.6	180.59	1.875	47.630	1.25	31.75	65	11.4
CV0625-3000-069							3.00	76.20	43.5	193.49	2.250	57.150	1.50	38.10	58	10.2
CV0625-3500-069							3.50	88.90	43.8	194.82	2.625	66.680	1.75	44.45	50	8.8
CV0625-4000-069							4.00	101.60	44.0	195.71	3.000	76.200	2.00	50.80	44	7.7
CV0625-12000-069							12.00	304.80	45.0	200.16	9.000	228.600	6.00	152.40	15	2.6
CV0625-1000-081							1.00	25.40	75.0	333.60	0.750	19.050	0.63	16.00	300	52.5
CV0625-1250-081							1.25	31.75	67.3	299.35	0.937	23.800	0.79	20.00	215	37.6
CV0625-1500-081							1.50	38.10	71.3	317.14	1.125	28.580	0.95	24.00	190	33.3
CV0625-1750-081	0.625	15.875	0.343	8.72	0.081 X 0.123	2.057 X 3.124	1.75	44.45	73.6	327.37	1.312	33.330	1.10	28.00	168	29.4
CV0625-2000-081							2.00	50.80	77.5	344.72	1.500	38.100	1.26	32.00	155	27.1
CV0625-2500-081							2.50	63.50	71.9	319.81	1.875	47.630	1.58	40.01	115	20.1
CV0625-3000-081							3.00	76.20	75.0	333.60	2.250	57.150	1.89	48.01	100	17.5
CV0625-3500-081							3.50	88.90	74.4	330.93	2.625	66.680	2.21	56.01	85	14.9
CV0625-4000-081							4.00	101.60	76.0	338.05	3.000	76.200	2.52	64.01	76	13.3
CV0625-12000-081							12.00	304.80	78.0	346.94	9.000	228.600	7.56	192.02	26	4.6
CV0625-1000-093							1.00	25.40	63.6	282.89	0.850	21.590	0.70	17.78	424	74.2
CV0625-1250-093							1.25	31.75	61.1	271.77	1.062	26.980	0.88	22.23	325	56.9
CV0625-1500-093							1.50	38.10	63.0	280.22	1.275	32.380	1.05	26.67	280	49
CV0625-1750-093					0.093 X 0.125	2.362 X 3.175	1.75	44.45	63.1	280.67	1.487	37.770	1.23	31.12	240	42
CV0625-2000-093							2.00	50.80	62.4	277.56	1.700	43.180	1.40	35.56	208	36.4
CV0625-2500-093							2.50	63.50	63.8	283.78	2.125	53.970	1.75	44.45	170	29.8
CV0625-3000-093							3.00	76.20	63.0	280.22	2.550	64.770	2.10	53.34	140	24.5
CV0625-3500-093							3.50	88.90	64.1	285.12	2.975	75.570	2.45	62.23	122	21.4



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV0625-4000-093					0.093 X 0.125	2.362 X 3.175	4.00	101.60	64.8	288.23	3.400	86.360	2.80	71.12	108	18.9
CV0625-12000-093							12.00	304.80	54.0	240.19	10.200	259.080	8.40	213.36	30	5.3
CV0625-1000-110							1.00	25.40	94.5	420.34	0.850	21.590	0.75	19.05	630	110.3
CV0625-1250-110							1.25	31.75	82.3	366.07	1.062	26.980	0.94	23.81	438	76.7
CV0625-1500-110							1.50	38.10	83.3	370.52	1.275	32.380	1.13	28.58	370	64.8
CV0625-1750-110	0.625	15.875	0.343	8.72	0.110 X 0.126	2.794 X 3.2	1.75	44.45	81.5	362.51	1.487	37.770	1.31	33.34	310	54.3
CV0625-2000-110							2.00	50.80	84.0	373.63	1.700	43.180	1.50	38.10	280	49
CV0625-2500-110							2.50	63.50	82.5	366.96	2.125	53.970	1.88	47.63	220	38.5
CV0625-3000-110							3.00	76.20	85.5	380.30	2.550	64.770	2.25	57.15	190	33.3
CV0625-3500-110							3.50	88.90	80.9	359.84	2.975	75.570	2.63	66.68	154	27
CV0625-4000-110							4.00	101.60	81.0	360.29	3.400	86.360	3.00	76.20	135	23.6
CV0625-12000-110							12.00	304.80	81.0	360.29	10.200	259.080	9.00	228.60	45	7.9
CV0750-1000-075							1.00	25.40	80.0	355.84	0.750	19.050	0.50	12.70	320	56
CV0750-1250-075							1.25	31.75	80.1	356.28	0.937	23.800	0.65	16.51	256	44.8
CV0750-1500-075							1.50	38.10	75.0	333.60	1.125	28.580	0.78	19.81	200	35
CV0750-1750-075							1.75	44.45	77.1	342.94	1.312	33.330	0.88	22.23	176	30.8
CV0750-2000-075							2.00	50.80	75.0	333.60	1.500	38.100	1.00	25.40	150	26.3
CV0750-2500-075							2.50	63.50	75.0	333.60	1.875	47.630	1.25	31.75	120	21
CV0750-3000-075							3.00	76.20	75.8	337.16	2.250	57.150	1.50	38.10	101	17.7
CV0750-3500-075					0.075 X 0.165	1.905 X 4.191	3.50	88.90	72.6	322.92	2.625	66.680	1.75	44.45	83	14.5
CV0750-4000-075							4.00	101.60	75.0	333.60	3.000	76.200	2.00	50.80	75	13.1
CV0750-4500-075							4.50	114.30	72.0	320.26	3.375	85.720	2.25	57.15	64	11.2
CV0750-5000-075							5.00	127.00	75.0	333.60	3.750	95.250	2.50	63.50	60	10.5
CV0750-5500-075							5.50	139.70	75.6	336.27	4.125	104.780	2.75	69.85	55	9.6
CV0750-6000-075							6.00	152.40	75.0	333.60	4.500	114.300	3.00	76.20	50	8.8
CV0750-6500-075							6.50	165.10	76.4	339.83	4.875	123.820	3.25	82.55	47	8.2
CV0750-7500-075							7.50	190.50	71.3	317.14	5.625	142.880	3.75	95.25	38	6.7
CV0750-12000-075							12.00	304.80	72.0	320.26	9.000	228.600	6.00	152.40	24	4.2
CV0750-1000-093							1.00	25.40	125.0	556.00	0.750	19.050	0.63	16.00	500	87.5
CV0750-1250-093							1.25	31.75	118.9	528.87	0.937	23.800	0.79	20.00	380	66.5
CV0750-1500-093							1.50	38.10	116.3	517.30	1.125	28.580	0.95	24.00	310	54.3
CV0750-1750-093							1.75	44.45	118.3	526.20	1.312	33.330	1.10	28.00	270	47.3
CV0750-2000-093							2.00	50.80	120.0	533.76	1.500	38.100	1.26	32.00	240	42
CV0750-2500-093							2.50	63.50	117.5	522.64	1.875	47.630	1.58	40.01	188	32.9
CV0750-3000-093					0.093 X 0.156	2.362 X 3.962	3.00	76.20	111.8	497.29	2.250	57.150	1.89	48.01	149	26.1
CV0750-3500-093							3.50	88.90	112.0	498.18	2.625	66.680	2.21	56.01	128	22.4
CV0750-4000-093							4.00	101.60	110.0	489.28	3.000	76.200	2.52	64.01	110	19.3
CV0750-4500-093							4.50	114.30	112.5	500.40	3.375	85.720	2.84	72.01	100	17.5
CV0750-5000-093	0.750	19.050	0.375	9.52			5.00	127.00	112.5	500.40	3.750	95.250	3.15	80.01	90	15.8
CV0750-5500-093							5.50	139.70	110.0	489.28	4.125	104.780	3.47	88.01	80	14
CV0750-6000-093							6.00	152.40	112.5	500.40	4.500	114.300	3.78	96.01	75	13.1
CV0750-12000-093							12.00	304.80	105.0	467.04	9.000	228.600	7.56	192.02	35	6.1
CV0750-1000-125							1.00	25.40	162.0	720.58	0.850	21.590	0.73	18.54	1080	189
CV0750-1250-125							1.25	31.75	165.4	735.70	1.062	26.980	0.90	22.86	880	154
CV0750-1500-125							1.50	38.10	155.3	690.77	1.275	32.380	1.05	26.67	690	120.8
CV0750-1750-125							1.75	44.45	157.8	701.89	1.487	37.770	1.23	31.12	600	105
CV0750-2000-125							2.00	50.80	154.5	687.22	1.700	43.180	1.40	35.56	515	90.1
CV0750-2500-125							2.50	63.50	150.0	667.20	2.125	53.970	1.75	44.45	400	70
CV0750-3000-125					0.125 X 0.165	3.175 X 4.191	3.00	76.20	148.5	660.53	2.550	64.770	2.10	53.34	330	57.8
CV0750-3500-125							3.50	88.90	152.3	677.43	2.975	75.570	2.45	62.23	290	50.8
CV0750-4000-125							4.00	101.60	150.0	667.20	3.400	86.360	2.80	71.12	250	43.8
CV0750-4500-125							4.50	114.30	148.5	660.53	3.825	97.150	3.15	80.01	220	38.5
CV0750-5000-125							5.00	127.00	146.3	650.74	4.250	107.950	3.50	88.90	195	34.1
CV0750-5500-125							5.50	139.70	146.9	653.41	4.675	118.750	3.85	97.79	178	31.2
CV0750-6000-125							6.00	152.40	144.0	640.51	5.100	129.540	4.20	106.68	160	28
CV0750-12000-125							12.00	304.80	144.0	640.51	10.200	259.080	8.40	213.36	80	14
CV0750-1000-135							1.00	25.40	210.0	934.08	0.850	21.590	0.75	19.05	1400	245
CV0750-1250-135							1.25	31.75	206.8	919.85	1.062	26.980	0.94	23.81	1100	192.5
CV0750-1500-135							1.50	38.10	200.3	890.93	1.275	32.380	1.13	28.58	890	155.8
CV0750-1750-135					0.135 X 0.165	3.429 X 4.191	1.75	44.45	197.3	877.59	1.487	37.770	1.31	33.34	750	131.3
CV0750-2000-135							2.00	50.80	198.0	880.70	1.700	43.180	1.50	38.10	660	115.5
CV0750-2500-135							2.50	63.50	187.5	834.00	2.125	53.970	1.88	47.63	500	87.5
CV0750-3000-135							3.00	76.20	182.3	810.87	2.550	64.770	2.25	57.15	405	70.9
CV0750-3500-135							3.50	88.90	181.1	805.53	2.975	75.570	2.63	66.68	345	60.4



STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV0750-4000-135							4.00	101.60	180.0	800.64	3.400	86.360	3.00	76.20	300	52.5
CV0750-4500-135							4.50	114.30	178.9	795.75	3.825	97.150	3.38	85.73	265	46.4
CV0750-5000-135	0.750	19.050	0.375	9.52	0.135 X 0.165	3.429 X 4.191	5.00	127.00	176.3	784.18	4.250	107.950	3.75	95.25	235	41.1
CV0750-5500-135							5.50	139.70	177.4	789.08	4.675	118.750	4.13	104.78	215	37.6
CV0750-6000-135							6.00	152.40	175.5	780.62	5.100	129.540	4.50	114.30	195	34.1
CV0750-12000-135							12.00	304.80	171.0	760.61	10.200	259.080	9.00	228.60	95	16.6
CV1000-1000-100							1.00	25.40	137.5	611.60	0.750	19.050	0.60	15.24	550	96.3
CV1000-1250-100							1.25	31.75	140.9	626.72	0.937	23.800	0.70	17.78	450	78.8
CV1000-1500-100							1.50	38.10	139.9	622.28	1.125	28.580	0.80	20.32	373	65.3
CV1000-1750-100							1.75	44.45	140.2	623.61	1.312	33.330	0.88	22.23	320	56
CV1000-2000-100							2.00	50.80	134.0	596.03	1.500	38.100	1.00	25.40	268	46.9
CV1000-2500-100							2.50	63.50	130.6	580.91	1.875	47.630	1.25	31.75	209	36.6
CV1000-3000-100							3.00	76.20	128.3	570.68	2.250	57.150	1.50	38.10	171	29.9
CV1000-3500-100					0.100 X 0.215	2.54 X 5.461	3.50	88.90	126.9	564.45	2.625	66.680	1.75	44.45	145	25.4
CV1000-4000-100							4.00	101.60	125.0	556.00	3.000	76.200	2.00	50.80	125	21.9
CV1000-4500-100							4.50	114.30	124.9	555.56	3.375	85.720	2.25	57.15	111	19.4
CV1000-5000-100							5.00	127.00	120.0	533.76	3.750	95.250	2.50	63.50	96	16.8
CV1000-5500-100							5.50	139.70	121.0	538.21	4.125	104.780	2.75	69.85	88	15.4
CV1000-6000-100							6.00	152.40	120.0	533.76	4.500	114.300	3.00	76.20	80	14
CV1000-7000-100							7.00	177.80	126.0	560.45	5.250	133.350	3.50	88.90	72	12.6
CV1000-8000-100							8.00	203.20	120.0	533.76	6.000	152.400	4.00	101.60	60	10.5
CV1000-12000-100							12.00	304.80	120.0	533.76	9.000	228.600	6.00	152.40	40	7
CV1000-1000-115							1.00	25.40	206.8	919.85	0.750	19.050	0.68	17.27	827	144.7
CV1000-1250-115							1.25	31.75	204.4	909.17	0.937	23.800	0.79	20.00	653	114.3
CV1000-1500-115							1.50	38.10	201.8	897.61	1.125	28.580	0.95	24.00	538	94.2
CV1000-1750-115							1.75	44.45	201.9	898.05	1.312	33.330	1.10	28.00	461	80.7
CV1000-2000-115							2.00	50.80	200.0	889.60	1.500	38.100	1.26	32.00	400	70
CV1000-2500-115							2.50	63.50	201.3	895.38	1.875	47.630	1.58	40.01	322	56.4
CV1000-3000-115							3.00	76.20	200.3	890.93	2.250	57.150	1.89	48.01	267	46.7
CV1000-3500-115					0.115 X 0.218	2.921 X 5.537	3.50	88.90	200.4	891.38	2.625	66.680	2.21	56.01	229	40.1
CV1000-4000-115							4.00	101.60	202.0	898.50	3.000	76.200	2.52	64.01	202	35.4
CV1000-4500-115							4.50	114.30	200.3	890.93	3.375	85.720	2.84	72.01	178	31.2
CV1000-5000-115							5.00	127.00	196.3	873.14	3.750	95.250	3.15	80.01	157	27.5
CV1000-5500-115							5.50	139.70	188.4	838.00	4.125	104.780	3.47	88.01	137	24
CV1000-6000-115	1.000	25.400	0.5	12.7			6.00	152.40	187.5	834.00	4.500	114.300	3.78	96.01	125	21.9
CV1000-7000-115							7.00	177.80	190.8	848.68	5.250	133.350	4.41	112.01	109	19.1
CV1000-8000-115							8.00	203.20	192.0	854.02	6.000	152.400	5.04	128.02	96	16.8
CV1000-12000-115							12.00	304.80	195.0	867.36	9.000	228.600	7.56	192.02	65	11.4
CV1000-1000-158							1.00	25.40	289.8	1289.03	0.850	21.590	0.73	18.54	1932	338.1
CV1000-1250-158							1.25	31.75	275.4	1224.98	1.062	26.980	0.88	22.23	1465	256.4
CV1000-1500-158							1.50	38.10	270.0	1200.96	1.275	32.380	1.05	26.67	1200	210
CV1000-1750-158							1.75	44.45	273.5	1216.53	1.487	37.770	1.23	31.12	1040	182
CV1000-2000-158							2.00	50.80	261.6	1163.60	1.700	43.180	1.40	35.56	872	152.6
CV1000-2500-158							2.50	63.50	249.4	1109.33	2.125	53.970	1.75	44.45	665	116.4
CV1000-3000-158							3.00	76.20	244.8	1088.87	2.550	64.770	2.10	53.34	544	95.2
CV1000-3500-158							3.50	88.90	239.4	1064.85	2.975	75.570	2.45	62.23	456	79.8
CV1000-4000-158					0.158 X 0.221	4.013 X 5.613	4.00	101.60	240.0	1067.52	3.400	86.360	2.80	71.12	400	70
CV1000-4500-158							4.50	114.30	237.6	1056.84	3.825	97.150	3.15	80.01	352	61.6
CV1000-5000-158							5.00	127.00	234.0	1040.83	4.250	107.950	3.50	88.90	312	54.6
CV1000-5500-158							5.50	139.70	237.6	1056.84	4.675	118.750	3.85	97.79	288	50.4
CV1000-6000-158							6.00	152.40	230.4	1024.82	5.100	129.540	4.20	106.68	256	44.8
CV1000-7000-158							7.00	177.80	235.2	1046.17	5.950	151.130	4.90	124.46	224	39.2
CV1000-8000-158							8.00	203.20	230.4	1024.82	6.800	172.720	5.60	142.24	192	33.6
CV1000-12000-158							12.00	304.80	230.4	1024.82	10.200	259.080	8.40	213.36	128	22.4
CV1000-1500-188							1.50	38.10	360.0	1601.28	1.275	32.380	1.13	28.58	1600	280
CV1000-2000-188							2.00	50.80	348.0	1547.90	1.700	43.180	1.50	38.10	1160	203
CV1000-2500-188							2.50	63.50	336.0	1494.53	2.125	53.970	1.88	47.63	896	156.8
CV1000-3000-188							3.00	76.20	331.2	1473.18	2.550	64.770	2.25	57.15	736	128.8
CV1000-3500-188							3.50	88.90	327.6	1457.16	2.975	75.570	2.63	66.68	624	109.2
CV1000-4000-188					0.188 X 0.221	4.775 X 5.613	4.00	101.60	331.2	1473.18	3.400	86.360	3.00	76.20	552	96.6
CV1000-4500-188							4.50	114.30	329.4	1465.17	3.825	97.150	3.38	85.73	488	85.4
CV1000-5000-188							5.00	127.00	324.0	1441.15	4.250	107.950	3.75	95.25	432	75.6
CV1000-6000-188							6.00	152.40	324.0	1441.15	5.100	129.540	4.50	114.30	360	63
CV1000-12000-188							12.00	304.30	316.8	1409.13	10.200	259.080	9.00	228.60	176	30.8



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SPEC

STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV1250-1500-115							1.50	38.10	186.0	827.33	1.125	28.580	0.83	21.08	496	86.8
CV1250-1750-115							1.75	44.45	177.8	790.85	1.312	33.330	0.90	22.86	406	71.1
CV1250-2000-115							2.00	50.80	188.0	836.22	1.500	38.100	1.00	25.40	376	65.8
CV1250-2500-115							2.50	63.50	180.0	800.64	1.875	47.630	1.25	31.75	288	50.4
CV1250-3000-115							3.00	76.20	180.0	800.64	2.250	57.150	1.50	38.10	240	42
CV1250-3500-115							3.50	88.90	175.0	778.40	2.625	66.680	1.75	44.45	200	35
CV1250-4000-115							4.00	101.60	176.0	782.85	3.000	76.200	2.00	50.80	176	30.8
CV1250-4500-115					0.115 X 0.285	2.921 X 7.239	4.50	114.30	180.0	800.64	3.375	85.720	2.25	57.15	160	28
CV1250-5000-115							5.00	127.00	178.8	795.30	3.750	95.250	2.50	63.50	143	25
CV1250-5500-115							5.50	138.70	176.0	782.85	4.125	104.780	2.75	69.85	128	22.4
CV1250-6000-115							6.00	152.40	180.0	800.64	4.500	114.300	3.00	76.20	120	21
CV1250-7000-115							7.00	177.80	182.0	809.54	5.250	133.350	3.50	88.90	104	18.2
CV1250-8000-115							8.00	203.20	176.0	782.85	6.000	152.400	4.00	101.60	88	15.4
CV1250-10000-115							10.00	254.00	180.0	800.64	7.500	190.500	5.00	127.00	72	12.6
CV1250-12000-115							12.00	304.80	180.0	800.64	9.000	228.600	6.00	152.40	60	10.5
CV1250-1500-156							1.50	38.10	429.0	1908.19	1.125	28.580	0.98	24.89	1144	200.2
CV1250-1750-156							1.75	44.45	441.5	1963.79	1.312	33.330	1.10	28.00	1008	176.4
CV1250-2000-156							2.00	50.80	419.0	1863.71	1.500	38.100	1.26	32.00	838	146.7
CV1250-2500-156							2.50	63.50	390.0	1734.72	1.875	47.630	1.58	40.01	624	109.2
CV1250-3000-156							3.00	76.20	384.0	1708.03	2.250	57.150	1.89	48.01	512	89.6
CV1250-3500-156							3.50	88.90	385.0	1712.48	2.625	66.680	2.21	56.01	440	77
CV1250-4000-156							4.00	101.60	381.0	1694.69	3.000	76.200	2.52	64.01	381	66.7
CV1250-4500-156					0.156 X 0.281	3.962 X 7.137	4.50	114.30	370.1	1646.20	3.375	85.720	2.84	72.01	329	57.6
CV1250-5000-156							5.00	127.00	375.0	1668.00	3.750	95.250	3.15	80.01	300	52.5
CV1250-5500-156							5.50	139.70	363.0	1614.62	4.125	104.780	3.47	88.01	264	46.2
CV1250-6000-156							6.00	152.40	375.0	1668.00	4.500	114.300	3.78	96.01	250	43.8
CV1250-7000-156	1.250	31.750	0.625	15.87			7.00	177.80	367.5	1634.64	5.250	133.350	4.41	112.01	210	36.8
CV1250-8000-156							8.00	203.20	368.0	1636.86	6.000	152.400	5.04	128.02	184	32.2
CV1250-10000-156							10.00	254.00	362.5	1612.40	7.500	190.500	6.30	160.02	145	25.4
CV1250-12000-156							12.00	304.80	372.0	1654.66	9.000	228.600	7.56	192.02	124	21.7
CV1250-1500-200							1.50	38.10	495.0	2201.76	1.275	32.380	1.05	26.67	2200	385
CV1250-1750-200							1.75	44.45	477.6	2124.36	1.487	37.770	1.23	31.12	1816	317.8
CV1250-2000-200							2.00	50.80	448.8	1996.26	1.700	43.180	1.43	36.32	1496	261.8
CV1250-2500-200							2.50	63.50	441.0	1961.57	2.125	53.970	1.75	44.45	1176	205.8
CV1250-3000-200							3.00	76.20	428.4	1905.52	2.550	64.770	2.10	53.34	952	166.6
CV1250-3500-200							3.50	88.90	409.5	1821.46	2.975	75.570	2.45	62.23	780	136.5
CV1250-4000-200					0.200 X 0.286	5.08 X 7.264	4.00	101.60	398.4	1772.08	3.400	86.360	2.80	71.12	664	116.2
CV1250-4500-200							4.50	114.30	394.2	1753.40	3.825	97.150	3.15	80.01	584	102.2
CV1250-5000-200							5.00	127.00	397.5	1768.08	4.250	107.950	3.50	88.90	530	92.8
CV1250-5500-200							5.50	139.70	389.4	1732.05	4.675	118.750	3.85	97.79	472	82.6
CV1250-6000-200							6.00	152.40	405.0	1801.44	5.100	129.540	4.20	106.68	450	78.8
CV1250-7000-200							7.00	177.80	386.4	1718.71	5.950	151.130	4.90	124.46	368	64.4
CV1250-8000-200							8.00	203.20	393.6	1750.73	6.800	172.720	5.60	142.24	328	57.4
CV1250-10000-200							10.00	254.00	384.0	1708.03	8.500	215.900	7.00	177.80	256	44.8
CV1250-12000-200							12.00	304.80	396.0	1761.41	10.200	259.080	8.40	213.36	220	38.5
CV1250-2000-225							2.00	50.80	615.0	2735.52	1.700	43.180	1.50	38.10	2050	359.0
CV1250-2500-225							2.50	63.50	571.9	2543.70	2.125	53.970	1.88	47.63	1525	267.0
CV1250-3000-225							3.00	76.20	549.0	2441.95	2.550	64.770	2.25	57.15	1220	213.6
CV1250-3500-225							3.50	88.90	569.6	2533.69	2.975	75.570	2.63	66.68	1085	190.0
CV1250-4000-225							4.00	101.60	534.0	2375.23	3.400	86.360	3.00	76.20	890	155.8
CV1250-4500-225					0.225 X 0.284	5.715 X 7.214	4.50	114.30	563.6	2507.00	3.825	97.150	3.38	85.73	835	146.2
CV1250-5000-225							5.00	127.00	525.0	2335.20	4.250	107.950	3.75	95.25	700	122.6
CV1250-6000-225							6.00	152.40	517.5	2301.84	5.100	129.540	4.50	114.30	575	100.7
CV1250-8000-225							8.00	203.20	552.0	2455.30	6.800	172.720	6.00	152.40	460	80.5
CV1250-10000-225							10.00	254.00	517.2	2301.84	8.500	215.900	7.50	190.50	345	60.4
CV1250-12000-225							12.00	304.80	486.0	2161.73	10.200	259.080	9.00	228.60	270	47.3
CV1500-2000-135							2.00	50.80	265.0	1178.72	1.500	38.100	1.08	27.43	530	92.8
CV1500-2500-135							2.50	63.50	266.9	1187.17	1.875	47.630	1.25	31.75	427	74.7
CV1500-3000-135							3.00	76.20	270.0	1200.96	2.250	57.150	1.50	38.10	360	63
CV1500-3500-135	1.500	38.100	0.75	19.05	0.135 X 0.345	3.429 X 8.763	3.50	88.90	262.5	1167.60	2.625	66.680	1.75	44.45	300	52.5
CV1500-4000-135							4.00	101.60	249.0	1107.55	3.000	76.200	2.00	50.80	249	43.6
CV1500-4500-135							4.50	114.30	258.8	1151.14	3.375	85.720	2.25	57.15	230	40.3
CV1500-5000-135							5.00	127.00	262.5	1167.60	3.750	95.250	2.50	63.50	210	36.8
CV1500-5500-135							5.50	139.70	254.4	1131.57	4.125	104.780	2.75	69.85	185	32.4



STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
CV1500-6000-135							6.00	152.40	255.0	1134.24	4.500	114.300	3.00	76.20	170	29.8
CV1500-7000-135							7.00	177.80	267.8	1191.17	5.250	133.350	3.50	88.90	153	26.8
CV1500-8000-135					0.135 X 0.345	3.429 X 8.763	8.00	203.20	264.0	1174.27	6.000	152.400	4.00	101.60	132	23.1
CV1500-10000-135							10.00	254.00	265.0	1178.72	7.500	190.500	5.00	127.00	106	18.6
CV1500-12000-135							12.00	304.80	255.0	1134.24	9.000	228.600	6.00	152.40	85	14.9
CV1500-2000-187							2.00	50.80	515.0	2290.72	1.500	38.100	1.26	32.00	1030	180.3
CV1500-2500-187							2.50	63.50	507.5	2257.36	1.875	47.630	1.58	40.01	812	142.1
CV1500-3000-187							3.00	76.20	468.0	2081.66	2.250	57.150	1.89	48.01	624	109.2
CV1500-3500-187							3.50	88.90	472.5	2101.68	2.625	66.680	2.21	56.01	540	94.5
CV1500-4000-187							4.00	101.60	465.0	2068.32	3.000	76.200	2.52	64.01	465	81.4
CV1500-4500-187							4.50	114.30	461.3	2051.86	3.375	85.720	2.84	72.01	410	71.8
CV1500-5000-187					0.187 X 0.312	4.75 X 7.925	5.00	127.00	460.0	2046.08	3.750	95.250	3.15	80.01	368	64.4
CV1500-5500-187							5.50	139.70	453.8	2018.50	4.125	104.780	3.47	88.01	330	57.8
CV1500-6000-187							6.00	152.40	442.5	1968.24	4.500	114.300	3.78	96.01	295	51.6
CV1500-7000-187							7.00	177.80	446.3	1985.14	5.250	133.350	4.41	112.01	255	44.6
CV1500-8000-187							8.00	203.20	440.0	1957.12	6.000	152.400	5.04	128.02	220	38.5
CV1500-10000-187							10.00	254.00	440.0	1957.12	7.500	190.500	6.30	160.02	176	30.8
CV1500-12000-187							12.00	304.80	432.0	1921.54	9.000	228.600	7.56	192.02	144	25.2
CV1500-2000-225							2.00	50.80	594.0	2642.11	1.700	43.180	1.40	35.56	1980	346.5
CV1500-2500-225							2.50	63.50	581.3	2585.62	2.125	53.970	1.75	44.45	1550	271.3
CV1500-3000-225	1.500	38.100	0.75	19.05			3.00	76.20	585.0	2602.08	2.550	64.770	2.10	53.34	1300	227.5
CV1500-3500-225							3.50	88.90	558.6	2484.65	2.975	75.570	2.45	62.23	1064	186.2
CV1500-4000-225							4.00	101.60	547.2	2433.95	3.400	86.360	2.80	71.12	912	159.6
CV1500-4500-225							4.50	114.30	550.8	2449.96	3.825	97.150	3.15	80.01	816	142.8
CV1500-5000-225					0.225 X 0.337	5.715 X 8.56	5.00	127.00	547.5	2435.28	4.250	107.950	3.50	88.90	730	127.8
CV1500-5500-225							5.50	139.70	552.8	2458.85	4.675	118.750	3.85	97.79	670	117.3
CV1500-6000-225							6.00	152.40	525.6	2337.87	5.100	129.540	4.20	106.68	584	102.2
CV1500-7000-225							7.00	177.80	520.8	2316.52	5.950	151.130	4.90	124.46	496	86.8
CV1500-8000-225							8.00	203.20	518.4	2305.84	6.800	172.720	5.60	142.24	432	75.6
CV1500-10000-225							10.00	254.00	543.0	2415.26	8.500	215.900	7.00	177.80	362	63.4
CV1500-12000-225							12.00	304.80	540.0	2401.92	10.200	259.080	8.40	213.36	300	52.5
CV1500-2000-300							2.00	50.80	1225.5	5451.02	1.700	43.180	1.55	39.37	4085	715.3
CV1500-2500-300							2.50	63.50	1231.9	5479.38	2.125	53.970	1.88	47.63	3285	575.2
CV1500-3000-300							3.00	76.20	1147.5	5104.08	2.550	64.770	2.25	57.15	2550	446.5
CV1500-3500-300							3.50	88.90	1120.9	4985.65	2.975	75.570	2.63	66.68	2135	373.8
CV1500-4000-300							4.00	101.60	1107.0	4923.94	3.400	86.360	3.00	76.20	1845	323.1
CV1500-4500-300					0.300 X 0.346	7.62 X 8.788	4.50	114.30	1096.9	4878.90	3.825	97.150	3.38	85.73	1625	284.5
CV1500-5000-300							5.00	127.00	1087.5	4837.20	4.250	107.950	3.75	95.25	1450	253.9
CV1500-6000-300							6.00	152.40	1084.5	4823.86	5.100	129.540	4.50	114.30	1205	211.0
CV1500-8000-300							8.00	203.20	1086.0	4830.53	6.800	172.720	6.00	152.40	905	158.5
CV1500-10000-300							10.00	254.00	1065.0	4737.12	8.500	215.900	7.50	190.50	710	124.3
CV1500-12000-300							12.00	304.80	999.0	4403.52	10.200	259.080	9.00	228.60	550	96.3
CV2000-2500-195							2.50	63.50	625.0	2780.00	1.875	47.630	1.40	35.56	1000	175
CV2000-3000-195							3.00	76.20	622.5	2768.88	2.250	57.150	1.60	40.64	830	145.3
CV2000-3500-195							3.50	88.90	592.4	2635.00	2.625	66.680	1.83	46.48	677	118.5
CV2000-4000-195							4.00	101.60	600.0	2668.80	3.000	76.200	2.05	52.07	600	105
CV2000-4500-195							4.50	114.30	596.3	2652.34	3.375	85.720	2.35	59.69	530	92.8
CV2000-5000-195					0.195 X 0.468	4.953 X 11.887	5.00	127.00	587.5	2613.20	3.750	95.250	2.55	64.77	470	82.3
CV2000-5500-195							5.50	139.70	556.9	2477.09	4.125	104.780	2.75	69.85	405	70.9
CV2000-6000-195							6.00	152.40	585.0	2602.08	4.500	114.300	3.00	76.20	390	68.3
CV2000-7000-195							7.00	177.80	546.0	2428.61	5.250	133.350	3.50	88.90	312	54.6
CV2000-8000-195							8.00	203.20	570.0	2535.36	6.000	152.400	4.00	101.60	285	49.9
CV2000-10000-195	2.000	50.800	1	25.4			10.00	254.00	540.0	2401.92	7.500	190.500	5.00	127.00	216	37.8
CV2000-12000-195							12.00	304.80	555.0	2468.64	9.000	228.600	6.00	152.40	185	32.4
CV2000-2500-225							2.50	63.50	740.0	3291.52	1.875	47.630	1.58	40.01	1184	207.2
CV2000-3000-225							3.00	76.20	697.5	3102.48	2.250	57.150	1.89	48.01	930	162.8
CV2000-3500-225							3.50	88.90	684.3	3043.77	2.625	66.680	2.21	56.01	782	136.9
CV2000-4000-225							4.00	101.60	664.0	2953.47	3.000	76.200	2.52	64.01	664	116.2
CV2000-4500-225					0.225 X 0.437	5.715 X 11.1	4.50	114.30	675.0	3002.40	3.375	85.720	2.84	72.01	600	105
CV2000-5000-225							5.00	127.00	667.5	2969.04	3.750	95.250	3.15	80.01	534	93.5
CV2000-5500-225							5.50	139.70	673.8	2997.06	4.125	104.780	3.47	88.01	490	85.8
CV2000-6000-225							6.00	152.40	675.0	3002.40	4.500	114.300	3.78	96.01	450	78.8
CV2000-7000-225							7.00	177.80	654.5	2911.22	5.250	133.350	4.41	112.01	374	65.5
CV2000-8000-225							8.00	203.20	660.0	2935.68	6.000	152.400	5.04	128.02	330	57.8

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
	CV2000-10000-225					0.225 X 0.437	5.715 X 11.1	10.00	254.00	650.0	2891.20	7.500	190.500	6.30	160.02	260
CV2000-12000-225							12.00	304.80	645.0	2868.96	9.000	228.600	7.56	192.02	215	37.6
CV2000-2500-280							2.50	63.50	942.0	4190.02	2.125	53.970	1.75	44.45	2512	439.6
CV2000-3000-280							3.00	76.20	927.0	4123.30	2.550	64.770	2.10	53.34	2060	360.5
CV2000-3500-280							3.50	88.90	892.5	3969.84	2.975	75.570	2.45	62.23	1700	297.5
CV2000-4000-280							4.00	101.60	900.0	4003.20	3.400	86.360	2.80	71.12	1500	262.5
CV2000-4500-280							4.50	114.30	858.6	3819.05	3.825	97.150	3.15	80.01	1272	222.6
CV2000-5000-280					0.280 X 0.470	7.112 X 11.938	5.00	127.00	889.5	3956.50	4.250	107.950	3.50	88.90	1186	207.6
CV2000-5500-280							5.50	139.70	888.5	3952.05	4.675	118.750	3.85	97.79	1077	188.5
CV2000-6000-280							6.00	152.40	879.3	3911.13	5.100	129.540	4.20	106.68	977	171
CV2000-7000-280							7.00	177.80	861.0	3829.73	5.950	151.130	4.90	124.46	820	143.5
CV2000-8000-280	2.000	50.800	1	25.4			8.00	203.20	876.0	3896.45	6.800	172.720	5.60	142.24	730	127.8
CV2000-10000-280							10.00	254.00	858.0	3816.38	8.500	215.900	7.00	177.80	572	100.1
CV2000-12000-280							12.00	304.80	858.6	3819.05	10.200	259.080	8.40	213.36	477	83.5
CV2000-2500-365							2.50	63.50	1541.3	6855.70	2.125	53.970	1.90	48.26	4110	719.7
CV2000-3000-365							3.00	76.20	1435.5	6385.10	2.550	64.770	2.30	58.42	3190	558.3
CV2000-3500-365							3.50	88.90	1451.1	6454.49	2.975	75.570	2.63	66.68	2764	484.0
CV2000-4000-365							4.00	101.60	1386.6	6167.60	3.400	86.360	3.03	76.96	2311	404.4
CV2000-4500-365					0.365 X 0.460	9.271 X 11.684	4.50	114.30	1274.4	5668.53	3.825	97.150	3.38	85.73	1888	330.4
CV2000-5000-365							5.00	127.00	1353.0	6018.14	4.250	107.950	3.75	95.25	1804	315.7
CV2000-6000-365							6.00	152.40	1325.7	5896.71	5.100	129.540	4.50	114.30	1473	257.8
CV2000-8000-365							8.00	203.20	1339.2	5956.76	6.800	172.720	6.00	152.40	1116	195.3
CV2000-10000-365							10.00	254.00	1326.0	5898.05	8.500	215.900	7.50	190.50	884	154.7
CV2000-12000-365							12.00	304.80	1281.6	5700.56	10.200	259.080	9.00	228.60	712	124.6

SPEC TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

HEAVY DUTY
COMPRESSION SPRINGS



STOCK HEAVY DUTY COMPRESSION SPRINGS

Catalog Number	Fits in Hole Size (H)		Fits over Shaft (R)		Wire Size		Free Length (L) (Reference)		Load @ Load Length (P) (Reference)		Load Length (L ₁)		Solid Height (Sh) (Approx.)		Spring Rate ±15%	
	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	lb/in	N/mm
	CV2000-10000-225					0.225 X 0.437	5.715 X 11.1	10.00	254.00	650.0	2891.20	7.500	190.500	6.30	160.02	260
CV2000-12000-225							12.00	304.80	645.0	2868.96	9.000	228.600	7.56	192.02	215	37.6
CV2000-2500-280							2.50	63.50	942.0	4190.02	2.125	53.970	1.75	44.45	2512	439.6
CV2000-3000-280							3.00	76.20	927.0	4123.30	2.550	64.770	2.10	53.34	2060	360.5
CV2000-3500-280							3.50	88.90	892.5	3969.84	2.975	75.570	2.45	62.23	1700	297.5
CV2000-4000-280							4.00	101.60	900.0	4003.20	3.400	86.360	2.80	71.12	1500	262.5
CV2000-4500-280							4.50	114.30	858.6	3819.05	3.825	97.150	3.15	80.01	1272	222.6
CV2000-5000-280					0.280 X 0.470	7.112 X 11.938	5.00	127.00	889.5	3956.50	4.250	107.950	3.50	88.90	1186	207.6
CV2000-5500-280							5.50	139.70	888.5	3952.05	4.675	118.750	3.85	97.79	1077	188.5
CV2000-6000-280							6.00	152.40	879.3	3911.13	5.100	129.540	4.20	106.68	977	171
CV2000-7000-280							7.00	177.80	861.0	3829.73	5.950	151.130	4.90	124.46	820	143.5
CV2000-8000-280	2.000	50.800	1	25.4			8.00	203.20	876.0	3896.45	6.800	172.720	5.60	142.24	730	127.8
CV2000-10000-280							10.00	254.00	858.0	3816.38	8.500	215.900	7.00	177.80	572	100.1
CV2000-12000-280							12.00	304.80	858.6	3819.05	10.200	259.080	8.40	213.36	477	83.5
CV2000-2500-365							2.50	63.50	1541.3	6855.70	2.125	53.970	1.90	48.26	4110	719.7
CV2000-3000-365							3.00	76.20	1435.5	6385.10	2.550	64.770	2.30	58.42	3190	558.3
CV2000-3500-365							3.50	88.90	1451.1	6454.49	2.975	75.570	2.63	66.68	2764	484.0
CV2000-4000-365							4.00	101.60	1386.6	6167.60	3.400	86.360	3.03	76.96	2311	404.4
CV2000-4500-365					0.365 X 0.460	9.271 X 11.684	4.50	114.30	1274.4	5668.53	3.825	97.150	3.38	85.73	1888	330.4
CV2000-5000-365							5.00	127.00	1353.0	6018.14	4.250	107.950	3.75	95.25	1804	315.7
CV2000-6000-365							6.00	152.40	1325.7	5896.71	5.100	129.540	4.50	114.30	1473	257.8
CV2000-8000-365							8.00	203.20	1339.2	5956.76	6.800	172.720	6.00	152.40	1116	195.3
CV2000-10000-365							10.00	254.00	1326.0	5898.05	8.500	215.900	7.50	190.50	884	154.7
CV2000-12000-365							12.00	304.80	1281.6	5700.56	10.200	259.080	9.00	228.60	712	124.6

SPEC TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

HEAVY DUTY
COMPRESSION SPRINGS

EXTENSION SPRINGS

Stock sizes in music wire and stainless steel

ASRaymond SPEC extension springs have a wide application for experimental, development, prototype and maintenance work, and have been specified, designed and manufactured to high precision standards.

All SPEC extension springs have uniform body diameter and are produced with full twist loops.

They are wound with initial tension, therefore some force is required before the coils are initially separated.

Materials

Part numbers starting with **E** in the following pages:

Music Wire: ASTM A228 or AMS 5112

Stainless Steel: Type 302 per ASTM A313 or AMS 5688 spring temper (Chemical and Physical only)

Part numbers starting with **T** in the following pages:

Music Wire: DIN 17223 or JIS G4314 SWP-A/B or AMS 5112

Stainless Steel: Type 301, 302 or 304 per DIN 17224 or JIS G4314 SUS 302/304 or AMS 5688 spring temper (chemical and physical only)

For specific T part number look up, please see page 135.

Music wire will be furnished unless stainless steel is specified. When inquiring or ordering, please use letter "M" or Letter "S" as suffix to designate music wire or stainless steel, respectively.

Music wire springs are not recommended for applications where the temperature exceeds 121 degrees C. (250 degrees F.). Stainless steel is not recommended above 260 degrees C. (500 degrees F.).

Stainless steel is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not effect the function of the part.

Wire diameter is prior to forming.

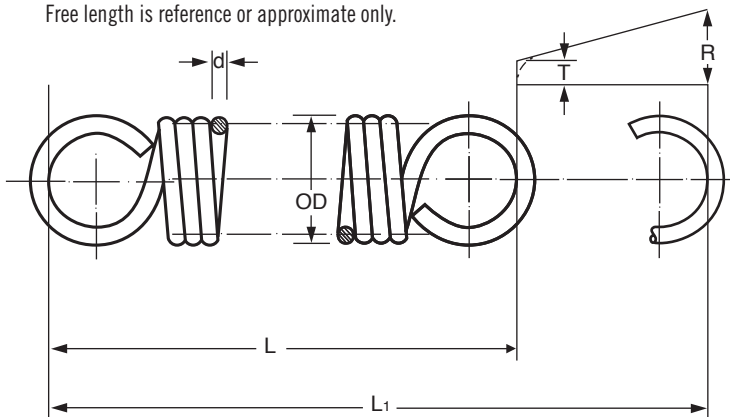
No charge for certificate of compliance when requested; certificate of chemical analysis available only for part numbers starting with **E** in the following pages (an additional charge applies).

Coil Direction (helix)

Right or left according to machine set-up at time of run. Coil count is for reference only.

Free Length

Free length is reference or approximate only.



Ends

Full twist loop. Special ends on request.



End Position

Part numbers starting with **E** in the following pages:

The majority of the parts are in-line within +/- 22 degrees. All springs have full twist loops, but physical shape may appear different. If ends are critical to your application, please contact our Engineering Department.

Part numbers starting with **T** in the following pages:

End position is in line per DIN 2097.

Tolerances

Part numbers starting with **E** in the following pages:

O.D. (English)	O.D. (Metric)
0.063 to 0.119" +/- 0.003"	1.60 to 3.02 mm +/- 0.08 mm
0.120 to 0.240" +/- 0.005"	3.05 to 6.10 mm +/- 0.13 mm
0.241 to 0.500" +/- 0.008"	6.12 to 12.70 mm +/- 0.20 mm
0.501 to 1.000" +/- 0.015"	12.73 to 25.40 mm +/- 0.38 mm
1.001 to 1.225" +/- 0.020"	25.43 to 31.12 mm +/- 0.51 mm
1.226 to 1.460" +/- 0.030"	31.14 to 37.08 mm +/- 0.76 mm
1.461 to 2.000" +/- 0.040"	37.11 to 50.80 mm +/- 1.02 mm

Part numbers starting with **T** in the following pages:

All dimensions, loads and rates listed are to DIN 2097 (Grade 2).

Loads & Spring Rate

Initial tension T is for reference only and will vary.

Load and rate values are shown for both music wire and stainless steel in their respective columns.

Load P at L₁ and spring rate R are +/- 10.0% – load at any other point is for reference only. Maximum load P is attained at extended length L₁.

Load values at lengths other than L₁, can be approximated by multiplying the proposed deflection by the rate R and adding the initial tension T. $P = (L_x - L) \times R + T$ where L_x is the new extended length. Load at L_x should be reference only. Contact our Engineering Department if more stringent requirements are needed.

Surface Finish

Music Wire: oil

Stainless steel: Only part numbers starting with **E** in the following pages are passivated. All others are plain wire.

Special finishes available upon request. See page 312 for alternative finishes.

Packaging

Parts are bulk-packed. Due to physical characteristics, tangling can occur during transit on wire sizes under .035" (.89mm). Please inquire about special packaging when ordering.

OD = Outside diameter
 d = Wire diameter
 L = Free length (reference use only inside hooks)
 L₁ = Maximum extended length
 P = Load at L₁
 R = Rate
 T = Initial Tension

SPEC Extension springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.



MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0063-007-0250-M					0.250	6.35	0.54	13.72					1.0	0.175	E0063-007-0250-S					0.83	0.15
E0063-007-0310-M					0.310	7.87	0.73	18.54					0.7	0.123	E0063-007-0310-S					0.58	0.10
E0063-007-0380-M			0.007	0.18	0.380	9.65	0.93	23.62	0.32	1.423	0.03	0.13	0.5	0.088	E0063-007-0380-S	0.27	1.18	0.02	0.11	0.42	0.07
E0063-007-0440-M					0.440	11.18	1.12	28.45					0.4	0.070	E0063-007-0440-S					0.33	0.06
E0063-007-0500-M					0.500	12.70	1.31	33.27					0.4	0.070	E0063-007-0500-S					0.33	0.06
E0063-008-0250-M					0.250	6.35	0.46	11.68					2.0	0.350	E0063-008-0250-S					1.67	0.29
E0063-008-0310-M					0.310	7.87	0.60	15.24					1.4	0.245	E0063-008-0310-S					1.17	0.20
E0063-008-0380-M					0.380	9.65	0.75	19.05					1.1	0.193	E0063-008-0380-S					0.92	0.16
E0063-008-0440-M			0.008	0.20	0.440	11.18	0.91	23.11	0.45	2.00	0.04	0.18	0.9	0.158	E0063-008-0440-S	0.38	1.67	0.03	0.15	0.75	0.13
E0063-008-0500-M					0.500	12.70	1.05	26.67					0.7	0.123	E0063-008-0500-S					0.58	0.10
E0063-008-0620-M					0.620	15.75	1.34	34.04					0.6	0.105	E0063-008-0620-S					0.50	0.09
E0063-008-0750-M					0.750	19.05	1.64	41.66					0.5	0.088	E0063-008-0750-S					0.42	0.07
E0063-009-0250-M					0.250	6.35	0.40	10.16					3.7	0.648	E0063-009-0250-S					3.08	0.54
E0063-009-0310-M	0.063	1.60			0.310	7.87	0.52	13.21					2.7	0.473	E0063-009-0310-S					2.25	0.39
E0063-009-0380-M					0.380	9.65	0.65	16.51					2.1	0.368	E0063-009-0380-S					1.75	0.31
E0063-009-0440-M			0.009	0.23	0.440	11.18	0.77	19.56	0.62	2.76	0.06	0.27	1.7	0.298	E0063-009-0440-S	0.52	2.30	0.05	0.22	1.42	0.25
E0063-009-0500-M					0.500	12.70	0.90	22.86					1.4	0.245	E0063-009-0500-S					1.17	0.20
E0063-009-0620-M					0.620	15.75	1.13	28.70					1.1	0.193	E0063-009-0620-S					0.92	0.16
E0063-009-0750-M					0.750	19.05	1.40	35.56					0.9	0.158	E0063-009-0750-S					0.75	0.13
E0063-011-0250-M					0.250	6.35	0.34	8.64					11.1	1.944	E0063-011-0250-S					9.25	1.62
E0063-011-0310-M					0.310	7.87	0.44	11.18					7.9	1.384	E0063-011-0310-S					6.58	1.15
E0063-011-0380-M					0.380	9.65	0.55	13.97					5.9	1.033	E0063-011-0380-S					4.91	0.86
E0063-011-0440-M			0.011	0.28	0.440	11.18	0.65	16.51	1.09	4.85	0.10	0.44	4.8	0.841	E0063-011-0440-S	0.91	4.04	0.08	0.37	4.00	0.70
E0063-011-0500-M					0.500	12.70	0.74	18.80					4.1	0.718	E0063-011-0500-S					3.42	0.60
E0063-011-0620-M					0.620	15.75	0.93	23.62					3.2	0.560	E0063-011-0620-S					2.67	0.47
E0063-011-0750-M					0.750	19.05	1.14	28.96					2.5	0.438	E0063-011-0750-S					2.08	0.37
E0094-010-0380-M					0.380	9.65	0.84	21.34					1.2	0.210	E0094-010-0380-S					1.00	0.18
E0094-010-0440-M					0.440	11.18	1.03	26.16					0.9	0.158	E0094-010-0440-S					0.75	0.13
E0094-010-0500-M					0.500	12.70	1.23	31.24					0.8	0.140	E0094-010-0500-S					0.67	0.12
E0094-010-0620-M			0.010	0.25	0.620	15.75	1.60	40.64	0.60	2.67	0.05	0.22	0.6	0.105	E0094-010-0620-S	0.50	2.22	0.04	0.18	0.50	0.09
E0094-010-0750-M					0.750	19.05	2.00	50.80					0.4	0.070	E0094-010-0750-S					0.33	0.06
E0094-010-0880-M					0.880	22.35	2.33	59.18					0.3	0.053	E0094-010-0880-S					0.25	0.04
E0094-010-1000-M					1.000	25.40	2.69	68.33					0.3	0.053	E0094-010-1000-S					0.25	0.04
E0094-011-0380-M					0.380	9.65	0.72	18.29					1.9	0.333	E0094-011-0380-S					1.58	0.28
E0094-011-0440-M					0.440	11.18	0.87	22.10					1.5	0.263	E0094-011-0440-S					1.25	0.22
E0094-011-0500-M					0.500	12.70	1.03	26.16					1.2	0.210	E0094-011-0500-S					1.00	0.18
E0094-011-0620-M			0.011	0.28	0.620	15.75	1.34	34.04	0.70	3.11	0.06	0.27	0.9	0.158	E0094-011-0620-S	0.58	2.59	0.05	0.22	0.75	0.13
E0094-011-0750-M					0.750	19.05	1.68	42.67					0.7	0.123	E0094-011-0750-S					0.58	0.10
E0094-011-0880-M					0.880	22.35	2.02	51.31					0.6	0.105	E0094-011-0880-S					0.50	0.09
E0094-011-1000-M					1.000	25.40	2.33	59.18					0.5	0.088	E0094-011-1000-S					0.42	0.07
E0094-012-0380-M	0.094	2.39			0.380	9.65	0.66	16.76					3.2	0.560	E0094-012-0380-S					2.67	0.47
E0094-012-0440-M					0.440	11.18	0.82	20.83					2.4	0.420	E0094-012-0440-S					2.00	0.35
E0094-012-0500-M					0.500	12.70	0.95	24.13					2.0	0.350	E0094-012-0500-S					1.67	0.29
E0094-012-0620-M			0.012	0.30	0.620	15.75	1.22	30.99	1.00	4.45	0.10	0.44	1.5	0.263	E0094-012-0620-S	0.83	3.71	0.08	0.37	1.25	0.22
E0094-012-0750-M					0.750	19.05	1.50	38.10					1.2	0.210	E0094-012-0750-S					1.00	0.18
E0094-012-0880-M					0.880	22.35	1.82	46.23					1.0	0.175	E0094-012-0880-S					0.83	0.15
E0094-012-1000-M					1.000	25.40	2.10	53.34					0.8	0.140	E0094-012-1000-S					0.67	0.12
E0094-013-0380-M					0.380	9.65	0.60	15.24					4.6	0.806	E0094-013-0380-S					3.83	0.67
E0094-013-0440-M					0.440	11.18	0.73	18.54					3.6	0.630	E0094-013-0440-S					3.00	0.53
E0094-013-0500-M					0.500	12.70	0.85	21.59					3.0	0.525	E0094-013-0500-S					2.50	0.44
E0094-013-0620-M			0.013	0.33	0.620	15.75	1.09	27.69	1.15	5.12	0.10	0.44	2.2	0.385	E0094-013-0620-S	0.96	4.26	0.08	0.37	1.83	0.32
E0094-013-0750-M					0.750	19.05	1.35	34.29					1.7	0.298	E0094-013-0750-S					1.42	0.25
E0094-013-0880-M					0.880	22.35	1.62	41.15					1.4	0.245	E0094-013-0880-S					1.17	0.20
E0094-013-1000-M					1.000	25.40	1.86	47.24					1.2	0.210	E0094-013-1000-S					1.00	0.18
E0094-014-0380-M					0.380	9.65	0.57	14.48					7.1	1.243	E0094-014-0380-S					5.91	1.04
E0094-014-0440-M					0.440	11.18	0.68	17.27					5.5	0.963	E0094-014-0440-S					4.58	0.80
E0094-014-0500-M					0.500	12.70	0.79	20.07					4.6	0.806	E0094-014-0500-S					3.83	0.67
E0094-014-0620-M			0.014	0.36	0.620	15.75	1.01	25.65	1.50	6.67	0.17	0.76	3.4	0.595	E0094-014-0620-S	1.25	5.56	0.14	0.63	2.83	0.50
E0094-014-0750-M					0.750	19.05	1.23	31.24					2.7	0.473	E0094-014-0750-S					2.25	0.39
E0094-014-0880-M					0.880	22.35	1.49	37.85					2.2	0.385	E0094-014-0880-S					1.83	0.32
E0094-014-1000-M					1.000	25.40	1.70	43.18					1.9	0.333	E0094-014-1000-S					1.58	0.28

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER





MUSIC WIRE														STAINLESS STEEL							
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0094-016-0380-M					0.380	9.65	0.52	13.21					14.2	2.490	E0094-016-0380-S					11.83	2.07
E0094-016-0440-M					0.440	11.18	0.62	15.75					11.0	1.926	E0094-016-0440-S					9.16	1.60
E0094-016-0500-M					0.500	12.70	0.71	18.03					9.2	1.611	E0094-016-0500-S					7.66	1.34
E0094-016-0620-M	0.094	2.39	0.016	0.41	0.620	15.75	0.91	23.11	2.15	9.56	0.19	0.85	6.8	1.191	E0094-016-0620-S	1.79	7.96	0.16	0.71	5.66	0.99
E0094-016-0750-M					0.750	19.05	1.12	28.45					5.3	0.928	E0094-016-0750-S					4.41	0.77
E0094-016-0880-M					0.880	22.35	1.33	33.78					4.4	0.771	E0094-016-0880-S					3.67	0.64
E0094-016-1000-M					1.000	25.40	1.52	38.61					3.7	0.648	E0094-016-1000-S					3.08	0.54
T30800					0.311	7.90	0.378	9.61					45.6	7.980	T40800					37.98	6.65
T30810	0.098	2.50	0.020	0.50	0.429	10.90	0.537	13.64	3.62	16.10	0.55	2.45	28.4	4.980	T40810	3.02	13.41	0.46	2.04	23.66	4.15
T30820					0.606	15.40	0.775	19.68					18.2	3.190	T40820					15.16	2.66
T30930					0.346	8.80	0.424	10.78					46.7	8.180	T40930					38.90	6.81
T30940	0.110	2.80	0.022	0.55	0.476	12.10	0.601	15.27	4.27	19.00	0.63	2.79	29.2	5.110	T40940	3.56	15.83	0.53	2.33	24.32	4.26
T30950					0.669	17.00	0.865	21.96					18.7	3.270	T40950					15.58	2.72
T31050					0.382	9.70	0.455	11.55					69.1	12.100	T41050					57.56	10.08
T31060	0.118	3.00	0.025	0.63	0.531	13.50	0.648	16.46	5.89	26.20	0.88	3.92	42.9	7.510	T41060	4.91	21.82	0.74	3.27	35.74	6.26
T31070					0.756	19.20	0.938	23.82					27.5	4.810	T41070					22.91	4.01
E0120-014-0620-M					0.620	15.75	1.25	31.75					1.6	0.280	E0120-014-0620-S					1.33	0.23
E0120-014-0750-M					0.750	19.05	1.58	40.13					1.2	0.210	E0120-014-0750-S					1.00	0.18
E0120-014-0880-M					0.880	22.35	1.92	48.77					1.0	0.175	E0120-014-0880-S					0.83	0.15
E0120-014-1000-M			0.014	0.36	1.000	25.40	2.23	56.64	1.12	4.98	0.10	0.44	0.8	0.140	E0120-014-1000-S	0.93	4.15	0.08	0.37	0.67	0.12
E0120-014-1120-M					1.120	28.45	2.53	64.26					0.7	0.123	E0120-014-1120-S					0.58	0.10
E0120-014-1250-M					1.250	31.75	2.87	72.90					0.6	0.105	E0120-014-1250-S					0.50	0.09
E0120-014-1370-M					1.370	34.80	3.17	80.52					0.6	0.105	E0120-014-1370-S					0.50	0.09
E0120-014-1500-M					1.500	38.10	3.51	89.15					0.5	0.088	E0120-014-1500-S					0.42	0.07
E0120-016-0380-M					0.380	9.65	0.57	14.48					7.9	1.384	E0120-016-0380-S					6.58	1.15
E0120-016-0500-M					0.500	12.70	0.82	20.83					4.6	0.806	E0120-016-0500-S					3.83	0.67
E0120-016-0620-M					0.620	15.75	1.07	27.18					3.3	0.578	E0120-016-0620-S					2.75	0.48
E0120-016-0750-M					0.750	19.05	1.34	34.04					2.5	0.438	E0120-016-0750-S					2.08	0.37
E0120-016-0880-M					0.880	22.35	1.62	41.15					2.0	0.350	E0120-016-0880-S					1.67	0.29
E0120-016-1000-M			0.016	0.41	1.000	25.40	1.81	45.97	1.60	7.12	0.20	0.89	1.7	0.298	E0120-016-1000-S	1.33	5.93	0.17	0.74	1.42	0.25
E0120-016-1120-M					1.120	28.45	2.07	52.58					1.4	0.245	E0120-016-1120-S					1.17	0.20
E0120-016-1250-M					1.250	31.75	2.31	58.67					1.3	0.228	E0120-016-1250-S					1.08	0.19
E0120-016-1370-M					1.370	34.80	2.57	65.28					1.1	0.193	E0120-016-1370-S					0.92	0.16
E0120-016-1500-M					1.500	38.10	2.82	71.63					1.0	0.175	E0120-016-1500-S					0.83	0.15
E0120-016-1750-M					1.750	44.45	3.45	87.63					0.9	0.158	E0120-016-1750-S					0.75	0.13
E0120-016-2000-M	0.120	3.05			2.000	50.80	3.97	100.84					0.7	0.123	E0120-016-2000-S					0.58	0.10
E0120-018-0380-M					0.380	9.65	0.52	13.21					14.4	2.520	E0120-018-0380-S					12.00	2.10
E0120-018-0500-M					0.500	12.70	0.74	18.80					8.6	1.506	E0120-018-0500-S					7.16	1.25
E0120-018-0620-M					0.620	15.75	0.95	24.13					6.1	1.068	E0120-018-0620-S					5.08	0.89
E0120-018-0750-M					0.750	19.05	1.19	30.23					4.7	0.823	E0120-018-0750-S					3.92	0.69
E0120-018-0880-M					0.880	22.35	1.42	36.07					3.8	0.665	E0120-018-0880-S					3.17	0.55
E0120-018-1000-M					1.000	25.40	1.60	40.64					3.3	0.578	E0120-018-1000-S					2.75	0.48
E0120-018-1120-M			0.018	0.46	1.120	28.45	1.81	45.97	2.20	9.79	0.20	0.89	2.8	0.490	E0120-018-1120-S	1.83	8.16	0.17	0.74	2.33	0.41
E0120-018-1250-M					1.250	31.75	2.03	51.56					2.5	0.438	E0120-018-1250-S					2.08	0.37
E0120-018-1370-M					1.370	34.80	2.25	57.15					2.2	0.385	E0120-018-1370-S					1.83	0.32
E0120-018-1500-M					1.500	38.10	2.47	62.74					2.0	0.350	E0120-018-1500-S					1.67	0.29
E0120-018-1750-M					1.750	44.45	2.90	73.66					1.7	0.298	E0120-018-1750-S					1.42	0.25
E0120-018-2000-M					2.000	50.80	3.34	84.84					1.4	0.245	E0120-018-2000-S					1.17	0.20
E0120-018-2250-M					2.250	57.15	3.89	98.81					1.3	0.228	E0120-018-2250-S					1.08	0.19
E0120-020-0500-M					0.500	12.70	0.68	17.27					15.1	2.640	E0120-020-0500-S					12.58	2.20
E0120-020-0620-M					0.620	15.75	0.87	22.10					10.8	1.891	E0120-020-0620-S					9.00	1.58
E0120-020-0750-M					0.750	19.05	1.08	27.43					8.3	1.454	E0120-020-0750-S					6.91	1.21
E0120-020-0880-M					0.880	22.35	1.29	32.77					6.7	1.173	E0120-020-0880-S					5.58	0.98
E0120-020-1000-M					1.000	25.40	1.45	36.83					6.0	1.051	E0120-020-1000-S					5.00	0.88
E0120-020-1120-M			0.020	0.51	1.120	28.45	1.64	41.66	3.00	13.34	0.30	1.33	5.2	0.911	E0120-020-1120-S	2.50	11.11	0.25	1.11	4.33	0.76
E0120-020-1250-M					1.250	31.75	1.84	46.74					4.5	0.788	E0120-020-1250-S					3.75	0.66
E0120-020-1370-M					1.370	34.80	2.04	51.82					4.0	0.701	E0120-020-1370-S					3.33	0.58
E0120-020-1500-M					1.500	38.10	2.23	56.64					3.7	0.648	E0120-020-1500-S					3.08	0.54
E0120-020-1750-M					1.750	44.45	2.62	66.55					3.1	0.543	E0120-020-1750-S					2.58	0.45
E0120-020-2000-M					2.000	50.80	3.01	76.45					2.6	0.455	E0120-020-2000-S					2.17	0.38
E0120-020-2250-M					2.250	57.15	3.47	88.14					2.2	0.385	E0120-020-2250-S					1.83	0.32

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0120-022-0620-M					0.620	15.75	0.81	20.57					18.3	3.200	E0120-022-0620-S					15.24	2.67
E0120-022-0750-M					0.750	19.05	1.00	25.40					14.0	2.450	E0120-022-0750-S					11.66	2.04
E0120-022-0880-M					0.880	22.35	1.19	30.23					11.4	1.996	E0120-022-0880-S					9.50	1.66
E0120-022-1000-M					1.000	25.40	1.36	34.54					9.7	1.699	E0120-022-1000-S					8.08	1.42
E0120-022-1120-M					1.120	28.45	1.54	39.12					8.5	1.489	E0120-022-1120-S					7.08	1.24
E0120-022-1250-M	0.120	3.05	0.022	0.56	1.250	31.75	1.73	43.94	3.89	17.30	0.35	1.56	7.4	1.296	E0120-022-1250-S	3.24	14.41	0.29	1.30	6.16	1.08
E0120-022-1370-M					1.370	34.80	1.90	48.26					6.7	1.173	E0120-022-1370-S					5.58	0.98
E0120-022-1500-M					1.500	38.10	2.09	53.09					6.0	1.051	E0120-022-1500-S					5.00	0.88
E0120-022-1750-M					1.750	44.45	2.45	62.23					5.0	0.876	E0120-022-1750-S					4.17	0.73
E0120-022-2000-M					2.000	50.80	2.82	71.63					4.3	0.753	E0120-022-2000-S					3.58	0.63
E0120-022-2250-M					2.250	57.15	3.18	80.77					3.8	0.665	E0120-022-2250-S					3.17	0.55
E0120-022-2500-M					2.500	63.50	3.54	89.92					3.4	0.595	E0120-022-2500-S					2.83	0.50
T30830					0.374	9.50	0.544	13.82					13.4	2.350	T40830					11.16	1.96
T30840					0.492	12.50	0.764	19.41					8.4	1.470	T40840					7.00	1.23
T30850			0.020	0.50	0.669	17.00	1.094	27.80	2.70	12.00	0.40	1.77	5.4	0.940	T40850	2.25	10.00	0.33	1.47	4.50	0.78
T30860					0.965	24.50	1.646	41.80					3.4	0.590	T40860					2.83	0.49
T30870					11.417	290.00	19.685	500.00					0.3	0.050	T40870					0.25	0.04
T30960					0.390	9.90	0.535	13.58					20.7	3.630	T40960					17.24	3.02
T30970	0.138	3.50	0.022	0.55	0.520	13.20	0.752	19.09	3.53	15.70	0.54	2.38	13.0	2.270	T40970	2.94	13.08	0.45	1.98	10.83	1.89
T30980					0.713	18.10	1.075	27.30					8.3	1.450	T40980					6.91	1.21
T30990					1.039	26.40	1.618	41.10					5.1	0.900	T40990					4.25	0.75
T31170					0.437	11.10	0.530	13.46					63.4	11.100	T41170					52.81	9.25
T31180			0.028	0.70	0.602	15.30	0.751	19.08	6.90	30.70	1.01	4.48	39.7	6.950	T41180	5.75	25.57	0.84	3.73	33.07	5.79
T31190					0.850	21.60	1.083	27.50					25.4	4.440	T41190					21.16	3.70
T31290					0.496	12.60	0.601	15.26					72.5	12.700	T41290					60.39	10.58
T31300	0.157	4.00	0.031	0.80	0.685	17.40	0.853	21.66	8.97	39.90	1.34	5.96	45.7	8.000	T41300	7.47	33.24	1.12	4.96	38.07	6.66
T31310					0.969	24.60	1.231	31.26					29.1	5.100	T41310					24.24	4.25
T31080					0.476	12.10	0.699	17.75					15.8	2.770	T41080					13.16	2.31
T31090			0.025	0.63	0.626	15.90	0.982	24.94	4.11	18.30	0.59	2.61	9.9	1.730	T41090	3.43	15.24	0.49	2.17	8.25	1.44
T31100					0.850	21.60	1.406	35.70					6.3	1.110	T41100					5.25	0.93
T31110	0.177	4.50			1.220	31.00	2.110	53.60					4.0	0.700	T41110					3.33	0.58
T31420					0.559	14.20	0.675	17.15					81.7	14.300	T41420					68.06	11.91
T31430			0.035	0.90	0.772	19.60	0.957	24.32	11.17	49.70	1.67	7.45	51.2	8.960	T41430	9.31	41.40	1.39	6.20	42.65	7.46
T31440					1.091	27.70	1.381	35.08					32.7	5.730	T41440					27.24	4.77
E0180-014-0620-M					0.620	15.75	1.75	44.45					0.6	0.105	E0180-014-0620-S					0.50	0.09
E0180-014-0750-M					0.750	19.05	2.40	60.96					0.4	0.070	E0180-014-0750-S					0.33	0.06
E0180-014-1000-M			0.014	0.36	1.000	25.40	3.69	93.73	0.77	3.42	0.07	0.31	0.3	0.053	E0180-014-1000-S	0.64	2.85	0.06	0.26	0.25	0.04
E0180-014-1250-M					1.250	31.75	4.99	126.75					0.2	0.035	E0180-014-1250-S					0.17	0.03
E0180-014-1500-M					1.500	38.10	6.28	159.51					0.1	0.018	E0180-014-1500-S					0.08	0.02
E0180-018-0620-M					0.620	15.75	1.25	31.75					2.2	0.385	E0180-018-0620-S					1.83	0.32
E0180-018-0750-M					0.750	19.05	1.66	42.16					1.5	0.263	E0180-018-0750-S					1.25	0.22
E0180-018-0880-M					0.880	22.35	2.08	52.83					1.2	0.210	E0180-018-0880-S					1.00	0.18
E0180-018-1000-M					1.000	25.40	2.46	62.48					1.0	0.175	E0180-018-1000-S					0.83	0.15
E0180-018-1120-M					1.120	28.45	2.85	72.39					0.8	0.140	E0180-018-1120-S					0.67	0.12
E0180-018-1250-M			0.018	0.46	1.250	31.75	3.26	82.80	1.55	6.89	0.14	0.62	0.7	0.123	E0180-018-1250-S	1.29	5.74	0.12	0.52	0.58	0.10
E0180-018-1370-M					1.370	34.80	3.65	92.71					0.6	0.105	E0180-018-1370-S					0.50	0.09
E0180-018-1500-M	0.180	4.57			1.500	38.10	4.06	103.12					0.5	0.088	E0180-018-1500-S					0.42	0.07
E0180-018-1750-M					1.750	44.45	4.86	123.44					0.5	0.088	E0180-018-1750-S					0.42	0.07
E0180-018-2000-M					2.000	50.80	5.66	143.76					0.4	0.070	E0180-018-2000-S					0.33	0.06
E0180-018-2250-M					2.250	57.15	6.46	164.08					0.3	0.053	E0180-018-2250-S					0.25	0.04
E0180-018-2500-M					2.500	63.50	7.27	184.66					0.3	0.053	E0180-018-2500-S					0.25	0.04
E0180-020-0620-M					0.620	15.75	1.11	28.19					3.8	0.665	E0180-020-0620-S					3.17	0.55
E0180-020-0750-M					0.750	19.05	1.46	37.08					2.7	0.473	E0180-020-0750-S					2.25	0.39
E0180-020-0880-M					0.880	22.35	1.81	45.97					2.0	0.350	E0180-020-0880-S					1.67	0.29
E0180-020-1000-M					1.000	25.40	2.13	54.10					1.7	0.298	E0180-020-1000-S					1.42	0.25
E0180-020-1120-M			0.020	0.51	1.120	28.45	2.45	62.23	2.08	9.25	0.19	0.85	1.4	0.245	E0180-020-1120-S	1.73	7.71	0.16	0.71	1.17	0.20
E0180-020-1250-M					1.250	31.75	2.80	71.12					1.2	0.210	E0180-020-1250-S					1.00	0.18
E0180-020-1370-M					1.370	34.80	3.12	79.25					1.1	0.193	E0180-020-1370-S					0.92	0.16
E0180-020-1500-M					1.500	38.10	3.47	88.14					1.0	0.175	E0180-020-1500-S					0.83	0.15
E0180-020-1750-M					1.750	44.45	4.14	105.16					0.8	0.140	E0180-020-1750-S					0.67	0.12
E0180-020-2000-M					2.000	50.80	4.81	122.17					0.7	0.123	E0180-020-2000-S					0.58	0.10

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER





MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0180-020-2250-M			0.020	0.51	2.250	57.15	5.48	139.19	2.60	11.56	0.20	0.89	0.6	0.105	E0180-020-2250-S	1.73	7.71	0.16	0.71	0.50	0.09
E0180-020-2500-M					2.500	63.50	6.16	156.46					0.5	0.088	E0180-020-2500-S					0.42	0.07
E0180-022-0500-M					0.500	12.70	0.73	18.54					10.5	1.839	E0180-022-0500-S					8.75	1.53
E0180-022-0620-M					0.620	15.75	1.01	25.65					6.3	1.103	E0180-022-0620-S					5.25	0.92
E0180-022-0750-M					0.750	19.05	1.31	33.27					4.4	0.771	E0180-022-0750-S					3.67	0.64
E0180-022-0880-M					0.880	22.35	1.61	40.89					3.4	0.595	E0180-022-0880-S					2.83	0.50
E0180-022-1000-M					1.000	25.40	1.86	47.24					2.8	0.490	E0180-022-1000-S					2.33	0.41
E0180-022-1120-M					1.120	28.45	2.13	54.10					2.4	0.420	E0180-022-1120-S					2.00	0.35
E0180-022-1250-M			0.022	0.56	1.250	31.75	2.43	61.72	3.45	15.35	0.31	1.38	2.0	0.350	E0180-022-1250-S	2.17	9.63	0.17	0.74	1.67	0.29
E0180-022-1370-M					1.370	34.80	2.70	68.58					1.8	0.315	E0180-022-1370-S					1.50	0.26
E0180-022-1500-M					1.500	38.10	2.99	75.95					1.6	0.280	E0180-022-1500-S					1.33	0.23
E0180-022-1750-M					1.750	44.45	3.55	90.17					1.3	0.228	E0180-022-1750-S					1.08	0.19
E0180-022-2000-M					2.000	50.80	4.07	103.38					1.2	0.210	E0180-022-2000-S					1.00	0.18
E0180-022-2250-M					2.250	57.15	4.78	121.41					1.0	0.175	E0180-022-2250-S					0.83	0.15
E0180-022-2500-M					2.500	63.50	5.36	136.14					0.9	0.158	E0180-022-2500-S					0.75	0.13
E0180-024-0620-M					0.620	15.75	0.94	23.88					9.9	1.734	E0180-024-0620-S					8.25	1.44
E0180-024-0750-M					0.750	19.05	1.20	30.48					6.9	1.208	E0180-024-0750-S					5.75	1.01
E0180-024-0880-M					0.880	22.35	1.47	37.34					5.3	0.928	E0180-024-0880-S					4.41	0.77
E0180-024-1000-M					1.000	25.40	1.71	43.43					4.4	0.771	E0180-024-1000-S					3.67	0.64
E0180-024-1120-M					1.120	28.45	1.96	49.78					3.7	0.648	E0180-024-1120-S					3.08	0.54
E0180-024-1250-M			0.024	0.61	1.250	31.75	2.23	56.64	3.45	15.35	0.31	1.38	3.2	0.560	E0180-024-1250-S	2.87	12.79	0.26	1.15	2.67	0.47
E0180-024-1370-M					1.370	34.80	2.47	62.74					2.9	0.508	E0180-024-1370-S					2.42	0.42
E0180-024-1500-M					1.500	38.10	2.74	69.60					2.5	0.438	E0180-024-1500-S					2.08	0.37
E0180-024-1750-M					1.750	44.45	3.25	82.55					2.1	0.368	E0180-024-1750-S					1.75	0.31
E0180-024-2000-M					2.000	50.80	3.76	95.50					1.8	0.315	E0180-024-2000-S					1.50	0.26
E0180-024-2250-M					2.250	57.15	4.27	108.46					1.6	0.280	E0180-024-2250-S					1.33	0.23
E0180-024-2500-M					2.500	63.50	4.78	121.41					1.4	0.245	E0180-024-2500-S					1.17	0.20
E0180-026-0500-M					0.500	12.70	0.66	16.76					24.3	4.260	E0180-026-0500-S					20.24	3.55
E0180-026-0620-M					0.620	15.75	0.88	22.35					15.0	2.630	E0180-026-0620-S					12.50	2.19
E0180-026-0750-M	0.180	4.57			0.750	19.05	1.12	28.45					10.6	1.856	E0180-026-0750-S					8.83	1.55
E0180-026-0880-M					0.880	22.35	1.36	34.54					8.2	1.436	E0180-026-0880-S					6.83	1.20
E0180-026-1000-M					1.000	25.40	1.57	39.88					6.8	1.191	E0180-026-1000-S					5.66	0.99
E0180-026-1120-M					1.120	28.45	1.78	45.21					5.9	1.033	E0180-026-1120-S					4.91	0.86
E0180-026-1250-M			0.026	0.66	1.250	31.75	2.01	51.05	4.20	18.68	0.40	1.78	5.1	0.893	E0180-026-1250-S	3.50	15.56	0.33	1.48	4.25	0.74
E0180-026-1370-M					1.370	34.80	2.24	56.90					4.5	0.788	E0180-026-1370-S					3.75	0.66
E0180-026-1500-M					1.500	38.10	2.47	62.74					4.0	0.701	E0180-026-1500-S					3.33	0.58
E0180-026-1750-M					1.750	44.45	2.91	73.91					3.3	0.578	E0180-026-1750-S					2.75	0.48
E0180-026-2000-M					2.000	50.80	3.36	85.34					2.8	0.490	E0180-026-2000-S					2.33	0.41
E0180-026-2250-M					2.250	57.15	3.88	98.55					2.4	0.420	E0180-026-2250-S					2.00	0.35
E0180-026-2500-M					2.500	63.50	4.34	110.24					2.1	0.368	E0180-026-2500-S					1.75	0.31
E0180-029-0620-M					0.620	15.75	0.82	20.83					26.5	4.640	E0180-029-0620-S					22.07	3.87
E0180-029-0750-M					0.750	19.05	1.03	26.16					18.9	3.310	E0180-029-0750-S					15.74	2.76
E0180-029-0880-M					0.880	22.35	1.24	31.50					14.7	2.570	E0180-029-0880-S					12.25	2.14
E0180-029-1000-M					1.000	25.40	1.43	36.32					12.2	2.140	E0180-029-1000-S					10.16	1.78
E0180-029-1120-M					1.120	28.45	1.63	41.40					10.4	1.821	E0180-029-1120-S					8.66	1.52
E0180-029-1250-M			0.029	0.74	1.250	31.75	1.84	46.74	5.82	25.89	0.52	2.31	9.0	1.576	E0180-029-1250-S	4.85	21.57	0.43	1.92	7.50	1.31
E0180-029-1370-M					1.370	34.80	2.03	51.56					8.0	1.401	E0180-029-1370-S					6.66	1.17
E0180-029-1500-M					1.500	38.10	2.24	56.90					7.1	1.243	E0180-029-1500-S					5.91	1.04
E0180-029-1750-M					1.750	44.45	2.65	67.31					5.9	1.033	E0180-029-1750-S					4.91	0.86
E0180-029-2000-M					2.000	50.80	3.05	77.47					5.0	0.876	E0180-029-2000-S					4.17	0.73
E0180-029-2250-M					2.250	57.15	3.46	87.88					4.4	0.771	E0180-029-2250-S					3.67	0.64
E0180-029-2500-M					2.500	63.50	3.86	98.04					3.9	0.683	E0180-029-2500-S					3.25	0.57
E0180-031-0500-M					0.500	12.70	0.61	15.49					59.4	10.400	E0180-031-0500-S					49.48	8.66
E0180-031-0620-M					0.620	15.75	0.79	20.07					37.8	6.620	E0180-031-0620-S					31.49	5.51
E0180-031-0750-M					0.750	19.05	0.98	24.89					27.1	4.750	E0180-031-0750-S					22.57	3.96
E0180-031-0880-M					0.880	22.35	1.18	29.97					21.1	3.700	E0180-031-0880-S					17.58	3.08
E0180-031-1000-M			0.031	0.79	1.000	25.40	1.35	34.29	6.80	30.25	0.60	2.67	17.8	3.120	E0180-031-1000-S	5.66	25.20	0.50	2.22	14.83	2.60
E0180-031-1120-M					1.120	28.45	1.53	38.86					15.2	2.660	E0180-031-1120-S					12.66	2.22
E0180-031-1250-M					1.250	31.75	1.72	43.69					13.1	2.290	E0180-031-1250-S					10.91	1.91
E0180-031-1370-M					1.370	34.80	1.91	48.51					11.6	2.030	E0180-031-1370-S					9.66	1.69
E0180-031-1500-M					1.500	38.10	2.09	53.09					10.5	1.8							

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0180-031-1750-M					1.750	44.45	2.46	62.48					8.7	1.524	E0180-031-1750-S					7.25	1.27
E0180-031-2000-M					2.000	50.80	2.83	71.88					7.5	1.313	E0180-031-2000-S					6.25	1.09
E0180-031-2250-M			0.031	0.79	2.250	57.15	3.20	81.28	6.80	30.25	0.60	2.67	6.5	1.138	E0180-031-2250-S	5.66	25.20	0.50	2.22	5.41	0.95
E0180-031-2500-M					2.500	63.50	3.63	92.20					5.6	0.981	E0180-031-2500-S					4.66	0.82
E0180-031-2750-M					2.750	69.85	4.01	101.85					5.1	0.893	E0180-031-2750-S					4.25	0.74
E0180-034-0620-M					0.620	15.75	0.75	19.05					61.8	10.820	E0180-034-0620-S					51.48	9.01
E0180-034-0750-M					0.750	19.05	0.93	23.62					44.7	7.830	E0180-034-0750-S					37.24	6.52
E0180-034-0880-M					0.880	22.35	1.11	28.19					35.0	6.130	E0180-034-0880-S					29.16	5.11
E0180-034-1000-M					1.000	25.40	1.28	32.51					29.2	5.110	E0180-034-1000-S					24.32	4.26
E0180-034-1120-M	0.180	4.57			1.120	28.45	1.45	36.83					25.0	4.380	E0180-034-1120-S					20.83	3.65
E0180-034-1250-M					1.250	31.75	1.63	41.40					21.6	3.780	E0180-034-1250-S					17.99	3.15
E0180-034-1370-M			0.034	0.86	1.370	34.80	1.79	45.47	8.97	39.90	0.81	3.60	19.3	3.380	E0180-034-1370-S	7.47	33.24	0.67	3.00	16.08	2.82
E0180-034-1500-M					1.500	38.10	1.97	50.04					17.2	3.010	E0180-034-1500-S					14.33	2.51
E0180-034-1750-M					1.750	44.45	2.32	58.93					14.3	2.500	E0180-034-1750-S					11.91	2.08
E0180-034-2000-M					2.000	50.80	2.67	67.82					12.2	2.140	E0180-034-2000-S					10.16	1.78
E0180-034-2250-M					2.250	57.15	3.02	76.71					10.7	1.874	E0180-034-2250-S					8.91	1.56
E0180-034-2500-M					2.500	63.50	3.36	85.34					9.5	1.664	E0180-034-2500-S					7.91	1.39
E0180-034-2750-M					2.750	69.85	3.71	94.23					8.5	1.489	E0180-034-2750-S					7.08	1.24
T31200					0.531	13.50	0.778	19.75					17.5	3.070	T41200					14.58	2.56
T31210			0.028	0.70	0.697	17.70	1.091	27.70	5.08	22.60	0.76	3.39	11.0	1.920	T41210	4.23	18.83	0.64	2.83	9.16	1.60
T31220					0.945	24.00	1.559	39.60					7.0	1.230	T41220					5.83	1.03
T31230	0.197	5.00			1.358	34.50	2.343	59.50					4.4	0.770	T41230					3.67	0.64
T31540					0.622	15.80	0.750	19.05					90.8	15.900	T41540					75.64	13.25
T31550			0.039	1.00	0.858	21.80	1.063	27.00	13.67	60.80	2.06	9.17	56.5	9.900	T41550	11.39	50.65	1.72	7.64	47.06	8.25
T31560					1.213	30.80	1.532	38.92					36.4	6.370	T41560					30.32	5.31
T30880					0.500	12.70	1.016	25.80					2.9	0.510	T40880					2.42	0.43
T30890					0.618	15.70	1.441	36.60					1.8	0.310	T40890					1.50	0.26
T30900			0.020	0.50	0.795	20.20	2.083	52.90	1.75	7.80	0.23	1.02	1.2	0.210	T40900	1.46	6.50	0.19	0.85	1.00	0.18
T30910					1.091	27.70	3.150	80.00					0.7	0.130	T40910					0.58	0.11
T30920					1.484	37.70	4.571	116.10					0.5	0.090	T40920					0.42	0.08
T31320					0.591	15.00	0.843	21.40					22.8	4.000	T41320					18.99	3.33
T31330	0.217	5.50			0.780	19.80	1.181	30.00					14.3	2.500	T41330					11.91	2.08
T31340			0.031	0.80	1.063	27.00	1.693	43.00	6.79	30.20	1.08	4.79	9.1	1.600	T41340	5.66	25.16	0.90	3.99	7.58	1.33
T31350					1.535	39.00	2.543	64.60					5.7	1.000	T41350					4.75	0.83
T31360					11.417	290.00	20.276	515.00					0.6	0.110	T41360					0.50	0.09
T31670					0.685	17.40	0.824	20.94					99.9	17.500	T41670					83.22	14.58
T31680			0.043	1.10	0.945	24.00	1.168	29.66	16.37	72.80	2.42	10.77	62.8	11.000	T41680	13.63	60.64	2.02	8.97	52.31	9.16
T31690					1.335	33.90	1.683	42.74					40.0	7.000	T41690					33.32	5.83
T31000					0.547	13.90	1.102	28.00					3.3	0.580	T41000					2.75	0.48
T31010					0.677	17.20	1.563	39.70					2.1	0.360	T41010					1.75	0.30
T31020			0.022	0.55	0.870	22.10	2.252	57.20	2.14	9.50	0.25	1.09	1.3	0.230	T41020	1.78	7.91	0.21	0.91	1.08	0.19
T31030					1.197	30.40	3.409	86.60					0.9	0.150	T41030					0.75	0.13
T31040	0.236	6.00			1.630	41.40	4.949	125.70					0.6	0.110	T41040					0.50	0.09
T31790					0.748	19.00	0.898	22.80					109.1	19.100	T41790					90.88	15.91
T31800			0.047	1.20	1.031	26.20	1.271	32.28	19.18	85.30	2.84	12.63	68.5	12.000	T41800	15.97	71.05	2.37	10.52	57.06	10.00
T31810					1.457	37.00	1.831	46.50					43.6	7.630	T41810					36.32	6.36
E0240-018-0620-M					0.620	15.75	1.28	32.51					1.6	0.280	E0240-018-0620-S					1.33	0.23
E0240-018-0750-M					0.750	19.05	1.96	49.78					0.9	0.158	E0240-018-0750-S					0.75	0.13
E0240-018-0880-M					0.880	22.35	2.68	68.07					0.6	0.105	E0240-018-0880-S					0.50	0.09
E0240-018-1000-M					1.000	25.40	3.30	83.82					0.5	0.088	E0240-018-1000-S					0.42	0.07
E0240-018-1250-M			0.018	0.46	1.250	31.75	4.65	118.11	1.18	5.25	0.11	0.49	0.3	0.053	E0240-018-1250-S	0.98	4.37	0.09	0.41	0.25	0.04
E0240-018-1500-M					1.500	38.10	5.99	152.15					0.2	0.035	E0240-018-1500-S					0.17	0.03
E0240-018-2000-M					2.000	50.80	8.64	219.46					0.2	0.035	E0240-018-2000-S					0.17	0.03
E0240-018-2500-M	0.240	6.10			2.500	63.50	11.33	287.78					0.1	0.018	E0240-018-2500-S					0.08	0.02
E0240-018-2750-M					2.750	69.85	12.67	321.82					0.1	0.018	E0240-018-2750-S					0.08	0.02
E0240-022-0620-M					0.620	15.75	1.06	26.92					4.3	0.753	E0240-022-0620-S					3.58	0.63
E0240-022-0750-M					0.750	19.05	1.53	38.86					2.4	0.420	E0240-022-0750-S					2.00	0.35
E0240-022-0880-M			0.022	0.56	0.880	22.35	2.00	50.80	2.07	9.21	0.19	0.85	1.7	0.298	E0240-022-0880-S	1.72	7.67	0.16	0.71	1.42	0.25
E0240-022-1000-M					1.000	25.40	2.44	61.98					1.3	0.228	E0240-022-1000-S					1.08	0.19
E0240-022-1120-M					1.120	28.45	2.88	73.15					1.1	0.193	E0240-022-1120-S					0.92	0.16
E0240-022-1250-M					1.250	31.75	3.35	85.09					0.9	0.158	E0240-022-1250-S					0.75	0.13

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER





MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0240-022-1370-M					1.370	34.80	3.78	96.01					0.8	0.140	E0240-022-1370-S					0.67	0.12
E0240-022-1500-M					1.500	38.10	4.26	108.20					0.7	0.123	E0240-022-1500-S					0.58	0.10
E0240-022-1750-M					1.750	44.45	5.16	131.06					0.6	0.105	E0240-022-1750-S					0.50	0.09
E0240-022-2000-M			0.022	0.56	2.000	50.80	6.07	154.18	2.07	9.21	0.19	0.85	0.5	0.088	E0240-022-2000-S	1.72	7.67	0.16	0.71	0.42	0.07
E0240-022-2250-M					2.250	57.15	6.98	177.29					0.4	0.070	E0240-022-2250-S					0.33	0.06
E0240-022-2500-M					2.500	63.50	7.89	200.41					0.3	0.053	E0240-022-2500-S					0.29	0.04
E0240-022-2750-M					2.750	69.85	8.80	223.52					0.3	0.053	E0240-022-2750-S					0.25	0.04
E0240-026-0500-M					0.500	12.70	0.60	15.24					28.9	5.060	E0240-026-0500-S					24.07	4.22
E0240-026-0620-M					0.620	15.75	0.93	23.62					9.7	1.699	E0240-026-0620-S					8.08	1.42
E0240-026-0750-M					0.750	19.05	1.29	32.77					5.6	0.981	E0240-026-0750-S					4.66	0.82
E0240-026-0880-M					0.880	22.35	1.64	41.66					4.0	0.701	E0240-026-0880-S					3.33	0.58
E0240-026-1000-M					1.000	25.40	1.97	50.04					3.0	0.525	E0240-026-1000-S					2.50	0.44
E0240-026-1120-M					1.120	28.45	2.31	58.67					2.5	0.438	E0240-026-1120-S					2.08	0.37
E0240-026-1250-M					1.250	31.75	2.64	67.06					2.1	0.368	E0240-026-1250-S					1.75	0.31
E0240-026-1370-M					1.370	34.80	2.96	75.18					1.8	0.315	E0240-026-1370-S					1.50	0.26
E0240-026-1500-M					1.500	38.10	3.28	83.31					1.6	0.280	E0240-026-1500-S					1.33	0.23
E0240-026-1750-M			0.026	0.66	1.750	44.45	3.95	100.33	3.30	14.68	0.30	1.33	1.3	0.228	E0240-026-1750-S	2.75	12.23	0.25	1.11	1.08	0.19
E0240-026-2000-M					2.000	50.80	4.60	116.84					1.1	0.193	E0240-026-2000-S					0.92	0.16
E0240-026-2250-M					2.250	57.15	5.38	136.65					1.0	0.175	E0240-026-2250-S					0.83	0.15
E0240-026-2500-M					2.500	63.50	6.06	153.92					0.8	0.140	E0240-026-2500-S					0.67	0.12
E0240-026-2750-M					2.750	69.85	6.74	171.20					0.8	0.140	E0240-026-2750-S					0.67	0.12
E0240-026-3000-M					3.000	76.20	7.42	188.47					0.7	0.123	E0240-026-3000-S					0.58	0.10
E0240-026-3500-M					3.500	88.90	8.76	222.50					0.6	0.105	E0240-026-3500-S					0.50	0.09
E0240-026-4000-M					4.000	101.60	10.14	257.56					0.5	0.088	E0240-026-4000-S					0.42	0.07
E0240-026-4500-M					4.500	114.30	11.49	291.85					0.4	0.070	E0240-026-4500-S					0.37	0.06
E0240-026-5000-M					5.000	127.00	12.86	326.64					0.4	0.070	E0240-026-5000-S					0.33	0.06
E0240-029-0620-M					0.620	15.75	0.87	22.10					16.5	2.890	E0240-029-0620-S					13.74	2.41
E0240-029-0750-M					0.750	19.05	1.17	29.72					9.8	1.716	E0240-029-0750-S					8.16	1.43
E0240-029-0880-M					0.880	22.35	1.47	37.34					7.0	1.226	E0240-029-0880-S					5.83	1.02
E0240-029-1000-M	0.240	6.10			1.000	25.40	1.74	44.20					5.5	0.963	E0240-029-1000-S					4.58	0.80
E0240-029-1120-M					1.120	28.45	2.02	51.31					4.5	0.788	E0240-029-1120-S					3.75	0.66
E0240-029-1250-M					1.250	31.75	2.32	58.93					3.8	0.665	E0240-029-1250-S					3.17	0.55
E0240-029-1370-M					1.370	34.80	2.59	65.79					3.3	0.578	E0240-029-1370-S					2.75	0.48
E0240-029-1500-M					1.500	38.10	2.89	73.41					2.9	0.508	E0240-029-1500-S					2.42	0.42
E0240-029-1750-M					1.750	44.45	3.47	88.14					2.4	0.420	E0240-029-1750-S					2.00	0.35
E0240-029-2000-M			0.029	0.74	2.000	50.80	4.04	102.62	4.50	20.02	0.40	1.78	2.0	0.350	E0240-029-2000-S	3.75	16.68	0.33	1.48	1.67	0.29
E0240-029-2250-M					2.250	57.15	4.62	117.35					1.7	0.298	E0240-029-2250-S					1.42	0.25
E0240-029-2500-M					2.500	63.50	5.19	131.83					1.5	0.263	E0240-029-2500-S					1.25	0.22
E0240-029-2750-M					2.750	69.85	5.77	146.56					1.4	0.245	E0240-029-2750-S					1.17	0.20
E0240-029-3000-M					3.000	76.20	6.34	161.04					1.2	0.210	E0240-029-3000-S					1.00	0.18
E0240-029-3500-M					3.500	88.90	7.51	190.75					1.0	0.175	E0240-029-3500-S					0.83	0.15
E0240-029-4000-M					4.000	101.60	8.65	219.71					0.9	0.158	E0240-029-4000-S					0.75	0.13
E0240-029-4500-M					4.500	114.30	9.82	249.43					0.8	0.140	E0240-029-4500-S					0.67	0.12
E0240-029-5000-M					5.000	127.00	10.96	278.38					0.7	0.123	E0240-029-5000-S					0.58	0.10
E0240-031-0620-M					0.620	15.75	0.84	21.34					22.8	3.990	E0240-031-0620-S					18.99	3.32
E0240-031-0750-M					0.750	19.05	1.11	28.19					13.8	2.420	E0240-031-0750-S					11.50	2.02
E0240-031-0880-M					0.880	22.35	1.38	35.05					9.9	1.734	E0240-031-0880-S					8.25	1.44
E0240-031-1000-M					1.000	25.40	1.64	41.66					7.5	1.313	E0240-031-1000-S					6.25	1.09
E0240-031-1120-M					1.120	28.45	1.89	48.01					6.5	1.138	E0240-031-1120-S					5.41	0.95
E0240-031-1250-M					1.250	31.75	2.14	54.36					5.3	0.928	E0240-031-1250-S					4.41	0.77
E0240-031-1370-M					1.370	34.80	2.36	59.94					4.8	0.841	E0240-031-1370-S					4.00	0.70
E0240-031-1500-M					1.500	38.10	2.64	67.06					4.2	0.736	E0240-031-1500-S					3.50	0.61
E0240-031-1750-M			0.031	0.79	1.750	44.45	3.15	80.01	5.30	23.58	0.50	2.22	3.4	0.595	E0240-031-1750-S	4.42	19.64	0.42	1.85	2.83	0.50
E0240-031-2000-M					2.000	50.80	3.65	92.71					2.9	0.508	E0240-031-2000-S					2.42	0.42
E0240-031-2250-M					2.250	57.15	4.16	105.66					2.5	0.438	E0240-031-2250-S					2.08	0.37
E0240-031-2500-M					2.500	63.50	4.66	118.36					2.2	0.385	E0240-031-2500-S					1.83	0.32
E0240-031-2750-M					2.750	69.85	5.29	134.37					1.9	0.333	E0240-031-2750-S					1.58	0.28
E0240-031-3000-M					3.000	76.20	5.81	147.57					1.7	0.298	E0240-031-3000-S					1.42	0.25
E0240-031-3500-M					3.500	88.90	6.78	172.21					1.5	0.263	E0240-031-3500-S					1.25	0.22
E0240-031-4000-M					4.000	101.60	7.81	198.37					1.3	0.228	E0240-031-4000-S					1.08	0.19
E0240-031-4500-M					4.500	114.30	8.84	224.54					1.1	0.193	E0240-031-4500-S					0.92	0.16

MUSIC WIRE														STAINLESS STEEL							
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0240-031-5000-M			0.031	0.79	5.000	127.00	9.87	250.70	5.30	23.58	0.50	2.22	1.0	0.175	E0240-031-5000-S	4.42	19.64	0.42	1.85	0.83	0.15
E0240-034-0620-M					0.620	15.75	0.80	20.32					36.0	6.300	E0240-034-0620-S					29.99	5.25
E0240-034-0750-M					0.750	19.05	1.04	26.42					22.1	3.870	E0240-034-0750-S					18.41	3.22
E0240-034-0880-M					0.880	22.35	1.26	32.00					16.0	2.800	E0240-034-0880-S					13.33	2.33
E0240-034-1000-M					1.000	25.40	1.50	38.10					12.7	2.220	E0240-034-1000-S					10.58	1.85
E0240-034-1120-M					1.120	28.45	1.72	43.69					10.6	1.856	E0240-034-1120-S					8.83	1.55
E0240-034-1250-M					1.250	31.75	1.96	49.78					8.9	1.559	E0240-034-1250-S					7.41	1.30
E0240-034-1370-M					1.370	34.80	2.18	55.37					7.8	1.366	E0240-034-1370-S					6.50	1.14
E0240-034-1500-M					1.500	38.10	2.42	61.47					6.9	1.208	E0240-034-1500-S					5.75	1.01
E0240-034-1750-M			0.034	0.86	1.750	44.45	2.89	73.41	7.00	31.14	0.65	2.89	5.6	0.981	E0240-034-1750-S	5.83	25.94	0.54	2.41	4.66	0.82
E0240-034-2000-M					2.000	50.80	3.35	85.09					4.7	0.823	E0240-034-2000-S					3.92	0.69
E0240-034-2250-M					2.250	57.15	3.81	96.77					4.1	0.718	E0240-034-2250-S					3.42	0.60
E0240-034-2500-M					2.500	63.50	4.27	108.46					3.6	0.630	E0240-034-2500-S					3.00	0.53
E0240-034-2750-M					2.750	69.85	4.74	120.40					3.2	0.560	E0240-034-2750-S					2.67	0.47
E0240-034-3000-M					3.000	76.20	5.20	132.08					2.9	0.508	E0240-034-3000-S					2.42	0.42
E0240-034-3500-M					3.500	88.90	6.13	155.70					2.4	0.420	E0240-034-3500-S					2.00	0.35
E0240-034-4000-M					4.000	101.60	7.05	179.07					2.1	0.368	E0240-034-4000-S					1.75	0.31
E0240-034-4500-M					4.500	114.30	7.97	202.44					1.8	0.315	E0240-034-4500-S					1.50	0.26
E0240-034-5000-M					5.000	127.00	8.90	226.06					1.6	0.280	E0240-034-5000-S					1.33	0.23
E0240-037-0620-M					0.620	15.75	0.77	19.56					54.7	9.580	E0240-037-0620-S					45.57	7.98
E0240-037-0750-M					0.750	19.05	0.98	24.89					34.3	6.010	E0240-037-0750-S					28.57	5.01
E0240-037-1000-M					1.000	25.40	1.40	35.56					19.8	3.470	E0240-037-1000-S					16.49	2.89
E0240-037-1120-M					1.120	28.45	1.61	40.89					16.4	2.870	E0240-037-1120-S					13.66	2.39
E0240-037-1250-M					1.250	31.75	1.81	45.97					14.0	2.450	E0240-037-1250-S					11.66	2.04
E0240-037-1370-M	0.240	6.10			1.370	34.80	2.01	51.05					12.4	2.170	E0240-037-1370-S					10.33	1.81
E0240-037-1500-M					1.500	38.10	2.20	55.88					11.2	1.961	E0240-037-1500-S					9.33	1.63
E0240-037-1750-M					1.750	44.45	2.63	66.80					8.9	1.559	E0240-037-1750-S					7.41	1.30
E0240-037-2000-M			0.037	0.94	2.000	50.80	3.04	77.22	8.70	38.70	0.80	3.56	7.6	1.331	E0240-037-2000-S	7.25	32.24	0.67	2.97	6.33	1.11
E0240-037-2250-M					2.250	57.15	3.45	87.63					6.5	1.138	E0240-037-2250-S					5.41	0.95
E0240-037-2500-M					2.500	63.50	3.85	97.79					5.8	1.016	E0240-037-2500-S					4.83	0.85
E0240-037-2750-M					2.750	69.85	4.27	108.46					5.2	0.911	E0240-037-2750-S					4.33	0.76
E0240-037-3000-M					3.000	76.20	4.67	118.62					4.7	0.823	E0240-037-3000-S					3.92	0.69
E0240-037-3250-M					3.250	82.55	5.16	131.06					4.2	0.736	E0240-037-3250-S					3.50	0.61
E0240-037-3500-M					3.500	88.90	5.58	141.73					3.8	0.665	E0240-037-3500-S					3.17	0.55
E0240-037-4000-M					4.000	101.60	6.38	162.05					3.3	0.578	E0240-037-4000-S					2.75	0.48
E0240-037-4500-M					4.500	114.30	7.22	183.39					2.9	0.508	E0240-037-4500-S					2.42	0.42
E0240-037-5000-M					5.000	127.00	8.05	204.47					2.6	0.455	E0240-037-5000-S					2.17	0.38
E0240-041-0750-M					0.750	19.05	0.93	23.62					58.5	10.240	E0240-041-0750-S					48.73	8.53
E0240-041-1000-M					1.000	25.40	1.31	33.27					34.6	6.060	E0240-041-1000-S					28.82	5.05
E0240-041-1120-M					1.120	28.45	1.49	37.85					28.9	5.060	E0240-041-1120-S					24.07	4.22
E0240-041-1250-M					1.250	31.75	1.68	42.67					24.5	4.290	E0240-041-1250-S					20.41	3.57
E0240-041-1370-M					1.370	34.80	1.86	47.24					21.5	3.770	E0240-041-1370-S					17.91	3.14
E0240-041-1500-M					1.500	38.10	2.06	52.32					19.0	3.330	E0240-041-1500-S					15.83	2.77
E0240-041-1750-M					1.750	44.45	2.43	61.72					15.5	2.710	E0240-041-1750-S					12.91	2.26
E0240-041-2000-M			0.041	1.04	2.000	50.80	2.81	71.37	11.65	51.82	1.05	4.67	13.1	2.290	E0240-041-2000-S	9.70	43.17	0.87	3.89	10.91	1.91
E0240-041-2250-M					2.250	57.15	3.18	80.77					11.4	1.996	E0240-041-2250-S					9.50	1.66
E0240-041-2500-M					2.500	63.50	3.56	90.42					10.0	1.751	E0240-041-2500-S					8.33	1.46
E0240-041-2750-M					2.750	69.85	3.94	100.08					8.9	1.559	E0240-041-2750-S					7.41	1.30
E0240-041-3000-M					3.000	76.20	4.31	109.47					8.1	1.419	E0240-041-3000-S					6.75	1.18
E0240-041-3500-M					3.500	88.90	5.06	128.52					6.8	1.191	E0240-041-3500-S					5.66	0.99
E0240-041-4000-M					4.000	101.60	5.81	147.57					5.9	1.033	E0240-041-4000-S					4.91	0.86
E0240-041-4500-M					4.500	114.30	6.57	166.88					5.1	0.893	E0240-041-4500-S					4.25	0.74
E0240-041-5000-M					5.000	127.00	7.31	185.67					4.6	0.806	E0240-041-5000-S					3.83	0.67
T31450					0.673	17.10	0.966	24.53					24.1	4.230	T41450					20.12	3.52
T31460	0.248	6.30	0.035	0.90	0.886	22.50	1.354	34.40	8.34	37.10	1.25	5.58	15.1	2.650	T41460	6.95	30.90	1.05	4.65	12.58	2.21
T31470					1.205	30.60	1.937	49.20					9.7	1.700	T41470					8.08	1.42
T31480					1.736	44.10	2.906	73.80					6.1	1.060	T41480					5.08	0.88
T31120					0.634	16.10	1.287	32.70					3.5	0.620	T41120					2.92	0.52
T31130	0.276	7.00	0.025	0.63	0.783	19.90	1.831	46.50	2.74	12.20	0.38	1.67	2.2	0.390	T41130	2.29	10.16	0.31	1.39	1.83	0.33
T31140					1.008	25.60	2.646	67.20					1.4	0.250	T41140					1.17	0.21
T31150					1.378	35.00	3.996	101.50					0.9	0.160	T41150					0.75	0.13



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC



MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
T31160			0.025	0.63	1.874	47.60	5.799	147.30	2.74	12.20	0.38	1.67	0.6	0.110	T41160	2.29	10.16	0.31	1.39	0.50	0.09
T31570					0.748	19.00	1.070	27.17					26.9	4.710	T41570					22.41	3.92
T31580					0.984	25.00	1.500	38.10					16.8	2.940	T41580					13.99	2.45
T31590			0.039	1.00	1.339	34.00	2.142	54.40	10.18	45.30	1.52	6.78	10.4	1.830	T41590	8.48	37.73	1.27	5.66	8.66	1.52
T31600	0.276	7.00			1.929	49.00	3.217	81.70					6.7	1.180	T41600					5.58	0.98
T31610					11.417	290.00	20.079	510.00					1.0	0.180	T41610					0.83	0.15
T31920					0.870	22.10	1.042	26.46					127.3	22.300	T41920					106.04	18.58
T31930			0.055	1.40	1.201	30.50	1.476	37.48	25.63	114.00	3.79	16.88	79.4	13.900	T41930	21.35	94.96	3.16	14.06	66.14	11.58
T31940					1.697	43.10	2.126	54.00					50.9	8.910	T41940					42.40	7.42
T31240					0.689	17.50	1.354	34.40					4.5	0.780	T41240					3.75	0.65
T31250					0.854	21.70	1.917	48.70					2.8	0.490	T41250					2.33	0.41
T31260			0.028	0.70	1.102	28.00	2.764	70.20	3.46	15.40	0.49	2.18	1.8	0.310	T41260	2.88	12.83	0.41	1.81	1.50	0.26
T31270					1.516	38.50	4.173	106.00					1.1	0.200	T41270					0.92	0.17
T31280	0.295	7.50			2.067	52.50	6.043	153.50					0.7	0.130	T41280					0.58	0.11
T31700					0.811	20.60	1.138	28.90					32.5	5.690	T41700					27.07	4.74
T31710			0.043	1.10	1.071	27.20	1.594	40.50	12.48	55.50	1.85	8.25	20.3	3.550	T41710	10.39	46.23	1.54	6.87	16.91	2.96
T31720					1.461	37.10	2.280	57.90					13.0	2.280	T41720					10.83	1.90
T31730					2.110	53.60	3.417	86.80					8.1	1.420	T41730					6.75	1.18
E0300-031-1000-M					1.000	25.40	1.84	46.74					4.7	0.823	E0300-031-1000-S					3.92	0.69
E0300-031-1120-M					1.120	28.45	2.19	55.63					3.7	0.648	E0300-031-1120-S					3.08	0.54
E0300-031-1250-M					1.250	31.75	2.56	65.02					3.0	0.525	E0300-031-1250-S					2.50	0.44
E0300-031-1370-M					1.370	34.80	2.91	73.91					2.6	0.455	E0300-031-1370-S					2.17	0.38
E0300-031-1500-M					1.500	38.10	3.29	83.57					2.2	0.385	E0300-031-1500-S					1.83	0.32
E0300-031-1750-M			0.031	0.79	1.750	44.45	4.01	101.85	4.39	19.53	0.39	1.73	1.8	0.315	E0300-031-1750-S	3.66	16.27	0.32	1.44	1.50	0.26
E0300-031-2000-M					2.000	50.80	4.73	120.14					1.5	0.263	E0300-031-2000-S					1.25	0.22
E0300-031-2250-M					2.250	57.15	5.45	138.43					1.2	0.210	E0300-031-2250-S					1.00	0.18
E0300-031-2500-M					2.500	63.50	6.17	156.72					1.1	0.193	E0300-031-2500-S					0.92	0.16
E0300-031-2750-M					2.750	69.85	6.90	175.26					1.0	0.175	E0300-031-2750-S					0.83	0.15
E0300-031-3000-M					3.000	76.20	7.62	193.55					0.9	0.158	E0300-031-3000-S					0.75	0.13
E0300-037-0750-M					0.750	19.05	1.01	25.65					25.4	4.450	E0300-037-0750-S					21.16	3.71
E0300-037-1000-M					1.000	25.40	1.56	39.62					11.8	2.070	E0300-037-1000-S					9.83	1.72
E0300-037-1120-M					1.120	28.45	1.82	46.23					9.4	1.646	E0300-037-1120-S					7.83	1.37
E0300-037-1250-M					1.250	31.75	2.10	53.34					7.7	1.348	E0300-037-1250-S					6.41	1.12
E0300-037-1370-M					1.370	34.80	2.37	60.20					6.6	1.156	E0300-037-1370-S					5.50	0.96
E0300-037-1500-M			0.037	0.94	1.500	38.10	2.65	67.31	7.20	32.03	0.65	2.89	5.7	0.998	E0300-037-1500-S	6.00	26.68	0.54	2.41	4.75	0.83
E0300-037-1750-M					1.750	44.45	3.20	81.28					4.5	0.788	E0300-037-1750-S					3.75	0.66
E0300-037-2000-M					2.000	50.80	3.75	95.25					3.7	0.648	E0300-037-2000-S					3.08	0.54
E0300-037-2250-M					2.250	57.15	4.30	109.22					3.2	0.560	E0300-037-2250-S					2.67	0.47
E0300-037-2500-M	0.300	7.62			2.500	63.50	4.85	123.19					2.8	0.490	E0300-037-2500-S					2.33	0.41
E0300-037-2750-M					2.750	69.85	5.40	137.16					2.5	0.438	E0300-037-2750-S					2.08	0.37
E0300-037-3000-M					3.000	76.20	5.94	150.88					2.2	0.385	E0300-037-3000-S					1.83	0.32
E0300-049-1000-M					1.000	25.40	1.28	32.51					50.7	8.880	E0300-049-1000-S					42.23	7.40
E0300-049-1120-M					1.120	28.45	1.47	37.34					41.0	7.180	E0300-049-1120-S					34.15	5.98
E0300-049-1250-M					1.250	31.75	1.67	42.42					33.9	5.940	E0300-049-1250-S					28.24	4.95
E0300-049-1370-M					1.370	34.80	1.85	46.99					29.3	5.130	E0300-049-1370-S					24.41	4.27
E0300-049-1500-M					1.500	38.10	2.06	52.32					25.5	4.470	E0300-049-1500-S					21.24	3.72
E0300-049-1750-M			0.049	1.24	1.750	44.45	2.44	61.98	15.60	69.39	1.40	6.23	20.4	3.570	E0300-049-1750-S	13.00	57.80	1.17	5.19	16.99	2.97
E0300-049-2000-M					2.000	50.80	2.83	71.88					17.0	2.980	E0300-049-2000-S					14.16	2.48
E0300-049-2250-M					2.250	57.15	3.22	81.79					14.6	2.560	E0300-049-2250-S					12.16	2.13
E0300-049-2500-M					2.500	63.50	3.61	91.69					12.8	2.240	E0300-049-2500-S					10.66	1.87
E0300-049-2750-M					2.750	69.85	4.00	101.60					11.4	1.996	E0300-049-2750-S					9.50	1.66
E0300-049-3000-M					3.000	76.20	4.38	111.25					10.2	1.786	E0300-049-3000-S					8.50	1.49
E0300-055-1000-M					1.000	25.40	1.21	30.73					93.3	16.340	E0300-055-1000-S					77.72	13.61
E0300-055-1120-M					1.120	28.45	1.38	35.05					76.0	13.310	E0300-055-1120-S					63.31	11.09
E0300-055-1250-M					1.250	31.75	1.56	39.62					63.3	11.090	E0300-055-1250-S					52.73	9.24
E0300-055-1370-M					1.370	34.80	1.72	43.69					54.8	9.600	E0300-055-1370-S					45.65	8.00
E0300-055-1500-M			0.055	1.40	1.500	38.10	1.90	48.26	21.31	94.79	1.92	8.54	47.9	8.390	E0300-055-1500-S	17.75	78.96	1.60	7.11	39.90	6.99
E0300-055-1750-M					1.750	44.45	2.25	57.15					38.5	6.740	E0300-055-1750-S					32.07	5.61
E0300-055-2000-M					2.000	50.80	2.60	66.04					32.2	5.640	E0300-055-2000-S					26.82	4.70
E0300-055-2250-M					2.250	57.15	2.95	74.93					27.7	4.850	E0300-055-2250-S					23.07	4.04
E0300-055-2500-M					2.500	63.50	3.30	83.82					24.3	4.260	E0300-055-2500-S					20.24	3.55</

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0300-055-2750-M	0.300	7.62	0.055	1.40	2.750	69.85	3.65	92.71	21.31	94.79	1.92	8.54	21.6	3.780	E0300-055-2750-S	17.75	78.96	1.60	7.11	17.99	3.15
E0300-055-3000-M					3.000	76.20	4.00	101.60					19.5	3.410	E0300-055-3000-S					16.24	2.84
T32050					0.996	25.30	1.188	30.18					145.0	25.400	T42050					120.79	21.16
T32060	0.315	8.00	0.063	1.60	1.374	34.90	1.681	42.71	32.82	146.00	4.90	21.81	90.8	15.900	T42060	27.34	121.62	4.09	18.17	75.64	13.25
T32070					1.941	49.30	2.421	61.50					58.2	10.200	T42070					48.48	8.50
T31820					0.906	23.00	1.293	32.85					31.0	5.430	T41820					25.82	4.52
T31830					1.189	30.20	1.811	46.00					19.4	3.390	T41830					16.16	2.82
T31840	0.335	8.50	0.047	1.20	1.614	41.00	2.583	65.60	14.12	62.80	2.07	9.22	12.4	2.170	T41840	11.76	52.31	1.73	7.68	10.33	1.81
T31850					2.323	59.00	3.882	98.60					7.7	1.350	T41850					6.41	1.13
T31860					11.417	290.00	20.276	515.00					1.37	0.240	T41860					1.14	0.20
T31370					0.811	20.60	1.654	42.00					4.4	0.760	T41370					3.67	0.63
T31380					1.000	25.40	2.350	59.70					2.7	0.470	T41380					2.25	0.39
T31390			0.031	0.80	1.283	32.60	3.390	86.10	4.27	19.00	0.61	2.72	1.7	0.300	T41390	3.56	15.83	0.51	2.27	1.42	0.25
T31400	0.354	9.00			1.756	44.60	5.126	130.20					1.1	0.190	T41400					0.92	0.16
T31410					2.386	60.60	7.425	188.60					0.74	0.130	T41410					0.62	0.11
T32170					1.118	28.40	1.330	33.77					163.3	28.600	T42170					136.03	23.82
T32180			0.071	1.80	1.543	39.20	1.881	47.79	40.46	180.00	5.95	26.47	101.6	17.800	T42180	33.71	149.94	4.96	22.05	84.63	14.83
T32190					2.181	55.40	2.709	68.80					65.7	11.500	T42190					54.73	9.58
E0360-026-1000-M					1.000	25.40	2.32	58.93					1.5	0.263	E0360-026-1000-S					1.25	0.22
E0360-026-1120-M					1.120	28.45	2.98	75.69					1.1	0.193	E0360-026-1120-S					0.92	0.16
E0360-026-1250-M			0.026	0.66	1.250	31.75	3.69	93.73	2.25	10.01	0.20	0.89	0.8	0.140	E0360-026-1250-S	1.87	8.34	0.17	0.74	0.67	0.12
E0360-026-1370-M					1.370	34.80	4.34	110.24					0.7	0.123	E0360-026-1370-S					0.58	0.10
E0360-026-1500-M					1.500	38.10	5.05	128.27					0.6	0.105	E0360-026-1500-S					0.50	0.09
E0360-026-1750-M					1.750	44.45	6.42	163.07					0.4	0.070	E0360-026-1750-S					0.33	0.06
E0360-031-0880-M					0.870	22.10	1.40	35.56					6.3	1.103	E0360-031-0880-S					5.25	0.92
E0360-031-1000-M					1.000	25.40	2.02	51.31					3.2	0.560	E0360-031-1000-S					2.67	0.47
E0360-031-1120-M					1.120	28.45	2.48	62.99					2.4	0.420	E0360-031-1120-S					2.00	0.35
E0360-031-1250-M					1.250	31.75	2.95	74.93					1.9	0.333	E0360-031-1250-S					1.58	0.28
E0360-031-1370-M					1.370	34.80	3.41	86.61					1.6	0.280	E0360-031-1370-S					1.33	0.23
E0360-031-1500-M			0.031	0.79	1.500	38.10	3.81	96.77	3.69	16.41	0.33	1.47	1.4	0.245	E0360-031-1500-S	3.07	13.67	0.28	1.22	1.17	0.20
E0360-031-1750-M					1.750	44.45	4.84	122.94					1.1	0.193	E0360-031-1750-S					0.92	0.16
E0360-031-2000-M					2.000	50.80	5.82	147.83					0.9	0.158	E0360-031-2000-S					0.75	0.13
E0360-031-2250-M					2.250	57.15	6.79	172.47					0.7	0.123	E0360-031-2250-S					0.58	0.10
E0360-031-2500-M					2.500	63.50	7.77	197.36					0.6	0.105	E0360-031-2500-S					0.50	0.09
E0360-031-2750-M					2.750	69.85	8.75	222.25					0.6	0.105	E0360-031-2750-S					0.50	0.09
E0360-031-3000-M					3.000	76.20	9.72	246.89					0.5	0.088	E0360-031-3000-S					0.42	0.07
E0360-034-1000-M					1.000	25.40	1.75	44.45					5.8	1.016	E0360-034-1000-S					4.83	0.85
E0360-034-1120-M					1.120	28.45	2.14	54.36					4.2	0.736	E0360-034-1120-S					3.50	0.61
E0360-034-1250-M					1.250	31.75	2.57	65.28					3.3	0.578	E0360-034-1250-S					2.75	0.48
E0360-034-1370-M	0.360	9.14			1.370	34.80	2.97	75.44					2.7	0.473	E0360-034-1370-S					2.25	0.39
E0360-034-1500-M					1.500	38.10	3.40	86.36					2.3	0.403	E0360-034-1500-S					1.92	0.34
E0360-034-1750-M					1.750	44.45	4.23	107.44					1.8	0.315	E0360-034-1750-S					1.50	0.26
E0360-034-2000-M					2.000	50.80	5.06	128.52					1.4	0.245	E0360-034-2000-S					1.17	0.20
E0360-034-2250-M			0.034	0.86	2.250	57.15	5.90	149.86	4.78	21.26	0.43	1.91	1.2	0.210	E0360-034-2250-S	3.98	17.71	0.36	1.59	1.00	0.18
E0360-034-2500-M					2.500	63.50	6.70	170.18					1.0	0.175	E0360-034-2500-S					0.83	0.15
E0360-034-2750-M					2.750	69.85	7.54	191.52					0.9	0.158	E0360-034-2750-S					0.75	0.13
E0360-034-3000-M					3.000	76.20	8.37	212.60					0.8	0.140	E0360-034-3000-S					0.67	0.12
E0360-034-3500-M					3.500	88.90	10.01	254.25					0.7	0.123	E0360-034-3500-S					0.58	0.10
E0360-034-4000-M					4.000	101.60	11.69	296.93					0.6	0.105	E0360-034-4000-S					0.50	0.09
E0360-034-4500-M					4.500	114.30	13.33	338.58					0.5	0.088	E0360-034-4500-S					0.42	0.07
E0360-034-5000-M					5.000	127.00	14.96	379.98					0.4	0.070	E0360-034-5000-S					0.33	0.06
E0360-037-0750-M					0.750	19.05	0.91	23.11					35.3	6.180	E0360-037-0750-S					29.40	5.15
E0360-037-1000-M					1.000	25.40	1.68	42.67					7.9	1.384	E0360-037-1000-S					6.58	1.15
E0360-037-1120-M					1.120	28.45	2.04	51.82					5.9	1.033	E0360-037-1120-S					4.91	0.86
E0360-037-1250-M					1.250	31.75	2.39	60.71					4.7	0.823	E0360-037-1250-S					3.92	0.69
E0360-037-1370-M			0.037	0.94	1.370	34.80	2.71	68.83	5.90	26.24	0.50	2.22	4.0	0.701	E0360-037-1370-S	4.92	21.86	0.42	1.85	3.33	0.58
E0360-037-1500-M					1.500	38.10	3.06	77.72					3.4	0.595	E0360-037-1500-S					2.83	0.50
E0360-037-1750-M					1.750	44.45	3.77	95.76					2.6	0.455	E0360-037-1750-S					2.17	0.38
E0360-037-2000-M					2.000	50.80	4.44	112.78					2.2	0.385	E0360-037-2000-S					1.83	0.32
E0360-037-2250-M					2.250	57.15	5.14	130.56					1.8	0.315	E0360-037-2250-S					1.50	0.26
E0360-037-2500-M					2.500	63.50	5.81	147.57					1.6	0.280	E0360-037-2500-S					1.33	0.23

TO ORDER: WWW.ASR



MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0360-037-2750-M					2.750	69.85	6.64	168.66					1.4	0.245	E0360-037-2750-S					1.17	0.20
E0360-037-3000-M					3.000	76.20	7.35	186.69					1.3	0.228	E0360-037-3000-S					1.08	0.19
E0360-037-3500-M			0.037	0.94	3.500	88.90	8.67	220.22	5.90	26.24	0.50	2.22	1.0	0.175	E0360-037-3500-S	4.92	21.86	0.42	1.85	0.83	0.15
E0360-037-4000-M					4.000	101.60	10.08	256.03					0.9	0.158	E0360-037-4000-S					0.75	0.13
E0360-037-4500-M					4.500	114.30	11.49	291.85					0.8	0.140	E0360-037-4500-S					0.67	0.12
E0360-037-5000-M					5.000	127.00	12.90	327.66					0.7	0.123	E0360-037-5000-S					0.58	0.10
E0360-039-1000-M					1.000	25.40	1.56	39.62					11.5	2.010	E0360-039-1000-S					9.58	1.67
E0360-039-1120-M					1.120	28.45	1.87	47.50					8.5	1.489	E0360-039-1120-S					7.08	1.24
E0360-039-1250-M					1.250	31.75	2.21	56.13					6.6	1.156	E0360-039-1250-S					5.50	0.96
E0360-039-1370-M					1.370	34.80	2.53	64.26					5.5	0.963	E0360-039-1370-S					4.58	0.80
E0360-039-1500-M					1.500	38.10	2.87	72.90					4.7	0.823	E0360-039-1500-S					3.92	0.69
E0360-039-1750-M			0.039	0.99	1.750	44.45	3.53	89.66	7.02	31.23	0.63	2.80	3.6	0.630	E0360-039-1750-S	5.85	26.01	0.52	2.33	3.00	0.53
E0360-039-2000-M					2.000	50.80	4.19	106.43					2.9	0.508	E0360-039-2000-S					2.42	0.42
E0360-039-2250-M					2.250	57.15	4.84	122.94					2.5	0.438	E0360-039-2250-S					2.08	0.37
E0360-039-2500-M					2.500	63.50	5.50	139.70					2.1	0.368	E0360-039-2500-S					1.75	0.31
E0360-039-2750-M					2.750	69.85	6.16	156.46					1.9	0.333	E0360-039-2750-S					1.58	0.28
E0360-039-3000-M					3.000	76.20	6.82	173.23					1.7	0.298	E0360-039-3000-S					1.42	0.25
E0360-041-0750-M					0.750	19.05	0.89	22.61					52.7	9.230	E0360-041-0750-S					43.90	7.69
E0360-041-1000-M					1.000	25.40	1.55	39.37					12.9	2.260	E0360-041-1000-S					10.75	1.88
E0360-041-1120-M					1.120	28.45	1.85	46.99					9.9	1.734	E0360-041-1120-S					8.25	1.44
E0360-041-1250-M					1.250	31.75	2.14	54.36					8.1	1.419	E0360-041-1250-S					6.75	1.18
E0360-041-1370-M					1.370	34.80	2.43	61.72					6.8	1.191	E0360-041-1370-S					5.66	0.99
E0360-041-1500-M					1.500	38.10	2.72	69.09					5.9	1.033	E0360-041-1500-S					4.91	0.86
E0360-041-1750-M					1.750	44.45	3.30	83.82					4.6	0.806	E0360-041-1750-S					3.83	0.67
E0360-041-2000-M			0.041	1.04	2.000	50.80	3.89	98.81	7.90	35.14	0.70	3.11	3.8	0.665	E0360-041-2000-S	6.58	29.27	0.58	2.59	3.17	0.55
E0360-041-2250-M					2.250	57.15	4.50	114.30					3.2	0.560	E0360-041-2250-S					2.67	0.47
E0360-041-2500-M					2.500	63.50	5.08	129.03					2.7	0.473	E0360-041-2500-S					2.25	0.39
E0360-041-2750-M					2.750	69.85	5.75	146.05					2.4	0.420	E0360-041-2750-S					2.00	0.35
E0360-041-3000-M	0.360	9.14			3.000	76.20	6.36	161.54					2.2	0.385	E0360-041-3000-S					1.83	0.32
E0360-041-3500-M					3.500	88.90	7.58	192.53					1.8	0.315	E0360-041-3500-S					1.50	0.26
E0360-041-4000-M					4.000	101.60	8.69	220.73					1.5	0.263	E0360-041-4000-S					1.25	0.22
E0360-041-4500-M					4.500	114.30	9.91	251.71					1.3	0.228	E0360-041-4500-S					1.08	0.19
E0360-041-5000-M					5.000	127.00	11.10	281.94					1.2	0.210	E0360-041-5000-S					1.00	0.18
E0360-045-0750-M					0.750	19.05	0.87	22.10					76.5	13.400	E0360-045-0750-S					63.72	11.16
E0360-045-1000-M					1.000	25.40	1.43	36.32					21.8	3.820	E0360-045-1000-S					18.16	3.18
E0360-045-1120-M					1.120	28.45	1.69	42.93					16.4	2.870	E0360-045-1120-S					13.66	2.39
E0360-045-1250-M					1.250	31.75	1.93	49.02					13.6	2.380	E0360-045-1250-S					11.33	1.98
E0360-045-1370-M					1.370	34.80	2.20	55.88					11.2	1.961	E0360-045-1370-S					9.33	1.63
E0360-045-1500-M					1.500	38.10	2.47	62.74					9.6	1.681	E0360-045-1500-S					8.00	1.40
E0360-045-1750-M					1.750	44.45	2.98	75.69					7.5	1.313	E0360-045-1750-S					6.25	1.09
E0360-045-2000-M					2.000	50.80	3.49	88.65					6.2	1.086	E0360-045-2000-S					5.16	0.91
E0360-045-2250-M			0.045	1.14	2.250	57.15	4.00	101.60	10.20	45.37	0.90	4.00	5.3	0.928	E0360-045-2250-S	8.50	37.79	0.75	3.33	4.41	0.77
E0360-045-2500-M					2.500	63.50	4.51	114.55					4.6	0.806	E0360-045-2500-S					3.83	0.67
E0360-045-2750-M					2.750	69.85	5.02	127.51					4.1	0.718	E0360-045-2750-S					3.42	0.60
E0360-045-3000-M					3.000	76.20	5.53	140.46					3.6	0.630	E0360-045-3000-S					3.00	0.53
E0360-045-3500-M					3.500	88.90	6.71	170.43					3.0	0.525	E0360-045-3500-S					2.50	0.44
E0360-045-4000-M					4.000	101.60	7.77	197.36					2.5	0.438	E0360-045-4000-S					2.08	0.37
E0360-045-4500-M					4.500	114.30	8.83	224.28					2.2	0.385	E0360-045-4500-S					1.83	0.32
E0360-045-5000-M					5.000	127.00	9.78	248.41					1.9	0.333	E0360-045-5000-S					1.58	0.28
E0360-045-5500-M					5.500	139.70	10.83	275.08					1.7	0.298	E0360-045-5500-S					1.42	0.25
E0360-045-6000-M					6.000	152.40	11.87	301.50					1.6	0.280	E0360-045-6000-S					1.33	0.23
E0360-049-1000-M					1.000	25.40	1.33	33.78					36.0	6.300	E0360-049-1000-S					29.99	5.25
E0360-049-1120-M					1.120	28.45	1.56	39.62					27.3	4.780	E0360-049-1120-S					22.74	3.98
E0360-049-1250-M					1.250	31.75	1.81	45.97					21.6	3.780	E0360-049-1250-S					17.99	3.15
E0360-049-1370-M					1.370	34.80	2.03	51.56					18.1	3.170	E0360-049-1370-S					15.08	2.64
E0360-049-1500-M			0.049	1.24	1.500	38.10	2.28	57.91	13.20	58.72	1.20	5.34	15.4	2.700	E0360-049-1500-S	11.00	48.91	1.00	4.45	12.83	2.25
E0360-049-1750-M					1.750	44.45	2.75	69.85					12.0	2.100	E0360-049-1750-S					10.00	1.75
E0360-049-2000-M					2.000	50.80	3.23	82.04					9.8	1.716	E0360-049-2000-S					8.16	1.43
E0360-049-2250-M					2.250	57.15	3.70	93.98					8.3	1.454	E0360-049-2250-S					6.91	1.21
E0360-049-2500-M					2.500	63.50	4.17	105.92					7.2	1.261	E0360-049-2500-S					6.00	1.05
E0360-049-2750-M					2.750	69.85	4.65	118.11					6.4	1.121	E0360-049-2750-S					5.33	0.93

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0360-049-3000-M					3.000	76.20	5.12	130.05					5.7	0.998	E0360-049-3000-S					4.75	0.83
E0360-049-3500-M					3.500	88.90	6.07	154.18					4.7	0.823	E0360-049-3500-S					3.92	0.69
E0360-049-4000-M					4.000	101.60	7.01	178.05					4.0	0.701	E0360-049-4000-S					3.33	0.58
E0360-049-4500-M			0.049	1.24	4.500	114.30	7.96	202.18	13.20	58.72	1.20	5.34	3.5	0.613	E0360-049-4500-S	11.00	48.91	1.00	4.45	2.92	0.51
E0360-049-5000-M					5.000	127.00	8.90	226.06					3.1	0.543	E0360-049-5000-S					2.58	0.45
E0360-049-5500-M					5.500	139.70	9.83	249.68					2.8	0.490	E0360-049-5500-S					2.33	0.41
E0360-049-6000-M					6.000	152.40	10.77	273.56					2.5	0.438	E0360-049-6000-S					2.08	0.37
E0360-055-1000-M					1.000	25.40	1.26	32.00					64.6	11.310	E0360-055-1000-S					53.81	9.42
E0360-055-1120-M					1.120	28.45	1.49	37.85					45.9	8.040	E0360-055-1120-S					38.23	6.70
E0360-055-1250-M					1.250	31.75	1.66	42.16					38.6	6.760	E0360-055-1250-S					32.15	5.63
E0360-055-1370-M					1.370	34.80	1.87	47.50					32.1	5.620	E0360-055-1370-S					26.74	4.68
E0360-055-1500-M					1.500	38.10	2.06	52.32					28.4	4.970	E0360-055-1500-S					23.66	4.14
E0360-055-1750-M					1.750	44.45	2.46	62.48					22.4	3.920	E0360-055-1750-S					18.66	3.27
E0360-055-2000-M					2.000	50.80	2.87	72.90					18.2	3.190	E0360-055-2000-S					15.16	2.66
E0360-055-2250-M					2.250	57.15	3.28	83.31					15.5	2.710	E0360-055-2250-S					12.91	2.26
E0360-055-2500-M			0.055	1.40	2.500	63.50	3.68	93.47	17.60	78.29	1.60	7.12	13.6	2.380	E0360-055-2500-S	14.66	65.22	1.33	5.93	11.33	1.98
E0360-055-2750-M					2.750	69.85	4.07	103.38					12.0	2.100	E0360-055-2750-S					10.00	1.75
E0360-055-3000-M					3.000	76.20	4.47	113.54					10.8	1.891	E0360-055-3000-S					9.00	1.58
E0360-055-3500-M					3.500	88.90	5.27	133.86					9.0	1.576	E0360-055-3500-S					7.50	1.31
E0360-055-4000-M					4.000	101.60	6.10	154.94					7.7	1.348	E0360-055-4000-S					6.41	1.12
E0360-055-4500-M	0.360	9.14			4.500	114.30	6.81	172.97					6.7	1.173	E0360-055-4500-S					5.58	0.98
E0360-055-5000-M					5.000	127.00	7.85	199.39					5.8	1.016	E0360-055-5000-S					4.83	0.85
E0360-055-5500-M					5.500	139.70	8.68	220.47					5.2	0.911	E0360-055-5500-S					4.33	0.76
E0360-055-6000-M					6.000	152.40	9.50	241.30					4.7	0.823	E0360-055-6000-S					3.92	0.69
E0360-058-1000-M					1.000	25.40	1.23	31.24					84.5	14.800	E0360-058-1000-S					70.39	12.33
E0360-058-1120-M					1.120	28.45	1.41	35.81					65.2	11.420	E0360-058-1120-S					54.31	9.51
E0360-058-1250-M					1.250	31.75	1.62	41.15					52.3	9.160	E0360-058-1250-S					43.57	7.63
E0360-058-1370-M					1.370	34.80	1.80	45.72					44.2	7.740	E0360-058-1370-S					36.82	6.45
E0360-058-1500-M					1.500	38.10	2.01	51.05					37.8	6.620	E0360-058-1500-S					31.49	5.51
E0360-058-1750-M					1.750	44.45	2.40	60.96					29.7	5.200	E0360-058-1750-S					24.74	4.33
E0360-058-2000-M					2.000	50.80	2.78	70.61					24.4	4.270	E0360-058-2000-S					20.33	3.56
E0360-058-2250-M					2.250	57.15	3.17	80.52					20.7	3.630	E0360-058-2250-S					17.24	3.02
E0360-058-2500-M			0.058	1.47	2.500	63.50	3.56	90.42	21.02	93.50	1.89	8.41	18.0	3.150	E0360-058-2500-S	17.51	77.89	1.58	7.01	14.99	2.62
E0360-058-2750-M					2.750	69.85	3.95	100.33					15.9	2.780	E0360-058-2750-S					13.24	2.32
E0360-058-3000-M					3.000	76.20	4.34	110.24					14.2	2.490	E0360-058-3000-S					11.83	2.07
E0360-058-3500-M					3.500	88.90	5.12	130.05					11.8	2.070	E0360-058-3500-S					9.83	1.72
E0360-058-4000-M					4.000	101.60	5.89	149.61					10.1	1.769	E0360-058-4000-S					8.41	1.47
E0360-058-4500-M					4.500	114.30	6.69	169.93					8.7	1.524	E0360-058-4500-S					7.25	1.27
E0360-058-5000-M					5.000	127.00	7.46	189.48					7.8	1.366	E0360-058-5000-S					6.50	1.14
E0360-058-5500-M					5.500	139.70	8.24	209.30					7.0	1.226	E0360-058-5500-S					5.83	1.02
E0360-058-6000-M					6.000	152.40	9.01	228.85					6.4	1.121	E0360-058-6000-S					5.33	0.93
T31490					0.906	23.00	1.815	46.10					5.0	0.880	T41490					4.17	0.73
T31500					1.118	28.40	2.571	65.30					3.1	0.550	T41500					2.58	0.46
T31510			0.035	0.90	1.437	36.50	3.705	94.10	5.40	24.00	0.78	3.46	2.0	0.350	T41510	4.49	19.99	0.65	2.88	1.67	0.29
T31520					1.969	50.00	5.598	142.20					1.3	0.230	T41520					1.08	0.19
T31530					2.677	68.00	8.110	206.00					0.9	0.150	T41530					0.75	0.13
T31950					1.059	26.90	1.516	38.50					35.1	6.140	T41950					29.24	5.12
T31960	0.394	10.00			1.390	35.30	2.118	53.80					21.9	3.830	T41960					18.24	3.19
T31970			0.055	1.40	1.886	47.90	3.024	76.80	18.79	83.60	2.85	12.66	14.0	2.460	T41970	15.66	69.64	2.37	10.54	11.66	2.05
T31980					2.713	68.90	4.531	115.10					8.8	1.540	T41980					7.33	1.28
T31990					11.417	290.00	20.079	510.00					1.8	0.320	T41990					1.50	0.27
T32300					1.244	31.60	1.475	37.46					181.6	31.800	T42300					151.27	26.49
T32310			0.079	2.00	1.717	43.60	2.086	52.98	49.46	220.00	7.40	32.94	113.6	19.900	T42310	41.20	183.26	6.17	27.44	94.63	16.58
T32320					2.425	61.60	3.004	76.30					73.1	12.800	T42320					60.89	10.66
E0420-037-1000-M					1.000	25.40	1.54	39.12					8.8	1.541	E0420-037-1000-S					7.33	1.28
E0420-037-1120-M					1.120	28.45	1.98	50.29					5.5	0.963	E0420-037-1120-S					4.58	0.80
E0420-037-1250-M					1.250	31.75	2.46	62.48					3.9	0.683	E0420-037-1250-S					3.25	0.57
E0420-037-1370-M	0.420	10.67	0.037	0.94	1.370	34.80	2.91	73.91	5.20	23.13	0.50	2.22	3.1	0.543	E0420-037-1370-S	4.33	19.27	0.42	1.85	2.58	0.45
E0420-037-1500-M					1.500	38.10	3.39	86.11					2.5	0.438	E0420-037-1500-S					2.08	0.37
E0420-037-1750-M					1.750	44.45	4.31	109.47					1.9	0.333	E0420-037-1750-S					1.58	0.28
E0420-037-2000-M					2.000	50.80	5.23	132.84					1.5	0.263	E0420-037-2000-S					1.25	0.22

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER





MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0420-037-2250-M					2.250	57.15	6.15	156.21					1.2	0.210	E0420-037-2250-S					1.00	0.18
E0420-037-2500-M			0.037	0.94	2.500	63.50	7.07	179.58	5.20	23.13	0.50	2.22	1.0	0.175	E0420-037-2500-S	4.33	19.27	0.42	1.85	0.83	0.15
E0420-037-2750-M					2.750	69.85	7.99	202.95					0.9	0.158	E0420-037-2750-S					0.75	0.13
E0420-037-3000-M					3.000	76.20	8.92	226.57					0.8	0.140	E0420-037-3000-S					0.67	0.12
E0420-045-1000-M					1.000	25.40	1.38	35.05					22.0	3.850	E0420-045-1000-S					18.33	3.21
E0420-045-1120-M					1.120	28.45	1.69	42.93					14.4	2.520	E0420-045-1120-S					12.00	2.10
E0420-045-1250-M					1.250	31.75	2.04	51.82					10.5	1.839	E0420-045-1250-S					8.75	1.53
E0420-045-1370-M					1.370	34.80	2.35	59.69					8.4	1.471	E0420-045-1370-S					7.00	1.23
E0420-045-1500-M			0.045	1.14	1.500	38.10	2.69	68.33	9.06	40.30	0.82	3.65	6.9	1.208	E0420-045-1500-S					5.75	1.01
E0420-045-1750-M					1.750	44.45	3.35	85.09					5.1	0.893	E0420-045-1750-S	7.55	33.57	0.68	3.04	4.25	0.74
E0420-045-2000-M					2.000	50.80	4.01	101.85					4.1	0.718	E0420-045-2000-S					3.42	0.60
E0420-045-2250-M					2.250	57.15	4.67	118.62					3.4	0.595	E0420-045-2250-S					2.83	0.50
E0420-045-2500-M					2.500	63.50	5.33	135.38					2.9	0.508	E0420-045-2500-S					2.42	0.42
E0420-045-2750-M	0.420	10.67			2.750	69.85	5.99	152.15					2.5	0.438	E0420-045-2750-S					2.08	0.37
E0420-045-3000-M					3.000	76.20	6.65	168.91					2.3	0.403	E0420-045-3000-S					1.92	0.34
E0420-055-1000-M					1.000	25.40	1.25	31.75					56.6	9.910	E0420-055-1000-S					47.15	8.26
E0420-055-1120-M					1.120	28.45	1.49	37.85					38.8	6.790	E0420-055-1120-S					32.32	5.66
E0420-055-1250-M					1.250	31.75	1.75	44.45					29.0	5.080	E0420-055-1250-S					24.16	4.23
E0420-055-1370-M					1.370	34.80	1.98	50.29					23.5	4.120	E0420-055-1370-S					19.58	3.43
E0420-055-1500-M					1.500	38.10	2.24	56.90					19.5	3.410	E0420-055-1500-S					16.24	2.84
E0420-055-1750-M			0.055	1.40	1.750	44.45	2.73	69.34	15.80	70.28	1.40	6.23	14.7	2.570	E0420-055-1750-S	13.16	58.54	1.17	5.19	12.25	2.14
E0420-055-2000-M					2.000	50.80	3.22	81.79					11.8	2.070	E0420-055-2000-S					9.83	1.72
E0420-055-2250-M					2.250	57.15	3.71	94.23					9.8	1.716	E0420-055-2250-S					8.16	1.43
E0420-055-2500-M					2.500	63.50	4.21	106.93					8.4	1.471	E0420-055-2500-S					7.00	1.23
E0420-055-2750-M					2.750	69.85	4.70	119.38					7.4	1.296	E0420-055-2750-S					6.16	1.08
E0420-055-3000-M					3.000	76.20	5.19	131.83					6.6	1.156	E0420-055-3000-S					5.50	0.96
T31620					1.000	25.40	1.976	50.20					5.8	1.020	T41620					4.83	0.85
T31630					1.236	31.40	2.795	71.00					3.7	0.640	T41630					3.08	0.53
T31640			0.039	1.00	1.591	40.40	4.028	102.30	6.65	29.60	0.94	4.18	2.3	0.410	T41640	5.54	24.66	0.78	3.48	1.92	0.34
T31650					2.181	55.40	6.079	154.40					1.5	0.260	T41650					1.25	0.22
T31660					2.969	75.40	8.835	224.40					1.0	0.170	T41660					0.83	0.14
T32080					1.185	30.10	1.646	41.80					45.9	8.040	T42080					38.23	6.70
T32090	0.433	11.00	0.063	1.60	1.563	39.70	2.299	58.40	24.95	111.00	3.80	16.91	28.7	5.020	T42090	20.79	92.46	3.17	14.09	23.91	4.18
T32100					2.130	54.10	3.283	83.40					18.4	3.220	T42100					15.33	2.68
T32110					3.075	78.10	4.917	124.90					11.5	2.010	T42110					9.58	1.67
T32420					1.370	34.80	1.618	41.10					199.9	35.000	T42420					166.52	29.16
T32430			0.087	2.20	1.890	48.00	2.287	58.10	58.22	259.00	8.55	38.04	125.0	21.900	T42430	48.50	215.75	7.12	31.69	104.13	18.24
T32440					2.669	67.80	3.291	83.60					79.9	14.000	T42440					66.56	11.66
T31740					1.094	27.80	2.134	54.20					6.6	1.150	T41740					5.50	0.96
T31750					1.354	34.40	3.020	76.70					4.1	0.720	T41750					3.42	0.60
T31760			0.043	1.10	1.744	44.30	4.346	110.40	8.05	35.80	1.18	5.26	2.6	0.460	T41760	6.70	29.82	0.99	4.38	2.17	0.38
T31770					2.394	60.80	6.567	166.80					1.6	0.280	T41770					1.33	0.23
T31780					3.260	82.80	9.520	241.80					1.1	0.200	T41780					0.92	0.17
T32200	0.472	12.00			1.307	33.20	1.776	45.10					57.7	10.100	T42200					48.06	8.41
T32210					1.732	44.00	2.480	63.00					35.9	6.280	T42210					29.90	5.23
T32220			0.071	1.80	2.370	60.20	3.539	89.90	31.70	141.00	4.82	21.43	23.0	4.020	T42220	26.40	117.45	4.01	17.85	19.16	3.35
T32230					3.433	87.20	5.307	134.80					14.4	2.520	T42230					12.00	2.10
T32240					11.417	290.00	18.307	465.00					3.9	0.680	T42240					3.25	0.57
E0500-034-1250-M					1.250	31.75	2.56	65.02					2.4	0.420	E0500-034-1250-S					2.00	0.35
E0500-034-1370-M					1.370	34.80	3.27	83.06					1.7	0.298	E0500-034-1370-S					1.42	0.25
E0500-034-1500-M			0.034	0.86	1.500	38.10	4.04	102.62	3.49	15.52	0.31	1.38	1.3	0.228	E0500-034-1500-S	2.91	12.93	0.26	1.15	1.08	0.19
E0500-034-1750-M					1.750	44.45	5.52	140.21					0.8	0.140	E0500-034-1750-S					0.67	0.12
E0500-034-2000-M					2.000	50.80	7.00	177.80					0.6	0.105	E0500-034-2000-S					0.50	0.09
E0500-034-2250-M					2.250	57.15	8.48	215.39					0.5	0.088	E0500-034-2250-S					0.42	0.07
E0500-037-1250-M	0.500	12.70			1.250	31.75	2.65	67.31					2.8	0.490	E0500-037-1250-S					2.33	0.41
E0500-037-1370-M					1.370	34.80	3.20	81.28					2.1	0.368	E0500-037-1370-S					1.75	0.31
E0500-037-1500-M					1.500	38.10	3.81	96.77					1.7	0.298	E0500-037-1500-S					1.42	0.25
E0500-037-1750-M			0.037	0.94	1.750	44.45	4.98	126.49	4.40	19.57	0.40	1.78	1.2	0.210	E0500-037-1750-S	3.67	16.30	0.33	1.48	1.00	0.18
E0500-037-2000-M					2.000	50.80	6.12	155.45					1.0	0.175	E0500-037-2000-S					0.83	0.15
E0500-037-2250-M					2.250	57.15	7.37	187.20					0.8	0.140	E0500-037-2250-S					0.67	0.12
E0500-037-2500-M					2.500	63.50	8.54	216.92					0.7	0.123	E0500-037-2500-S					0.58	0.10

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0500-037-2750-M					2.750	69.85	9.82	249.43					0.6	0.105	E0500-037-2750-S					0.50	0.09
E0500-037-3000-M					3.000	76.20	11.10	281.94					0.5	0.088	E0500-037-3000-S					0.42	0.07
E0500-037-3500-M			0.037	0.94	3.500	88.90	13.59	345.19	4.40	19.57	0.40	1.78	0.4	0.070	E0500-037-3500-S	3.67	16.30	0.33	1.48	0.33	0.06
E0500-037-4000-M					4.000	101.60	16.08	408.43					0.3	0.053	E0500-037-4000-S					0.25	0.04
E0500-037-4500-M					4.500	114.30	18.57	471.68					0.3	0.053	E0500-037-4500-S					0.25	0.04
E0500-037-5000-M					5.000	127.00	21.06	534.92					0.2	0.035	E0500-037-5000-S					0.17	0.03
E0500-041-1250-M					1.250	31.75	2.34	59.44					4.8	0.841	E0500-041-1250-S					4.00	0.70
E0500-041-1370-M					1.370	34.80	2.83	71.88					3.6	0.630	E0500-041-1370-S					3.00	0.53
E0500-041-1500-M					1.500	38.10	3.32	84.33					2.9	0.508	E0500-041-1500-S					2.42	0.42
E0500-041-1750-M					1.750	44.45	4.29	108.97					2.0	0.350	E0500-041-1750-S					1.67	0.29
E0500-041-2000-M					2.000	50.80	5.33	135.38					1.5	0.263	E0500-041-2000-S					1.25	0.22
E0500-041-2250-M					2.250	57.15	6.30	160.02					1.3	0.228	E0500-041-2250-S					1.08	0.19
E0500-041-2500-M			0.041	1.04	2.500	63.50	7.31	185.67	5.80	25.80	0.50	2.22	1.1	0.193	E0500-041-2500-S	4.83	21.49	0.42	1.85	0.92	0.16
E0500-041-2750-M					2.750	69.85	8.34	211.84					1.0	0.175	E0500-041-2750-S					0.83	0.15
E0500-041-3000-M					3.000	76.20	9.38	238.25					0.8	0.140	E0500-041-3000-S					0.67	0.12
E0500-041-3500-M					3.500	88.90	11.32	287.53					0.7	0.123	E0500-041-3500-S					0.58	0.10
E0500-041-4000-M					4.000	101.60	13.34	338.84					0.6	0.105	E0500-041-4000-S					0.50	0.09
E0500-041-4500-M					4.500	114.30	15.41	391.41					0.5	0.088	E0500-041-4500-S					0.42	0.07
E0500-041-5000-M					5.000	127.00	17.43	442.72					0.4	0.070	E0500-041-5000-S					0.33	0.06
E0500-045-1250-M					1.250	31.75	2.00	50.80					9.3	1.629	E0500-045-1250-S					7.75	1.36
E0500-045-1370-M					1.370	34.80	2.58	65.53					5.6	0.981	E0500-045-1370-S					4.66	0.82
E0500-045-1500-M					1.500	38.10	2.94	74.68					4.6	0.806	E0500-045-1500-S					3.83	0.67
E0500-045-1750-M					1.750	44.45	3.79	96.27					3.3	0.578	E0500-045-1750-S					2.75	0.48
E0500-045-2000-M					2.000	50.80	4.61	117.09					2.6	0.455	E0500-045-2000-S					2.17	0.38
E0500-045-2250-M					2.250	57.15	5.49	139.45					2.1	0.368	E0500-045-2250-S					1.75	0.31
E0500-045-2500-M			0.045	1.14	2.500	63.50	6.36	161.54	7.50	33.36	0.70	3.11	1.8	0.315	E0500-045-2500-S	6.25	27.79	0.58	2.59	1.50	0.26
E0500-045-2750-M					2.750	69.85	7.23	183.64					1.6	0.280	E0500-045-2750-S					1.33	0.23
E0500-045-3000-M					3.000	76.20	8.10	205.74					1.4	0.245	E0500-045-3000-S					1.17	0.20
E0500-045-3500-M					3.500	88.90	9.64	244.86					1.1	0.193	E0500-045-3500-S					0.92	0.16
E0500-045-4000-M	0.500	12.70			4.000	101.60	11.39	289.31					0.9	0.158	E0500-045-4000-S					0.75	0.13
E0500-045-4500-M					4.500	114.30	13.08	332.23					0.8	0.140	E0500-045-4500-S					0.67	0.12
E0500-045-5000-M					5.000	127.00	14.78	375.41					0.7	0.123	E0500-045-5000-S					0.58	0.10
E0500-049-1250-M					1.250	31.75	1.88	47.75					14.0	2.450	E0500-049-1250-S					11.66	2.04
E0500-049-1370-M					1.370	34.80	2.25	57.15					10.1	1.769	E0500-049-1370-S					8.41	1.47
E0500-049-1500-M					1.500	38.10	2.64	67.06					7.8	1.366	E0500-049-1500-S					6.50	1.14
E0500-049-1750-M					1.750	44.45	3.39	86.11					5.4	0.946	E0500-049-1750-S					4.50	0.79
E0500-049-2000-M					2.000	50.80	4.14	105.16					4.2	0.736	E0500-049-2000-S					3.50	0.61
E0500-049-2250-M					2.250	57.15	4.89	124.21					3.4	0.595	E0500-049-2250-S					2.83	0.50
E0500-049-2500-M			0.049	1.24	2.500	63.50	5.64	143.26	9.75	43.37	0.88	3.91	2.8	0.490	E0500-049-2500-S	8.12	36.13	0.73	3.26	2.33	0.41
E0500-049-2750-M					2.750	69.85	6.39	162.31					2.4	0.420	E0500-049-2750-S					2.00	0.35
E0500-049-3000-M					3.000	76.20	7.14	181.36					2.1	0.368	E0500-049-3000-S					1.75	0.31
E0500-049-3500-M					3.500	88.90	8.64	219.46					1.7	0.298	E0500-049-3500-S					1.42	0.25
E0500-049-4000-M					4.000	101.60	10.15	257.81					1.4	0.245	E0500-049-4000-S					1.17	0.20
E0500-049-4500-M					4.500	114.30	11.67	296.42					1.2	0.210	E0500-049-4500-S					1.00	0.18
E0500-049-5000-M					5.000	127.00	13.15	334.01					1.1	0.193	E0500-049-5000-S					0.92	0.16
E0500-055-1250-M					1.250	31.75	1.75	44.45					24.4	4.270	E0500-055-1250-S					20.33	3.56
E0500-055-1370-M					1.370	34.80	2.14	54.36					15.6	2.730	E0500-055-1370-S					12.99	2.27
E0500-055-1500-M					1.500	38.10	2.41	61.21					13.0	2.280	E0500-055-1500-S					10.83	1.90
E0500-055-1750-M					1.750	44.45	3.01	76.45					9.0	1.576	E0500-055-1750-S					7.50	1.31
E0500-055-2000-M					2.000	50.80	3.60	91.44					7.4	1.296	E0500-055-2000-S					6.16	1.08
E0500-055-2250-M					2.250	57.15	4.29	108.97					6.1	1.068	E0500-055-2250-S					5.08	0.89
E0500-055-2500-M			0.055	1.40	2.500	63.50	4.82	122.43	13.10	58.27	1.20	5.34	5.1	0.893	E0500-055-2500-S	10.91	48.54	1.00	4.45	4.25	0.74
E0500-055-2750-M					2.750	69.85	5.41	137.41					4.4	0.771	E0500-055-2750-S					3.67	0.64
E0500-055-3000-M					3.000	76.20	6.01	152.65					3.9	0.683	E0500-055-3000-S					3.25	0.57
E0500-055-3500-M					3.500	88.90	7.19	182.63					3.2	0.560	E0500-055-3500-S					2.67	0.47
E0500-055-4000-M					4.000	101.60	8.38	212.85					2.7	0.473	E0500-055-4000-S					2.25	0.39
E0500-055-4500-M					4.500	114.30	9.56	242.82					2.3	0.403	E0500-055-4500-S					1.92	0.34
E0500-055-5000-M					5.000	127.00	11.10	281.94					2.0	0.350	E0500-055-5000-S					1.67	0.29
E0500-063-1250-M					1.250	31.75	1.63	41.40					46.9	8.210	E0500-063-1250-S					39.07	6.84
E0500-063-1370-M			0.063	1.60	1.370	34.80	1.92	48.77	18.80	83.63	1.70	7.56	31.2	5.460	E0500-063-1370-S	15.66	69.66	1.42	6.30	25.99	4.55
E0500-063-1500-M					1.500	38.10	2.17	55.12					25.5	4.470	E0500-063-1500-S					21.24	3.72



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC



MUSIC WIRE												STAINLESS STEEL									
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0500-063-1750-M					1.750	44.45	2.66	67.56					18.7	3.270	E0500-063-1750-S					15.58	2.72
E0500-063-2000-M					2.000	50.80	3.16	80.26					14.8	2.590	E0500-063-2000-S					12.33	2.16
E0500-063-2250-M					2.250	57.15	3.65	92.71					12.2	2.140	E0500-063-2250-S					10.16	1.78
E0500-063-2500-M					2.500	63.50	4.12	104.65					10.4	1.821	E0500-063-2500-S					8.66	1.52
E0500-063-2750-M			0.063	1.60	2.750	69.85	4.60	116.84	18.80	83.63	1.70	7.56	9.2	1.611	E0500-063-2750-S	15.66	69.66	1.42	6.30	7.66	1.34
E0500-063-3000-M					3.000	76.20	5.10	129.54					8.1	1.419	E0500-063-3000-S					6.75	1.18
E0500-063-3500-M					3.500	88.90	6.08	154.43					6.6	1.156	E0500-063-3500-S					5.50	0.96
E0500-063-4000-M					4.000	101.60	7.07	179.58					5.5	0.963	E0500-063-4000-S					4.58	0.80
E0500-063-4500-M					4.500	114.30	8.06	204.72					4.8	0.841	E0500-063-4500-S					4.00	0.70
E0500-063-5000-M					5.000	127.00	9.04	229.62					4.2	0.736	E0500-063-5000-S					3.50	0.61
E0500-069-1250-M					1.250	31.75	1.55	39.37					74.0	12.960	E0500-069-1250-S					61.64	10.80
E0500-069-1370-M					1.370	34.80	1.78	45.21					54.3	9.510	E0500-069-1370-S					45.23	7.92
E0500-069-1500-M					1.500	38.10	1.99	50.55					45.2	7.920	E0500-069-1500-S					37.65	6.60
E0500-069-1750-M					1.750	44.45	2.45	62.23					31.3	5.480	E0500-069-1750-S					26.07	4.57
E0500-069-2000-M					2.000	50.80	2.89	73.41					24.7	4.330	E0500-069-2000-S					20.58	3.61
E0500-069-2250-M					2.250	57.15	3.33	84.58					20.3	3.560	E0500-069-2250-S					16.91	2.97
E0500-069-2500-M			0.069	1.75	2.500	63.50	3.77	95.76	24.21	107.69	2.18	9.70	17.3	3.030	E0500-069-2500-S	20.17	89.71	1.82	8.08	14.41	2.52
E0500-069-2750-M	0.500	12.70			2.750	69.85	4.24	107.70					14.8	2.590	E0500-069-2750-S					12.33	2.16
E0500-069-3000-M					3.000	76.20	4.68	118.87					13.1	2.290	E0500-069-3000-S					10.91	1.91
E0500-069-3500-M					3.500	88.90	5.56	141.22					10.7	1.874	E0500-069-3500-S					8.91	1.56
E0500-069-4000-M					4.000	101.60	6.46	164.08					8.9	1.559	E0500-069-4000-S					7.41	1.30
E0500-069-4500-M					4.500	114.30	7.34	186.44					7.8	1.366	E0500-069-4500-S					6.50	1.14
E0500-069-5000-M					5.000	127.00	8.25	209.55					6.8	1.191	E0500-069-5000-S					5.66	0.99
E0500-075-1250-M					1.250	31.75	1.51	38.35					107.7	18.860	E0500-075-1250-S					89.71	15.71
E0500-075-1370-M					1.370	34.80	1.70	43.18					84.6	14.810	E0500-075-1370-S					70.47	12.34
E0500-075-1500-M					1.500	38.10	1.90	48.26					69.7	12.200	E0500-075-1500-S					58.06	10.16
E0500-075-1750-M					1.750	44.45	2.31	58.67					49.4	8.650	E0500-075-1750-S					41.15	7.21
E0500-075-2000-M					2.000	50.80	2.73	69.34					38.2	6.690	E0500-075-2000-S					31.82	5.57
E0500-075-2250-M					2.250	57.15	3.12	79.25					32.0	5.600	E0500-075-2250-S					26.66	4.67
E0500-075-2500-M			0.075	1.91	2.500	63.50	3.53	89.66	30.51	135.71	2.75	12.23	26.9	4.710	E0500-075-2500-S	25.42	113.05	2.29	10.19	22.41	3.92
E0500-075-2750-M					2.750	69.85	3.95	100.33					23.2	4.060	E0500-075-2750-S					19.33	3.38
E0500-075-3000-M					3.000	76.20	4.34	110.24					20.8	3.640	E0500-075-3000-S					17.33	3.03
E0500-075-3500-M					3.500	88.90	5.16	131.06					16.7	2.920	E0500-075-3500-S					13.91	2.43
E0500-075-4000-M					4.000	101.60	5.97	151.64					14.1	2.470	E0500-075-4000-S					11.75	2.06
E0500-075-4500-M					4.500	114.30	6.77	171.96					12.2	2.140	E0500-075-4500-S					10.16	1.78
E0500-075-5000-M					5.000	127.00	7.60	193.04					10.7	1.874	E0500-075-5000-S					8.91	1.56
T31870					1.189	30.20	2.287	58.10					7.3	1.280	T41870					6.08	1.07
T31880					1.472	37.40	3.232	82.10					4.6	0.800	T41880					3.83	0.67
T31890			0.047	1.20	1.898	48.20	4.646	118.00	9.49	42.20	1.47	6.56	2.9	0.510	T41890	7.90	35.15	1.23	5.47	2.42	0.43
T31900	0.512	13.00			2.606	66.20	7.016	178.20					1.8	0.320	T41900					1.50	0.27
T31910					3.551	90.20	10.165	258.20					1.2	0.210	T41910					1.00	0.18
T32540					1.587	40.30	1.895	48.14					195.9	34.300	T42540					163.18	28.57
T32550			0.098	2.50	2.177	55.30	2.669	67.80	71.26	317.00	10.85	48.27	122.8	21.500	T42550	59.36	264.06	9.04	40.21	102.29	17.91
T32560					3.063	77.80	3.835	97.40					78.2	13.700	T42560					65.14	11.41
T32330					1.496	38.00	2.075	52.70					53.8	9.420	T42330					44.82	7.85
T32340			0.079	2.00	1.969	50.00	2.898	73.60	36.87	164.00	5.68	25.25	33.6	5.880	T42340	30.71	136.61	4.73	21.03	27.99	4.90
T32350					2.677	68.00	4.130	104.90					21.5	3.770	T42350					17.91	3.14
T32360	0.551	14.00			3.858	98.00	6.181	157.00					13.4	2.350	T42360					11.16	1.96
T32660					1.740	44.20	2.041	51.85					254.7	44.600	T42660					212.17	37.15
T32670			0.110	2.80	2.402	61.00	2.882	73.20	89.92	400.00	13.23	58.85	159.3	27.900	T42670	74.90	333.20	11.02	49.02	132.70	23.24
T32680					3.394	86.20	4.146	105.30					102.2	17.900	T42680					85.13	14.91
T32000					1.374	34.90	2.602	66.10					8.9	1.550	T42000					7.41	1.29
T32010					1.705	43.30	3.673	93.30					5.5	0.970	T42010					4.58	0.81
T32020			0.055	1.40	2.201	55.90	5.276	134.00	12.84	57.10	1.93	8.57	3.5	0.620	T42020	10.69	47.56	1.61	7.14	2.92	0.52
T32030					3.028	76.90	7.949	201.90					2.2	0.390	T42030					1.83	0.33
T32040	0.591	15.00			4.134	105.00	11.496	292.00					1.5	0.260	T42040					1.25	0.22
T32450					1.622	41.20	2.205	56.00					65.1	11.400	T42450					54.23	9.50
T32460			0.087	2.20	2.142	54.40	3.075	78.10	44.51	198.00	6.66	29.63	40.5	7.100	T42460	37.08	164.93	5.55	24.68	33.74	5.91
T32470					2.921	74.20	4.378	111.20					26.0	4.550	T42470					21.66	3.79
T32480					4.213	107.00	6.543	166.20					16.22	2.840	T42480					13.51	2.37
T32780	0.630	16.00	0.126	3.20	1.992	50.60	2.328	59.12	114.65	510.00	17.18	76.44	290.6	50.900	T42780	95.50	424.83	14.32	63.68	242.07	42.40

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
T32790	0.630	16.00	0.126	3.20	2.748	69.80	3.283	83.40	114.65	510.00	17.18	76.44	181.6	31.800	T42790	95.50	424.83	14.32	63.68	151.27	26.49
T32800					3.882	98.60	4.720	119.90					116.5	20.400	T42800					97.04	16.99
E0650-055-1500-M					1.500	38.10	2.21	56.13					13.4	2.350	E0650-055-1500-S					11.16	1.96
E0650-055-1750-M					1.750	44.45	3.16	80.26					6.8	1.191	E0650-055-1750-S					5.66	0.99
E0650-055-2000-M					2.000	50.80	4.20	106.68					4.1	0.718	E0650-055-2000-S					3.42	0.60
E0650-055-2250-M					2.250	57.15	5.13	130.30					3.2	0.560	E0650-055-2250-S					2.67	0.47
E0650-055-2500-M			0.055	1.40	2.500	63.50	5.98	151.89	10.10	44.93	0.90	4.00	2.6	0.455	E0650-055-2500-S	8.41	37.43	0.75	3.33	2.17	0.38
E0650-055-2750-M					2.750	69.85	6.94	176.28					2.2	0.385	E0650-055-2750-S					1.83	0.32
E0650-055-3000-M					3.000	76.20	7.83	198.88					1.9	0.333	E0650-055-3000-S					1.58	0.28
E0650-055-3500-M					3.500	88.90	9.61	244.09					1.5	0.263	E0650-055-3500-S					1.25	0.22
E0650-055-4000-M					4.000	101.60	11.38	289.05					1.2	0.210	E0650-055-4000-S					1.00	0.18
E0650-063-1500-M					1.500	38.10	2.06	52.32					24.8	4.340	E0650-063-1500-S					20.66	3.62
E0650-063-1750-M					1.750	44.45	2.81	71.37					13.2	2.310	E0650-063-1750-S					11.00	1.92
E0650-063-2000-M					2.000	50.80	3.61	91.69					8.3	1.454	E0650-063-2000-S					6.91	1.21
E0650-063-2250-M					2.250	57.15	4.32	109.73					6.4	1.121	E0650-063-2250-S					5.33	0.93
E0650-063-2500-M					2.500	63.50	5.03	127.76					5.3	0.928	E0650-063-2500-S					4.41	0.77
E0650-063-2750-M	0.650	16.51	0.063	1.60	2.750	69.85	5.74	145.80	14.80	65.83	1.40	6.23	4.4	0.771	E0650-063-2750-S	12.33	54.84	1.17	5.19	3.67	0.64
E0650-063-3000-M					3.000	76.20	6.45	163.83					3.8	0.665	E0650-063-3000-S					3.17	0.55
E0650-063-3500-M					3.500	88.90	7.87	199.90					3.0	0.525	E0650-063-3500-S					2.50	0.44
E0650-063-4000-M					4.000	101.60	9.29	235.97					2.5	0.438	E0650-063-4000-S					2.08	0.37
E0650-063-4500-M					4.500	114.30	10.71	272.03					2.1	0.368	E0650-063-4500-S					1.75	0.31
E0650-063-5000-M					5.000	127.00	12.49	317.25					1.9	0.333	E0650-063-5000-S					1.58	0.28
E0650-069-1750-M					1.750	44.45	2.62	66.55					20.7	3.630	E0650-069-1750-S					17.24	3.02
E0650-069-2000-M					2.000	50.80	3.26	82.80					14.2	2.490	E0650-069-2000-S					11.83	2.07
E0650-069-2250-M					2.250	57.15	3.90	99.06					10.9	1.909	E0650-069-2250-S					9.08	1.59
E0650-069-2500-M					2.500	63.50	4.55	115.57					8.8	1.541	E0650-069-2500-S					7.33	1.28
E0650-069-2750-M			0.069	1.75	2.750	69.85	5.19	131.83	19.80	88.07	1.90	8.45	7.4	1.296	E0650-069-2750-S	16.49	73.36	1.58	7.04	6.16	1.08
E0650-069-3000-M					3.000	76.20	5.83	148.08					6.4	1.121	E0650-069-3000-S					5.33	0.93
E0650-069-3500-M					3.500	88.90	7.12	180.85					5.0	0.876	E0650-069-3500-S					4.17	0.73
E0650-069-4000-M					4.000	101.60	8.40	213.36					4.1	0.718	E0650-069-4000-S					3.42	0.60
E0650-069-4500-M					4.500	114.30	9.68	245.87					3.5	0.613	E0650-069-4500-S					2.92	0.51
E0650-069-5000-M					5.000	127.00	10.97	278.64					3.0	0.525	E0650-069-5000-S					2.50	0.44
T32120					1.563	39.70	2.913	74.00					10.4	1.820	T42120					8.66	1.52
T32130					1.941	49.30	4.098	104.10					6.5	1.140	T42130					5.41	0.95
T32140	0.669	17.00	0.063	1.60	2.508	63.70	5.878	149.30	16.64	74.00	2.61	11.62	4.2	0.730	T42140	13.86	61.64	2.18	9.68	3.50	0.61
T32150					3.453	87.70	8.846	224.70					2.6	0.460	T42150					2.17	0.38
T32160					4.724	120.00	12.795	325.00					1.7	0.300	T42160					1.42	0.25
T32570					1.902	48.30	2.646	67.20					61.1	10.700	T42570					50.90	8.91
T32580			0.098	2.50	2.492	63.30	3.685	93.60	53.28	237.00	7.85	34.90	38.1	6.670	T42580	44.38	197.42	6.54	29.07	31.74	5.56
T32590					3.378	85.80	5.240	133.10					24.4	4.270	T42590					20.33	3.56
T32600	0.709	18.00			4.843	123.00	7.823	198.70					15.2	2.670	T42600					12.66	2.22
T32900					2.240	56.90	2.608	66.25					326.6	57.200	T42900					272.06	47.65
T32910			0.142	3.60	3.091	78.50	3.681	93.50	141.62	630.00	21.16	94.11	204.4	35.800	T42910	117.97	524.79	17.62	78.39	170.27	29.82
T32920					4.370	111.00	5.291	134.40					130.8	22.900	T42920					108.96	19.08
E0750-049-2000-M					2.000	50.80	4.64	117.86					2.3	0.403	E0750-049-2000-S					1.92	0.34
E0750-049-2250-M					2.250	57.15	6.16	156.46					1.5	0.263	E0750-049-2250-S					1.25	0.22
E0750-049-2500-M					2.500	63.50	7.69	195.33					1.2	0.210	E0750-049-2500-S					1.00	0.18
E0750-049-2750-M			0.049	1.24	2.750	69.85	9.21	233.93	6.61	29.40	0.59	2.62	0.9	0.158	E0750-049-2750-S	5.51	24.49	0.49	2.18	0.75	0.13
E0750-049-3000-M					3.000	76.20	10.74	272.80					0.8	0.140	E0750-049-3000-S					0.67	0.12
E0750-049-3250-M					3.250	82.55	12.26	311.40					0.7	0.123	E0750-049-3250-S					0.58	0.10
E0750-049-3500-M					3.500	88.90	13.79	350.27					0.6	0.105	E0750-049-3500-S					0.50	0.09
E0750-055-2000-M	0.750	19.05			2.000	50.80	4.36	110.74					3.3	0.578	E0750-055-2000-S					2.75	0.48
E0750-055-2250-M					2.250	57.15	5.50	139.70					2.4	0.420	E0750-055-2250-S					2.00	0.35
E0750-055-2500-M			0.055	1.40	2.500	63.50	6.64	168.66	8.80	39.14	0.80	3.56	1.9	0.333	E0750-055-2500-S	7.33	32.60	0.67	2.97	1.58	0.28
E0750-055-2750-M					2.750	69.85	7.77	197.36					1.5	0.263	E0750-055-2750-S					1.25	0.22
E0750-055-3000-M					3.000	76.20	8.91	226.31					1.3	0.228	E0750-055-3000-S					1.08	0.19
E0750-055-3500-M					3.500	88.90	11.28	286.51					1.0	0.175	E0750-055-3500-S					0.83	0.15
E0750-063-2000-M					2.000	50.80	3.77	95.76					6.5	1.138	E0750-063-2000-S					5.41	0.95
E0750-063-2250-M			0.063	1.60	2.250	57.15	4.67	118.62	12.80	56.94	1.20	5.34	4.8	0.841	E0750-063-2250-S	10.66	47.43	1.00	4.45	4.00	0.70
E0750-063-2500-M					2.500	63.50	5.56	141.22					3.7	0.648	E0750-063-2500-S					3.08	0.54
E0750-063-2750-M					2.750	69.85	6.29	159.77													



MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0750-063-3000-M					3.000	76.20	7.35	186.69					2.6	0.455	E0750-063-3000-S					2.17	0.38
E0750-063-3500-M					3.500	88.90	9.05	229.87					2.0	0.350	E0750-063-3500-S					1.67	0.29
E0750-063-4000-M			0.063	1.60	4.000	101.60	10.84	275.34	12.80	56.94	1.20	5.34	1.7	0.298	E0750-063-4000-S	10.66	47.43	1.00	4.45	1.42	0.25
E0750-063-4500-M					4.500	114.30	12.63	320.80					1.4	0.245	E0750-063-4500-S					1.17	0.20
E0750-063-5000-M					5.000	127.00	14.42	366.27					1.2	0.210	E0750-063-5000-S					1.00	0.18
E0750-063-5500-M					5.500	139.70	16.75	425.45					1.1	0.193	E0750-063-5500-S					0.92	0.16
E0750-069-2000-M					2.000	50.80	3.29	83.57					12.2	2.140	E0750-069-2000-S					10.16	1.78
E0750-069-2250-M					2.250	57.15	4.10	104.14					8.5	1.490	E0750-069-2250-S					7.08	1.24
E0750-069-2500-M					2.500	63.50	4.89	124.21					6.6	1.156	E0750-069-2500-S					5.50	0.96
E0750-069-2750-M					2.750	69.85	5.69	144.53					5.3	0.928	E0750-069-2750-S					4.41	0.77
E0750-069-3000-M			0.069	1.75	3.000	76.20	6.50	165.10	17.26	76.78	1.55	6.89	4.5	0.788	E0750-069-3000-S	14.38	63.96	1.29	5.74	3.75	0.66
E0750-069-3500-M					3.500	88.90	8.10	205.74					3.4	0.595	E0750-069-3500-S					2.83	0.50
E0750-069-4000-M					4.000	101.60	9.70	246.38					2.8	0.490	E0750-069-4000-S					2.33	0.41
E0750-069-4500-M					4.500	114.30	11.31	287.27					2.3	0.403	E0750-069-4500-S					1.92	0.34
E0750-069-5000-M					5.000	127.00	12.91	327.91					2.0	0.350	E0750-069-5000-S					1.67	0.29
E0750-075-2000-M					2.000	50.80	3.16	80.26					16.2	2.840	E0750-075-2000-S					13.49	2.37
E0750-075-2250-M					2.250	57.15	3.83	97.28					11.8	2.070	E0750-075-2250-S					9.83	1.72
E0750-075-2500-M					2.500	63.50	4.51	114.55					9.3	1.629	E0750-075-2500-S					7.75	1.36
E0750-075-2750-M					2.750	69.85	5.13	130.30					7.9	1.384	E0750-075-2750-S					6.58	1.15
E0750-075-3000-M					3.000	76.20	5.80	147.32					6.7	1.173	E0750-075-3000-S					5.58	0.98
E0750-075-3500-M			0.075	1.91	3.500	88.90	7.09	180.09	20.70	92.08	1.90	8.45	5.2	0.911	E0750-075-3500-S	17.24	76.70	1.58	7.04	4.33	0.76
E0750-075-4000-M					4.000	101.60	8.45	214.63					4.2	0.736	E0750-075-4000-S					3.50	0.61
E0750-075-4500-M					4.500	114.30	9.74	247.40					3.5	0.613	E0750-075-4500-S					2.92	0.51
E0750-075-5000-M					5.000	127.00	11.03	280.16					3.1	0.543	E0750-075-5000-S					2.58	0.45
E0750-075-5500-M					5.500	139.70	12.83	325.88					2.7	0.473	E0750-075-5500-S					2.25	0.39
E0750-075-6000-M					6.000	152.40	14.23	361.44					2.4	0.420	E0750-075-6000-S					2.00	0.35
E0750-085-2000-M					2.000	50.80	2.83	71.88					33.9	5.940	E0750-085-2000-S					28.24	4.95
E0750-085-2250-M					2.250	57.15	3.40	86.36					24.4	4.270	E0750-085-2250-S					20.33	3.56
E0750-085-2500-M	0.750	19.05			2.500	63.50	3.97	100.84					19.0	3.330	E0750-085-2500-S					15.83	2.77
E0750-085-2750-M					2.750	69.85	4.55	115.57					15.6	2.730	E0750-085-2750-S					12.99	2.27
E0750-085-3000-M			0.085	2.16	3.000	76.20	5.12	130.05	30.82	137.09	2.77	12.32	13.2	2.310	E0750-085-3000-S	25.67	114.20	2.31	10.26	11.00	1.92
E0750-085-3500-M					3.500	88.90	6.27	159.26					10.1	1.769	E0750-085-3500-S					8.41	1.47
E0750-085-4000-M					4.000	101.60	7.41	188.21					8.2	1.436	E0750-085-4000-S					6.83	1.20
E0750-085-4500-M					4.500	114.30	8.56	217.42					6.9	1.208	E0750-085-4500-S					5.75	1.01
E0750-085-5000-M					5.000	127.00	9.71	246.63					6.0	1.051	E0750-085-5000-S					5.00	0.88
E0750-095-2000-M					2.000	50.80	2.63	66.80					59.5	10.420	E0750-095-2000-S					49.56	8.68
E0750-095-2250-M					2.250	57.15	3.10	78.74					43.9	7.690	E0750-095-2250-S					36.57	6.41
E0750-095-2500-M					2.500	63.50	3.62	91.95					33.3	5.830	E0750-095-2500-S					27.74	4.86
E0750-095-2750-M					2.750	69.85	4.10	104.14					27.8	4.870	E0750-095-2750-S					23.16	4.06
E0750-095-3000-M					3.000	76.20	4.57	116.08					23.8	4.170	E0750-095-3000-S					19.83	3.47
E0750-095-3500-M			0.095	2.41	3.500	88.90	5.57	141.48	41.21	183.30	3.71	16.50	18.1	3.170	E0750-095-3500-S	34.33	152.69	3.09	13.74	15.08	2.64
E0750-095-4000-M					4.000	101.60	6.52	165.61					14.9	2.610	E0750-095-4000-S					12.41	2.17
E0750-095-4500-M					4.500	114.30	7.51	190.75					12.4	2.170	E0750-095-4500-S					10.33	1.81
E0750-095-5000-M					5.000	127.00	8.46	214.88					10.8	1.891	E0750-095-5000-S					9.00	1.58
E0750-095-5500-M					5.500	139.70	9.46	240.28					9.5	1.664	E0750-095-5500-S					7.91	1.39
E0750-095-6000-M					6.000	152.40	10.41	264.41					8.5	1.489	E0750-095-6000-S					7.08	1.24
E0750-105-2000-M					2.000	50.80	2.50	63.50					100.2	17.550	E0750-105-2000-S					83.47	14.62
E0750-105-2250-M					2.250	57.15	2.94	74.68					72.4	12.680	E0750-105-2250-S					60.31	10.56
E0750-105-2500-M					2.500	63.50	3.38	85.85					56.6	9.910	E0750-105-2500-S					47.15	8.26
E0750-105-2750-M					2.750	69.85	3.83	97.28					46.5	8.140	E0750-105-2750-S					38.73	6.78
E0750-105-3000-M			0.105	2.67	3.000	76.20	4.27	108.46	54.96	244.46	4.95	22.02	39.5	6.920	E0750-105-3000-S	45.78	203.64	4.12	18.34	32.90	5.76
E0750-105-3500-M					3.500	88.90	5.11	129.90					31.0	5.430	E0750-105-3500-S					25.82	4.52
E0750-105-4000-M					4.000	101.60	6.00	152.40					25.0	4.380	E0750-105-4000-S					20.83	3.65
E0750-105-4500-M					4.500	114.30	6.84	173.74					21.3	3.730	E0750-105-4500-S					17.74	3.11
E0750-105-5000-M					5.000	127.00	7.73	196.34					18.3	3.200	E0750-105-5000-S					15.24	2.67
E0750-115-2000-M					2.000	50.80	2.42	61.47					151.1	26.460	E0750-115-2000-S					125.87	22.04
E0750-115-2250-M					2.250	57.15	2.80	71.12					115.5	20.220	E0750-115-2250-S					96.21	16.84
E0750-115-2500-M			0.115	2.92	2.500	63.50	3.21	81.53	69.69	309.98	6.27	27.89	89.3	15.640	E0750-115-2500-S	58.05	258.21	5.22	23.23	74.39	13.03
E0750-115-2750-M					2.750	69.85	3.59	91.19					75.5	13.220	E0750-115-2750-S					62.89	11.01
E0750-115-3000-M					3.000	76.20	3.97	100.84					65.5	11.470	E0750-115-3000-S					54.56	9.56
E0750-115-3500-M					3.500	88.90	4.76	120.90					50.4	8.830	E0750-115-3500-S					41.98	7.36

MUSIC WIRE												STAINLESS STEEL									
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E0750-115-4000-M					4.000	101.60	5.55	140.97					40.9	7.160	E0750-115-4000-S					34.07	5.96
E0750-115-4500-M					4.500	114.30	6.31	160.27					35.1	6.150	E0750-115-4500-S					29.24	5.12
E0750-115-5000-M			0.115	2.92	5.000	127.00	7.10	180.34	69.69	309.98	6.27	27.89	30.2	5.290	E0750-115-5000-S	58.05	258.21	5.22	23.23	25.16	4.41
E0750-115-5500-M					5.500	139.70	7.89	200.41					26.5	4.640	E0750-115-5500-S					22.07	3.87
E0750-115-6000-M					6.000	152.40	8.65	219.71					23.9	4.190	E0750-115-6000-S					19.91	3.49
E0750-125-2000-M					2.000	50.80	2.33	59.18					239.6	41.950	E0750-125-2000-S					199.59	34.94
E0750-125-2250-M	0.750	19.05			2.250	57.15	2.70	68.58					179.7	31.470	E0750-125-2250-S					149.69	26.22
E0750-125-2500-M					2.500	63.50	3.06	77.72					143.8	25.180	E0750-125-2500-S					119.79	20.98
E0750-125-2750-M					2.750	69.85	3.42	86.87					119.8	20.980	E0750-125-2750-S					99.79	17.48
E0750-125-3000-M			0.125	3.18	3.000	76.20	3.78	96.01	87.94	391.16	7.91	35.18	102.7	17.980	E0750-125-3000-S	73.25	325.84	6.59	29.30	85.55	14.98
E0750-125-3500-M					3.500	88.90	4.50	114.30					79.9	13.990	E0750-125-3500-S					66.56	11.65
E0750-125-4000-M					4.000	101.60	5.22	132.59					65.3	11.430	E0750-125-4000-S					54.39	9.52
E0750-125-4500-M					4.500	114.30	5.95	151.13					55.3	9.680	E0750-125-4500-S					46.06	8.06
E0750-125-5000-M					5.000	127.00	6.67	169.42					47.9	8.390	E0750-125-5000-S					39.90	6.99
T32250					1.811	46.00	3.461	87.90					10.2	1.780	T42250					8.50	1.48
T32260					2.236	56.80	4.874	123.80					6.3	1.110	T42260					5.25	0.93
T32270			0.071	1.80	2.874	73.00	7.008	178.00	19.56	87.00	2.93	13.05	4.1	0.710	T42270	16.29	72.47	2.44	10.87	3.42	0.59
T32280					3.937	100.00	10.512	267.00					2.5	0.440	T42280					2.08	0.37
T32290					5.354	136.00	15.236	387.00					1.7	0.290	T42290					1.42	0.24
T32690	0.787	20.00			2.118	53.80	2.917	74.10					70.2	12.300	T42690					58.48	10.25
T32700			0.110	2.80	2.780	70.60	4.055	103.00	65.87	293.00	9.91	44.09	43.9	7.680	T42700	54.87	244.07	8.26	36.73	36.57	6.40
T32710					3.772	95.80	5.764	146.40					28.0	4.910	T42710					23.32	4.09
T32720					5.433	138.00	8.622	219.00					17.5	3.070	T42720					14.58	2.56
T33020					2.488	63.20	2.886	73.30					363.2	63.600	T43020					302.55	52.98
T33030			0.157	4.00	3.433	87.20	4.071	103.40	170.17	757.00	25.69	114.29	226.7	39.700	T43030	141.76	630.58	21.40	95.21	188.84	33.07
T33040					4.843	123.00	5.839	148.30					145.0	25.400	T43040					120.79	21.16
E0850-055-2000-M					2.000	50.80	4.22	107.19					3.2	0.560	E0850-055-2000-S					2.67	0.47
E0850-055-2250-M			0.055	1.40	2.250	57.15	5.65	143.51	7.80	34.70	0.70	3.11	2.1	0.368	E0850-055-2250-S	6.50	28.91	0.58	2.59	1.75	0.31
E0850-055-2500-M					2.500	63.50	7.07	179.58					1.6	0.280	E0850-055-2500-S					1.33	0.23
E0850-055-2750-M					2.750	69.85	8.50	215.90					1.2	0.210	E0850-055-2750-S					1.00	0.18
E0850-063-2250-M					2.250	57.15	4.88	123.95					3.9	0.683	E0850-063-2250-S					3.25	0.57
E0850-063-2500-M					2.500	63.50	6.04	153.42					2.9	0.508	E0850-063-2500-S					2.42	0.42
E0850-063-2750-M			0.063	1.60	2.750	69.85	7.21	183.13	11.30	50.26	1.00	4.45	2.3	0.403	E0850-063-2750-S	9.41	41.87	0.83	3.71	1.92	0.34
E0850-063-3000-M					3.000	76.20	8.37	212.60					1.9	0.333	E0850-063-3000-S					1.58	0.28
E0850-063-3500-M					3.500	88.90	10.70	271.78					1.4	0.245	E0850-063-3500-S					1.17	0.20
E0850-075-2250-M					2.250	57.15	3.97	100.84					9.7	1.699	E0850-075-2250-S					8.08	1.42
E0850-075-2500-M					2.500	63.50	4.71	119.63					7.5	1.313	E0850-075-2500-S					6.25	1.09
E0850-075-2750-M					2.750	69.85	5.54	140.72					6.0	1.051	E0850-075-2750-S					5.00	0.88
E0850-075-3000-M			0.075	1.91	3.000	76.20	6.36	161.54	18.40	81.85	1.70	7.56	5.0	0.876	E0850-075-3000-S	15.33	68.18	1.42	6.30	4.17	0.73
E0850-075-3500-M					3.500	88.90	7.93	201.42					3.8	0.665	E0850-075-3500-S					3.17	0.55
E0850-075-4000-M	0.850	21.59			4.000	101.60	9.49	241.05					3.0	0.525	E0850-075-4000-S					2.50	0.44
E0850-075-4500-M					4.500	114.30	11.14	282.96					2.5	0.438	E0850-075-4500-S					2.08	0.37
E0850-075-5000-M					5.000	127.00	12.71	322.83					2.2	0.385	E0850-075-5000-S					1.83	0.32
E0850-085-2000-M					2.000	50.80	2.73	69.34					34.0	5.950	E0850-085-2000-S					28.32	4.96
E0850-085-2250-M					2.250	57.15	3.52	89.41					19.2	3.360	E0850-085-2250-S					15.99	2.80
E0850-085-2500-M					2.500	63.50	4.18	106.17					14.0	2.450	E0850-085-2500-S					11.66	2.04
E0850-085-2750-M					2.750	69.85	4.83	122.68					11.3	1.979	E0850-085-2750-S					9.41	1.65
E0850-085-3000-M					3.000	76.20	5.49	139.45					9.5	1.664	E0850-085-3000-S					7.91	1.39
E0850-085-3500-M			0.085	2.16	3.500	88.90	6.73	170.94	25.90	115.21	2.40	10.68	7.3	1.278	E0850-085-3500-S	21.58	95.97	2.00	8.90	6.08	1.07
E0850-085-4000-M					4.000	101.60	8.03	203.96					5.8	1.016	E0850-085-4000-S					4.83	0.85
E0850-085-4500-M					4.500	114.30	9.34	237.24					4.9	0.858	E0850-085-4500-S					4.08	0.72
E0850-085-4750-M					4.750	120.65	9.99	253.75					4.5	0.788	E0850-085-4750-S					3.75	0.66
E0850-085-5000-M					5.000	127.00	10.64	270.26					4.2	0.736	E0850-085-5000-S					3.50	0.61
E0850-085-5500-M					5.500	139.70	12.36	313.94					3.6	0.630	E0850-085-5500-S					3.00	0.53
E0850-085-6000-M					6.000	152.40	13.73	348.74					3.2	0.560	E0850-085-6000-S					2.67	0.47
T32370					2.000	50.80	3.760	95.50					11.6	2.030	T42370					9.66	1.69
T32380					2.472	62.80	5.287	134.30					7.3	1.270	T42380					6.08	1.06
T32390	0.866	22.00	0.079	2.00	3.181	80.80	7.591	192.80	24.05	107.00	3.61	16.07	4.6	0.810	T42390	20.04	89.13	3.01	13.38	3.83	0.68
T32400					4.370	111.00	11.417	290.00					2.9	0.510	T42400					2.42	0.43
T32410					5.945	151.00	16.496	419.00					1.9	0.340	T42410					1.58	0.28
T32810			0.126	3.20	2.370	60.20	3.177	80.70	86.77	386.00	12.76	56.75	91.9	16.100	T42810	72.28	321.54	10.63	47.27	76.55	13.41

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER





MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
T32820					3.126	79.40	4.413	112.10					57.1	10.000	T42820					47.56	8.33
T32830			0.126	3.20	4.252	108.00	6.264	159.10	86.77	386.00	12.76	56.75	37.0	6.480	T42830	72.28	321.54	10.63	47.27	30.82	5.40
T32840	0.866	22.00			6.142	156.00	9.362	237.80					23.0	4.020	T42840					19.16	3.35
T33140					2.768	70.30	3.177	80.70					444.8	77.900	T43140					370.52	64.89
T33150			0.177	4.50	3.831	97.30	4.484	113.90	213.78	951.00	31.95	142.11	278.1	48.700	T43150	178.08	792.18	26.61	118.38	231.66	40.57
T33160					5.433	138.00	6.453	163.90					178.2	31.200	T43160					148.44	25.99
T32490					2.189	55.60	4.043	102.70					13.2	2.310	T42490					11.00	1.92
T32500					2.709	68.80	5.673	144.10					8.2	1.440	T42500					6.83	1.20
T32510	0.945	24.00	0.087	2.20	3.488	88.60	8.134	206.60	28.55	127.00	4.18	18.60	5.3	0.920	T42510	23.78	105.79	3.48	15.50	4.41	0.77
T32520					4.803	122.00	12.205	310.00					3.3	0.580	T42520					2.75	0.48
T32530					6.535	166.00	17.638	448.00					2.2	0.380	T42530					1.83	0.32
T32930					2.681	68.10	3.587	91.10					99.9	17.500	T42930					83.22	14.58
T32940			0.142	3.60	3.531	89.70	4.980	126.50	106.33	473.00	15.95	70.96	62.2	10.900	T42940	88.57	394.01	13.29	59.11	51.81	9.08
T32950					4.803	122.00	7.071	179.60					39.9	6.980	T42950					33.24	5.81
T32960	0.984	25.00			6.929	176.00	10.555	268.10					25.0	4.370	T42960					20.83	3.64
T33260					3.110	79.00	3.579	90.90					453.9	79.500	T43260					378.10	66.22
T33270			0.197	5.00	4.291	109.00	5.039	128.00	249.53	1110.00	37.11	165.06	283.8	49.700	T43270	207.86	924.63	30.91	137.50	236.41	41.40
T33280					6.063	154.00	7.232	183.70					181.6	31.800	T43280					151.27	26.49
E1000-063-2500-M					2.500	63.50	5.91	150.11					2.6	0.455	E1000-063-2500-S					2.17	0.38
E1000-063-2750-M			0.063	1.60	2.750	69.85	7.40	187.96	9.70	43.15	0.90	4.00	1.9	0.333	E1000-063-2750-S	8.08	35.94	0.75	3.33	1.58	0.28
E1000-063-3000-M					3.000	76.20	8.89	225.81					1.5	0.263	E1000-063-3000-S					1.25	0.22
E1000-063-3250-M					3.250	82.55	10.38	263.65					1.2	0.210	E1000-063-3250-S					1.00	0.18
E1000-075-2500-M					2.500	63.50	4.77	121.16					6.3	1.103	E1000-075-2500-S					5.25	0.92
E1000-075-2750-M					2.750	69.85	5.85	148.59					4.6	0.806	E1000-075-2750-S					3.83	0.67
E1000-075-3000-M					3.000	76.20	6.94	176.28					3.6	0.630	E1000-075-3000-S					3.00	0.53
E1000-075-3500-M			0.075	1.91	3.500	88.90	8.99	228.35	15.70	69.84	1.40	6.23	2.6	0.455	E1000-075-3500-S	13.08	58.18	1.17	5.19	2.17	0.38
E1000-075-4000-M					4.000	101.60	11.04	280.42					2.0	0.350	E1000-075-4000-S					1.67	0.29
E1000-075-4500-M					4.500	114.30	13.21	335.53					1.7	0.298	E1000-075-4500-S					1.42	0.25
E1000-075-5000-M					5.000	127.00	15.26	387.60					1.4	0.245	E1000-075-5000-S					1.17	0.20
E1000-085-2500-M					2.500	63.50	4.01	101.85					14.1	2.470	E1000-085-2500-S					11.75	2.06
E1000-085-2750-M					2.750	69.85	5.12	130.05					8.5	1.489	E1000-085-2750-S					7.08	1.24
E1000-085-3000-M					3.000	76.20	5.96	151.38					6.8	1.191	E1000-085-3000-S					5.66	0.99
E1000-085-3500-M			0.085	2.16	3.500	88.90	7.55	191.77	22.20	98.75	2.00	8.90	5.0	0.876	E1000-085-3500-S	18.49	82.26	1.67	7.41	4.17	0.73
E1000-085-4000-M					4.000	101.60	9.23	234.44					3.9	0.683	E1000-085-4000-S					3.25	0.57
E1000-085-4500-M					4.500	114.30	10.92	277.37					3.2	0.560	E1000-085-4500-S					2.67	0.47
E1000-085-5000-M					5.000	127.00	12.60	320.04					2.7	0.473	E1000-085-5000-S					2.25	0.39
E1000-095-2500-M					2.500	63.50	3.71	94.23					24.1	4.220	E1000-095-2500-S					20.08	3.52
E1000-095-2750-M					2.750	69.85	4.57	116.08					15.0	2.630	E1000-095-2750-S					12.50	2.19
E1000-095-3000-M					3.000	76.20	5.24	133.10					12.2	2.140	E1000-095-3000-S					10.16	1.78
E1000-095-3500-M	1.000	25.40			3.500	88.90	6.65	168.91					8.7	1.524	E1000-095-3500-S					7.25	1.27
E1000-095-4000-M					4.000	101.60	7.98	202.69					6.9	1.208	E1000-095-4000-S					5.75	1.01
E1000-095-4500-M					4.500	114.30	9.39	238.51					5.6	0.981	E1000-095-4500-S					4.66	0.82
E1000-095-5000-M			0.095	2.41	5.000	127.00	10.72	272.29	30.00	133.45	2.70	12.01	4.8	0.841	E1000-095-5000-S	24.99	111.16	2.25	10.00	4.00	0.70
E1000-095-5500-M					5.500	139.70	12.53	318.26					4.1	0.718	E1000-095-5500-S					3.42	0.60
E1000-095-6000-M					6.000	152.40	14.00	355.60					3.6	0.630	E1000-095-6000-S					3.00	0.53
E1000-095-6500-M					6.500	165.10	14.88	377.95					3.3	0.578	E1000-095-6500-S					2.75	0.48
E1000-095-7000-M					7.000	177.80	16.33	414.78					2.9	0.508	E1000-095-7000-S					2.42	0.42
E1000-095-8000-M					8.000	203.20	19.15	486.41					2.4	0.420	E1000-095-8000-S					2.00	0.35
E1000-095-9000-M					9.000	228.60	21.96	557.78					2.1	0.368	E1000-095-9000-S					1.75	0.31
E1000-105-2500-M					2.500	63.50	3.49	88.65					39.0	6.830	E1000-105-2500-S					32.49	5.69
E1000-105-2750-M					2.750	69.85	4.11	104.39					28.2	4.940	E1000-105-2750-S					23.49	4.12
E1000-105-3000-M					3.000	76.20	4.74	120.40					22.1	3.870	E1000-105-3000-S					18.41	3.22
E1000-105-3500-M					3.500	88.90	5.99	152.15					15.4	2.700	E1000-105-3500-S					12.83	2.25
E1000-105-4000-M					4.000	101.60	7.24	183.90					11.9	2.080	E1000-105-4000-S					9.91	1.73
E1000-105-4500-M			0.105	2.67	4.500	114.30	8.49	215.65	42.25	187.94	3.80	16.90	9.6	1.681	E1000-105-4500-S	35.19	156.55	3.17	14.08	8.00	1.40
E1000-105-5000-M					5.000	127.00	9.74	247.40					8.1	1.419	E1000-105-5000-S					6.75	1.18
E1000-105-5500-M					5.500	139.70	10.99	279.15					7.0	1.226	E1000-105-5500-S					5.83	1.02
E1000-105-6000-M					6.000	152.40	12.25	311.15					6.2	1.086	E1000-105-6000-S					5.16	0.91
E1000-105-6500-M					6.500	165.10	13.52	343.41					5.5	0.963	E1000-105-6500-S					4.58	0.80
E1000-105-7000-M					7.000	177.80	14.73	374.14					5.0	0.876	E1000-105-7000-S					4.17	0.73
E1000-105-8000-M					8.000	203.20	17.23	437.64					4.2	0.736	E1000-105-8000-S					3.50	0.61

MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E1000-105-9000-M			0.105	2.67	9.000	228.60	19.73	501.14	42.25	187.94	3.80	16.90	3.6	0.630	E1000-105-9000-S	35.19	156.55	3.17	14.08	3.00	0.53
E1000-115-2500-M					2.500	63.50	3.32	84.33					60.4	10.580	E1000-115-2500-S					50.31	8.81
E1000-115-2750-M					2.750	69.85	3.87	98.30					44.3	7.760	E1000-115-2750-S					36.90	6.46
E1000-115-3000-M					3.000	76.20	4.41	112.01					35.0	6.130	E1000-115-3000-S					29.16	5.11
E1000-115-3500-M					3.500	88.90	5.50	139.70					24.7	4.330	E1000-115-3500-S					20.58	3.61
E1000-115-4000-M					4.000	101.60	6.60	167.64					19.0	3.330	E1000-115-4000-S					15.83	2.77
E1000-115-4500-M					4.500	114.30	7.69	195.33					15.5	2.710	E1000-115-4500-S					12.91	2.26
E1000-115-5000-M			0.115	2.92	5.000	127.00	8.78	223.01	54.30	241.54	4.90	21.80	13.1	2.290	E1000-115-5000-S	45.23	201.20	4.08	18.16	10.91	1.91
E1000-115-5500-M					5.500	139.70	9.87	250.70					11.3	1.979	E1000-115-5500-S					9.41	1.65
E1000-115-6000-M					6.000	152.40	10.97	278.64					10.0	1.751	E1000-115-6000-S					8.33	1.46
E1000-115-6500-M					6.500	165.10	12.08	306.83					8.8	1.541	E1000-115-6500-S					7.33	1.28
E1000-115-7000-M					7.000	177.80	13.13	333.50					8.1	1.419	E1000-115-7000-S					6.75	1.18
E1000-115-8000-M					8.000	203.20	15.35	389.89					6.7	1.173	E1000-115-8000-S					5.58	0.98
E1000-115-9000-M					9.000	228.60	17.51	444.75					5.8	1.016	E1000-115-9000-S					4.83	0.85
E1000-125-2500-M					2.500	63.50	3.21	81.53					87.3	15.290	E1000-125-2500-S					72.72	12.74
E1000-125-2750-M					2.750	69.85	3.69	93.73					65.5	11.470	E1000-125-2750-S					54.56	9.56
E1000-125-3000-M					3.000	76.20	4.18	106.17					52.4	9.180	E1000-125-3000-S					43.65	7.65
E1000-125-3500-M					3.500	88.90	5.15	130.81					37.4	6.550	E1000-125-3500-S					31.15	5.46
E1000-125-4000-M					4.000	101.60	6.12	155.45					29.1	5.100	E1000-125-4000-S					24.24	4.25
E1000-125-4500-M					4.500	114.30	7.09	180.09					23.8	4.170	E1000-125-4500-S					19.83	3.47
E1000-125-5000-M			0.125	3.18	5.000	127.00	8.07	204.98	67.87	301.89	6.11	27.18	20.1	3.520	E1000-125-5000-S	56.54	251.47	5.09	22.64	16.74	2.93
E1000-125-5500-M					5.500	139.70	9.04	229.62					17.5	3.060	E1000-125-5500-S					14.58	2.55
E1000-125-6000-M					6.000	152.40	10.01	254.25					15.4	2.700	E1000-125-6000-S					12.83	2.25
E1000-125-6500-M					6.500	165.10	10.98	278.89					13.8	2.420	E1000-125-6500-S					11.50	2.02
E1000-125-7000-M					7.000	177.80	11.95	303.53					12.5	2.190	E1000-125-7000-S					10.41	1.82
E1000-125-8000-M					8.000	203.20	13.89	352.81					10.5	1.839	E1000-125-8000-S					8.75	1.53
E1000-125-9000-M	1.000	25.40			9.000	228.60	15.84	402.34					9.0	1.576	E1000-125-9000-S					7.50	1.31
E1000-135-2500-M					2.500	63.50	3.07	77.98					134.1	23.480	E1000-135-2500-S					111.71	19.56
E1000-135-2750-M					2.750	69.85	3.53	89.66					98.4	17.230	E1000-135-2750-S					81.97	14.35
E1000-135-3000-M					3.000	76.20	3.98	101.09					77.7	13.610	E1000-135-3000-S					64.72	11.34
E1000-135-3500-M					3.500	88.90	4.85	123.19					56.7	9.930	E1000-135-3500-S					47.23	8.27
E1000-135-4000-M					4.000	101.60	5.71	145.03					44.7	7.830	E1000-135-4000-S					37.24	6.52
E1000-135-4500-M					4.500	114.30	6.62	168.15					36.0	6.300	E1000-135-4500-S					29.99	5.25
E1000-135-5000-M			0.135	3.43	5.000	127.00	7.49	190.25	83.98	373.54	7.56	33.63	30.7	5.380	E1000-135-5000-S	69.96	311.16	6.30	28.01	25.57	4.48
E1000-135-5500-M					5.500	139.70	8.40	213.36					26.3	4.610	E1000-135-5500-S					21.91	3.84
E1000-135-6000-M					6.000	152.40	9.26	235.20					23.4	4.100	E1000-135-6000-S					19.49	3.42
E1000-135-6500-M					6.500	165.10	10.18	258.57					20.8	3.640	E1000-135-6500-S					17.33	3.03
E1000-135-7000-M					7.000	177.80	11.04	280.42					18.9	3.310	E1000-135-7000-S					15.74	2.76
E1000-135-8000-M					8.000	203.20	12.82	325.63					15.9	2.780	E1000-135-8000-S					13.24	2.32
E1000-135-9000-M					9.000	228.60	14.59	370.59					13.7	2.400	E1000-135-9000-S					11.41	2.00
E1000-148-2500-M					2.500	63.50	2.98	75.69					202.8	35.510	E1000-148-2500-S					168.93	29.58
E1000-148-2750-M					2.750	69.85	3.36	85.34					159.3	27.890	E1000-148-2750-S					132.70	23.23
E1000-148-3000-M					3.000	76.20	3.79	96.27					123.9	21.700	E1000-148-3000-S					103.21	18.08
E1000-148-3500-M					3.500	88.90	4.55	115.57					92.9	16.270	E1000-148-3500-S					77.39	13.55
E1000-148-4000-M					4.000	101.60	5.36	136.14					71.9	12.590	E1000-148-4000-S					59.89	10.49
E1000-148-4500-M					4.500	114.30	6.17	156.72					58.7	10.280	E1000-148-4500-S					48.90	8.56
E1000-148-5000-M			0.148	3.76	5.000	127.00	6.98	177.29	107.57	478.47	9.68	43.06	49.6	8.690	E1000-148-5000-S	89.61	398.57	8.06	35.87	41.32	7.24
E1000-148-5500-M					5.500	139.70	7.74	196.60					43.7	7.650	E1000-148-5500-S					36.40	6.37
E1000-148-6000-M					6.000	152.40	8.55	217.17					38.5	6.740	E1000-148-6000-S					32.07	5.61
E1000-148-6500-M					6.500	165.10	9.35	237.49					34.3	6.010	E1000-148-6500-S					28.57	5.01
E1000-148-7000-M					7.000	177.80	10.16	258.06					31.0	5.430	E1000-148-7000-S					25.82	4.52
E1000-148-8000-M					8.000	203.20	11.73	297.94					26.2	4.590	E1000-148-8000-S					21.82	3.82
E1000-148-9000-M					9.000	228.60	13.35	339.09					22.5	3.940	E1000-148-9000-S					18.74	3.28
T32610					2.531	64.30	4.720	119.90					13.6	2.390	T42610					11.33	1.99
T32620					3.122	79.30	6.622	168.20					8.6	1.500	T42620					7.16	1.25
T32630			0.098	2.50	4.016	102.00	9.488	241.00	35.29	157.00	5.35	23.79	5.5	0.960	T42630	29.40	130.78	4.45	19.81	4.58	0.80
T32640					5.472	139.00	14.213	361.00					3.4	0.600	T42640					2.83	0.50
T32650	1.102	28.00			7.441	189.00	20.551	522.00					2.3	0.400	T42650					1.92	0.33
T33050					2.992	76.00	3.992	101.40					107.3	18.800	T43050					89.38	15.66
T33060			0.157	4.00	3.937	100.00	5.539	140.70	126.79	564.00	19.01	84.56	67.4	11.800	T43060	105.61	469.81	15.84	70.44	56.14	9.83
T33070																					



MUSIC WIRE

STAINLESS STEEL

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
T33080	1.102	28.00	0.157	4.00	7.717	196.00	11.732	298.00	126.79	564.00	19.01	84.56	26.9	4.710	T43080	105.61	469.81	15.84	70.44	22.41	3.92
E1125-085-3000-M					3.000	76.20	5.74	145.80					7.0	1.226	E1125-085-3000-S					5.83	1.02
E1125-085-3500-M					3.500	88.90	7.92	201.17					4.3	0.753	E1125-085-3500-S					3.58	0.63
E1125-085-4000-M					4.000	101.60	10.11	256.79					3.1	0.543	E1125-085-4000-S					2.58	0.45
E1125-085-4500-M					4.500	114.30	12.29	312.17					2.5	0.438	E1125-085-4500-S					2.08	0.37
E1125-085-5000-M			0.085	2.16	5.000	127.00	14.47	367.54	20.97	93.28	1.89	8.41	2.0	0.350	E1125-085-5000-S	17.47	77.70	1.58	7.01	1.67	0.29
E1125-085-5500-M					5.500	139.70	16.65	422.91					1.7	0.298	E1125-085-5500-S					1.42	0.25
E1125-085-6000-M					6.000	152.40	18.84	478.54					1.5	0.263	E1125-085-6000-S					1.25	0.22
E1125-085-6500-M					6.500	165.10	21.02	533.91					1.3	0.228	E1125-085-6500-S					1.08	0.19
E1125-085-7000-M					7.000	177.80	23.20	589.28					1.2	0.210	E1125-085-7000-S					1.00	0.18
E1125-105-3000-M					3.000	76.20	4.75	120.65					19.6	3.430	E1125-105-3000-S					16.33	2.86
E1125-105-3500-M					3.500	88.90	6.25	158.75					12.5	2.190	E1125-105-3500-S					10.41	1.82
E1125-105-4000-M					4.000	101.60	7.74	196.60					9.2	1.611	E1125-105-4000-S					7.66	1.34
E1125-105-4500-M					4.500	114.30	9.24	234.70					7.3	1.278	E1125-105-4500-S					6.08	1.07
E1125-105-5000-M	1.125	28.58	0.105	2.67	5.000	127.00	10.73	272.54	37.80	168.14	3.40	15.12	6.0	1.051	E1125-105-5000-S	31.49	140.06	2.83	12.59	5.00	0.88
E1125-105-5500-M					5.500	139.70	12.23	310.64					5.1	0.893	E1125-105-5500-S					4.25	0.74
E1125-105-6000-M					6.000	152.40	13.72	348.49					4.5	0.788	E1125-105-6000-S					3.75	0.66
E1125-105-6500-M					6.500	165.10	15.22	386.59					3.9	0.683	E1125-105-6500-S					3.25	0.57
E1125-105-7000-M					7.000	177.80	16.71	424.43					3.5	0.613	E1125-105-7000-S					2.92	0.51
E1125-125-3000-M					3.000	76.20	4.21	106.93					46.2	8.090	E1125-125-3000-S					38.48	6.74
E1125-125-3500-M					3.500	88.90	5.34	135.64					30.3	5.310	E1125-125-3500-S					25.24	4.42
E1125-125-4000-M					4.000	101.60	6.48	164.59					22.5	3.940	E1125-125-4000-S					18.74	3.28
E1125-125-4500-M					4.500	114.30	7.61	193.29					17.9	3.130	E1125-125-4500-S					14.91	2.61
E1125-125-5000-M			0.125	3.18	5.000	127.00	8.75	222.25	61.25	272.45	5.51	24.51	14.9	2.610	E1125-125-5000-S	51.02	226.95	4.59	20.42	12.41	2.17
E1125-125-5500-M					5.500	139.70	9.88	250.95					12.7	2.220	E1125-125-5500-S					10.58	1.85
E1125-125-6000-M					6.000	152.40	11.02	279.91					11.1	1.944	E1125-125-6000-S					9.25	1.62
E1125-125-6500-M					6.500	165.10	12.15	308.61					9.9	1.734	E1125-125-6500-S					8.25	1.44
E1125-125-7000-M					7.000	177.80	13.29	337.57					8.9	1.559	E1125-125-7000-S					7.41	1.30
T32730					2.748	69.80	4.902	124.50					17.8	3.110	T42730					14.83	2.59
T32740	1.181	30.00	0.110	2.80	3.409	86.60	6.858	174.20	44.96	200.00	6.62	29.47	11.1	1.940	T42740	37.45	166.60	5.74	25.55	9.25	1.62
T32750					4.409	112.00	9.803	249.00					7.1	1.250	T42750					5.91	1.04
T32760					6.063	154.00	14.685	373.00					4.5	0.780	T42760					3.75	0.65
E1250-095-3500-M					3.500	88.90	7.00	177.80					6.7	1.173	E1250-095-3500-S					5.58	0.98
E1250-095-4000-M					4.000	101.60	9.13	231.90					4.6	0.806	E1250-095-4000-S					3.83	0.67
E1250-095-4500-M					4.500	114.30	11.26	286.00					3.5	0.613	E1250-095-4500-S					2.92	0.51
E1250-095-5000-M					5.000	127.00	13.39	340.11					2.8	0.490	E1250-095-5000-S					2.33	0.41
E1250-095-5500-M			0.095	2.41	5.500	139.70	15.52	394.21	25.86	115.03	2.33	10.36	2.3	0.403	E1250-095-5500-S	21.54	95.82	1.94	8.63	1.92	0.34
E1250-095-6000-M					6.000	152.40	17.65	448.31					2.0	0.350	E1250-095-6000-S					1.67	0.29
E1250-095-6500-M					6.500	165.10	19.78	502.41					1.8	0.315	E1250-095-6500-S					1.50	0.26
E1250-095-7500-M					7.500	190.50	24.04	610.62					1.4	0.245	E1250-095-7500-S					1.17	0.20
E1250-115-3500-M					3.500	88.90	5.81	147.57					17.3	3.030	E1250-115-3500-S					14.41	2.52
E1250-115-4000-M					4.000	101.60	7.32	185.93					12.1	2.120	E1250-115-4000-S					10.08	1.77
E1250-115-4500-M					4.500	114.30	8.84	224.54					9.2	1.611	E1250-115-4500-S					7.66	1.34
E1250-115-5000-M					5.000	127.00	10.35	262.89					7.5	1.313	E1250-115-5000-S					6.25	1.09
E1250-115-5500-M			0.115	2.92	5.500	139.70	11.86	301.24	44.03	195.86	3.96	17.61	6.3	1.103	E1250-115-5500-S	36.68	163.15	3.30	14.67	5.25	0.92
E1250-115-6000-M					6.000	152.40	13.38	339.85					5.4	0.946	E1250-115-6000-S					4.50	0.79
E1250-115-6500-M	1.250	31.75			6.500	165.10	14.89	378.21					4.8	0.841	E1250-115-6500-S					4.00	0.70
E1250-115-7000-M					7.000	177.80	16.40	416.56					4.3	0.753	E1250-115-7000-S					3.58	0.63
E1250-115-7500-M					7.500	190.50	17.92	455.17					3.8	0.665	E1250-115-7500-S					3.17	0.55
E1250-135-3500-M					3.500	88.90	5.12	130.05					38.5	6.740	E1250-135-3500-S					32.07	5.61
E1250-135-4000-M					4.000	101.60	6.30	160.02					27.2	4.760	E1250-135-4000-S					22.66	3.97
E1250-135-4500-M					4.500	114.30	7.47	189.74					21.1	3.700	E1250-135-4500-S					17.58	3.08
E1250-135-5000-M					5.000	127.00	8.64	219.46					17.2	3.010	E1250-135-5000-S					14.33	2.51
E1250-135-5500-M			0.135	3.43	5.500	139.70	9.81	249.17	68.62	305.24	6.18	27.49	14.5	2.540	E1250-135-5500-S	57.16	254.26	5.15	22.90	12.08	2.12
E1250-135-6000-M					6.000	152.40	10.98	278.89					12.5	2.190	E1250-135-6000-S					10.41	1.82
E1250-135-6500-M					6.500	165.10	12.15	308.61					11.0	1.926	E1250-135-6500-S					9.16	1.60
E1250-135-7000-M					7.000	177.80	13.32	338.33					9.9	1.734	E1250-135-7000-S					8.25	1.44
E1250-135-7500-M					7.500	190.50	14.50	368.30					8.9	1.559	E1250-135-7500-S					7.41	1.30
E1250-148-3500-M					3.500	88.90	4.82	122.43					60.9	10.670	E1250-148-3500-S					50.73	8.89
E1250-148-4000-M			0.148	3.76	4.000																

MUSIC WIRE												STAINLESS STEEL									
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E1250-148-5000-M					5.000	127.00	7.90	200.66					27.7	4.850	E1250-148-5000-S					23.07	4.04
E1250-148-5500-M					5.500	139.70	8.93	226.82					23.4	4.100	E1250-148-5500-S					19.49	3.42
E1250-148-6000-M	1.250	31.75	0.148	3.76	6.000	152.40	9.96	252.98	88.38	393.13	7.95	35.36	20.3	3.560	E1250-148-6000-S	73.62	327.48	6.62	29.45	16.91	2.97
E1250-148-6500-M					6.500	165.10	10.99	279.15					17.9	3.130	E1250-148-6500-S					14.91	2.61
E1250-148-7000-M					7.000	177.80	12.01	305.05					16.0	2.800	E1250-148-7000-S					13.33	2.33
E1250-148-7500-M					7.500	190.50	13.04	331.22					14.5	2.540	E1250-148-7500-S					12.08	2.12
T33170					3.398	86.30	4.539	115.30					114.8	20.100	T43170					95.60	16.74
T33180	1.260	32.00	0.177	4.50	4.449	113.00	6.276	159.40	153.99	685.00	22.95	102.08	71.9	12.600	T43180	128.27	570.61	19.12	85.03	59.93	10.50
T33190					6.063	154.00	8.921	226.60					45.9	8.030	T43190					38.19	6.69
T33200					8.701	221.00	13.268	337.00					28.6	5.010	T43200					23.83	4.17
T32850					3.252	82.60	5.945	151.00					17.2	3.020	T42850					14.36	2.52
T32860					4.016	102.00	8.307	211.00					10.8	1.890	T42860					8.99	1.57
T32870			0.126	3.20	5.157	131.00	11.890	302.00	54.63	243.00	8.19	36.45	6.9	1.210	T42870	45.50	202.42	6.83	30.37	5.76	1.01
T32880					7.047	179.00	17.835	453.00					4.3	0.760	T42880					3.61	0.63
T32890	1.417	36.00			9.567	243.00	25.709	653.00					2.9	0.500	T42890					2.38	0.42
T33290					3.803	96.60	5.071	128.80					122.2	21.400	T43290					101.79	17.83
T33300			0.197	5.00	5.000	127.00	7.028	178.50	181.64	808.00	27.12	120.62	75.9	13.300	T43300	151.31	673.06	22.59	100.48	63.26	11.08
T33310					6.772	172.00	9.937	252.40					48.8	8.540	T43310					40.62	7.11
T33320					9.724	247.00	14.803	376.00					30.5	5.340	T43320					25.40	4.45
E1500-125-4500-M					4.500	114.30	8.59	218.19					10.4	1.821	E1500-125-4500-S					8.66	1.52
E1500-125-5000-M					5.000	127.00	10.34	262.64					7.9	1.384	E1500-125-5000-S					6.58	1.15
E1500-125-5500-M					5.500	139.70	12.10	307.34					6.4	1.121	E1500-125-5500-S					5.33	0.93
E1500-125-6000-M			0.125	3.18	6.000	152.40	13.86	352.04	46.64	207.47	4.20	18.68	5.4	0.946	E1500-125-6000-S	38.85	172.82	3.50	15.56	4.50	0.79
E1500-125-6500-M					6.500	165.10	15.62	396.75					4.7	0.823	E1500-125-6500-S					3.92	0.69
E1500-125-7000-M					7.000	177.80	17.37	441.20					4.1	0.718	E1500-125-7000-S					3.42	0.60
E1500-125-7500-M					7.500	190.50	19.13	485.90					3.6	0.631	E1500-125-7500-S					3.00	0.53
E1500-125-8000-M					8.000	203.20	20.89	530.61					3.3	0.578	E1500-125-8000-S					2.75	0.48
E1500-148-4500-M					4.500	114.30	7.30	185.42					24.3	4.260	E1500-148-4500-S					20.24	3.55
E1500-148-5000-M					5.000	127.00	8.62	218.95					18.7	3.270	E1500-148-5000-S					15.58	2.72
E1500-148-5500-M					5.500	139.70	9.94	252.48					15.3	2.680	E1500-148-5500-S					12.74	2.23
E1500-148-6000-M					6.000	152.40	11.26	286.00					12.9	2.260	E1500-148-6000-S					10.75	1.88
E1500-148-6500-M	1.500	38.10	0.148	3.76	6.500	165.10	12.58	319.53	74.49	331.35	6.70	29.80	11.2	1.961	E1500-148-6500-S	62.05	276.01	5.58	24.82	9.33	1.63
E1500-148-7000-M					7.000	177.80	13.90	353.06					9.8	1.716	E1500-148-7000-S					8.16	1.43
E1500-148-7500-M					7.500	190.50	15.22	386.59					8.8	1.541	E1500-148-7500-S					7.33	1.28
E1500-148-8000-M					8.000	203.20	16.54	420.12					7.9	1.384	E1500-148-8000-S					6.58	1.15
E1500-177-4500-M					4.500	114.30	6.35	161.29					59.9	10.490	E1500-177-4500-S					49.90	8.74
E1500-177-5000-M					5.000	127.00	7.37	187.20					46.9	8.210	E1500-177-5000-S					39.07	6.84
E1500-177-5500-M					5.500	139.70	8.38	212.85					38.5	6.740	E1500-177-5500-S					32.07	5.61
E1500-177-6000-M			0.177	4.50	6.000	152.40	9.40	238.76	121.90	542.24	10.97	48.79	32.7	5.730	E1500-177-6000-S	101.54	451.69	9.14	40.64	27.24	4.77
E1500-177-6500-M					6.500	165.10	10.41	264.41					28.4	4.970	E1500-177-6500-S					23.66	4.14
E1500-177-7000-M					7.000	177.80	11.42	290.07					25.1	4.400	E1500-177-7000-S					20.91	3.67
E1500-177-7500-M					7.500	190.50	12.44	315.98					22.5	3.940	E1500-177-7500-S					18.74	3.28
E1500-177-8000-M					8.000	203.20	13.45	341.63					20.3	3.560	E1500-177-8000-S					16.91	2.97
T32970					3.626	92.10	6.496	165.00					20.2	3.540	T42970					16.84	2.95
T32980					4.488	114.00	9.094	231.00					12.7	2.220	T42980					10.56	1.85
T32990	1.575	40.00	0.142	3.60	5.748	146.00	12.913	328.00	68.34	304.00	10.29	45.79	8.1	1.420	T42990	56.93	253.23	8.58	38.15	6.75	1.18
T33000					7.874	200.00	19.370	492.00					5.0	0.880	T43000					4.19	0.73
T33010					10.709	272.00	27.913	709.00					3.4	0.590	T43010					2.81	0.49
E1750-148-5000-M					5.000	127.00	8.90	226.06					15.0	2.630	E1750-148-5000-S					12.50	2.19
E1750-148-5500-M					5.500	139.70	10.58	268.73					11.5	2.010	E1750-148-5500-S					9.58	1.67
E1750-148-6000-M					6.000	152.40	12.26	311.40					9.4	1.646	E1750-148-6000-S					7.83	1.37
E1750-148-6500-M			0.148	3.76	6.500	165.10	13.93	353.82	64.33	286.15	5.79	25.75	7.9	1.384	E1750-148-6500-S	53.59	238.36	4.82	21.45	6.58	1.15
E1750-148-7000-M					7.000	177.80	15.61	396.49					6.8	1.191	E1750-148-7000-S					5.66	0.99
E1750-148-7500-M					7.500	190.50	17.29	439.17					6.0	1.051	E1750-148-7500-S					5.00	0.88
E1750-148-8000-M	1.750	44.45			8.000	203.20	18.97	481.84					5.3	0.928	E1750-148-8000-S					4.41	0.77
E1750-148-9000-M					9.000	228.60	22.33	567.18					4.4	0.771	E1750-148-9000-S					3.67	0.64
E1750-177-5000-M					5.000	127.00	7.62	193.55					36.6	6.410	E1750-177-5000-S					30.49	5.34
E1750-177-5500-M					5.500	139.70	8.87	225.30					28.5	4.990	E1750-177-5500-S					23.74	4.16
E1750-177-6000-M			0.177	4.50	6.000	152.40	10.12	257.05	105.51	469.33	9.50	42.26	23.3	4.080	E1750-177-6000-S	87.89	390.95	7.91	35.20	19.41	3.40
E1750-177-6500-M					6.500	165.10	11.37	288.80					19.7	3.450	E1750-177-6500-S					16.41	2.87
E1750-177-7000-M					7.000	177.80	12.61	320.29					17.1	2.990	E1750-177-7000-S					14.24	2.49

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



MUSIC WIRE													STAINLESS STEEL								
Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length L, Approx		Ext. L1		Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R		Catalog Number	Load P at L1		Initial Tension, T (Ref. only)		Spring Rate R	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm		lb	N	lb	N	lb/in	N/mm
E1750-177-7500-M					7.500	190.50	13.86	352.04					15.1	2.640	E1750-177-7500-S					12.58	2.20
E1750-177-8000-M			0.177	4.50	8.000	203.20	15.11	383.79	105.51	469.33	9.50	42.26	13.5	2.360	E1750-177-8000-S	87.89	390.95	7.91	35.20	11.25	1.97
E1750-177-9000-M					9.000	228.60	17.61	447.29					11.2	1.961	E1750-177-9000-S					9.33	1.63
E1750-207-5000-M					5.000	127.00	6.84	173.74					80.2	14.050	E1750-207-5000-S					66.81	11.70
E1750-207-5500-M					5.500	139.70	7.84	199.14					63.2	11.070	E1750-207-5500-S					52.65	9.22
E1750-207-6000-M	1.750	44.45			6.000	152.40	8.83	224.28					52.1	9.120	E1750-207-6000-S					43.40	7.60
E1750-207-6500-M			0.207	5.26	6.500	165.10	9.83	249.68	162.17	721.37	14.59	64.90	44.3	7.760	E1750-207-6500-S	135.09	600.90	12.15	54.06	36.90	6.46
E1750-207-7000-M					7.000	177.80	10.82	274.83					38.6	6.760	E1750-207-7000-S					32.15	5.63
E1750-207-7500-M					7.500	190.50	11.82	300.23					34.2	5.990	E1750-207-7500-S					28.49	4.99
E1750-207-8000-M					8.000	203.20	12.82	325.63					30.6	5.360	E1750-207-8000-S					25.49	4.47
E1750-207-9000-M					9.000	228.60	14.81	376.17					25.4	4.450	E1750-207-9000-S					21.16	3.71
T33090					4.055	103.00	7.252	184.20					21.6	3.780	T43090					17.99	3.15
T33100					5.000	127.00	10.118	257.00					13.5	2.360	T43100					11.25	1.97
T33110	1.772	45.00	0.157	4.00	6.417	163.00	14.409	366.00	81.15	361.00	12.25	54.49	8.6	1.510	T43110	67.60	300.71	10.20	45.39	7.16	1.26
T33120					8.780	223.00	21.575	548.00					5.4	0.940	T43120					4.50	0.78
T33130					11.929	303.00	31.102	790.00					3.6	0.630	T43130					3.00	0.53
T33210					4.528	115.00	7.929	201.40					25.3	4.430	T43210					21.07	3.69
T33220					5.591	142.00	11.024	280.00					15.8	2.770	T43220					13.16	2.31
T33230	1.969	50.00			7.205	183.00	15.709	399.00	101.38	451.00	15.20	67.63	10.2	1.780	T43230	84.45	375.68	12.66	56.33	8.50	1.48
T33240					9.843	250.00	23.465	596.00					6.3	1.110	T43240					5.25	0.93
T33250					13.386	340.00	33.780	858.00					4.2	0.740	T43250					3.50	0.62
E2000-177-5500-M			0.177	4.50	5.500	139.70	8.99	228.35					24.2	4.240	E2000-177-5500-S					20.16	3.53
E2000-177-6000-M					6.000	152.40	10.52	267.21					18.7	3.270	E2000-177-6000-S					15.58	2.72
E2000-177-6500-M					6.500	165.10	12.04	305.82					15.3	2.680	E2000-177-6500-S					12.74	2.23
E2000-177-7000-M					7.000	177.80	13.57	344.68	92.95	413.46	8.37	37.23	12.9	2.260	E2000-177-7000-S	77.43	344.41	6.97	31.01	10.75	1.88
E2000-177-7500-M					7.500	190.50	15.10	383.54					11.1	1.944	E2000-177-7500-S					9.25	1.62
E2000-177-8000-M					8.000	203.20	16.62	422.15					9.8	1.716	E2000-177-8000-S					8.16	1.43
E2000-177-9000-M					9.000	228.60	19.67	499.62					7.9	1.384	E2000-177-9000-S					6.58	1.15
E2000-177-10000-M	2.000	50.80			10.000	254.00	22.73	577.34					6.6	1.156	E2000-177-10000-S					5.50	0.96
E2000-207-5500-M					5.500	139.70	7.98	202.69					52.5	9.190	E2000-207-5500-S					43.73	7.66
E2000-207-6000-M					6.000	152.40	9.17	232.92					41.1	7.200	E2000-207-6000-S					34.24	6.00
E2000-207-6500-M					6.500	165.10	10.35	262.89					33.8	5.920	E2000-207-6500-S					28.16	4.93
E2000-207-7000-M			0.207	5.26	7.000	177.80	11.54	293.12	143.12	636.63	12.88	57.29	28.7	5.030	E2000-207-7000-S	119.22	530.31	10.73	47.72	23.91	4.19
E2000-207-7500-M					7.500	190.50	12.73	323.34					24.9	4.360	E2000-207-7500-S					20.74	3.63
E2000-207-8000-M					8.000	203.20	13.91	353.31					22.0	3.850	E2000-207-8000-S					18.33	3.21
E2000-207-9000-M					9.000	228.60	16.29	413.77					17.9	3.130	E2000-207-9000-S					14.91	2.61
E2000-207-10000-M					10.000	254.00	18.66	473.96					15.0	2.630	E2000-207-10000-S					12.50	2.19
T33330					5.000	127.00	8.567	217.60					29.1	5.090	T43330					24.24	4.24
T33340					6.181	157.00	11.890	302.00					18.2	3.180	T43340					15.16	2.65
T33350	2.165	55.00	0.197	5.00	7.953	202.00	16.850	428.00	122.07	543.00	18.50	82.28	11.6	2.040	T43350	101.68	452.32	15.41	68.54	9.66	1.70
T33360					8.937	227.00	23.189	589.00					7.3	1.280	T43360					6.08	1.07
T33370					14.843	377.00	36.260	921.00					4.8	0.840	T43370					4.00	0.70



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC Extension springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.

LOOK-UP TABLE FOR EXTENSION SPRINGS – T TYPE (METRIC)

All Music Wire part numbers start with **T3** (Example: **T30800**).

All Stainless Steel part numbers start with **T4** (Example: **T40800**), and can be found on the same page as the Music Wire parts, as indicated below:

Part Number Range	Page	Part Number Range	Page
T30800 - T30820	112	T32170 - T32190	119
T30830 - T30870	113	T32200 - T32240	122
T30880 - T30920	115	T32250 - T32290	127
T30930 - T30950	112	T32300 - T32320	121
T30960 - T30990	113	T32330 - T32360	124
T31000 - T31040	115	T32370 - T32410	127
T31050 - T31070	112	T32420 - T32440	122
T31080 - T31110	113	T32450 - T32480	124
T31120 - T31150	117	T32490 - T32530	128
T31160 - T31160	118	T32540 - T32560	124
T31170 - T31190	113	T32570 - T32600	125
T31200 - T31230	115	T32610 - T32650	129
T31240 - T31280	118	T32660 - T32680	124
T31290 - T31310	113	T32690 - T32720	127
T31320 - T31360	115	T32730 - T32770	130
T31370 - T31410	119	T32780 - T32780	124
T31420 - T31440	113	T32790 - T32800	125
T31450 - T31480	117	T32810 - T32810	127
T31490 - T31530	121	T32820 - T32840	128
T31540 - T31560	115	T32850 - T32890	131
T31570 - T31610	118	T32900 - T32920	125
T31620 - T31660	122	T32930 - T32960	128
T31670 - T31690	115	T32970 - T33010	131
T31700 - T31730	118	T33020 - T33040	127
T31740 - T31780	122	T33050 - T33070	129
T31790 - T31810	115	T33080 - T33080	130
T31820 - T31860	119	T33090 - T33130	132
T31870 - T31910	124	T33140 - T33160	128
T31920 - T31940	118	T33170 - T33200	131
T31950 - T31990	121	T33210 - T33250	132
T32000 - T32040	124	T33260 - T33280	128
T32050 - T32070	119	T33290 - T33320	131
T32080 - T32110	122	T33330 - T33370	132
T32120 - T32160	125		



LOOKING FOR A SPECIAL FINISH FOR YOUR SPRINGS OR WASHERS? SEE PAGE 312.

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Stock sizes in 316 stainless steel

ASRaymond now offers a complete line of 316 Stainless Steel compression springs. 316 Stainless steel provides superior temperature and corrosion resistance, which makes it particularly suitable for:

- Medical, surgical, veterinary and pharmaceutical applications
- Food and food preparation machinery and equipment
- Marine, aircraft and aerospace uses
- Harsh environment projects

Materials

Stainless Steel: Type 316 per ASTM A313 (Chemical and Physical only)

Stainless steel is not recommended above 300 degrees C. (570 degrees F.).

Stainless steel 316 is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not affect the function of the part.

Wire diameter is prior to forming.

All SPEC springs have uniform body diameter and are produced with full twist loops. They are wound with initial tension, therefore some force is required before the coils are initially separated.

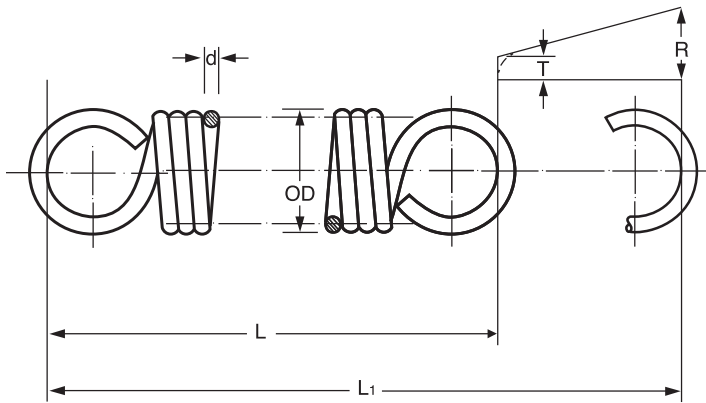
No charge for certificate of compliance when requested.

Coil Direction (helix)

Right or left according to machine setup at time of run. Coil count is for reference only.

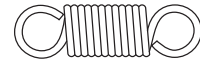
Free Length

Free length is approximate only.



Ends

Full twist loop. Special ends on request.



End Position

The majority of the parts are in-line within +/- 22 degrees. All springs have full twist loops, but physical shape may appear different. If ends are critical to your application, please contact our Engineering Department.

End position is in line per DIN 2097.

Tolerances

O.D. English	O.D. Metric
0.063 to 0.119" +/- 0.003"	1.60 to 3.02 mm +/- 0.08 mm
0.120 to 0.240" +/- 0.005"	3.05 to 6.10 mm +/- 0.13 mm
0.241 to 0.500" +/- 0.008"	6.12 to 12.70 mm +/- 0.20 mm
0.501 to 1.000" +/- 0.015"	12.73 to 25.40 mm +/- 0.38 mm
1.001 to 1.225" +/- 0.020"	25.43 to 31.12 mm +/- 0.51 mm
1.226 to 1.460" +/- 0.030"	31.14 to 37.08 mm +/- 0.76 mm
1.461 to 2.000" +/- 0.040"	37.11 to 50.80 mm +/- 1.02 mm

Loads & Spring Rate

Initial tension T is for reference only and will vary.

Load and rate values are shown for both music wire and stainless steel in their respective columns.

Load P at L1 and spring rate R are +/- 10.0% – load at any other point is for reference only. Maximum load P is attained at extended length L1.

Load values at lengths other than L1, can be approximated by multiplying the proposed deflection by the rate R and adding the initial tension T. $P = (Lx - L) \times R + T$ where Lx is the new extended length. Load at Lx should be reference only. Contact our Engineering Department if more stringent requirements are needed.

Surface Finish

Plain wire, passivated per ASTM A967

Special finishes available upon request. See page 312 for alternative finishes.

Packaging

Parts are bulk-packed. Due to physical characteristics, tangling can occur during transit on wire sizes under .035" (.89mm). Please inquire about ultrasonic cleaning and special packaging when ordering.

OD = Outside diameter	P = Load at L ₁
d = Wire diameter	R = Rate
L = Free length (reference use only inside hooks)	T = Initial Tension
L ₁ = Loaded length (minimum working length)	

SPEC Extension springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0063-007-0250-X					0.250	6.35	0.36	9.15	0.12	0.52	0.02	0.004	0.8	0.146
E0063-007-0310-X					0.310	7.87	0.47	11.88	0.12	0.52	0.02	0.004	0.6	0.102
E0063-007-0380-X			0.007	0.18	0.380	9.65	0.60	15.26	0.12	0.52	0.02	0.004	0.4	0.073
E0063-007-0440-X					0.440	11.18	0.72	18.18	0.12	0.52	0.02	0.004	0.3	0.058
E0063-007-0500-X					0.500	12.70	0.78	19.71	0.12	0.52	0.02	0.004	0.3	0.058
E0063-008-0250-X					0.250	6.35	0.34	8.55	0.18	0.79	0.03	0.007	1.7	0.292
E0063-008-0310-X					0.310	7.87	0.43	11.02	0.18	0.79	0.03	0.007	1.2	0.204
E0063-008-0380-X					0.380	9.65	0.54	13.65	0.18	0.79	0.03	0.007	0.9	0.160
E0063-008-0440-X			0.008	0.20	0.440	11.18	0.63	16.06	0.18	0.79	0.03	0.007	0.7	0.131
E0063-008-0500-X					0.500	12.70	0.75	18.99	0.18	0.79	0.03	0.007	0.6	0.102
E0063-008-0620-X					0.620	15.75	0.91	23.08	0.18	0.79	0.03	0.007	0.5	0.088
E0063-008-0750-X					0.750	19.05	1.10	27.85	0.18	0.79	0.03	0.007	0.4	0.073
E0063-009-0250-X	0.063	1.60			0.250	6.35	0.32	8.07	0.26	1.15	0.05	0.011	3.1	0.540
E0063-009-0310-X					0.310	7.87	0.40	10.23	0.26	1.15	0.05	0.011	2.2	0.394
E0063-009-0380-X					0.380	9.65	0.50	12.68	0.26	1.15	0.05	0.011	1.7	0.306
E0063-009-0440-X			0.009	0.23	0.440	11.18	0.59	14.92	0.26	1.15	0.05	0.011	1.4	0.248
E0063-009-0500-X					0.500	12.70	0.68	17.24	0.26	1.15	0.05	0.011	1.2	0.204
E0063-009-0620-X					0.620	15.75	0.85	21.53	0.26	1.15	0.05	0.011	0.9	0.160
E0063-009-0750-X					0.750	19.05	1.03	26.12	0.26	1.15	0.05	0.011	0.7	0.131
E0063-011-0250-X					0.250	6.35	0.29	7.47	0.49	2.18	0.08	0.018	9.2	1.619
E0063-011-0310-X					0.310	7.87	0.37	9.44	0.49	2.18	0.08	0.018	6.6	1.152
E0063-011-0380-X					0.380	9.65	0.46	11.75	0.49	2.18	0.08	0.018	4.9	0.861
E0063-011-0440-X			0.011	0.28	0.440	11.18	0.54	13.76	0.49	2.18	0.08	0.018	4.0	0.700
E0063-011-0500-X					0.500	12.70	0.62	15.73	0.49	2.18	0.08	0.018	3.4	0.598
E0063-011-0620-X					0.620	15.75	0.77	19.62	0.49	2.18	0.08	0.018	2.7	0.467
E0063-011-0750-X					0.750	19.05	0.95	24.01	0.49	2.18	0.08	0.018	2.1	0.365
E0094-010-0380-X					0.380	9.65	0.57	14.36	0.23	1.01	0.04	0.009	1.0	0.175
E0094-010-0440-X					0.440	11.18	0.69	17.46	0.23	1.01	0.04	0.009	0.7	0.131
E0094-010-0500-X					0.500	12.70	0.78	19.77	0.23	1.01	0.04	0.009	0.7	0.117
E0094-010-0620-X			0.010	0.25	0.620	15.75	0.99	25.17	0.23	1.01	0.04	0.009	0.5	0.088
E0094-010-0750-X					0.750	19.05	1.31	33.18	0.23	1.01	0.04	0.009	0.3	0.058
E0094-010-0880-X					0.880	22.35	1.62	41.20	0.23	1.01	0.04	0.009	0.2	0.044
E0094-010-1000-X					1.000	25.40	1.74	44.25	0.23	1.01	0.04	0.009	0.2	0.044
E0094-011-0380-X					0.380	9.65	0.54	13.76	0.31	1.36	0.05	0.011	1.6	0.277
E0094-011-0440-X					0.440	11.18	0.64	16.38	0.31	1.36	0.05	0.011	1.2	0.219
E0094-011-0500-X	0.094	2.39			0.500	12.70	0.76	19.20	0.31	1.36	0.05	0.011	1.0	0.175
E0094-011-0620-X			0.011	0.28	0.620	15.75	0.96	24.41	0.31	1.36	0.05	0.011	0.7	0.131
E0094-011-0750-X					0.750	19.05	1.19	30.19	0.31	1.36	0.05	0.011	0.6	0.102
E0094-011-0880-X					0.880	22.35	1.39	35.35	0.31	1.36	0.05	0.011	0.5	0.088
E0094-011-1000-X					1.000	25.40	1.61	41.00	0.31	1.36	0.05	0.011	0.4	0.073
E0094-012-0380-X					0.380	9.65	0.50	12.69	0.40	1.79	0.08	0.018	2.7	0.467
E0094-012-0440-X					0.440	11.18	0.60	15.23	0.40	1.79	0.08	0.018	2.0	0.350
E0094-012-0500-X			0.012	0.30	0.500	12.70	0.69	17.57	0.40	1.79	0.08	0.018	1.7	0.292
E0094-012-0620-X					0.620	15.75	0.88	22.24	0.40	1.79	0.08	0.018	1.2	0.219
E0094-012-0750-X					0.750	19.05	1.07	27.16	0.40	1.79	0.08	0.018	1.0	0.175



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

COMPRESSION SPRINGS
316 STAINLESS STEEL



Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0094-012-0880-X			0.012	0.30	0.880	22.35	1.26	32.08	0.40	1.79	0.08	0.018	0.8	0.146
E0094-012-1000-X					1.000	25.40	1.48	37.56	0.40	1.79	0.08	0.018	0.7	0.117
E0094-013-0380-X					0.380	9.65	0.49	12.53	0.52	2.30	0.08	0.018	3.8	0.671
E0094-013-0440-X					0.440	11.18	0.58	14.85	0.52	2.30	0.08	0.018	3.0	0.525
E0094-013-0500-X					0.500	12.70	0.67	17.11	0.52	2.30	0.08	0.018	2.5	0.438
E0094-013-0620-X			0.013	0.33	0.620	15.75	0.86	21.76	0.52	2.30	0.08	0.018	1.8	0.321
E0094-013-0750-X					0.750	19.05	1.06	26.83	0.52	2.30	0.08	0.018	1.4	0.248
E0094-013-0880-X					0.880	22.35	1.25	31.80	0.52	2.30	0.08	0.018	1.2	0.204
E0094-013-1000-X					1.000	25.40	1.43	36.42	0.52	2.30	0.08	0.018	1.0	0.175
E0094-014-0380-X					0.380	9.65	0.47	11.84	0.65	2.90	0.14	0.031	5.9	1.036
E0094-014-0440-X					0.440	11.18	0.55	14.01	0.65	2.90	0.14	0.031	4.6	0.802
E0094-014-0500-X	0.094	2.39			0.500	12.70	0.63	16.08	0.65	2.90	0.14	0.031	3.8	0.671
E0094-014-0620-X			0.014	0.36	0.620	15.75	0.80	20.33	0.65	2.90	0.14	0.031	2.8	0.496
E0094-014-0750-X					0.750	19.05	0.98	24.81	0.65	2.90	0.14	0.031	2.2	0.394
E0094-014-0880-X					0.880	22.35	1.16	29.43	0.65	2.90	0.14	0.031	1.8	0.321
E0094-014-1000-X					1.000	25.40	1.32	33.59	0.65	2.90	0.14	0.031	1.6	0.277
E0094-016-0380-X					0.380	9.65	0.45	11.45	1.00	4.43	0.16	0.036	11.8	2.071
E0094-016-0440-X					0.440	11.18	0.53	13.50	1.00	4.43	0.16	0.036	9.2	1.605
E0094-016-0500-X					0.500	12.70	0.61	15.48	1.00	4.43	0.16	0.036	7.7	1.342
E0094-016-0620-X			0.016	0.41	0.620	15.75	0.77	19.50	1.00	4.43	0.16	0.036	5.7	0.992
E0094-016-0750-X					0.750	19.05	0.94	23.87	1.00	4.43	0.16	0.036	4.4	0.773
E0094-016-0880-X					0.880	22.35	1.11	28.16	1.00	4.43	0.16	0.036	3.7	0.642
E0094-016-1000-X					1.000	25.40	1.27	32.30	1.00	4.43	0.16	0.036	3.1	0.540
E0120-014-0620-X					0.620	15.75	0.93	23.54	0.49	2.19	0.08	0.018	1.3	0.233
E0120-014-0750-X					0.750	19.05	1.16	29.44	0.49	2.19	0.08	0.018	1.0	0.175
E0120-014-0880-X					0.880	22.35	1.37	34.83	0.49	2.19	0.08	0.018	0.8	0.146
E0120-014-1000-X			0.014	0.36	1.000	25.40	1.61	40.99	0.49	2.19	0.08	0.018	0.7	0.117
E0120-014-1120-X					1.120	28.45	1.82	46.27	0.49	2.19	0.08	0.018	0.6	0.102
E0120-014-1250-X					1.250	31.75	2.07	52.54	0.49	2.19	0.08	0.018	0.5	0.088
E0120-014-1370-X					1.370	34.80	2.19	55.59	0.49	2.19	0.08	0.018	0.5	0.088
E0120-014-1500-X					1.500	38.10	2.48	63.05	0.49	2.19	0.08	0.018	0.4	0.073
E0120-016-0380-X					0.380	9.65	0.47	11.89	0.75	3.32	0.17	0.038	6.6	1.152
E0120-016-0500-X					0.500	12.70	0.65	16.54	0.75	3.32	0.17	0.038	3.8	0.671
E0120-016-0620-X	0.120	3.05			0.620	15.75	0.83	21.11	0.75	3.32	0.17	0.038	2.7	0.481
E0120-016-0750-X					0.750	19.05	1.03	26.12	0.75	3.32	0.17	0.038	2.1	0.365
E0120-016-0880-X					0.880	22.35	1.23	31.19	0.75	3.32	0.17	0.038	1.7	0.292
E0120-016-1000-X			0.016	0.41	1.000	25.40	1.41	35.80	0.75	3.32	0.17	0.038	1.4	0.248
E0120-016-1120-X					1.120	28.45	1.62	41.08	0.75	3.32	0.17	0.038	1.2	0.204
E0120-016-1250-X					1.250	31.75	1.79	45.35	0.75	3.32	0.17	0.038	1.1	0.190
E0120-016-1370-X					1.370	34.80	2.00	50.87	0.75	3.32	0.17	0.038	0.9	0.160
E0120-016-1500-X					1.500	38.10	2.20	55.78	0.75	3.32	0.17	0.038	0.8	0.146
E0120-016-1750-X					1.750	44.45	2.52	64.09	0.75	3.32	0.17	0.038	0.7	0.131
E0120-016-2000-X					2.000	50.80	2.99	76.06	0.75	3.32	0.17	0.038	0.6	0.102
E0120-018-0380-X			0.018	0.46	0.380	9.65	0.46	11.58	1.08	4.80	0.17	0.038	12.0	2.101
E0120-018-0500-X					0.500	12.70	0.63	15.94	1.08	4.80	0.17	0.038	7.2	1.255

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0120-018-0620-X					0.620	15.75	0.80	20.31	1.08	4.80	0.17	0.038	5.1	0.890
E0120-018-0750-X					0.750	19.05	0.98	24.97	1.08	4.80	0.17	0.038	3.9	0.686
E0120-018-0880-X					0.880	22.35	1.17	29.67	1.08	4.80	0.17	0.038	3.2	0.554
E0120-018-1000-X					1.000	25.40	1.33	33.83	1.08	4.80	0.17	0.038	2.7	0.481
E0120-018-1120-X					1.120	28.45	1.51	38.39	1.08	4.80	0.17	0.038	2.3	0.408
E0120-018-1250-X			0.018	0.46	1.250	31.75	1.69	42.88	1.08	4.80	0.17	0.038	2.1	0.365
E0120-018-1370-X					1.370	34.80	1.87	47.45	1.08	4.80	0.17	0.038	1.8	0.321
E0120-018-1500-X					1.500	38.10	2.05	52.01	1.08	4.80	0.17	0.038	1.7	0.292
E0120-018-1750-X					1.750	44.45	2.39	60.82	1.08	4.80	0.17	0.038	1.4	0.248
E0120-018-2000-X					2.000	50.80	2.78	70.68	1.08	4.80	0.17	0.038	1.2	0.204
E0120-018-2250-X					2.250	57.15	3.09	78.55	1.08	4.80	0.17	0.038	1.1	0.190
E0120-020-0500-X					0.500	12.70	0.60	15.24	1.51	6.70	0.25	0.056	12.6	2.203
E0120-020-0620-X					0.620	15.75	0.76	19.30	1.51	6.70	0.25	0.056	9.0	1.575
E0120-020-0750-X					0.750	19.05	0.93	23.67	1.51	6.70	0.25	0.056	6.9	1.211
E0120-020-0880-X					0.880	22.35	1.11	28.07	1.51	6.70	0.25	0.056	5.6	0.977
E0120-020-1000-X					1.000	25.40	1.25	31.79	1.51	6.70	0.25	0.056	5.0	0.875
E0120-020-1120-X			0.020	0.51	1.120	28.45	1.41	35.82	1.51	6.70	0.25	0.056	4.3	0.759
E0120-020-1250-X	0.120	3.05			1.250	31.75	1.59	40.26	1.51	6.70	0.25	0.056	3.7	0.656
E0120-020-1370-X					1.370	34.80	1.75	44.38	1.51	6.70	0.25	0.056	3.3	0.583
E0120-020-1500-X					1.500	38.10	1.91	48.45	1.51	6.70	0.25	0.056	3.1	0.540
E0120-020-1750-X					1.750	44.45	2.24	56.81	1.51	6.70	0.25	0.056	2.6	0.452
E0120-020-2000-X					2.000	50.80	2.58	65.53	1.51	6.70	0.25	0.056	2.2	0.379
E0120-020-2250-X					2.250	57.15	2.94	74.56	1.51	6.70	0.25	0.056	1.8	0.321
E0120-022-0620-X					0.620	15.75	0.73	18.64	2.03	9.01	0.29	0.065	15.2	2.669
E0120-022-0750-X					0.750	19.05	0.90	22.83	2.03	9.01	0.29	0.065	11.7	2.042
E0120-022-0880-X					0.880	22.35	1.06	26.99	2.03	9.01	0.29	0.065	9.5	1.663
E0120-022-1000-X					1.000	25.40	1.21	30.85	2.03	9.01	0.29	0.065	8.1	1.415
E0120-022-1120-X					1.120	28.45	1.36	34.67	2.03	9.01	0.29	0.065	7.1	1.240
E0120-022-1250-X			0.022	0.56	1.250	31.75	1.53	38.90	2.03	9.01	0.29	0.065	6.2	1.079
E0120-022-1370-X					1.370	34.80	1.68	42.69	2.03	9.01	0.29	0.065	5.6	0.977
E0120-022-1500-X					1.500	38.10	1.85	46.91	2.03	9.01	0.29	0.065	5.0	0.875
E0120-022-1750-X					1.750	44.45	2.17	55.03	2.03	9.01	0.29	0.065	4.2	0.729
E0120-022-2000-X					2.000	50.80	2.48	63.10	2.03	9.01	0.29	0.065	3.6	0.627
E0120-022-2250-X					2.250	57.15	2.80	71.06	2.03	9.01	0.29	0.065	3.2	0.554
E0120-022-2500-X					2.500	63.50	3.11	79.05	2.03	9.01	0.29	0.065	2.8	0.496
E0180-014-0620-X					0.620	15.75	1.13	28.78	0.31	1.40	0.06	0.013	0.5	0.088
E0180-014-0750-X					0.750	19.05	1.52	38.60	0.31	1.40	0.06	0.013	0.3	0.058
E0180-014-1000-X			0.014	0.36	1.000	25.40	2.03	51.46	0.31	1.40	0.06	0.013	0.2	0.044
E0180-014-1250-X					1.250	31.75	2.79	70.85	0.31	1.40	0.06	0.013	0.2	0.029
E0180-014-1500-X	0.180	4.57			1.500	38.10	3.69	93.77	0.31	1.40	0.06	0.013	0.1	0.020
E0180-018-0620-X					0.620	15.75	0.93	23.54	0.68	3.02	0.12	0.027	1.8	0.321
E0180-018-0750-X					0.750	19.05	1.20	30.48	0.68	3.02	0.12	0.027	1.2	0.219
E0180-018-0880-X			0.018	0.46	0.880	22.35	1.44	36.64	0.68	3.02	0.12	0.027	1.0	0.175
E0180-018-1000-X					1.000	25.40	1.68	42.55	0.68	3.02	0.12	0.027	0.8	0.146
E0180-018-1120-X					1.120	28.45	1.96	49.88	0.68	3.02	0.12	0.027	0.7	0.117



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0180-018-1250-X					1.250	31.75	2.21	56.25	0.68	3.02	0.12	0.027	0.6	0.102
E0180-018-1370-X					1.370	34.80	2.50	63.38	0.68	3.02	0.12	0.027	0.5	0.088
E0180-018-1500-X					1.500	38.10	2.85	72.39	0.68	3.02	0.12	0.027	0.4	0.073
E0180-018-1750-X			0.018	0.46	1.750	44.45	3.10	78.74	0.68	3.02	0.12	0.027	0.4	0.073
E0180-018-2000-X					2.000	50.80	3.69	93.67	0.68	3.02	0.12	0.027	0.3	0.058
E0180-018-2250-X					2.250	57.15	4.50	114.31	0.68	3.02	0.12	0.027	0.2	0.044
E0180-018-2500-X					2.500	63.50	4.75	120.66	0.68	3.02	0.12	0.027	0.2	0.044
E0180-020-0620-X					0.620	15.75	0.87	22.02	0.94	4.18	0.16	0.036	3.2	0.554
E0180-020-0750-X					0.750	19.05	1.10	27.88	0.94	4.18	0.16	0.036	2.2	0.394
E0180-020-0880-X					0.880	22.35	1.35	34.27	0.94	4.18	0.16	0.036	1.7	0.292
E0180-020-1000-X					1.000	25.40	1.55	39.42	0.94	4.18	0.16	0.036	1.4	0.248
E0180-020-1120-X					1.120	28.45	1.79	45.47	0.94	4.18	0.16	0.036	1.2	0.204
E0180-020-1250-X			0.020	0.51	1.250	31.75	2.03	51.61	0.94	4.18	0.16	0.036	1.0	0.175
E0180-020-1370-X					1.370	34.80	2.22	56.46	0.94	4.18	0.16	0.036	0.9	0.160
E0180-020-1500-X					1.500	38.10	2.44	61.93	0.94	4.18	0.16	0.036	0.8	0.146
E0180-020-1750-X					1.750	44.45	2.92	74.24	0.94	4.18	0.16	0.036	0.7	0.117
E0180-020-2000-X					2.000	50.80	3.34	84.84	0.94	4.18	0.16	0.036	0.6	0.102
E0180-020-2250-X					2.250	57.15	3.81	96.86	0.94	4.18	0.16	0.036	0.5	0.088
E0180-020-2500-X					2.500	63.50	4.38	111.16	0.94	4.18	0.16	0.036	0.4	0.073
E0180-022-0500-X					0.500	12.70	0.63	15.89	1.26	5.62	0.17	0.038	8.7	1.532
E0180-022-0620-X					0.620	15.75	0.83	21.06	1.26	5.62	0.17	0.038	5.2	0.919
E0180-022-0750-X					0.750	19.05	1.05	26.65	1.26	5.62	0.17	0.038	3.7	0.642
E0180-022-0880-X	0.180	4.57			0.880	22.35	1.27	32.19	1.26	5.62	0.17	0.038	2.8	0.496
E0180-022-1000-X					1.000	25.40	1.47	37.35	1.26	5.62	0.17	0.038	2.3	0.408
E0180-022-1120-X					1.120	28.45	1.67	42.38	1.26	5.62	0.17	0.038	2.0	0.350
E0180-022-1250-X			0.022	0.56	1.250	31.75	1.91	48.47	1.26	5.62	0.17	0.038	1.7	0.292
E0180-022-1370-X					1.370	34.80	2.10	53.38	1.26	5.62	0.17	0.038	1.5	0.263
E0180-022-1500-X					1.500	38.10	2.32	59.00	1.26	5.62	0.17	0.038	1.3	0.233
E0180-022-1750-X					1.750	44.45	2.76	70.18	1.26	5.62	0.17	0.038	1.1	0.190
E0180-022-2000-X					2.000	50.80	3.10	78.67	1.26	5.62	0.17	0.038	1.0	0.175
E0180-022-2250-X					2.250	57.15	3.57	90.60	1.26	5.62	0.17	0.038	0.8	0.146
E0180-022-2500-X					2.500	63.50	3.96	100.66	1.26	5.62	0.17	0.038	0.7	0.131
E0180-024-0620-X					0.620	15.75	0.79	20.04	1.65	7.35	0.26	0.058	8.2	1.444
E0180-024-0750-X					0.750	19.05	0.99	25.21	1.65	7.35	0.26	0.058	5.7	1.007
E0180-024-0880-X					0.880	22.35	1.20	30.37	1.65	7.35	0.26	0.058	4.4	0.773
E0180-024-1000-X					1.000	25.40	1.38	35.06	1.65	7.35	0.26	0.058	3.7	0.642
E0180-024-1120-X					1.120	28.45	1.57	39.94	1.65	7.35	0.26	0.058	3.1	0.540
E0180-024-1250-X			0.024	0.61	1.250	31.75	1.77	45.04	1.65	7.35	0.26	0.058	2.7	0.467
E0180-024-1370-X					1.370	34.80	1.95	49.46	1.65	7.35	0.26	0.058	2.4	0.423
E0180-024-1500-X					1.500	38.10	2.17	55.10	1.65	7.35	0.26	0.058	2.1	0.365
E0180-024-1750-X					1.750	44.45	2.55	64.69	1.65	7.35	0.26	0.058	1.7	0.306
E0180-024-2000-X					2.000	50.80	2.93	74.42	1.65	7.35	0.26	0.058	1.5	0.263
E0180-024-2250-X					2.250	57.15	3.30	83.72	1.65	7.35	0.26	0.058	1.3	0.233
E0180-024-2500-X					2.500	63.50	3.70	93.87	1.65	7.35	0.26	0.058	1.2	0.204
E0180-026-0500-X			0.026	0.66	0.500	12.70	0.59	14.95	2.12	9.44	0.33	0.074	20.2	3.545



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0180-026-0620-X					0.620	15.75	0.76	19.38	2.12	9.44	0.33	0.074	12.5	2.188
E0180-026-0750-X					0.750	19.05	0.95	24.20	2.12	9.44	0.33	0.074	8.8	1.546
E0180-026-0880-X					0.880	22.35	1.14	29.00	2.12	9.44	0.33	0.074	6.8	1.196
E0180-026-1000-X					1.000	25.40	1.32	33.42	2.12	9.44	0.33	0.074	5.7	0.992
E0180-026-1120-X					1.120	28.45	1.48	37.69	2.12	9.44	0.33	0.074	4.9	0.861
E0180-026-1250-X			0.026	0.66	1.250	31.75	1.67	42.45	2.12	9.44	0.33	0.074	4.2	0.744
E0180-026-1370-X					1.370	34.80	1.85	46.92	2.12	9.44	0.33	0.074	3.7	0.656
E0180-026-1500-X					1.500	38.10	2.04	51.74	2.12	9.44	0.33	0.074	3.3	0.583
E0180-026-1750-X					1.750	44.45	2.40	60.98	2.12	9.44	0.33	0.074	2.7	0.481
E0180-026-2000-X					2.000	50.80	2.77	70.28	2.12	9.44	0.33	0.074	2.3	0.408
E0180-026-2250-X					2.250	57.15	3.14	79.88	2.12	9.44	0.33	0.074	2.0	0.350
E0180-026-2500-X					2.500	63.50	3.52	89.48	2.12	9.44	0.33	0.074	1.7	0.306
E0180-029-0620-X					0.620	15.75	0.74	18.68	2.98	13.27	0.43	0.097	22.1	3.866
E0180-029-0750-X					0.750	19.05	0.91	23.16	2.98	13.27	0.43	0.097	15.7	2.757
E0180-029-0880-X					0.880	22.35	1.09	27.64	2.98	13.27	0.43	0.097	12.2	2.144
E0180-029-1000-X					1.000	25.40	1.25	31.77	2.98	13.27	0.43	0.097	10.2	1.780
E0180-029-1120-X					1.120	28.45	1.41	35.93	2.98	13.27	0.43	0.097	8.7	1.517
E0180-029-1250-X			0.029	0.74	1.250	31.75	1.59	40.39	2.98	13.27	0.43	0.097	7.5	1.313
E0180-029-1370-X					1.370	34.80	1.75	44.52	2.98	13.27	0.43	0.097	6.7	1.167
E0180-029-1500-X					1.500	38.10	1.93	49.05	2.98	13.27	0.43	0.097	5.9	1.036
E0180-029-1750-X					1.750	44.45	2.27	57.63	2.98	13.27	0.43	0.097	4.9	0.861
E0180-029-2000-X					2.000	50.80	2.61	66.35	2.98	13.27	0.43	0.097	4.2	0.729
E0180-029-2250-X	0.180	4.57			2.250	57.15	2.95	74.82	2.98	13.27	0.43	0.097	3.7	0.642
E0180-029-2500-X					2.500	63.50	3.28	83.44	2.98	13.27	0.43	0.097	3.2	0.569
E0180-031-0500-X					0.500	12.70	0.56	14.34	3.69	16.43	0.5	0.112	49.5	8.665
E0180-031-0620-X					0.620	15.75	0.72	18.32	3.69	16.43	0.5	0.112	31.5	5.514
E0180-031-0750-X					0.750	19.05	0.89	22.64	3.69	16.43	0.5	0.112	22.6	3.953
E0180-031-0880-X					0.880	22.35	1.06	26.97	3.69	16.43	0.5	0.112	17.6	3.078
E0180-031-1000-X					1.000	25.40	1.22	30.87	3.69	16.43	0.5	0.112	14.8	2.597
E0180-031-1120-X					1.120	28.45	1.37	34.86	3.69	16.43	0.5	0.112	12.7	2.217
E0180-031-1250-X			0.031	0.79	1.250	31.75	1.54	39.18	3.69	16.43	0.5	0.112	10.9	1.911
E0180-031-1370-X					1.370	34.80	1.70	43.19	3.69	16.43	0.5	0.112	9.7	1.692
E0180-031-1500-X					1.500	38.10	1.87	47.38	3.69	16.43	0.5	0.112	8.7	1.532
E0180-031-1750-X					1.750	44.45	2.19	55.64	3.69	16.43	0.5	0.112	7.2	1.269
E0180-031-2000-X					2.000	50.80	2.51	63.79	3.69	16.43	0.5	0.112	6.2	1.094
E0180-031-2250-X					2.250	57.15	2.84	72.13	3.69	16.43	0.5	0.112	5.4	0.948
E0180-031-2500-X					2.500	63.50	3.18	80.89	3.69	16.43	0.5	0.112	4.7	0.817
E0180-031-2750-X					2.750	69.85	3.50	88.95	3.69	16.43	0.5	0.112	4.2	0.744
E0180-034-0620-X					0.620	15.75	0.70	17.83	4.90	21.80	0.67	0.151	51.5	9.015
E0180-034-0750-X					0.750	19.05	0.86	21.93	4.90	21.80	0.67	0.151	37.2	6.521
E0180-034-0880-X					0.880	22.35	1.02	26.03	4.90	21.80	0.67	0.151	29.2	5.106
E0180-034-1000-X			0.034	0.86	1.000	25.40	1.17	29.81	4.90	21.80	0.67	0.151	24.3	4.260
E0180-034-1120-X					1.120	28.45	1.32	33.60	4.90	21.80	0.67	0.151	20.8	3.647
E0180-034-1250-X					1.250	31.75	1.48	37.72	4.90	21.80	0.67	0.151	18.0	3.151
E0180-034-1370-X					1.370	34.80	1.63	41.48	4.90	21.80	0.67	0.151	16.1	2.815



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0180-034-1500-X					1.500	38.10	1.79	45.59	4.90	21.80	0.67	0.151	14.3	2.509
E0180-034-1750-X					1.750	44.45	2.10	53.46	4.90	21.80	0.67	0.151	11.9	2.086
E0180-034-2000-X	0.180	6.10	0.034	0.86	2.000	50.80	2.42	61.36	4.90	21.80	0.67	0.151	10.2	1.780
E0180-034-2250-X					2.250	57.15	2.72	69.19	4.90	21.80	0.67	0.151	8.9	1.561
E0180-034-2500-X					2.500	63.50	3.03	77.07	4.90	21.80	0.67	0.151	7.9	1.386
E0180-034-2750-X					2.750	69.85	3.35	85.01	4.90	21.80	0.67	0.151	7.1	1.240
E0240-018-0620-X					0.620	15.75	0.92	23.43	0.49	2.20	0.09	0.02	1.3	0.233
E0240-018-0750-X					0.750	19.05	1.29	32.70	0.49	2.20	0.09	0.02	0.7	0.131
E0240-018-0880-X					0.880	22.35	1.69	42.83	0.49	2.20	0.09	0.02	0.5	0.088
E0240-018-1000-X					1.000	25.40	1.97	49.98	0.49	2.20	0.09	0.02	0.4	0.073
E0240-018-1250-X			0.018	0.46	1.250	31.75	2.86	72.71	0.49	2.20	0.09	0.02	0.2	0.044
E0240-018-1500-X					1.500	38.10	3.92	99.54	0.49	2.20	0.09	0.02	0.2	0.029
E0240-018-2000-X					2.000	50.80	4.42	112.24	0.49	2.20	0.09	0.02	0.2	0.029
E0240-018-2500-X					2.500	63.50	7.34	186.38	0.49	2.20	0.09	0.02	0.1	0.015
E0240-018-2750-X					2.750	69.85	7.59	192.73	0.49	2.20	0.09	0.02	0.1	0.015
E0240-022-0620-X					0.620	15.75	0.83	21.11	0.92	4.07	0.16	0.036	3.6	0.627
E0240-022-0750-X					0.750	19.05	1.13	28.66	0.92	4.07	0.16	0.036	2.0	0.350
E0240-022-0880-X					0.880	22.35	1.41	35.93	0.92	4.07	0.16	0.036	1.4	0.248
E0240-022-1000-X					1.000	25.40	1.70	43.15	0.92	4.07	0.16	0.036	1.1	0.190
E0240-022-1120-X					1.120	28.45	1.95	49.43	0.92	4.07	0.16	0.036	0.9	0.160
E0240-022-1250-X					1.250	31.75	2.26	57.39	0.92	4.07	0.16	0.036	0.7	0.131
E0240-022-1370-X			0.022	0.56	1.370	34.80	2.51	63.64	0.92	4.07	0.16	0.036	0.7	0.117
E0240-022-1500-X					1.500	38.10	2.80	71.06	0.92	4.07	0.16	0.036	0.6	0.102
E0240-022-1750-X					1.750	44.45	3.26	82.91	0.92	4.07	0.16	0.036	0.5	0.088
E0240-022-2000-X					2.000	50.80	3.82	96.95	0.92	4.07	0.16	0.036	0.4	0.073
E0240-022-2250-X	0.240	6.10			2.250	57.15	4.52	114.84	0.92	4.07	0.16	0.036	0.3	0.058
E0240-022-2500-X					2.500	63.50	5.11	129.78	0.92	4.07	0.16	0.036	0.3	0.051
E0240-022-2750-X					2.750	69.85	5.78	146.77	0.92	4.07	0.16	0.036	0.2	0.044
E0240-026-0500-X					0.500	12.70	0.55	14.05	1.53	6.79	0.25	0.056	24.1	4.216
E0240-026-0620-X					0.620	15.75	0.78	19.76	1.53	6.79	0.25	0.056	8.1	1.415
E0240-026-0750-X					0.750	19.05	1.02	26.00	1.53	6.79	0.25	0.056	4.7	0.817
E0240-026-0880-X					0.880	22.35	1.26	32.08	1.53	6.79	0.25	0.056	3.3	0.583
E0240-026-1000-X					1.000	25.40	1.51	38.38	1.53	6.79	0.25	0.056	2.5	0.438
E0240-026-1120-X					1.120	28.45	1.73	44.02	1.53	6.79	0.25	0.056	2.1	0.365
E0240-026-1250-X					1.250	31.75	1.98	50.29	1.53	6.79	0.25	0.056	1.7	0.306
E0240-026-1370-X					1.370	34.80	2.22	56.42	1.53	6.79	0.25	0.056	1.5	0.263
E0240-026-1500-X			0.026	0.66	1.500	38.10	2.46	62.43	1.53	6.79	0.25	0.056	1.3	0.233
E0240-026-1750-X					1.750	44.45	2.93	74.39	1.53	6.79	0.25	0.056	1.1	0.190
E0240-026-2000-X					2.000	50.80	3.39	86.19	1.53	6.79	0.25	0.056	0.9	0.160
E0240-026-2250-X					2.250	57.15	3.78	96.08	1.53	6.79	0.25	0.056	0.8	0.146
E0240-026-2500-X					2.500	63.50	4.42	112.16	1.53	6.79	0.25	0.056	0.7	0.117
E0240-026-2750-X					2.750	69.85	4.67	118.51	1.53	6.79	0.25	0.056	0.7	0.117
E0240-026-3000-X					3.000	76.20	5.19	131.81	1.53	6.79	0.25	0.056	0.6	0.102
E0240-026-3500-X					3.500	88.90	6.05	153.78	1.53	6.79	0.25	0.056	0.5	0.088
E0240-026-4000-X					4.000	101.60	7.07	179.45	1.53	6.79	0.25	0.056	0.4	0.073



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0240-026-4500-X			0.026	0.66	4.500	114.30	8.33	211.62	1.53	6.79	0.25	0.056	0.3	0.058
E0240-026-5000-X					5.000	127.00	8.83	224.32	1.53	6.79	0.25	0.056	0.3	0.058
E0240-029-0620-X					0.620	15.75	0.75	19.08	2.13	9.49	0.33	0.074	13.7	2.407
E0240-029-0750-X					0.750	19.05	0.97	24.65	2.13	9.49	0.33	0.074	8.2	1.430
E0240-029-0880-X					0.880	22.35	1.19	30.19	2.13	9.49	0.33	0.074	5.8	1.021
E0240-029-1000-X					1.000	25.40	1.39	35.38	2.13	9.49	0.33	0.074	4.6	0.802
E0240-029-1120-X					1.120	28.45	1.60	40.65	2.13	9.49	0.33	0.074	3.7	0.656
E0240-029-1250-X					1.250	31.75	1.82	46.20	2.13	9.49	0.33	0.074	3.2	0.554
E0240-029-1370-X					1.370	34.80	2.02	51.43	2.13	9.49	0.33	0.074	2.7	0.481
E0240-029-1500-X					1.500	38.10	2.25	57.03	2.13	9.49	0.33	0.074	2.4	0.423
E0240-029-1750-X			0.029	0.74	1.750	44.45	2.65	67.32	2.13	9.49	0.33	0.074	2.0	0.350
E0240-029-2000-X					2.000	50.80	3.08	78.25	2.13	9.49	0.33	0.074	1.7	0.292
E0240-029-2250-X					2.250	57.15	3.52	89.44	2.13	9.49	0.33	0.074	1.4	0.248
E0240-029-2500-X					2.500	63.50	3.94	100.10	2.13	9.49	0.33	0.074	1.2	0.219
E0240-029-2750-X					2.750	69.85	4.29	109.06	2.13	9.49	0.33	0.074	1.2	0.204
E0240-029-3000-X					3.000	76.20	4.80	121.95	2.13	9.49	0.33	0.074	1.0	0.175
E0240-029-3500-X					3.500	88.90	5.66	143.80	2.13	9.49	0.33	0.074	0.8	0.146
E0240-029-4000-X					4.000	101.60	6.40	162.60	2.13	9.49	0.33	0.074	0.7	0.131
E0240-029-4500-X					4.500	114.30	7.20	182.92	2.13	9.49	0.33	0.074	0.7	0.117
E0240-029-5000-X					5.000	127.00	8.09	205.42	2.13	9.49	0.33	0.074	0.6	0.102
E0240-031-0620-X					0.620	15.75	0.74	18.70	2.62	11.67	0.42	0.094	19.0	3.326
E0240-031-0750-X					0.750	19.05	0.94	23.93	2.62	11.67	0.42	0.094	11.5	2.013
E0240-031-0880-X	0.240	6.10			0.880	22.35	1.15	29.15	2.62	11.67	0.42	0.094	8.2	1.444
E0240-031-1000-X					1.000	25.40	1.35	34.37	2.62	11.67	0.42	0.094	6.2	1.094
E0240-031-1120-X					1.120	28.45	1.53	38.80	2.62	11.67	0.42	0.094	5.4	0.948
E0240-031-1250-X					1.250	31.75	1.75	44.45	2.62	11.67	0.42	0.094	4.4	0.773
E0240-031-1370-X					1.370	34.80	1.92	48.82	2.62	11.67	0.42	0.094	4.0	0.700
E0240-031-1500-X					1.500	38.10	2.13	54.12	2.62	11.67	0.42	0.094	3.5	0.613
E0240-031-1750-X			0.031	0.79	1.750	44.45	2.53	64.24	2.62	11.67	0.42	0.094	2.8	0.496
E0240-031-2000-X					2.000	50.80	2.91	74.01	2.62	11.67	0.42	0.094	2.4	0.423
E0240-031-2250-X					2.250	57.15	3.31	84.07	2.62	11.67	0.42	0.094	2.1	0.365
E0240-031-2500-X					2.500	63.50	3.70	94.09	2.62	11.67	0.42	0.094	1.8	0.321
E0240-031-2750-X					2.750	69.85	4.14	105.27	2.62	11.67	0.42	0.094	1.6	0.277
E0240-031-3000-X					3.000	76.20	4.56	115.79	2.62	11.67	0.42	0.094	1.4	0.248
E0240-031-3500-X					3.500	88.90	5.27	133.77	2.62	11.67	0.42	0.094	1.2	0.219
E0240-031-4000-X					4.000	101.60	6.04	153.37	2.62	11.67	0.42	0.094	1.1	0.190
E0240-031-4500-X					4.500	114.30	6.91	175.48	2.62	11.67	0.42	0.094	0.9	0.160
E0240-031-5000-X					5.000	127.00	7.65	194.30	2.62	11.67	0.42	0.094	0.8	0.146
E0240-034-0620-X					0.620	15.75	0.72	18.24	3.49	15.51	0.54	0.121	30.0	5.251
E0240-034-0750-X					0.750	19.05	0.91	23.11	3.49	15.51	0.54	0.121	18.4	3.224
E0240-034-0880-X					0.880	22.35	1.10	27.97	3.49	15.51	0.54	0.121	13.3	2.334
E0240-034-1000-X			0.034	0.86	1.000	25.40	1.28	32.47	3.49	15.51	0.54	0.121	10.6	1.853
E0240-034-1120-X					1.120	28.45	1.45	36.92	3.49	15.51	0.54	0.121	8.8	1.546
E0240-034-1250-X					1.250	31.75	1.65	41.84	3.49	15.51	0.54	0.121	7.4	1.298
E0240-034-1370-X					1.370	34.80	1.82	46.31	3.49	15.51	0.54	0.121	6.5	1.138



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0240-034-1500-X					1.500	38.10	2.01	51.12	3.49	15.51	0.54	0.121	5.7	1.007
E0240-034-1750-X					1.750	44.45	2.38	60.49	3.49	15.51	0.54	0.121	4.7	0.817
E0240-034-2000-X					2.000	50.80	2.75	69.91	3.49	15.51	0.54	0.121	3.9	0.686
E0240-034-2250-X					2.250	57.15	3.11	79.06	3.49	15.51	0.54	0.121	3.4	0.598
E0240-034-2500-X					2.500	63.50	3.48	88.45	3.49	15.51	0.54	0.121	3.0	0.525
E0240-034-2750-X			0.034	0.86	2.750	69.85	3.86	97.92	3.49	15.51	0.54	0.121	2.7	0.467
E0240-034-3000-X					3.000	76.20	4.22	107.17	3.49	15.51	0.54	0.121	2.4	0.423
E0240-034-3500-X					3.500	88.90	4.97	126.32	3.49	15.51	0.54	0.121	2.0	0.350
E0240-034-4000-X					4.000	101.60	5.68	144.37	3.49	15.51	0.54	0.121	1.7	0.306
E0240-034-4500-X					4.500	114.30	6.46	164.20	3.49	15.51	0.54	0.121	1.5	0.263
E0240-034-5000-X					5.000	127.00	7.21	183.13	3.49	15.51	0.54	0.121	1.3	0.233
E0240-037-0620-X					0.620	15.75	0.70	17.90	4.53	20.16	0.67	0.151	45.6	7.979
E0240-037-0750-X					0.750	19.05	0.89	22.49	4.53	20.16	0.67	0.151	28.6	5.003
E0240-037-1000-X					1.000	25.40	1.23	31.35	4.53	20.16	0.67	0.151	16.5	2.888
E0240-037-1120-X					1.120	28.45	1.40	35.64	4.53	20.16	0.67	0.151	13.7	2.392
E0240-037-1250-X					1.250	31.75	1.58	40.17	4.53	20.16	0.67	0.151	11.7	2.042
E0240-037-1370-X					1.370	34.80	1.74	44.30	4.53	20.16	0.67	0.151	10.3	1.809
E0240-037-1500-X					1.500	38.10	1.91	48.63	4.53	20.16	0.67	0.151	9.3	1.634
E0240-037-1750-X					1.750	44.45	2.27	57.70	4.53	20.16	0.67	0.151	7.4	1.298
E0240-037-2000-X			0.037	0.94	2.000	50.80	2.61	66.31	4.53	20.16	0.67	0.151	6.3	1.109
E0240-037-2250-X					2.250	57.15	2.96	75.29	4.53	20.16	0.67	0.151	5.4	0.948
E0240-037-2500-X					2.500	63.50	3.30	83.82	4.53	20.16	0.67	0.151	4.8	0.846
E0240-037-2750-X	0.240	6.30			2.750	69.85	3.64	92.52	4.53	20.16	0.67	0.151	4.3	0.759
E0240-037-3000-X					3.000	76.20	3.99	101.28	4.53	20.16	0.67	0.151	3.9	0.686
E0240-037-3250-X					3.250	82.55	4.36	110.62	4.53	20.16	0.67	0.151	3.5	0.613
E0240-037-3500-X					3.500	88.90	4.72	119.92	4.53	20.16	0.67	0.151	3.2	0.554
E0240-037-4000-X					4.000	101.60	5.41	137.32	4.53	20.16	0.67	0.151	2.7	0.481
E0240-037-4500-X					4.500	114.30	6.10	154.95	4.53	20.16	0.67	0.151	2.4	0.423
E0240-037-5000-X					5.000	127.00	6.79	172.34	4.53	20.16	0.67	0.151	2.2	0.379
E0240-041-0750-X					0.750	19.05	0.86	21.84	6.24	27.74	0.87	0.196	48.7	8.534
E0240-041-1000-X					1.000	25.40	1.19	30.13	6.24	27.74	0.87	0.196	28.8	5.047
E0240-041-1120-X					1.120	28.45	1.34	34.11	6.24	27.74	0.87	0.196	24.1	4.216
E0240-041-1250-X					1.250	31.75	1.51	38.42	6.24	27.74	0.87	0.196	20.4	3.574
E0240-041-1370-X					1.370	34.80	1.67	42.40	6.24	27.74	0.87	0.196	17.9	3.136
E0240-041-1500-X					1.500	38.10	1.84	46.70	6.24	27.74	0.87	0.196	15.8	2.772
E0240-041-1750-X					1.750	44.45	2.17	55.00	6.24	27.74	0.87	0.196	12.9	2.261
E0240-041-2000-X			0.041	1.04	2.000	50.80	2.49	63.28	6.24	27.74	0.87	0.196	10.9	1.911
E0240-041-2250-X					2.250	57.15	2.81	71.49	6.24	27.74	0.87	0.196	9.5	1.663
E0240-041-2500-X					2.500	63.50	3.14	79.85	6.24	27.74	0.87	0.196	8.3	1.459
E0240-041-2750-X					2.750	69.85	3.47	88.22	6.24	27.74	0.87	0.196	7.4	1.298
E0240-041-3000-X					3.000	76.20	3.79	96.38	6.24	27.74	0.87	0.196	6.7	1.182
E0240-041-3500-X					3.500	88.90	4.45	112.94	6.24	27.74	0.87	0.196	5.7	0.992
E0240-041-4000-X					4.000	101.60	5.09	129.31	6.24	27.74	0.87	0.196	4.9	0.861
E0240-041-4500-X					4.500	114.30	5.76	146.36	6.24	27.74	0.87	0.196	4.2	0.744
E0240-041-5000-X					5.000	127.00	6.40	162.54	6.24	27.74	0.87	0.196	3.8	0.671



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0300-031-1000-X					1.000	25.40	1.44	36.51	2.04	9.06	0.32	0.072	3.9	0.686
E0300-031-1120-X					1.120	28.45	1.68	42.56	2.04	9.06	0.32	0.072	3.1	0.540
E0300-031-1250-X					1.250	31.75	1.94	49.15	2.04	9.06	0.32	0.072	2.5	0.438
E0300-031-1370-X					1.370	34.80	2.16	54.88	2.04	9.06	0.32	0.072	2.2	0.379
E0300-031-1500-X					1.500	38.10	2.43	61.83	2.04	9.06	0.32	0.072	1.8	0.321
E0300-031-1750-X			0.031	0.79	1.750	44.45	2.89	73.45	2.04	9.06	0.32	0.072	1.5	0.263
E0300-031-2000-X					2.000	50.80	3.37	85.60	2.04	9.06	0.32	0.072	1.2	0.219
E0300-031-2250-X					2.250	57.15	3.96	100.65	2.04	9.06	0.32	0.072	1.0	0.175
E0300-031-2500-X					2.500	63.50	4.37	110.96	2.04	9.06	0.32	0.072	0.9	0.160
E0300-031-2750-X					2.750	69.85	4.81	122.05	2.04	9.06	0.32	0.072	0.8	0.146
E0300-031-3000-X					3.000	76.20	5.28	134.20	2.04	9.06	0.32	0.072	0.7	0.131
E0300-037-0750-X					0.750	19.05	0.89	22.60	3.50	15.56	0.54	0.121	21.2	3.705
E0300-037-1000-X					1.000	25.40	1.30	33.04	3.50	15.56	0.54	0.121	9.8	1.721
E0300-037-1120-X					1.120	28.45	1.50	38.04	3.50	15.56	0.54	0.121	7.8	1.371
E0300-037-1250-X					1.250	31.75	1.71	43.46	3.50	15.56	0.54	0.121	6.4	1.123
E0300-037-1370-X					1.370	34.80	1.91	48.46	3.50	15.56	0.54	0.121	5.5	0.963
E0300-037-1500-X			0.037	0.94	1.500	38.10	2.12	53.92	3.50	15.56	0.54	0.121	4.7	0.831
E0300-037-1750-X					1.750	44.45	2.54	64.49	3.50	15.56	0.54	0.121	3.7	0.656
E0300-037-2000-X					2.000	50.80	2.96	75.17	3.50	15.56	0.54	0.121	3.1	0.540
E0300-037-2250-X					2.250	57.15	3.36	85.32	3.50	15.56	0.54	0.121	2.7	0.467
E0300-037-2500-X					2.500	63.50	3.77	95.70	3.50	15.56	0.54	0.121	2.3	0.408
E0300-037-2750-X					2.750	69.85	4.17	105.91	3.50	15.56	0.54	0.121	2.1	0.365
E0300-037-3000-X	0.300	7.62			3.000	76.20	4.61	117.18	3.50	15.56	0.54	0.121	1.8	0.321
E0300-049-1000-X					1.000	25.40	1.17	29.69	8.30	36.90	1.17	0.263	42.2	7.396
E0300-049-1120-X					1.120	28.45	1.33	33.75	8.30	36.90	1.17	0.263	34.2	5.981
E0300-049-1250-X					1.250	31.75	1.50	38.16	8.30	36.90	1.17	0.263	28.2	4.945
E0300-049-1370-X					1.370	34.80	1.66	42.22	8.30	36.90	1.17	0.263	24.4	4.274
E0300-049-1500-X					1.500	38.10	1.84	46.63	8.30	36.90	1.17	0.263	21.2	3.720
E0300-049-1750-X			0.049	1.24	1.750	44.45	2.17	55.11	8.30	36.90	1.17	0.263	17.0	2.976
E0300-049-2000-X					2.000	50.80	2.50	63.59	8.30	36.90	1.17	0.263	14.2	2.480
E0300-049-2250-X					2.250	57.15	2.84	72.04	8.30	36.90	1.17	0.263	12.2	2.130
E0300-049-2500-X					2.500	63.50	3.17	80.48	8.30	36.90	1.17	0.263	10.7	1.867
E0300-049-2750-X					2.750	69.85	3.50	88.92	8.30	36.90	1.17	0.263	9.5	1.663
E0300-049-3000-X					3.000	76.20	3.84	97.51	8.30	36.90	1.17	0.263	8.5	1.488
E0300-055-1000-X					1.000	25.40	1.13	28.73	11.80	52.49	1.6	0.36	77.7	13.610
E0300-055-1120-X					1.120	28.45	1.28	32.54	11.80	52.49	1.6	0.36	63.3	11.086
E0300-055-1250-X					1.250	31.75	1.44	36.66	11.80	52.49	1.6	0.36	52.7	9.234
E0300-055-1370-X					1.370	34.80	1.59	40.47	11.80	52.49	1.6	0.36	45.6	7.994
E0300-055-1500-X					1.500	38.10	1.76	44.59	11.80	52.49	1.6	0.36	39.9	6.987
E0300-055-1750-X			0.055	1.40	1.750	44.45	2.07	52.53	11.80	52.49	1.6	0.36	32.1	5.616
E0300-055-2000-X					2.000	50.80	2.38	60.46	11.80	52.49	1.6	0.36	26.8	4.697
E0300-055-2250-X					2.250	57.15	2.69	68.38	11.80	52.49	1.6	0.36	23.1	4.041
E0300-055-2500-X					2.500	63.50	3.00	76.30	11.80	52.49	1.6	0.36	20.2	3.545
E0300-055-2750-X					2.750	69.85	3.32	84.25	11.80	52.49	1.6	0.36	18.0	3.151
E0300-055-3000-X					3.000	76.20	3.63	92.15	11.80	52.49	1.6	0.36	16.2	2.845



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0360-026-1000-X					1.000	25.40	1.65	41.89	0.98	4.35	0.17	0.038	1.2	0.219
E0360-026-1120-X					1.120	28.45	2.01	50.94	0.98	4.35	0.17	0.038	0.9	0.160
E0360-026-1250-X			0.026	0.66	1.250	31.75	2.47	62.68	0.98	4.35	0.17	0.038	0.7	0.117
E0360-026-1370-X					1.370	34.80	2.76	70.14	0.98	4.35	0.17	0.038	0.6	0.102
E0360-026-1500-X					1.500	38.10	3.12	79.33	0.98	4.35	0.17	0.038	0.5	0.088
E0360-026-1750-X					1.750	44.45	4.19	106.30	0.98	4.35	0.17	0.038	0.3	0.058
E0360-031-0880-X					0.870	22.10	1.14	28.83	1.67	7.41	0.27	0.061	5.2	0.919
E0360-031-1000-X					1.000	25.40	1.52	38.65	1.67	7.41	0.27	0.061	2.7	0.467
E0360-031-1120-X					1.120	28.45	1.82	46.12	1.67	7.41	0.27	0.061	2.0	0.350
E0360-031-1250-X					1.250	31.75	2.13	54.07	1.67	7.41	0.27	0.061	1.6	0.277
E0360-031-1370-X					1.370	34.80	2.41	61.31	1.67	7.41	0.27	0.061	1.3	0.233
E0360-031-1500-X			0.031	0.79	1.500	38.10	2.69	68.40	1.67	7.41	0.27	0.061	1.2	0.204
E0360-031-1750-X					1.750	44.45	3.27	83.01	1.67	7.41	0.27	0.061	0.9	0.160
E0360-031-2000-X					2.000	50.80	3.86	97.93	1.67	7.41	0.27	0.061	0.7	0.131
E0360-031-2250-X					2.250	57.15	4.64	117.74	1.67	7.41	0.27	0.061	0.6	0.102
E0360-031-2500-X					2.500	63.50	5.28	134.19	1.67	7.41	0.27	0.061	0.5	0.088
E0360-031-2750-X					2.750	69.85	5.53	140.54	1.67	7.41	0.27	0.061	0.5	0.088
E0360-031-3000-X					3.000	76.20	6.34	161.03	1.67	7.41	0.27	0.061	0.4	0.073
E0360-034-1000-X					1.000	25.40	1.38	35.10	2.20	9.80	0.36	0.081	4.8	0.846
E0360-034-1120-X					1.120	28.45	1.65	41.84	2.20	9.80	0.36	0.081	3.5	0.613
E0360-034-1250-X					1.250	31.75	1.92	48.80	2.20	9.80	0.36	0.081	2.7	0.481
E0360-034-1370-X					1.370	34.80	2.19	55.63	2.20	9.80	0.36	0.081	2.2	0.394
E0360-034-1500-X	0.360	9.14			1.500	38.10	2.46	62.56	2.20	9.80	0.36	0.081	1.9	0.336
E0360-034-1750-X					1.750	44.45	2.98	75.71	2.20	9.80	0.36	0.081	1.5	0.263
E0360-034-2000-X					2.000	50.80	3.58	90.99	2.20	9.80	0.36	0.081	1.2	0.204
E0360-034-2250-X			0.034	0.86	2.250	57.15	4.10	104.03	2.20	9.80	0.36	0.081	1.0	0.175
E0360-034-2500-X					2.500	63.50	4.71	119.76	2.20	9.80	0.36	0.081	0.8	0.146
E0360-034-2750-X					2.750	69.85	5.21	132.36	2.20	9.80	0.36	0.081	0.7	0.131
E0360-034-3000-X					3.000	76.20	5.77	146.52	2.20	9.80	0.36	0.081	0.7	0.117
E0360-034-3500-X					3.500	88.90	6.66	169.27	2.20	9.80	0.36	0.081	0.6	0.102
E0360-034-4000-X					4.000	101.60	7.69	195.37	2.20	9.80	0.36	0.081	0.5	0.088
E0360-034-4500-X					4.500	114.30	8.93	226.82	2.20	9.80	0.36	0.081	0.4	0.073
E0360-034-5000-X					5.000	127.00	10.54	267.65	2.20	9.80	0.36	0.081	0.3	0.058
E0360-037-0750-X					0.750	19.05	0.83	21.15	2.85	12.67	0.42	0.094	29.4	5.149
E0360-037-1000-X					1.000	25.40	1.37	34.79	2.85	12.67	0.42	0.094	6.6	1.152
E0360-037-1120-X					1.120	28.45	1.61	41.02	2.85	12.67	0.42	0.094	4.9	0.861
E0360-037-1250-X					1.250	31.75	1.87	47.53	2.85	12.67	0.42	0.094	3.9	0.686
E0360-037-1370-X					1.370	34.80	2.10	53.34	2.85	12.67	0.42	0.094	3.3	0.583
E0360-037-1500-X			0.037	0.94	1.500	38.10	2.36	59.91	2.85	12.67	0.42	0.094	2.8	0.496
E0360-037-1750-X					1.750	44.45	2.87	72.97	2.85	12.67	0.42	0.094	2.2	0.379
E0360-037-2000-X					2.000	50.80	3.33	84.51	2.85	12.67	0.42	0.094	1.8	0.321
E0360-037-2250-X					2.250	57.15	3.87	98.35	2.85	12.67	0.42	0.094	1.5	0.263
E0360-037-2500-X					2.500	63.50	4.32	109.85	2.85	12.67	0.42	0.094	1.3	0.233
E0360-037-2750-X					2.750	69.85	4.84	122.82	2.85	12.67	0.42	0.094	1.2	0.204
E0360-037-3000-X					3.000	76.20	5.25	133.24	2.85	12.67	0.42	0.094	1.1	0.190



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0360-037-3500-X					3.500	88.90	6.42	163.06	2.85	12.67	0.42	0.094	0.8	0.146
E0360-037-4000-X			0.037	0.94	4.000	101.60	7.24	184.00	2.85	12.67	0.42	0.094	0.7	0.131
E0360-037-4500-X					4.500	114.30	8.15	207.00	2.85	12.67	0.42	0.094	0.7	0.117
E0360-037-5000-X					5.000	127.00	9.17	232.94	2.85	12.67	0.42	0.094	0.6	0.102
E0360-039-1000-X					1.000	25.40	1.29	32.87	3.34	14.86	0.52	0.117	9.6	1.678
E0360-039-1120-X					1.120	28.45	1.52	38.55	3.34	14.86	0.52	0.117	7.1	1.240
E0360-039-1250-X					1.250	31.75	1.76	44.76	3.34	14.86	0.52	0.117	5.5	0.963
E0360-039-1370-X					1.370	34.80	1.98	50.41	3.34	14.86	0.52	0.117	4.6	0.802
E0360-039-1500-X					1.500	38.10	2.22	56.37	3.34	14.86	0.52	0.117	3.9	0.686
E0360-039-1750-X			0.039	0.99	1.750	44.45	2.69	68.30	3.34	14.86	0.52	0.117	3.0	0.525
E0360-039-2000-X					2.000	50.80	3.17	80.41	3.34	14.86	0.52	0.117	2.4	0.423
E0360-039-2250-X					2.250	57.15	3.60	91.50	3.34	14.86	0.52	0.117	2.1	0.365
E0360-039-2500-X					2.500	63.50	4.11	104.39	3.34	14.86	0.52	0.117	1.7	0.306
E0360-039-2750-X					2.750	69.85	4.53	115.04	3.34	14.86	0.52	0.117	1.6	0.277
E0360-039-3000-X					3.000	76.20	4.99	126.71	3.34	14.86	0.52	0.117	1.4	0.248
E0360-041-0750-X					0.750	19.05	0.83	20.96	3.89	17.30	0.58	0.13	43.9	7.688
E0360-041-1000-X					1.000	25.40	1.31	33.22	3.89	17.30	0.58	0.13	10.7	1.882
E0360-041-1120-X					1.120	28.45	1.52	38.63	3.89	17.30	0.58	0.13	8.2	1.444
E0360-041-1250-X					1.250	31.75	1.74	44.20	3.89	17.30	0.58	0.13	6.7	1.182
E0360-041-1370-X					1.370	34.80	1.95	49.62	3.89	17.30	0.58	0.13	5.7	0.992
E0360-041-1500-X					1.500	38.10	2.17	55.19	3.89	17.30	0.58	0.13	4.9	0.861
E0360-041-1750-X					1.750	44.45	2.61	66.37	3.89	17.30	0.58	0.13	3.8	0.671
E0360-041-2000-X	0.360	9.14	0.041	1.04	2.000	50.80	3.04	77.33	3.89	17.30	0.58	0.13	3.2	0.554
E0360-041-2250-X					2.250	57.15	3.49	88.65	3.89	17.30	0.58	0.13	2.7	0.467
E0360-041-2500-X					2.500	63.50	3.97	100.84	3.89	17.30	0.58	0.13	2.2	0.394
E0360-041-2750-X					2.750	69.85	4.40	111.86	3.89	17.30	0.58	0.13	2.0	0.350
E0360-041-3000-X					3.000	76.20	4.80	122.03	3.89	17.30	0.58	0.13	1.8	0.321
E0360-041-3500-X					3.500	88.90	5.71	144.91	3.89	17.30	0.58	0.13	1.5	0.263
E0360-041-4000-X					4.000	101.60	6.65	168.81	3.89	17.30	0.58	0.13	1.2	0.219
E0360-041-4500-X					4.500	114.30	7.55	191.85	3.89	17.30	0.58	0.13	1.1	0.190
E0360-041-5000-X					5.000	127.00	8.31	211.01	3.89	17.30	0.58	0.13	1.0	0.175
E0360-045-0750-X					0.750	19.05	0.82	20.81	5.17	22.98	0.75	0.169	63.7	11.159
E0360-045-1000-X					1.000	25.40	1.24	31.58	5.17	22.98	0.75	0.169	18.2	3.180
E0360-045-1120-X					1.120	28.45	1.44	36.66	5.17	22.98	0.75	0.169	13.7	2.392
E0360-045-1250-X					1.250	31.75	1.64	41.65	5.17	22.98	0.75	0.169	11.3	1.984
E0360-045-1370-X					1.370	34.80	1.84	46.82	5.17	22.98	0.75	0.169	9.3	1.634
E0360-045-1500-X					1.500	38.10	2.05	52.13	5.17	22.98	0.75	0.169	8.0	1.400
E0360-045-1750-X			0.045	1.14	1.750	44.45	2.46	62.41	5.17	22.98	0.75	0.169	6.2	1.094
E0360-045-2000-X					2.000	50.80	2.86	72.52	5.17	22.98	0.75	0.169	5.2	0.904
E0360-045-2250-X					2.250	57.15	3.25	82.56	5.17	22.98	0.75	0.169	4.4	0.773
E0360-045-2500-X					2.500	63.50	3.65	92.78	5.17	22.98	0.75	0.169	3.8	0.671
E0360-045-2750-X					2.750	69.85	4.04	102.70	5.17	22.98	0.75	0.169	3.4	0.598
E0360-045-3000-X					3.000	76.20	4.47	113.61	5.17	22.98	0.75	0.169	3.0	0.525
E0360-045-3500-X					3.500	88.90	5.27	133.79	5.17	22.98	0.75	0.169	2.5	0.438
E0360-045-4000-X					4.000	101.60	6.12	155.47	5.17	22.98	0.75	0.169	2.1	0.365



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0360-045-4500-X					4.500	114.30	6.91	175.52	5.17	22.98	0.75	0.169	1.8	0.321
E0360-045-5000-X			0.045	1.14	5.000	127.00	7.79	197.88	5.17	22.98	0.75	0.169	1.6	0.277
E0360-045-5500-X					5.500	139.70	8.62	218.92	5.17	22.98	0.75	0.169	1.4	0.248
E0360-045-6000-X					6.000	152.40	9.31	236.57	5.17	22.98	0.75	0.169	1.3	0.233
E0360-049-1000-X					1.000	25.40	1.19	30.22	6.70	29.78	1	0.225	30.0	5.251
E0360-049-1120-X					1.120	28.45	1.37	34.81	6.70	29.78	1	0.225	22.7	3.982
E0360-049-1250-X					1.250	31.75	1.57	39.79	6.70	29.78	1	0.225	18.0	3.151
E0360-049-1370-X					1.370	34.80	1.75	44.39	6.70	29.78	1	0.225	15.1	2.640
E0360-049-1500-X					1.500	38.10	1.94	49.38	6.70	29.78	1	0.225	12.8	2.246
E0360-049-1750-X					1.750	44.45	2.32	58.92	6.70	29.78	1	0.225	10.0	1.750
E0360-049-2000-X					2.000	50.80	2.70	68.52	6.70	29.78	1	0.225	8.2	1.430
E0360-049-2250-X					2.250	57.15	3.07	78.07	6.70	29.78	1	0.225	6.9	1.211
E0360-049-2500-X			0.049	1.24	2.500	63.50	3.45	87.62	6.70	29.78	1	0.225	6.0	1.050
E0360-049-2750-X					2.750	69.85	3.82	96.99	6.70	29.78	1	0.225	5.3	0.934
E0360-049-3000-X					3.000	76.20	4.20	106.67	6.70	29.78	1	0.225	4.7	0.831
E0360-049-3500-X					3.500	88.90	4.95	125.85	6.70	29.78	1	0.225	3.9	0.686
E0360-049-4000-X					4.000	101.60	5.71	145.02	6.70	29.78	1	0.225	3.3	0.583
E0360-049-4500-X					4.500	114.30	6.45	163.92	6.70	29.78	1	0.225	2.9	0.511
E0360-049-5000-X					5.000	127.00	7.21	183.02	6.70	29.78	1	0.225	2.6	0.452
E0360-049-5500-X					5.500	139.70	7.94	201.72	6.70	29.78	1	0.225	2.3	0.408
E0360-049-6000-X					6.000	152.40	8.73	221.87	6.70	29.78	1	0.225	2.1	0.365
E0360-055-1000-X					1.000	25.40	1.15	29.27	9.53	42.40	1.33	0.299	53.8	9.423
E0360-055-1120-X	0.360	9.14			1.120	28.45	1.33	33.90	9.53	42.40	1.33	0.299	38.2	6.696
E0360-055-1250-X					1.250	31.75	1.51	38.23	9.53	42.40	1.33	0.299	32.2	5.631
E0360-055-1370-X					1.370	34.80	1.68	42.59	9.53	42.40	1.33	0.299	26.7	4.683
E0360-055-1500-X					1.500	38.10	1.85	46.90	9.53	42.40	1.33	0.299	23.7	4.143
E0360-055-1750-X					1.750	44.45	2.19	55.61	9.53	42.40	1.33	0.299	18.7	3.268
E0360-055-2000-X					2.000	50.80	2.54	64.54	9.53	42.40	1.33	0.299	15.2	2.655
E0360-055-2250-X					2.250	57.15	2.89	73.28	9.53	42.40	1.33	0.299	12.9	2.261
E0360-055-2500-X			0.055	1.40	2.500	63.50	3.22	81.88	9.53	42.40	1.33	0.299	11.3	1.984
E0360-055-2750-X					2.750	69.85	3.57	90.69	9.53	42.40	1.33	0.299	10.0	1.750
E0360-055-3000-X					3.000	76.20	3.91	99.35	9.53	42.40	1.33	0.299	9.0	1.575
E0360-055-3500-X					3.500	88.90	4.59	116.68	9.53	42.40	1.33	0.299	7.5	1.313
E0360-055-4000-X					4.000	101.60	5.28	134.07	9.53	42.40	1.33	0.299	6.4	1.123
E0360-055-4500-X					4.500	114.30	5.97	151.62	9.53	42.40	1.33	0.299	5.6	0.977
E0360-055-5000-X					5.000	127.00	6.70	170.11	9.53	42.40	1.33	0.299	4.8	0.846
E0360-055-5500-X					5.500	139.70	7.39	187.78	9.53	42.40	1.33	0.299	4.3	0.759
E0360-055-6000-X					6.000	152.40	8.09	205.60	9.53	42.40	1.33	0.299	3.9	0.686
E0360-058-1000-X					1.000	25.40	1.14	28.88	11.22	49.92	1.57	0.353	70.4	12.326
E0360-058-1120-X					1.120	28.45	1.30	32.96	11.22	49.92	1.57	0.353	54.3	9.511
E0360-058-1250-X					1.250	31.75	1.47	37.38	11.22	49.92	1.57	0.353	43.6	7.629
E0360-058-1370-X			0.058	1.47	1.370	34.80	1.63	41.45	11.22	49.92	1.57	0.353	36.8	6.448
E0360-058-1500-X					1.500	38.10	1.81	45.88	11.22	49.92	1.57	0.353	31.5	5.514
E0360-058-1750-X					1.750	44.45	2.14	54.36	11.22	49.92	1.57	0.353	24.7	4.332
E0360-058-2000-X					2.000	50.80	2.47	62.86	11.22	49.92	1.57	0.353	20.3	3.559



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0360-058-2250-X					2.250	57.15	2.81	71.36	11.22	49.92	1.57	0.353	17.2	3.020
E0360-058-2500-X					2.500	63.50	3.14	79.84	11.22	49.92	1.57	0.353	15.0	2.626
E0360-058-2750-X					2.750	69.85	3.48	88.35	11.22	49.92	1.57	0.353	13.2	2.319
E0360-058-3000-X					3.000	76.20	3.82	96.92	11.22	49.92	1.57	0.353	11.8	2.071
E0360-058-3500-X	0.360	9.14	0.058	1.47	3.500	88.90	4.48	113.83	11.22	49.92	1.57	0.353	9.8	1.721
E0360-058-4000-X					4.000	101.60	5.15	130.73	11.22	49.92	1.57	0.353	8.4	1.473
E0360-058-4500-X					4.500	114.30	5.83	148.12	11.22	49.92	1.57	0.353	7.2	1.269
E0360-058-5000-X					5.000	127.00	6.49	164.72	11.22	49.92	1.57	0.353	6.5	1.138
E0360-058-5500-X					5.500	139.70	7.15	181.73	11.22	49.92	1.57	0.353	5.8	1.021
E0360-058-6000-X					6.000	152.40	7.81	198.37	11.22	49.92	1.57	0.353	5.3	0.934
E0420-037-1000-X					1.000	25.40	1.27	32.28	2.40	10.68	0.42	0.094	7.3	1.284
E0420-037-1120-X					1.120	28.45	1.55	39.45	2.40	10.68	0.42	0.094	4.6	0.802
E0420-037-1250-X					1.250	31.75	1.86	47.27	2.40	10.68	0.42	0.094	3.2	0.569
E0420-037-1370-X					1.370	34.80	2.14	54.32	2.40	10.68	0.42	0.094	2.6	0.452
E0420-037-1500-X					1.500	38.10	2.45	62.31	2.40	10.68	0.42	0.094	2.1	0.365
E0420-037-1750-X			0.037	0.94	1.750	44.45	3.00	76.30	2.40	10.68	0.42	0.094	1.6	0.277
E0420-037-2000-X					2.000	50.80	3.59	91.14	2.40	10.68	0.42	0.094	1.2	0.219
E0420-037-2250-X					2.250	57.15	4.24	107.58	2.40	10.68	0.42	0.094	1.0	0.175
E0420-037-2500-X					2.500	63.50	4.88	124.01	2.40	10.68	0.42	0.094	0.8	0.146
E0420-037-2750-X					2.750	69.85	5.40	137.09	2.40	10.68	0.42	0.094	0.7	0.131
E0420-037-3000-X					3.000	76.20	5.98	151.84	2.40	10.68	0.42	0.094	0.7	0.117
E0420-045-1000-X					1.000	25.40	1.20	30.47	4.34	19.30	0.68	0.153	18.3	3.209
E0420-045-1120-X					1.120	28.45	1.42	36.19	4.34	19.30	0.68	0.153	12.0	2.101
E0420-045-1250-X					1.250	31.75	1.67	42.37	4.34	19.30	0.68	0.153	8.7	1.532
E0420-045-1370-X					1.370	34.80	1.89	48.07	4.34	19.30	0.68	0.153	7.0	1.225
E0420-045-1500-X					1.500	38.10	2.14	54.26	4.34	19.30	0.68	0.153	5.7	1.007
E0420-045-1750-X	0.420	10.67	0.045	1.14	1.750	44.45	2.61	66.31	4.34	19.30	0.68	0.153	4.2	0.744
E0420-045-2000-X					2.000	50.80	3.07	77.99	4.34	19.30	0.68	0.153	3.4	0.598
E0420-045-2250-X					2.250	57.15	3.54	89.94	4.34	19.30	0.68	0.153	2.8	0.496
E0420-045-2500-X					2.500	63.50	4.01	101.94	4.34	19.30	0.68	0.153	2.4	0.423
E0420-045-2750-X					2.750	69.85	4.51	114.44	4.34	19.30	0.68	0.153	2.1	0.365
E0420-045-3000-X					3.000	76.20	4.91	124.67	4.34	19.30	0.68	0.153	1.9	0.336
E0420-055-1000-X					1.000	25.40	1.14	29.06	7.97	35.43	1.17	0.263	47.1	8.256
E0420-055-1120-X					1.120	28.45	1.33	33.79	7.97	35.43	1.17	0.263	32.3	5.660
E0420-055-1250-X					1.250	31.75	1.53	38.90	7.97	35.43	1.17	0.263	24.2	4.230
E0420-055-1370-X					1.370	34.80	1.72	43.62	7.97	35.43	1.17	0.263	19.6	3.428
E0420-055-1500-X					1.500	38.10	1.92	48.73	7.97	35.43	1.17	0.263	16.2	2.845
E0420-055-1750-X			0.055	1.40	1.750	44.45	2.31	58.55	7.97	35.43	1.17	0.263	12.2	2.144
E0420-055-2000-X					2.000	50.80	2.69	68.37	7.97	35.43	1.17	0.263	9.8	1.721
E0420-055-2250-X					2.250	57.15	3.08	78.31	7.97	35.43	1.17	0.263	8.2	1.430
E0420-055-2500-X					2.500	63.50	3.47	88.18	7.97	35.43	1.17	0.263	7.0	1.225
E0420-055-2750-X					2.750	69.85	3.85	97.87	7.97	35.43	1.17	0.263	6.2	1.079
E0420-055-3000-X					3.000	76.20	4.24	107.61	7.97	35.43	1.17	0.263	5.5	0.963
E0500-034-1250-X	0.500	12.70	0.034	0.86	1.250	31.75	1.89	48.04	1.54	6.85	0.26	0.058	2.0	0.350
E0500-034-1370-X					1.370	34.80	2.28	57.79	1.54	6.85	0.26	0.058	1.4	0.248



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0500-034-1500-X					1.500	38.10	2.68	68.17	1.54	6.85	0.26	0.058	1.1	0.190
E0500-034-1750-X			0.034	0.86	1.750	44.45	3.67	93.31	1.54	6.85	0.26	0.058	0.7	0.117
E0500-034-2000-X					2.000	50.80	4.56	115.94	1.54	6.85	0.26	0.058	0.5	0.088
E0500-034-2250-X					2.250	57.15	5.33	135.32	1.54	6.85	0.26	0.058	0.4	0.073
E0500-037-1250-X					1.250	31.75	1.96	49.76	1.99	8.84	0.33	0.074	2.3	0.408
E0500-037-1370-X					1.370	34.80	2.32	58.82	1.99	8.84	0.33	0.074	1.7	0.306
E0500-037-1500-X					1.500	38.10	2.67	67.77	1.99	8.84	0.33	0.074	1.4	0.248
E0500-037-1750-X					1.750	44.45	3.40	86.48	1.99	8.84	0.33	0.074	1.0	0.175
E0500-037-2000-X					2.000	50.80	3.99	101.24	1.99	8.84	0.33	0.074	0.8	0.146
E0500-037-2250-X					2.250	57.15	4.73	120.20	1.99	8.84	0.33	0.074	0.7	0.117
E0500-037-2500-X			0.037	0.94	2.500	63.50	5.34	135.56	1.99	8.84	0.33	0.074	0.6	0.102
E0500-037-2750-X					2.750	69.85	6.06	153.92	1.99	8.84	0.33	0.074	0.5	0.088
E0500-037-3000-X					3.000	76.20	6.97	177.08	1.99	8.84	0.33	0.074	0.4	0.073
E0500-037-3500-X					3.500	88.90	8.46	215.00	1.99	8.84	0.33	0.074	0.3	0.058
E0500-037-4000-X					4.000	101.60	10.62	269.73	1.99	8.84	0.33	0.074	0.2	0.044
E0500-037-4500-X					4.500	114.30	11.12	282.43	1.99	8.84	0.33	0.074	0.2	0.044
E0500-037-5000-X					5.000	127.00	13.27	337.08	1.99	8.84	0.33	0.074	0.2	0.035
E0500-041-1250-X					1.250	31.75	1.82	46.29	2.70	12.03	0.42	0.094	4.0	0.700
E0500-041-1370-X					1.370	34.80	2.13	54.18	2.70	12.03	0.42	0.094	3.0	0.525
E0500-041-1500-X					1.500	38.10	2.45	62.16	2.70	12.03	0.42	0.094	2.4	0.423
E0500-041-1750-X					1.750	44.45	3.12	79.33	2.70	12.03	0.42	0.094	1.7	0.292
E0500-041-2000-X					2.000	50.80	3.83	97.31	2.70	12.03	0.42	0.094	1.2	0.219
E0500-041-2250-X	0.500	12.70			2.250	57.15	4.36	110.82	2.70	12.03	0.42	0.094	1.1	0.190
E0500-041-2500-X			0.041	1.04	2.500	63.50	5.00	126.93	2.70	12.03	0.42	0.094	0.9	0.160
E0500-041-2750-X					2.750	69.85	5.50	139.62	2.70	12.03	0.42	0.094	0.8	0.146
E0500-041-3000-X					3.000	76.20	6.43	163.41	2.70	12.03	0.42	0.094	0.7	0.117
E0500-041-3500-X					3.500	88.90	7.42	188.57	2.70	12.03	0.42	0.094	0.6	0.102
E0500-041-4000-X					4.000	101.60	8.58	217.88	2.70	12.03	0.42	0.094	0.5	0.088
E0500-041-4500-X					4.500	114.30	9.99	253.84	2.70	12.03	0.42	0.094	0.4	0.073
E0500-041-5000-X					5.000	127.00	11.87	301.42	2.70	12.03	0.42	0.094	0.3	0.058
E0500-045-1250-X					1.250	31.75	1.64	41.57	3.58	15.91	0.58	0.13	7.7	1.357
E0500-045-1370-X					1.370	34.80	2.01	51.10	3.58	15.91	0.58	0.13	4.7	0.817
E0500-045-1500-X					1.500	38.10	2.28	57.95	3.58	15.91	0.58	0.13	3.8	0.671
E0500-045-1750-X					1.750	44.45	2.84	72.11	3.58	15.91	0.58	0.13	2.7	0.481
E0500-045-2000-X					2.000	50.80	3.38	85.91	3.58	15.91	0.58	0.13	2.2	0.379
E0500-045-2250-X					2.250	57.15	3.96	100.62	3.58	15.91	0.58	0.13	1.7	0.306
E0500-045-2500-X			0.045	1.14	2.500	63.50	4.50	114.22	3.58	15.91	0.58	0.13	1.5	0.263
E0500-045-2750-X					2.750	69.85	5.00	126.90	3.58	15.91	0.58	0.13	1.3	0.233
E0500-045-3000-X					3.000	76.20	5.57	141.41	3.58	15.91	0.58	0.13	1.2	0.204
E0500-045-3500-X					3.500	88.90	6.77	171.89	3.58	15.91	0.58	0.13	0.9	0.160
E0500-045-4000-X					4.000	101.60	7.99	203.03	3.58	15.91	0.58	0.13	0.7	0.131
E0500-045-4500-X					4.500	114.30	8.99	228.41	3.58	15.91	0.58	0.13	0.7	0.117
E0500-045-5000-X					5.000	127.00	10.13	257.41	3.58	15.91	0.58	0.13	0.6	0.102
E0500-049-1250-X			0.049	1.24	1.250	31.75	1.58	40.22	4.62	20.55	0.73	0.164	11.7	2.042
E0500-049-1370-X					1.370	34.80	1.83	46.53	4.62	20.55	0.73	0.164	8.4	1.473



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0500-049-1500-X					1.500	38.10	2.10	53.30	4.62	20.55	0.73	0.164	6.5	1.138
E0500-049-1750-X					1.750	44.45	2.61	66.40	4.62	20.55	0.73	0.164	4.5	0.788
E0500-049-2000-X					2.000	50.80	3.11	79.02	4.62	20.55	0.73	0.164	3.5	0.613
E0500-049-2250-X					2.250	57.15	3.62	92.01	4.62	20.55	0.73	0.164	2.8	0.496
E0500-049-2500-X					2.500	63.50	4.17	105.83	4.62	20.55	0.73	0.164	2.3	0.408
E0500-049-2750-X			0.049	1.24	2.750	69.85	4.69	119.23	4.62	20.55	0.73	0.164	2.0	0.350
E0500-049-3000-X					3.000	76.20	5.22	132.64	4.62	20.55	0.73	0.164	1.7	0.306
E0500-049-3500-X					3.500	88.90	6.24	158.62	4.62	20.55	0.73	0.164	1.4	0.248
E0500-049-4000-X					4.000	101.60	7.33	186.26	4.62	20.55	0.73	0.164	1.2	0.204
E0500-049-4500-X					4.500	114.30	8.39	213.07	4.62	20.55	0.73	0.164	1.0	0.175
E0500-049-5000-X					5.000	127.00	9.24	234.75	4.62	20.55	0.73	0.164	0.9	0.160
E0500-055-1250-X					1.250	31.75	1.52	38.67	6.53	29.06	1	0.225	20.3	3.559
E0500-055-1370-X					1.370	34.80	1.80	45.61	6.53	29.06	1	0.225	13.0	2.276
E0500-055-1500-X					1.500	38.10	2.01	51.08	6.53	29.06	1	0.225	10.8	1.896
E0500-055-1750-X					1.750	44.45	2.49	63.20	6.53	29.06	1	0.225	7.5	1.313
E0500-055-2000-X					2.000	50.80	2.90	73.60	6.53	29.06	1	0.225	6.2	1.079
E0500-055-2250-X					2.250	57.15	3.34	84.81	6.53	29.06	1	0.225	5.1	0.890
E0500-055-2500-X			0.055	1.40	2.500	63.50	3.80	96.59	6.53	29.06	1	0.225	4.2	0.744
E0500-055-2750-X					2.750	69.85	4.26	108.20	6.53	29.06	1	0.225	3.7	0.642
E0500-055-3000-X					3.000	76.20	4.70	119.47	6.53	29.06	1	0.225	3.2	0.569
E0500-055-3500-X					3.500	88.90	5.58	141.63	6.53	29.06	1	0.225	2.7	0.467
E0500-055-4000-X					4.000	101.60	6.46	164.09	6.53	29.06	1	0.225	2.2	0.394
E0500-055-4500-X	0.500	12.70			4.500	114.30	7.39	187.66	6.53	29.06	1	0.225	1.9	0.336
E0500-055-5000-X					5.000	127.00	8.32	211.37	6.53	29.06	1	0.225	1.7	0.292
E0500-063-1250-X					1.250	31.75	1.47	37.22	9.83	43.72	1.42	0.319	39.1	6.841
E0500-063-1370-X					1.370	34.80	1.69	43.02	9.83	43.72	1.42	0.319	26.0	4.551
E0500-063-1500-X					1.500	38.10	1.90	48.16	9.83	43.72	1.42	0.319	21.2	3.720
E0500-063-1750-X					1.750	44.45	2.29	58.17	9.83	43.72	1.42	0.319	15.6	2.728
E0500-063-2000-X					2.000	50.80	2.68	68.13	9.83	43.72	1.42	0.319	12.3	2.159
E0500-063-2250-X					2.250	57.15	3.08	78.18	9.83	43.72	1.42	0.319	10.2	1.780
E0500-063-2500-X			0.063	1.60	2.500	63.50	3.47	88.17	9.83	43.72	1.42	0.319	8.7	1.517
E0500-063-2750-X					2.750	69.85	3.85	97.73	9.83	43.72	1.42	0.319	7.7	1.342
E0500-063-3000-X					3.000	76.20	4.25	107.87	9.83	43.72	1.42	0.319	6.7	1.182
E0500-063-3500-X					3.500	88.90	5.03	127.77	9.83	43.72	1.42	0.319	5.5	0.963
E0500-063-4000-X					4.000	101.60	5.84	148.24	9.83	43.72	1.42	0.319	4.6	0.802
E0500-063-4500-X					4.500	114.30	6.60	167.74	9.83	43.72	1.42	0.319	4.0	0.700
E0500-063-5000-X					5.000	127.00	7.40	188.08	9.83	43.72	1.42	0.319	3.5	0.613
E0500-069-1250-X					1.250	31.75	1.43	36.33	12.93	57.50	1.82	0.409	61.6	10.795
E0500-069-1370-X					1.370	34.80	1.62	41.04	12.93	57.50	1.82	0.409	45.2	7.921
E0500-069-1500-X					1.500	38.10	1.80	45.60	12.93	57.50	1.82	0.409	37.7	6.593
E0500-069-1750-X			0.069	1.75	1.750	44.45	2.18	55.27	12.93	57.50	1.82	0.409	26.1	4.566
E0500-069-2000-X					2.000	50.80	2.54	64.52	12.93	57.50	1.82	0.409	20.6	3.603
E0500-069-2250-X					2.250	57.15	2.91	73.84	12.93	57.50	1.82	0.409	16.9	2.961
E0500-069-2500-X					2.500	63.50	3.27	83.08	12.93	57.50	1.82	0.409	14.4	2.524
E0500-069-2750-X					2.750	69.85	3.65	92.74	12.93	57.50	1.82	0.409	12.3	2.159



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0500-069-3000-X					3.000	76.20	4.02	102.06	12.93	57.50	1.82	0.409	10.9	1.911
E0500-069-3500-X					3.500	88.90	4.75	120.56	12.93	57.50	1.82	0.409	8.9	1.561
E0500-069-4000-X			0.069	1.75	4.000	101.60	5.50	139.67	12.93	57.50	1.82	0.409	7.4	1.298
E0500-069-4500-X					4.500	114.30	6.21	157.74	12.93	57.50	1.82	0.409	6.5	1.138
E0500-069-5000-X					5.000	127.00	6.96	176.82	12.93	57.50	1.82	0.409	5.7	0.992
E0500-075-1250-X					1.250	31.75	1.41	35.80	16.60	73.83	2.29	0.515	89.7	15.711
E0500-075-1370-X					1.370	34.80	1.57	39.95	16.60	73.83	2.29	0.515	70.5	12.341
E0500-075-1500-X					1.500	38.10	1.75	44.36	16.60	73.83	2.29	0.515	58.1	10.167
E0500-075-1750-X					1.750	44.45	2.10	53.28	16.60	73.83	2.29	0.515	41.2	7.206
E0500-075-2000-X					2.000	50.80	2.45	62.22	16.60	73.83	2.29	0.515	31.8	5.572
E0500-075-2250-X					2.250	57.15	2.79	70.78	16.60	73.83	2.29	0.515	26.7	4.668
E0500-075-2500-X			0.075	1.91	2.500	63.50	3.14	79.72	16.60	73.83	2.29	0.515	22.4	3.924
E0500-075-2750-X					2.750	69.85	3.49	88.65	16.60	73.83	2.29	0.515	19.3	3.384
E0500-075-3000-X					3.000	76.20	3.83	97.17	16.60	73.83	2.29	0.515	17.3	3.034
E0500-075-3500-X					3.500	88.90	4.53	115.02	16.60	73.83	2.29	0.515	13.9	2.436
E0500-075-4000-X					4.000	101.60	5.22	132.54	16.60	73.83	2.29	0.515	11.7	2.057
E0500-075-4500-X					4.500	114.30	5.91	150.06	16.60	73.83	2.29	0.515	10.2	1.780
E0500-075-5000-X					5.000	127.00	6.61	167.77	16.60	73.83	2.29	0.515	8.9	1.561
E0650-055-1500-X					1.500	38.10	1.87	47.51	4.89	21.73	0.75	0.169	11.2	1.955
E0650-055-1750-X					1.750	44.45	2.48	62.99	4.89	21.73	0.75	0.169	5.7	0.992
E0650-055-2000-X					2.000	50.80	3.21	81.56	4.89	21.73	0.75	0.169	3.4	0.598
E0650-055-2250-X					2.250	57.15	3.80	96.56	4.89	21.73	0.75	0.169	2.7	0.467
E0650-055-2500-X			0.055	1.40	2.500	63.50	4.41	112.00	4.89	21.73	0.75	0.169	2.2	0.379
E0650-055-2750-X					2.750	69.85	5.01	127.17	4.89	21.73	0.75	0.169	1.8	0.321
E0650-055-3000-X					3.000	76.20	5.61	142.57	4.89	21.73	0.75	0.169	1.6	0.277
E0650-055-3500-X					3.500	88.90	6.81	172.97	4.89	21.73	0.75	0.169	1.2	0.219
E0650-055-4000-X					4.000	101.60	8.14	206.69	4.89	21.73	0.75	0.169	1.0	0.175
E0650-063-1500-X					1.500	38.10	1.80	45.66	7.32	32.54	1.17	0.263	20.7	3.618
E0650-063-1750-X					1.750	44.45	2.31	58.66	7.32	32.54	1.17	0.263	11.0	1.926
E0650-063-2000-X					2.000	50.80	2.89	73.39	7.32	32.54	1.17	0.263	6.9	1.211
E0650-063-2250-X					2.250	57.15	3.40	86.45	7.32	32.54	1.17	0.263	5.3	0.934
E0650-063-2500-X	0.650	16.51			2.500	63.50	3.89	98.88	7.32	32.54	1.17	0.263	4.4	0.773
E0650-063-2750-X			0.063	1.60	2.750	69.85	4.43	112.47	7.32	32.54	1.17	0.263	3.7	0.642
E0650-063-3000-X					3.000	76.20	4.94	125.54	7.32	32.54	1.17	0.263	3.2	0.554
E0650-063-3500-X					3.500	88.90	5.96	151.40	7.32	32.54	1.17	0.263	2.5	0.438
E0650-063-4000-X					4.000	101.60	6.95	176.60	7.32	32.54	1.17	0.263	2.1	0.365
E0650-063-4500-X					4.500	114.30	8.02	203.59	7.32	32.54	1.17	0.263	1.7	0.306
E0650-063-5000-X					5.000	127.00	8.89	225.69	7.32	32.54	1.17	0.263	1.6	0.277
E0650-069-1750-X					1.750	44.45	2.21	56.25	9.59	42.66	1.58	0.355	17.2	3.020
E0650-069-2000-X					2.000	50.80	2.68	68.00	9.59	42.66	1.58	0.355	11.8	2.071
E0650-069-2250-X					2.250	57.15	3.13	79.55	9.59	42.66	1.58	0.355	9.1	1.590
E0650-069-2500-X			0.069	1.75	2.500	63.50	3.59	91.25	9.59	42.66	1.58	0.355	7.3	1.284
E0650-069-2750-X					2.750	69.85	4.05	102.85	9.59	42.66	1.58	0.355	6.2	1.079
E0650-069-3000-X					3.000	76.20	4.50	114.35	9.59	42.66	1.58	0.355	5.3	0.934
E0650-069-3500-X					3.500	88.90	5.42	137.74	9.59	42.66	1.58	0.355	4.2	0.729



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0650-069-4000-X					4.000	101.60	6.34	161.16	9.59	42.66	1.58	0.355	3.4	0.598
E0650-069-4500-X	0.650	16.51	0.069	1.75	4.500	114.30	7.25	184.07	9.59	42.66	1.58	0.355	2.9	0.511
E0650-069-5000-X					5.000	127.00	8.20	208.40	9.59	42.66	1.58	0.355	2.5	0.438
E0750-049-2000-X					2.000	50.80	3.29	83.69	2.97	13.22	0.49	0.11	1.9	0.336
E0750-049-2250-X					2.250	57.15	4.24	107.58	2.97	13.22	0.49	0.11	1.2	0.219
E0750-049-2500-X					2.500	63.50	4.98	126.53	2.97	13.22	0.49	0.11	1.0	0.175
E0750-049-2750-X			0.049	1.24	2.750	69.85	6.06	153.90	2.97	13.22	0.49	0.11	0.7	0.131
E0750-049-3000-X					3.000	76.20	6.72	170.75	2.97	13.22	0.49	0.11	0.7	0.117
E0750-049-3250-X					3.250	82.55	7.50	190.61	2.97	13.22	0.49	0.11	0.6	0.102
E0750-049-3500-X					3.500	88.90	8.46	214.97	2.97	13.22	0.49	0.11	0.5	0.088
E0750-055-2000-X					2.000	50.80	3.30	83.82	4.24	18.86	0.67	0.151	2.7	0.481
E0750-055-2250-X					2.250	57.15	4.04	102.55	4.24	18.86	0.67	0.151	2.0	0.350
E0750-055-2500-X			0.055	1.40	2.500	63.50	4.76	120.85	4.24	18.86	0.67	0.151	1.6	0.277
E0750-055-2750-X					2.750	69.85	5.61	142.50	4.24	18.86	0.67	0.151	1.2	0.219
E0750-055-3000-X					3.000	76.20	6.30	160.02	4.24	18.86	0.67	0.151	1.1	0.190
E0750-055-3500-X					3.500	88.90	7.79	197.87	4.24	18.86	0.67	0.151	0.8	0.146
E0750-063-2000-X					2.000	50.80	2.97	75.44	6.25	27.81	1	0.225	5.4	0.948
E0750-063-2250-X					2.250	57.15	3.56	90.52	6.25	27.81	1	0.225	4.0	0.700
E0750-063-2500-X					2.500	63.50	4.20	106.79	6.25	27.81	1	0.225	3.1	0.540
E0750-063-2750-X					2.750	69.85	4.72	119.90	6.25	27.81	1	0.225	2.7	0.467
E0750-063-3000-X			0.063	1.60	3.000	76.20	5.43	137.80	6.25	27.81	1	0.225	2.2	0.379
E0750-063-3500-X					3.500	88.90	6.65	168.98	6.25	27.81	1	0.225	1.7	0.292
E0750-063-4000-X					4.000	101.60	7.71	195.81	6.25	27.81	1	0.225	1.4	0.248
E0750-063-4500-X	0.750	19.05			4.500	114.30	9.00	228.70	6.25	27.81	1	0.225	1.2	0.204
E0750-063-5000-X					5.000	127.00	10.25	260.47	6.25	27.81	1	0.225	1.0	0.175
E0750-063-5500-X					5.500	139.70	11.23	285.30	6.25	27.81	1	0.225	0.9	0.160
E0750-069-2000-X					2.000	50.80	2.68	68.02	8.18	36.39	1.29	0.29	10.2	1.780
E0750-069-2250-X					2.250	57.15	3.22	81.87	8.18	36.39	1.29	0.29	7.1	1.240
E0750-069-2500-X					2.500	63.50	3.75	95.33	8.18	36.39	1.29	0.29	5.5	0.963
E0750-069-2750-X					2.750	69.85	4.31	109.49	8.18	36.39	1.29	0.29	4.4	0.773
E0750-069-3000-X			0.069	1.75	3.000	76.20	4.84	122.89	8.18	36.39	1.29	0.29	3.7	0.656
E0750-069-3500-X					3.500	88.90	5.93	150.69	8.18	36.39	1.29	0.29	2.8	0.496
E0750-069-4000-X					4.000	101.60	6.95	176.63	8.18	36.39	1.29	0.29	2.3	0.408
E0750-069-4500-X					4.500	114.30	8.10	205.64	8.18	36.39	1.29	0.29	1.9	0.336
E0750-069-5000-X					5.000	127.00	9.14	232.05	8.18	36.39	1.29	0.29	1.7	0.292
E0750-075-2000-X					2.000	50.80	2.66	67.49	10.45	46.49	1.58	0.355	13.5	2.363
E0750-075-2250-X					2.250	57.15	3.15	80.07	10.45	46.49	1.58	0.355	9.8	1.721
E0750-075-2500-X					2.500	63.50	3.64	92.58	10.45	46.49	1.58	0.355	7.7	1.357
E0750-075-2750-X					2.750	69.85	4.10	104.08	10.45	46.49	1.58	0.355	6.6	1.152
E0750-075-3000-X			0.075	1.91	3.000	76.20	4.59	116.56	10.45	46.49	1.58	0.355	5.6	0.977
E0750-075-3500-X					3.500	88.90	5.55	140.91	10.45	46.49	1.58	0.355	4.3	0.759
E0750-075-4000-X					4.000	101.60	6.54	165.99	10.45	46.49	1.58	0.355	3.5	0.613
E0750-075-4500-X					4.500	114.30	7.54	191.57	10.45	46.49	1.58	0.355	2.9	0.511
E0750-075-5000-X					5.000	127.00	8.43	214.24	10.45	46.49	1.58	0.355	2.6	0.452
E0750-075-5500-X					5.500	139.70	9.44	239.86	10.45	46.49	1.58	0.355	2.2	0.394



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0750-075-6000-X			0.075	1.191	6.000	152.40	10.44	265.08	10.45	46.49	1.58	0.355	2.0	0.350
E0750-085-2000-X					2.000	50.80	2.45	62.32	15.12	67.24	2.31	0.52	28.2	4.945
E0750-085-2250-X					2.250	57.15	2.88	73.16	15.12	67.24	2.31	0.52	20.3	3.559
E0750-085-2500-X					2.500	63.50	3.31	84.06	15.12	67.24	2.31	0.52	15.8	2.772
E0750-085-2750-X					2.750	69.85	3.74	94.89	15.12	67.24	2.31	0.52	13.0	2.276
E0750-085-3000-X			0.085	2.16	3.000	76.20	4.16	105.79	15.12	67.24	2.31	0.52	11.0	1.926
E0750-085-3500-X					3.500	88.90	5.02	127.57	15.12	67.24	2.31	0.52	8.4	1.473
E0750-085-4000-X					4.000	101.60	5.88	149.23	15.12	67.24	2.31	0.52	6.8	1.196
E0750-085-4500-X					4.500	114.30	6.73	170.91	15.12	67.24	2.31	0.52	5.7	1.007
E0750-085-5000-X					5.000	127.00	7.56	192.10	15.12	67.24	2.31	0.52	5.0	0.875
E0750-095-2000-X					2.000	50.80	2.36	59.95	20.95	93.18	3.09	0.695	49.6	8.679
E0750-095-2250-X					2.250	57.15	2.74	69.55	20.95	93.18	3.09	0.695	36.6	6.404
E0750-095-2500-X					2.500	63.50	3.14	79.85	20.95	93.18	3.09	0.695	27.7	4.858
E0750-095-2750-X					2.750	69.85	3.52	89.44	20.95	93.18	3.09	0.695	23.2	4.055
E0750-095-3000-X					3.000	76.20	3.90	99.08	20.95	93.18	3.09	0.695	19.8	3.472
E0750-095-3500-X			0.095	2.41	3.500	88.90	4.68	118.99	20.95	93.18	3.09	0.695	15.1	2.640
E0750-095-4000-X					4.000	101.60	5.44	138.15	20.95	93.18	3.09	0.695	12.4	2.174
E0750-095-4500-X					4.500	114.30	6.23	158.21	20.95	93.18	3.09	0.695	10.3	1.809
E0750-095-5000-X					5.000	127.00	6.99	177.42	20.95	93.18	3.09	0.695	9.0	1.575
E0750-095-5500-X					5.500	139.70	7.76	197.02	20.95	93.18	3.09	0.695	7.9	1.386
E0750-095-6000-X					6.000	152.40	8.52	216.46	20.95	93.18	3.09	0.695	7.1	1.240
E0750-105-2000-X					2.000	50.80	2.29	58.09	28.07	124.86	4.12	0.927	83.5	14.617
E0750-105-2250-X	0.750	19.50			2.250	57.15	2.65	67.24	28.07	124.86	4.12	0.927	60.3	10.561
E0750-105-2500-X					2.500	63.50	3.01	76.40	28.07	124.86	4.12	0.927	47.1	8.256
E0750-105-2750-X					2.750	69.85	3.37	85.55	28.07	124.86	4.12	0.927	38.7	6.783
E0750-105-3000-X			0.105	2.67	3.000	76.20	3.73	94.69	28.07	124.86	4.12	0.927	32.9	5.762
E0750-105-3500-X					3.500	88.90	4.43	112.46	28.07	124.86	4.12	0.927	25.8	4.522
E0750-105-4000-X					4.000	101.60	5.15	130.81	28.07	124.86	4.12	0.927	20.8	3.647
E0750-105-4500-X					4.500	114.30	5.85	148.58	28.07	124.86	4.12	0.927	17.7	3.107
E0750-105-5000-X					5.000	127.00	6.57	166.90	28.07	124.86	4.12	0.927	15.2	2.669
E0750-115-2000-X					2.000	50.80	2.25	57.14	36.64	162.98	5.22	1.174	125.9	22.041
E0750-115-2250-X					2.250	57.15	2.58	65.44	36.64	162.98	5.22	1.174	96.2	16.848
E0750-115-2500-X					2.500	63.50	2.92	74.23	36.64	162.98	5.22	1.174	74.4	13.026
E0750-115-2750-X					2.750	69.85	3.25	82.54	36.64	162.98	5.22	1.174	62.9	11.013
E0750-115-3000-X					3.000	76.20	3.58	90.83	36.64	162.98	5.22	1.174	54.6	9.555
E0750-115-3500-X			0.115	2.92	3.500	88.90	4.25	107.91	36.64	162.98	5.22	1.174	42.0	7.352
E0750-115-4000-X					4.000	101.60	4.92	125.02	36.64	162.98	5.22	1.174	34.1	5.966
E0750-115-4500-X					4.500	114.30	5.57	141.59	36.64	162.98	5.22	1.174	29.2	5.120
E0750-115-5000-X					5.000	127.00	6.25	158.72	36.64	162.98	5.22	1.174	25.2	4.405
E0750-115-5500-X					5.500	139.70	6.92	175.85	36.64	162.98	5.22	1.174	22.1	3.866
E0750-115-6000-X					6.000	152.40	7.58	192.48	36.64	162.98	5.22	1.174	19.9	3.486
E0750-125-2000-X					2.000	50.80	2.20	55.91	46.71	207.75	6.59	1.483	199.6	34.951
E0750-125-2250-X			0.125	3.18	2.250	57.15	2.52	63.96	46.71	207.75	6.59	1.483	149.7	26.213
E0750-125-2500-X					2.500	63.50	2.83	72.01	46.71	207.75	6.59	1.483	119.8	20.977
E0750-125-2750-X					2.750	69.85	3.15	80.06	46.71	207.75	6.59	1.483	99.8	17.476



COMPRESSION SPRINGS
316 STAINLESS STEEL

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E0750-125-3000-X					3.000	76.20	3.47	88.11	46.71	207.75	6.59	1.483	85.5	14.981
E0750-125-3500-X					3.500	88.90	4.10	104.21	46.71	207.75	6.59	1.483	66.6	11.655
E0750-125-4000-X	0.750	19.50	0.125	3.18	4.000	101.60	4.74	120.33	46.71	207.75	6.59	1.483	54.4	9.526
E0750-125-4500-X					4.500	114.30	5.37	136.42	46.71	207.75	6.59	1.483	46.1	8.067
E0750-125-5000-X					5.000	127.00	6.01	152.54	46.71	207.75	6.59	1.483	39.9	6.987
E0850-055-2000-X					2.000	50.80	3.15	80.08	3.66	16.26	0.58	0.13	2.7	0.467
E0850-055-2250-X			0.055	1.40	2.250	57.15	4.01	101.76	3.66	16.26	0.58	0.13	1.7	0.306
E0850-055-2500-X					2.500	63.50	4.81	122.05	3.66	16.26	0.58	0.13	1.3	0.233
E0850-055-2750-X					2.750	69.85	5.82	147.92	3.66	16.26	0.58	0.13	1.0	0.175
E0850-063-2250-X					2.250	57.15	3.70	94.04	5.55	24.69	0.83	0.187	3.2	0.569
E0850-063-2500-X					2.500	63.50	4.45	113.11	5.55	24.69	0.83	0.187	2.4	0.423
E0850-063-2750-X			0.063	1.60	2.750	69.85	5.21	132.40	5.55	24.69	0.83	0.187	1.9	0.336
E0850-063-3000-X					3.000	76.20	5.98	151.91	5.55	24.69	0.83	0.187	1.6	0.277
E0850-063-3500-X					3.500	88.90	7.55	191.65	5.55	24.69	0.83	0.187	1.2	0.204
E0850-075-2250-X					2.250	57.15	3.20	81.31	9.10	40.49	1.42	0.319	8.1	1.415
E0850-075-2500-X					2.500	63.50	3.73	94.75	9.10	40.49	1.42	0.319	6.2	1.094
E0850-075-2750-X					2.750	69.85	4.29	108.91	9.10	40.49	1.42	0.319	5.0	0.875
E0850-075-3000-X			0.075	1.91	3.000	76.20	4.85	123.08	9.10	40.49	1.42	0.319	4.2	0.729
E0850-075-3500-X					3.500	88.90	5.93	150.58	9.10	40.49	1.42	0.319	3.2	0.554
E0850-075-4000-X	0.850	21.59			4.000	101.60	7.08	179.73	9.10	40.49	1.42	0.319	2.5	0.438
E0850-075-4500-X					4.500	114.30	8.19	208.06	9.10	40.49	1.42	0.319	2.1	0.365
E0850-075-5000-X					5.000	127.00	9.19	233.54	9.10	40.49	1.42	0.319	1.8	0.321
E0850-085-2000-X					2.000	50.80	2.39	60.79	13.14	58.45	2	0.45	28.3	4.960
E0850-085-2250-X					2.250	57.15	2.95	74.84	13.14	58.45	2	0.45	16.0	2.801
E0850-085-2500-X					2.500	63.50	3.46	87.77	13.14	58.45	2	0.45	11.7	2.042
E0850-085-2750-X					2.750	69.85	3.93	99.91	13.14	58.45	2	0.45	9.4	1.648
E0850-085-3000-X					3.000	76.20	4.41	111.96	13.14	58.45	2	0.45	7.9	1.386
E0850-085-3500-X			0.085	2.16	3.500	88.90	5.33	135.44	13.14	58.45	2	0.45	6.1	1.065
E0850-085-4000-X					4.000	101.60	6.31	160.17	13.14	58.45	2	0.45	4.8	0.846
E0850-085-4500-X					4.500	114.30	7.23	183.63	13.14	58.45	2	0.45	4.1	0.715
E0850-085-4750-X					4.750	120.65	7.72	196.15	13.14	58.45	2	0.45	3.7	0.656
E0850-085-5000-X					5.000	127.00	8.18	207.89	13.14	58.45	2	0.45	3.5	0.613
E0850-085-5500-X					5.500	139.70	9.22	234.07	13.14	58.45	2	0.45	3.0	0.525
E0850-085-6000-X					6.000	152.40	10.18	258.57	13.14	58.45	2	0.45	2.7	0.467
E1000-063-2500-X					2.500	63.50	4.27	108.47	4.58	20.39	0.75	0.169	2.2	0.379
E1000-063-2750-X			0.063	1.60	2.750	69.85	5.17	131.39	4.58	20.39	0.75	0.169	1.6	0.277
E1000-063-3000-X					3.000	76.20	6.07	154.15	4.58	20.39	0.75	0.169	1.2	0.219
E1000-063-3250-X					3.250	82.55	7.09	179.98	4.58	20.39	0.75	0.169	1.0	0.175
E1000-075-2500-X					2.500	63.50	3.73	94.77	7.63	33.92	1.17	0.263	5.2	0.919
E1000-075-2750-X	1.000	25.40			2.750	69.85	4.44	112.67	7.63	33.92	1.17	0.263	3.8	0.671
E1000-075-3000-X					3.000	76.20	5.15	130.91	7.63	33.92	1.17	0.263	3.0	0.525
E1000-075-3500-X			0.075	1.91	3.500	88.90	6.48	164.66	7.63	33.92	1.17	0.263	2.2	0.379
E1000-075-4000-X					4.000	101.60	7.88	200.09	7.63	33.92	1.17	0.263	1.7	0.292
E1000-075-4500-X					4.500	114.30	9.06	230.16	7.63	33.92	1.17	0.263	1.4	0.248
E1000-075-5000-X					5.000	127.00	10.54	267.69	7.63	33.92	1.17	0.263	1.2	0.204



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E1000-085-2500-X					2.500	63.50	3.29	83.66	10.99	48.87	1.67	0.376	11.7	2.057
E1000-085-2750-X					2.750	69.85	4.07	103.29	10.99	48.87	1.67	0.376	7.1	1.240
E1000-085-3000-X					3.000	76.20	4.65	118.00	10.99	48.87	1.67	0.376	5.7	0.992
E1000-085-3500-X			0.085	2.16	3.500	88.90	5.74	145.74	10.99	48.87	1.67	0.376	4.2	0.729
E1000-085-4000-X					4.000	101.60	6.87	174.48	10.99	48.87	1.67	0.376	3.2	0.569
E1000-085-4500-X					4.500	114.30	8.00	203.12	10.99	48.87	1.67	0.376	2.7	0.467
E1000-085-5000-X					5.000	127.00	9.14	232.27	10.99	48.87	1.67	0.376	2.2	0.394
E1000-095-2500-X					2.500	63.50	3.14	79.84	15.16	67.44	2.25	0.506	20.1	3.516
E1000-095-2750-X					2.750	69.85	3.78	96.10	15.16	67.44	2.25	0.506	12.5	2.188
E1000-095-3000-X					3.000	76.20	4.27	108.47	15.16	67.44	2.25	0.506	10.2	1.780
E1000-095-3500-X					3.500	88.90	5.28	134.16	15.16	67.44	2.25	0.506	7.2	1.269
E1000-095-4000-X					4.000	101.60	6.25	158.66	15.16	67.44	2.25	0.506	5.7	1.007
E1000-095-4500-X					4.500	114.30	7.27	184.61	15.16	67.44	2.25	0.506	4.7	0.817
E1000-095-5000-X			0.095	2.41	5.000	127.00	8.23	209.03	15.16	67.44	2.25	0.506	4.0	0.700
E1000-095-5500-X					5.500	139.70	9.28	235.73	15.16	67.44	2.25	0.506	3.4	0.598
E1000-095-6000-X					6.000	152.40	10.31	261.77	15.16	67.44	2.25	0.506	3.0	0.525
E1000-095-6500-X					6.500	165.10	11.20	284.41	15.16	67.44	2.25	0.506	2.7	0.481
E1000-095-7000-X					7.000	177.80	12.35	313.57	15.16	67.44	2.25	0.506	2.4	0.423
E1000-095-8000-X					8.000	203.20	14.46	367.26	15.16	67.44	2.25	0.506	2.0	0.350
E1000-095-9000-X					9.000	228.60	16.38	416.09	15.16	67.44	2.25	0.506	1.7	0.306
E1000-105-2500-X					2.500	63.50	3.03	76.84	20.23	89.98	3.17	0.713	32.5	5.689
E1000-105-2750-X					2.750	69.85	3.48	88.30	20.23	89.98	3.17	0.713	23.5	4.114
E1000-105-3000-X	1.000	25.40			3.000	76.20	3.93	99.74	20.23	89.98	3.17	0.713	18.4	3.224
E1000-105-3500-X					3.500	88.90	4.83	122.69	20.23	89.98	3.17	0.713	12.8	2.246
E1000-105-4000-X					4.000	101.60	5.72	145.32	20.23	89.98	3.17	0.713	9.9	1.736
E1000-105-4500-X					4.500	114.30	6.63	168.50	20.23	89.98	3.17	0.713	8.0	1.400
E1000-105-5000-X			0.105	2.67	5.000	127.00	7.53	191.24	20.23	89.98	3.17	0.713	6.7	1.182
E1000-105-5500-X					5.500	139.70	8.43	214.03	20.23	89.98	3.17	0.713	5.8	1.021
E1000-105-6000-X					6.000	152.40	9.30	236.32	20.23	89.98	3.17	0.713	5.2	0.904
E1000-105-6500-X					6.500	165.10	10.22	259.70	20.23	89.98	3.17	0.713	4.6	0.802
E1000-105-7000-X					7.000	177.80	11.10	281.86	20.23	89.98	3.17	0.713	4.2	0.729
E1000-105-8000-X					8.000	203.20	12.88	327.08	20.23	89.98	3.17	0.713	3.5	0.613
E1000-105-9000-X					9.000	228.60	14.69	373.13	20.23	89.98	3.17	0.713	3.0	0.525
E1000-115-2500-X					2.500	63.50	2.94	74.71	26.29	116.94	4.08	0.918	50.3	8.811
E1000-115-2750-X					2.750	69.85	3.35	85.14	26.29	116.94	4.08	0.918	36.9	6.462
E1000-115-3000-X					3.000	76.20	3.76	95.55	26.29	116.94	4.08	0.918	29.2	5.106
E1000-115-3500-X					3.500	88.90	4.58	116.32	26.29	116.94	4.08	0.918	20.6	3.603
E1000-115-4000-X					4.000	101.60	5.40	137.24	26.29	116.94	4.08	0.918	15.8	2.772
E1000-115-4500-X			0.115	2.92	4.500	114.30	6.22	157.99	26.29	116.94	4.08	0.918	12.9	2.261
E1000-115-5000-X					5.000	127.00	7.04	178.69	26.29	116.94	4.08	0.918	10.9	1.911
E1000-115-5500-X					5.500	139.70	7.86	199.63	26.29	116.94	4.08	0.918	9.4	1.648
E1000-115-6000-X					6.000	152.40	8.67	220.12	26.29	116.94	4.08	0.918	8.3	1.459
E1000-115-6500-X					6.500	165.10	9.53	242.05	26.29	116.94	4.08	0.918	7.3	1.284
E1000-115-7000-X					7.000	177.80	10.29	261.40	26.29	116.94	4.08	0.918	6.7	1.182
E1000-115-8000-X					8.000	203.20	11.98	304.27	26.29	116.94	4.08	0.918	5.6	0.977



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E1000-115-9000-X			0.115	2.92	9.000	228.60	13.60	345.36	26.29	116.94	4.08	0.918	4.8	0.846
E1000-125-2500-X					2.500	63.50	2.89	73.37	33.36	148.39	5.09	1.145	72.7	12.735
E1000-125-2750-X					2.750	69.85	3.27	83.01	33.36	148.39	5.09	1.145	54.6	9.555
E1000-125-3000-X					3.000	76.20	3.65	92.65	33.36	148.39	5.09	1.145	43.6	7.644
E1000-125-3500-X					3.500	88.90	4.41	111.95	33.36	148.39	5.09	1.145	31.2	5.456
E1000-125-4000-X					4.000	101.60	5.17	131.22	33.36	148.39	5.09	1.145	24.2	4.245
E1000-125-4500-X					4.500	114.30	5.93	150.52	33.36	148.39	5.09	1.145	19.8	3.472
E1000-125-5000-X			0.125	3.18	5.000	127.00	6.69	169.89	33.36	148.39	5.09	1.145	16.7	2.932
E1000-125-5500-X					5.500	139.70	7.44	188.96	33.36	148.39	5.09	1.145	14.6	2.553
E1000-125-6000-X					6.000	152.40	8.20	208.38	33.36	148.39	5.09	1.145	12.8	2.246
E1000-125-6500-X					6.500	165.10	8.96	227.57	33.36	148.39	5.09	1.145	11.5	2.013
E1000-125-7000-X					7.000	177.80	9.72	246.76	33.36	148.39	5.09	1.145	10.4	1.823
E1000-125-8000-X					8.000	203.20	11.23	285.30	33.36	148.39	5.09	1.145	8.7	1.532
E1000-125-9000-X					9.000	228.60	12.77	324.38	33.36	148.39	5.09	1.145	7.5	1.313
E1000-135-2500-X					2.500	63.50	2.82	71.51	41.54	184.76	6.3	1.417	111.7	19.562
E1000-135-2750-X					2.750	69.85	3.18	80.77	41.54	184.76	6.3	1.417	82.0	14.354
E1000-135-3000-X					3.000	76.20	3.54	90.03	41.54	184.76	6.3	1.417	64.7	11.334
E1000-135-3500-X					3.500	88.90	4.25	107.85	41.54	184.76	6.3	1.417	47.2	8.271
E1000-135-4000-X					4.000	101.60	4.95	125.64	41.54	184.76	6.3	1.417	37.2	6.521
E1000-135-4500-X	1.000	25.40			4.500	114.30	5.68	144.15	41.54	184.76	6.3	1.417	30.0	5.251
E1000-135-5000-X			0.135	3.43	5.000	127.00	6.38	162.00	41.54	184.76	6.3	1.417	25.6	4.478
E1000-135-5500-X					5.500	139.70	7.11	180.56	41.54	184.76	6.3	1.417	21.9	3.836
E1000-135-6000-X					6.000	152.40	7.81	198.32	41.54	184.76	6.3	1.417	19.5	3.413
E1000-135-6500-X					6.500	165.10	8.53	216.76	41.54	184.76	6.3	1.417	17.3	3.034
E1000-135-7000-X					7.000	177.80	9.24	234.65	41.54	184.76	6.3	1.417	15.7	2.757
E1000-135-8000-X					8.000	203.20	10.66	270.78	41.54	184.76	6.3	1.417	13.2	2.319
E1000-135-9000-X					9.000	228.60	12.09	307.03	41.54	184.76	6.3	1.417	11.4	1.998
E1000-148-2500-X					2.500	63.50	2.77	70.39	53.88	239.64	8.06	1.813	168.9	29.583
E1000-148-2750-X					2.750	69.85	3.10	78.62	53.88	239.64	8.06	1.813	132.7	23.238
E1000-148-3000-X					3.000	76.20	3.44	87.47	53.88	239.64	8.06	1.813	103.2	18.074
E1000-148-3500-X					3.500	88.90	4.09	103.94	53.88	239.64	8.06	1.813	77.4	13.552
E1000-148-4000-X					4.000	101.60	4.76	121.03	53.88	239.64	8.06	1.813	59.9	10.488
E1000-148-4500-X					4.500	114.30	5.44	138.10	53.88	239.64	8.06	1.813	48.9	8.563
E1000-148-5000-X			0.148	3.76	5.000	127.00	6.11	155.16	53.88	239.64	8.06	1.813	41.3	7.235
E1000-148-5500-X					5.500	139.70	6.76	171.67	53.88	239.64	8.06	1.813	36.4	6.375
E1000-148-6000-X					6.000	152.40	7.43	188.68	53.88	239.64	8.06	1.813	32.1	5.616
E1000-148-6500-X					6.500	165.10	8.10	205.83	53.88	239.64	8.06	1.813	28.6	5.003
E1000-148-7000-X					7.000	177.80	8.77	222.86	53.88	239.64	8.06	1.813	25.8	4.522
E1000-148-8000-X					8.000	203.20	10.10	256.52	53.88	239.64	8.06	1.813	21.8	3.822
E1000-148-9000-X					9.000	228.60	11.44	290.69	53.88	239.64	8.06	1.813	18.7	3.282
E1125-085-3000-X					3.000	76.20	4.39	111.44	9.67	42.99	1.57	0.353	5.8	1.021
E1125-085-3500-X					3.500	88.90	5.76	146.27	9.67	42.99	1.57	0.353	3.6	0.627
E1125-085-4000-X	1.125	28.58	0.085	2.16	4.000	101.60	7.13	181.18	9.67	42.99	1.57	0.353	2.6	0.452
E1125-085-4500-X					4.500	114.30	8.39	212.98	9.67	42.99	1.57	0.353	2.1	0.365
E1125-085-5000-X					5.000	127.00	9.86	250.35	9.67	42.99	1.57	0.353	1.7	0.292



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E1125-085-5500-X					5.500	139.70	11.21	284.82	9.67	42.99	1.57	0.353	1.4	0.248
E1125-085-6000-X			0.085	2.16	6.000	152.40	12.48	316.87	9.67	42.99	1.57	0.353	1.2	0.219
E1125-085-6500-X					6.500	165.10	13.97	354.87	9.67	42.99	1.57	0.353	1.1	0.190
E1125-085-7000-X					7.000	177.80	15.09	383.38	9.67	42.99	1.57	0.353	1.0	0.175
E1125-105-3000-X					3.000	76.20	3.91	99.41	17.75	78.95	2.83	0.637	16.3	2.859
E1125-105-3500-X					3.500	88.90	4.93	125.29	17.75	78.95	2.83	0.637	10.4	1.823
E1125-105-4000-X					4.000	101.60	5.95	151.04	17.75	78.95	2.83	0.637	7.7	1.342
E1125-105-4500-X					4.500	114.30	6.95	176.61	17.75	78.95	2.83	0.637	6.1	1.065
E1125-105-5000-X			0.105	2.67	5.000	127.00	7.98	202.81	17.75	78.95	2.83	0.637	5.0	0.875
E1125-105-5500-X					5.500	139.70	9.01	228.89	17.75	78.95	2.83	0.637	4.2	0.744
E1125-105-6000-X	1.125	28.58			6.000	152.40	9.98	253.48	17.75	78.95	2.83	0.637	3.7	0.656
E1125-105-6500-X					6.500	165.10	11.09	281.73	17.75	78.95	2.83	0.637	3.2	0.569
E1125-105-7000-X					7.000	177.80	12.12	307.76	17.75	78.95	2.83	0.637	2.9	0.511
E1125-125-3000-X					3.000	76.20	3.64	92.44	29.19	129.84	4.59	1.033	38.5	6.739
E1125-125-3500-X					3.500	88.90	4.47	113.66	29.19	129.84	4.59	1.033	25.2	4.420
E1125-125-4000-X					4.000	101.60	5.31	134.94	29.19	129.84	4.59	1.033	18.7	3.282
E1125-125-4500-X					4.500	114.30	6.15	156.21	29.19	129.84	4.59	1.033	14.9	2.611
E1125-125-5000-X			0.125	3.18	5.000	127.00	6.98	177.34	29.19	129.84	4.59	1.033	12.4	2.174
E1125-125-5500-X					5.500	139.70	7.83	198.77	29.19	129.84	4.59	1.033	10.6	1.853
E1125-125-6000-X					6.000	152.40	8.66	219.98	29.19	129.84	4.59	1.033	9.2	1.619
E1125-125-6500-X					6.500	165.10	9.48	240.87	29.19	129.84	4.59	1.033	8.2	1.444
E1125-125-7000-X					7.000	177.80	10.32	262.08	29.19	129.84	4.59	1.033	7.4	1.298
E1250-095-3500-X					3.500	88.90	5.28	134.13	11.88	52.84	1.94	0.436	5.6	0.977
E1250-095-4000-X					4.000	101.60	6.59	167.48	11.88	52.84	1.94	0.436	3.8	0.671
E1250-095-4500-X					4.500	114.30	7.91	200.89	11.88	52.84	1.94	0.436	2.9	0.511
E1250-095-5000-X			0.095	2.41	5.000	127.00	9.26	235.23	11.88	52.84	1.94	0.436	2.3	0.408
E1250-095-5500-X					5.500	139.70	10.69	271.46	11.88	52.84	1.94	0.436	1.9	0.336
E1250-095-6000-X					6.000	152.40	11.97	303.92	11.88	52.84	1.94	0.436	1.7	0.292
E1250-095-6500-X					6.500	165.10	13.13	333.46	11.88	52.84	1.94	0.436	1.5	0.263
E1250-095-7500-X					7.500	190.50	16.02	406.96	11.88	52.84	1.94	0.436	1.2	0.204
E1250-115-3500-X					3.500	88.90	4.69	119.22	20.50	91.18	3.3	0.742	14.4	2.524
E1250-115-4000-X					4.000	101.60	5.71	144.95	20.50	91.18	3.3	0.742	10.1	1.765
E1250-115-4500-X					4.500	114.30	6.74	171.31	20.50	91.18	3.3	0.742	7.7	1.342
E1250-115-5000-X	1.250	31.75			5.000	127.00	7.75	196.93	20.50	91.18	3.3	0.742	6.2	1.094
E1250-115-5500-X			0.115	2.92	5.500	139.70	8.78	222.95	20.50	91.18	3.3	0.742	5.2	0.919
E1250-115-6000-X					6.000	152.40	9.82	249.53	20.50	91.18	3.3	0.742	4.5	0.788
E1250-115-6500-X					6.500	165.10	10.80	274.37	20.50	91.18	3.3	0.742	4.0	0.700
E1250-115-7000-X					7.000	177.80	11.80	299.77	20.50	91.18	3.3	0.742	3.6	0.627
E1250-115-7500-X					7.500	190.50	12.93	328.52	20.50	91.18	3.3	0.742	3.2	0.554
E1250-135-3500-X					3.500	88.90	4.34	110.35	32.23	143.34	5.15	1.159	32.1	5.616
E1250-135-4000-X					4.000	101.60	5.20	131.96	32.23	143.34	5.15	1.159	22.7	3.968
E1250-135-4500-X			0.135	3.43	4.500	114.30	6.04	153.43	32.23	143.34	5.15	1.159	17.6	3.078
E1250-135-5000-X					5.000	127.00	6.89	175.00	32.23	143.34	5.15	1.159	14.3	2.509
E1250-135-5500-X					5.500	139.70	7.74	196.64	32.23	143.34	5.15	1.159	12.1	2.115
E1250-135-6000-X					6.000	152.40	8.60	218.45	32.23	143.34	5.15	1.159	10.4	1.823



316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E1250-135-6500-X					6.500	165.10	9.46	240.16	32.23	143.34	5.15	1.159	9.2	1.605
E1250-135-7000-X			0.135	3.43	7.000	177.80	10.28	261.20	32.23	143.34	5.15	1.159	8.2	1.444
E1250-135-7500-X					7.500	190.50	11.15	283.27	32.23	143.34	5.15	1.159	7.4	1.298
E1250-148-3500-X					3.500	88.90	4.19	106.44	41.65	185.28	6.62	1.489	50.7	8.884
E1250-148-4000-X					4.000	101.60	4.97	126.16	41.65	185.28	6.62	1.489	36.2	6.345
E1250-148-4500-X	1.250	31.75			4.500	114.30	5.74	145.81	41.65	185.28	6.62	1.489	28.2	4.945
E1250-148-5000-X					5.000	127.00	6.52	165.56	41.65	185.28	6.62	1.489	23.1	4.041
E1250-148-5500-X			0.148	3.76	5.500	139.70	7.30	185.35	41.65	185.28	6.62	1.489	19.5	3.413
E1250-148-6000-X					6.000	152.40	8.07	205.02	41.65	185.28	6.62	1.489	16.9	2.961
E1250-148-6500-X					6.500	165.10	8.85	224.78	41.65	185.28	6.62	1.489	14.9	2.611
E1250-148-7000-X					7.000	177.80	9.63	244.56	41.65	185.28	6.62	1.489	13.3	2.334
E1250-148-7500-X					7.500	190.50	10.40	264.17	41.65	185.28	6.62	1.489	12.1	2.115
E1500-125-4500-X					4.500	114.30	6.55	166.29	21.23	94.43	3.5	0.787	8.7	1.517
E1500-125-5000-X					5.000	127.00	7.69	195.44	21.23	94.43	3.5	0.787	6.6	1.152
E1500-125-5500-X					5.500	139.70	8.83	224.18	21.23	94.43	3.5	0.787	5.3	0.934
E1500-125-6000-X			0.125	3.18	6.000	152.40	9.94	252.52	21.23	94.43	3.5	0.787	4.5	0.788
E1500-125-6500-X					6.500	165.10	11.03	280.13	21.23	94.43	3.5	0.787	3.9	0.686
E1500-125-7000-X					7.000	177.80	12.19	309.67	21.23	94.43	3.5	0.787	3.4	0.598
E1500-125-7500-X					7.500	190.50	13.41	340.68	21.23	94.43	3.5	0.787	3.0	0.525
E1500-125-8000-X					8.000	203.20	14.45	367.04	21.23	94.43	3.5	0.787	2.7	0.481
E1500-148-4500-X					4.500	114.30	5.90	149.90	33.95	151.02	5.58	1.255	20.2	3.545
E1500-148-5000-X					5.000	127.00	6.82	173.26	33.95	151.02	5.58	1.255	15.6	2.728
E1500-148-5500-X					5.500	139.70	7.73	196.24	33.95	151.02	5.58	1.255	12.7	2.232
E1500-148-6000-X	1.500	38.10	0.148	3.76	6.000	152.40	8.64	219.46	33.95	151.02	5.58	1.255	10.7	1.882
E1500-148-6500-X					6.500	165.10	9.54	242.34	33.95	151.02	5.58	1.255	9.3	1.634
E1500-148-7000-X					7.000	177.80	10.48	266.08	33.95	151.02	5.58	1.255	8.2	1.430
E1500-148-7500-X					7.500	190.50	11.37	288.81	33.95	151.02	5.58	1.255	7.3	1.284
E1500-148-8000-X					8.000	203.20	12.31	312.71	33.95	151.02	5.58	1.255	6.6	1.152
E1500-177-4500-X					4.500	114.30	5.43	137.84	55.39	246.36	9.14	2.056	49.9	8.738
E1500-177-5000-X					5.000	127.00	6.18	157.07	55.39	246.36	9.14	2.056	39.1	6.841
E1500-177-5500-X					5.500	139.70	6.94	176.33	55.39	246.36	9.14	2.056	32.1	5.616
E1500-177-6000-X			0.177	4.50	6.000	152.40	7.70	195.53	55.39	246.36	9.14	2.056	27.2	4.770
E1500-177-6500-X					6.500	165.10	8.45	214.76	55.39	246.36	9.14	2.056	23.7	4.143
E1500-177-7000-X					7.000	177.80	9.21	233.98	55.39	246.36	9.14	2.056	20.9	3.661
E1500-177-7500-X					7.500	190.50	9.97	253.18	55.39	246.36	9.14	2.056	18.7	3.282
E1500-177-8000-X					8.000	203.20	10.74	272.67	55.39	246.36	9.14	2.056	16.9	2.961
E1750-148-5000-X					5.000	127.00	6.91	175.44	28.65	127.45	4.82	1.084	12.5	2.188
E1750-148-5500-X					5.500	139.70	7.99	202.89	28.65	127.45	4.82	1.084	9.6	1.678
E1750-148-6000-X					6.000	152.40	9.04	229.70	28.65	127.45	4.82	1.084	7.8	1.371
E1750-148-6500-X			0.148	3.76	6.500	165.10	10.12	257.08	28.65	127.45	4.82	1.084	6.6	1.152
E1750-148-7000-X	1.750	44.45			7.000	177.80	11.21	284.66	28.65	127.45	4.82	1.084	5.7	0.992
E1750-148-7500-X					7.500	190.50	12.27	311.61	28.65	127.45	4.82	1.084	5.0	0.875
E1750-148-8000-X					8.000	203.20	13.40	340.30	28.65	127.45	4.82	1.084	4.4	0.773
E1750-148-9000-X					9.000	228.60	15.50	393.74	28.65	127.45	4.82	1.084	3.7	0.642
E1750-177-5000-X			0.177	4.50	5.000	127.00	6.27	159.22	46.58	207.20	7.91	1.78	30.5	5.339



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL EXTENSION SPRINGS

Catalog Number	Outside Diameter (OD)		Wire Diameter (d)		Free Length (L) Approx.		Ext. (L1)		Load P at L1		Initial Tension T (Ref. Only)		Spring Rate (R)	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
E1750-177-5500-X					5.500	139.70	7.13	181.07	46.58	207.20	7.91	1.78	23.7	4.157
E1750-177-6000-X					6.000	152.40	7.99	203.01	46.58	207.20	7.91	1.78	19.4	3.399
E1750-177-6500-X					6.500	165.10	8.86	224.95	46.58	207.20	7.91	1.78	16.4	2.874
E1750-177-7000-X			0.177	4.50	7.000	177.80	9.71	246.75	46.58	207.20	7.91	1.78	14.2	2.494
E1750-177-7500-X					7.500	190.50	10.57	268.59	46.58	207.20	7.91	1.78	12.6	2.203
E1750-177-8000-X					8.000	203.20	11.44	290.54	46.58	207.20	7.91	1.78	11.2	1.969
E1750-177-9000-X					9.000	228.60	13.14	333.88	46.58	207.20	7.91	1.78	9.3	1.634
E1750-207-5000-X	1.750	44.45			5.000	127.00	5.87	149.22	70.59	313.99	12.15	2.734	66.8	11.699
E1750-207-5500-X					5.500	139.70	6.61	167.89	70.59	313.99	12.15	2.734	52.6	9.219
E1750-207-6000-X					6.000	152.40	7.35	186.60	70.59	313.99	12.15	2.734	43.4	7.600
E1750-207-6500-X			0.207	5.26	6.500	165.10	8.08	205.32	70.59	313.99	12.15	2.734	36.9	6.462
E1750-207-7000-X					7.000	177.80	8.82	223.96	70.59	313.99	12.15	2.734	32.2	5.631
E1750-207-7500-X					7.500	190.50	9.55	242.60	70.59	313.99	12.15	2.734	28.5	4.989
E1750-207-8000-X					8.000	203.20	10.29	261.43	70.59	313.99	12.15	2.734	25.5	4.464
E1750-207-9000-X					9.000	228.60	11.76	298.75	70.59	313.99	12.15	2.734	21.2	3.705
E2000-177-5500-X					5.500	139.70	7.15	181.56	40.20	178.79	6.97	1.568	20.2	3.530
E2000-177-6000-X					6.000	152.40	8.13	206.57	40.20	178.79	6.97	1.568	15.6	2.728
E2000-177-6500-X					6.500	165.10	9.11	231.31	40.20	178.79	6.97	1.568	12.7	2.232
E2000-177-7000-X			0.177	4.50	7.000	177.80	10.09	256.33	40.20	178.79	6.97	1.568	10.7	1.882
E2000-177-7500-X					7.500	190.50	11.09	281.77	40.20	178.79	6.97	1.568	9.2	1.619
E2000-177-8000-X					8.000	203.20	12.07	306.57	40.20	178.79	6.97	1.568	8.2	1.430
E2000-177-9000-X					9.000	228.60	14.05	356.83	40.20	178.79	6.97	1.568	6.6	1.152
E2000-177-10000-X	2.000	50.80			10.000	254.00	16.04	407.49	40.20	178.79	6.97	1.568	5.5	0.963
E2000-207-5500-X					5.500	139.70	6.64	168.75	60.75	270.21	10.73	2.414	43.7	7.658
E2000-207-6000-X					6.000	152.40	7.46	189.51	60.75	270.21	10.73	2.414	34.2	5.995
E2000-207-6500-X					6.500	165.10	8.28	210.22	60.75	270.21	10.73	2.414	28.2	4.931
E2000-207-7000-X			0.207	5.26	7.000	177.80	9.09	230.94	60.75	270.21	10.73	2.414	23.9	4.187
E2000-207-7500-X					7.500	190.50	9.91	251.75	60.75	270.21	10.73	2.414	20.7	3.632
E2000-207-8000-X					8.000	203.20	10.73	272.53	60.75	270.21	10.73	2.414	18.3	3.209
E2000-207-9000-X					9.000	228.60	12.35	313.81	60.75	270.21	10.73	2.414	14.9	2.611
E2000-207-10000-X					10.000	254.00	14.00	355.68	60.75	270.21	10.73	2.414	12.5	2.188



Area for handwritten notes, consisting of multiple horizontal lines.

**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
EXTENSION SPRINGS. SEE PAGE 136.**

SPRING ANCHORS

Spring Anchors

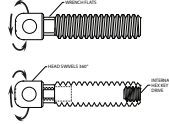
- Anchor the ends of extension springs quickly and easily
- Coarse and Fine thread choices allow for more adjustment possibilities
- Made in the USA
- Low Carbon Steel with protective Black Oxide finish, or 18-8 Stainless Steel materials available from stock



Engineering and Installation Problem: the Extension spring twists as the spring anchor is adjusted up or down

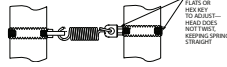
Swivel Anchor Solution: Swivel Spring Anchors allow for the adjustment of tension on the extension spring—**without** twisting the spring.

The attachment point to the extension spring is designed to swivel, allowing the spring to be drawn tighter (or looser) without twisting the spring. There are two ways to make adjustments to the Anchor—you can use the wrench flats on the top side to tighten or loosen, or use a hex key from the bottom of the Anchor.



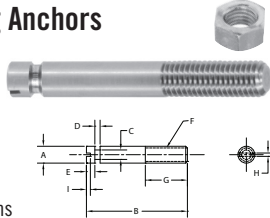
Swivel Spring Anchors

- Patent Pending
- Made in the USA
- Low Carbon Steel with protective Black Oxide finish, or 18-8 Stainless Steel materials available from stock



Groove-Type Spring Anchors

- Made in the USA
- 18-8 Stainless Steel available from stock
- Headless Anchors come with a Jam Nut ready for installation
- Standard and Custom lengths available



STANDARD SPRING ANCHORS											
Low Carbon Steel											
Catalog Number	Thread	Overall Length (± 0.016)		Threaded Shank Length		Head Height		Hole size		Center of Hole to Top of Head	
		in	mm	in	mm	in	mm	in	mm	in	mm
AF0632063C	6-32	0.625	15.9	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AF0648063C	6-48	0.625	15.9	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AF0832088C	8-32	0.875	22.2	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AF0840088C	8-40	0.875	22.2	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AF1420125C	1/4-20	1.250	31.8	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AF1428125C	1/4-28	1.250	31.8	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AF3816163C	3/8-16	1.625	41.3	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6
AF3824163C	3/8-24	1.625	41.3	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6
18.8 Stainless Steel											
AF0632063S	6-32	0.625	15.9	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AF0648063S	6-48	0.625	15.9	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AF0832088S	8-32	0.875	22.2	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AF0840088S	8-40	0.875	22.2	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AF1420125S	1/4-20	1.250	31.8	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AF1428125S	1/4-28	1.250	31.8	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AF3816163S	3/8-16	1.625	41.3	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6
AF3824163S	3/8-24	1.625	41.3	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6

SWIVEL SPRING ANCHORS											
Low Carbon Steel											
Catalog Number	Thread	Overall Length (± 0.016)		Threaded Shank Length		Head Height		Hole size		Center of Hole to Top of Head	
		in	mm	in	mm	in	mm	in	mm	in	mm
AS0632058C	6-32	0.580	14.7	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AS0832082C	8-32	0.820	20.8	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AS1420116C	1/4-20	1.160	29.5	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AS3816152C	3/8-16	1.520	38.6	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6
18.8 Stainless Steel											
AS0632058S	6-32	0.580	14.7	0.400	10.2	0.150	3.8	0.080	2.0	0.070	1.8
AS0832082S	8-32	0.820	20.8	0.625	15.9	0.160	4.1	0.100	2.5	0.085	2.2
AS1420116S	1/4-20	1.160	29.5	0.875	22.2	0.250	6.4	0.150	3.8	0.130	3.3
AS3816152S	3/8-16	1.520	38.6	1.125	28.6	0.360	9.1	0.220	5.6	0.180	4.6

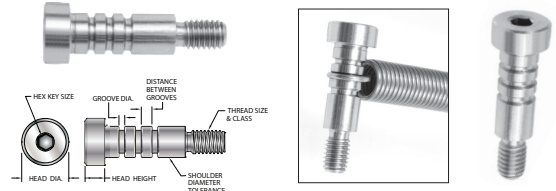
GROOVE TYPE SPRING ANCHORS																				
18.8 Stainless Steel																				
Catalog Number	"A"		"B"		"C"		"D"		"E"		"F"		"G"		"H"		"I"		Jam Nut Thickness	
	Head Diameter	Overall Length	Groove Diameter	Groove Height	Head Height	Threads	Thread Length	Slot Width	Slot Depth	in	mm	in	mm	in	mm	in	mm	in	mm	in
AG0540-625-S	.125	3.2	.625	15.9	0.078	2.0	0.047	1.2	.125	3.2	5-40	.375	9.5	.039	1.0	0.040	1.0	0.109	2.8	
AG0540-750-S	.125	3.2	.750	19.1	0.078	2.0	0.047	1.2	.125	3.2	5-40	.375	9.5	0.039	1.0	0.040	1.0	0.109	2.8	
AG0540-100-S	.125	3.2	1.00	25.4	0.078	2.0	0.047	1.2	.125	3.2	5-40	.375	9.5	0.039	1.0	0.040	1.0	0.109	2.8	
AG1032-750-S	.188	4.8	.750	19.1	0.125	3.2	0.094	2.4	.156	4.0	10-32	.375	9.5	0.055	1.4	0.040	1.0	0.125	3.2	
AG1032-100-S	.188	4.8	1.00	25.4	0.125	3.2	0.094	2.4	.156	4.0	10-32	.375	9.5	0.055	1.4	0.040	1.0	0.125	3.2	
AG1032-125-S	.188	4.8	1.25	31.8	0.125	3.2	0.094	2.4	.156	4.0	10-32	.375	9.5	0.055	1.4	0.040	1.0	0.125	3.2	
AG1420-100-S	.25	6.4	1	25.4	0.156	4.0	0.125	3.2	.156	4.0	1/4-20	.625	15.9	0.070	1.8	0.069	1.8	0.156	4.0	
AG1420-125-S	.25	6.4	1.25	31.8	0.156	4.0	0.125	3.2	.156	4.0	1/4-20	.625	15.9	0.070	1.8	0.069	1.8	0.156	4.0	
AG1420-150-S	.25	6.4	1.5	38.1	0.156	4.0	0.125	3.2	.156	4.0	1/4-20	.625	15.9	0.070	1.8	0.069	1.8	0.156	4.0	
AG3118-100-S	.313	8.0	1	25.4	0.188	4.8	0.125	3.2	.156	4.0	5/16-18	.75	19.1	0.078	2.0	0.069	1.8	0.188	4.8	
AG3118-125-S	.313	8.0	1.25	31.8	0.188	4.8	0.125	3.2	.156	4.0	5/16-18	.75	19.1	0.078	2.0	0.069	1.8	0.188	4.8	
AG3118-150-S	.313	8.0	1.5	38.1	0.188	4.8	0.125	3.2	.156	4.0	5/16-18	.75	19.1	0.078	2.0	0.069	1.8	0.188	4.8	
AG3118-200-S	.313	8.0	2	50.8	0.188	4.8	0.125	3.2	.156	4.0	5/16-18	.75	19.1	0.078	2.0	0.069	1.8	0.188	4.8	
AG3816-150-S	.375	9.5	1.5	38.1	0.250	6.4	0.125	3.2	.188	4.8	3/8-16	1	25.4	0.088	2.2	0.094	2.4	0.218	5.5	
AG3816-200-S	.375	9.5	2	50.8	0.250	6.4	0.125	3.2	.188	4.8	3/8-16	1	25.4	0.088	2.2	0.094	2.4	0.218	5.5	
AG3816-250-S	.375	9.5	2.5	63.5	0.250	6.4	0.125	3.2	.188	4.8	3/8-16	1	25.4	0.088	2.2	0.094	2.4	0.218	5.5	
AG5013-200-S	.5	12.7	2	50.8	0.281	7.1	0.156	4.0	.25	6.4	1/2-13	1.25	31.8	0.099	2.5	0.117	3.0	0.313	8.0	
AG5013-250-S	.5	12.7	2.5	63.5	0.281	7.1	0.156	4.0	.25	6.4	1/2-13	1.25	31.8	0.099	2.5	0.117	3.0	0.313	8.0	
AG5013-300-S	.5	12.7	3	76.2	0.281	7.1	0.156	4.0	.25	6.4	1/2-13	1.25	31.8	0.099	2.5	0.117	3.0	0.313	8.0	

SPRING ANCHORS

Multiple Groove-Type Spring Anchors

- Easy to install
- Allows for different height adjustment using the multiple grooves
- Allows the anchoring of two different springs on the same anchor

- Grooves are approx. .005 deeper than the wire diameter for positive locking
- Separation between each groove of approx. 3 times the wire diameter
- Finished appearance of anchor enhances product design



SPRING ANCHORS

MULTIPLE GROOVE-TYPE SPRING ANCHORS																				18.8 Stainless Steel				
Catalog Number	"Suggested Inner Diameter of Spring End"		Groove Diameter		Groove Height		Distance Between Grooves		Number of Grooves	Shaft Diameter		Shaft Length		Head Height		Head Outer Diameter		Thread Size	Thread Length		Thread Class	Type of Drive	Hex Size	
	in	mm	in	mm	in	mm	in	mm		in	mm	in	mm	in	mm	in	mm		in	mm				
AH0078-038-S	0.070	1.8	0.170	4.3	.024	0.6	.036	0.9	3	.078	2.0	.375	9.5	.094	2.4	.156	4.0	1-72	.125	3.2	3A	Slot	n/a	
AH0078-050-S	0.070	1.8	0.170	4.3	.024	0.6	.036	0.9	3	.078	2.0	.5	12.7	.094	2.4	.156	4.0	1-72	.125	3.2	3A	Slot	n/a	
AH0078-075-S	0.070	1.8	0.170	4.3	.024	0.6	.036	0.9	3	.078	2.0	.75	19.1	.094	2.4	.156	4.0	1-72	.125	3.2	3A	Slot	n/a	
AH0125-075-S	0.125	3.2	0.063	1.6	.052	1.3	.078	2.0	3	.125	3.2	.75	19.1	.125	3.2	.25	6.4	4-40	.156	4.0	3A	Hex	5/64	
AH0125-100-S	0.125	3.2	0.063	1.6	.052	1.3	.078	2.0	3	.125	3.2	1	25.4	.125	3.2	.25	6.4	4-40	.156	4.0	3A	Hex	5/64	
AH0125-125-S	0.125	3.2	0.063	1.6	.052	1.3	.078	2.0	3	.125	3.2	1.25	31.8	.125	3.2	.25	6.4	4-40	.156	4.0	3A	Hex	5/64	
AH0172-075-S	0.172	4.4	0.094	2.4	.068	1.7	.102	2.6	3	.172	4.4	.75	19.1	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0172-100-S	0.172	4.4	0.094	2.4	.068	1.7	.102	2.6	3	.172	4.4	1	25.4	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0172-125-S	0.172	4.4	0.094	2.4	.068	1.7	.102	2.6	3	.172	4.4	1.25	31.8	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0172-150-S	0.172	4.4	0.094	2.4	.068	1.7	.102	2.6	3	.172	4.4	1.5	38.1	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0187-075-S	0.188	4.8	0.126	3.2	.052	1.3	.078	2.0	3	.187	4.7	.75	19.1	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0187-100-S	0.188	4.8	0.126	3.2	.052	1.3	.078	2.0	3	.187	4.7	1	25.4	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0187-125-S	0.188	4.8	0.126	3.2	.052	1.3	.078	2.0	3	.187	4.7	1.25	31.8	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0187-150-S	0.188	4.8	0.126	3.2	.052	1.3	.078	2.0	3	.187	4.7	1.5	38.1	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0203-100-S	0.203	5.2	0.094	2.4	.098	2.5	0.147	3.7	3	.203	5.2	1	25.4	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0203-125-S	0.203	5.2	0.094	2.4	.098	2.5	0.147	3.7	3	.203	5.2	1.25	31.8	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0203-150-S	0.203	5.2	0.094	2.4	.098	2.5	0.147	3.7	3	.203	5.2	1.5	38.1	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0203-200-S	0.203	5.2	0.094	2.4	.098	2.5	0.147	3.7	3	.203	5.2	2	50.8	.156	4.0	.313	8.0	8-32	.188	4.8	3A	Hex	3/32	
AH0270-100-S	0.266	6.8	0.170	4.3	.090	2.3	.135	3.4	3	.270	6.9	1	25.4	.218	5.5	.375	9.5	10-24	.375	9.5	3A	Hex	1/8	
AH0270-125-S	0.266	6.8	0.170	4.3	.090	2.3	.135	3.4	3	.270	6.9	1.25	31.8	.218	5.5	.375	9.5	10-24	.375	9.5	3A	Hex	1/8	
AH0270-150-S	0.266	6.8	0.170	4.3	.090	2.3	.135	3.4	3	.270	6.9	1.5	38.1	.218	5.5	.375	9.5	10-24	.375	9.5	3A	Hex	1/8	
AH0270-200-S	0.266	6.8	0.170	4.3	.090	2.3	.135	3.4	3	.270	6.9	2	50.8	.218	5.5	.375	9.5	10-24	.375	9.5	3A	Hex	1/8	
AH0292-100-S	0.297	7.5	0.214	5.4	.068	1.7	.102	2.6	3	.292	7.4	1	25.4	.218	5.5	.438	11.1	1/4-20	.438	11.1	3A	Hex	1/8	
AH0292-125-S	0.297	7.5	0.214	5.4	.068	1.7	.102	2.6	3	.292	7.4	1.25	31.8	.218	5.5	.438	11.1	1/4-20	.438	11.1	3A	Hex	1/8	
AH0292-150-S	0.297	7.5	0.214	5.4	.068	1.7	.102	2.6	3	.292	7.4	1.5	38.1	.218	5.5	.438	11.1	1/4-20	.438	11.1	3A	Hex	1/8	
AH0292-200-S	0.297	7.5	0.214	5.4	.068	1.7	.102	2.6	3	.292	7.4	2	50.8	.218	5.5	.438	11.1	1/4-20	.438	11.1	3A	Hex	1/8	
AH0374-150-S	0.375	9.5	0.238	6.0	.126	3.2	.189	4.8	3	.374	9.5	1.5	38.1	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0374-175-S	0.375	9.5	0.238	6.0	.126	3.2	.189	4.8	3	.374	9.5	1.75	44.5	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0374-200-S	0.375	9.5	0.238	6.0	.126	3.2	.189	4.8	3	.374	9.5	2	50.8	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0374-250-S	0.375	9.5	0.238	6.0	.126	3.2	.189	4.8	3	.374	9.5	2.5	63.5	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0418-100-S	0.422	10.7	0.326	8.3	.082	2.1	.123	3.1	3	.418	10.6	1	25.4	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0418-125-S	0.422	10.7	0.326	8.3	.082	2.1	.123	3.1	3	.418	10.6	1.25	31.8	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0418-150-S	0.422	10.7	0.326	8.3	.082	2.1	.123	3.1	3	.418	10.6	1.5	38.1	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0418-200-S	0.422	10.7	0.326	8.3	.082	2.1	.123	3.1	3	.418	10.6	2	50.8	.25	6.4	.563	14.3	5/16-18	.5	12.7	3A	Hex	3/16	
AH0560-175-S	0.563	14.3	0.360	9.1	.190	4.8	.285	7.2	3	.560	14.2	1.75	44.5	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0560-200-S	0.563	14.3	0.360	9.1	.190	4.8	.285	7.2	3	.560	14.2	2	50.8	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0560-225-S	0.563	14.3	0.360	9.1	.190	4.8	.285	7.2	3	.560	14.2	2.24	56.9	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0560-250-S	0.563	14.3	0.360	9.1	.190	4.8	.285	7.2	3	.560	14.2	2.5	63.5	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0624-150-S	0.625	15.9	0.488	12.4	.126	3.2	.189	4.8	3	.624	15.8	1.5	38.1	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0624-175-S	0.625	15.9	0.488	12.4	.126	3.2	.189	4.8	3	.624	15.8	1.75	44.5	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0624-200-S	0.625	15.9	0.488	12.4	.126	3.2	.189	4.8	3	.624	15.8	2	50.8	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0624-250-S	0.625	15.9	0.488	12.4	.126	3.2	.189	4.8	3	.624	15.8	2.5	63.5	.375	9.5	.875	22.2	1/2-13	.75	19.1	3A	Hex	5/16	
AH0810-175-S	0.813	20.7	0.610	15.5	.190	4.8	.285	7.2	3	.810	20.6	1.75	44.5	.5	12.7	1	25.4	5/8-11	.875	22.2	3A	Hex	3/8	
AH0810-200-S	0.813	20.7	0.610	15.5	.190	4.8	.285	7.2	3	.810	20.6	2	50.8	.5	12.7	1	25.4	5/8-11	.875	22.2	3A	Hex	3/8	
AH0810-225-S	0.813	20.7	0.610	15.5	.190	4.8	.285	7.2	3	.810	20.6	2.25	57.2	.5	12.7	1	25.4	5/8-11	.875	22.2	3A	Hex	3/8	
AH0810-250-S	0.813	20.7	0.610	15.5	.190	4.8	.285	7.2	3	.810	20.6	2.5	63.5	.5	12.7	1	25.4	5/8-11	.875	22.2	3A	Hex	3/8	
AH0980-225-S	1.000	25.4	0.700	17.8	.270	6.9	.405	10.3	3	.980	24.9	2.25	57.2	.625	15.9	1.25	31.8	3/4-10	1	25.4	3A	Hex	1/2	
AH0980-250-S	1.000	25.4	0.700	17.8	.270	6.9	.405	10.3	3	.980	24.9	2.5	63.5	.625	15.9	1.25	31.8	3/4-10	1	25.4	3A	Hex	1/2	
AH0980-275-S	1.000	25.4	0.700	17.8	.270	6.9	.405	10.3	3	.980	24.9	2.75	69.9	.625	15.9	1.25	31.8	3/4-10	1	25.4	3A	Hex	1/2	

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

TORSION SPRINGS

Stock sizes in stainless steel and music wire

SPEC stainless steel torsion springs are widely useful to store and release energy of rotation or to maintain a pressure over a short distance. Our stock selection includes stainless steel torsion springs with four end positions and music wire springs with three end positions as shown in the drawings.

SPEC torsion springs are normally used over a supporting mandrel or arbor. Suggested mandrel sizes allow about 10% clearance at the deflections listed. If greater deflections are used, the arbor size should be reduced. Sufficient room (minimum axial space) must be provided in the assembly for the spring to function properly.

SPEC torsion springs should be used in the direction that winds the coils. In the unwinding direction the maximum load is lower because of residual stresses.

Torque values listed are suitable for average conditions. These values can be increased about 20% for static conditions with only slight setting.

Material

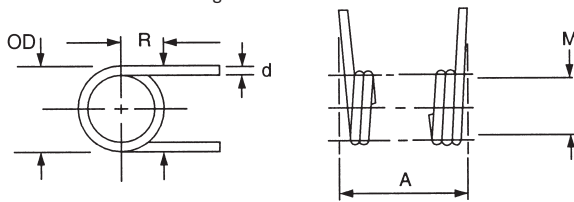
Stainless Steel

Commercial Type 302 ASTM-A313 or AMS 5688 (chemical and physical only)

Music Wire

ASTM-A228 or AMS 5112

Certificate of compliance available on request. Certificate of chemical analysis available at additional charge.



Position of Legs

STAINLESS STEEL SPRINGS

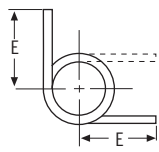


Fig 1. 90° Deflexion

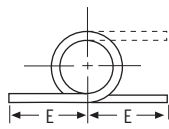


Fig 2. 180° Deflexion

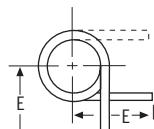


Fig 3. 270° Deflexion

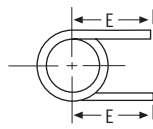


Fig 4. 360° Deflexion

MUSIC WIRE SPRINGS

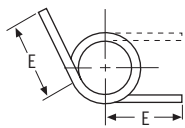


Fig 5. 120° Deflexion

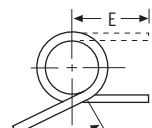


Fig 6. 210° Deflexion

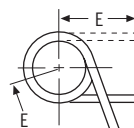


Fig 7. 300° Deflexion

For critical applications SPEC Torsion springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.

Ends

Straight torsion ends are standard.

Special end treatment available. Allow additional time.

Finish

Plain finish is standard. Allow additional time for special finishes.

See page 312 for alternative finishes.

Direction of Helix

Must be specified by adding a suffix to the catalog number.

Use L for left-hand wound, or R for right-hand wound. See illustration below.

Coil count if for reference only.

Tolerances

Torque is for reference only and should not be specified.

O.D. ±2% Stainless Steel

±2% Music Wire

For inspection purposes, the load should be applied at 1/2 leg length (E). Using other lengths appreciably alters the active length of wire and affects the test results.

The reference torque values listed can be translated to the approximate direct load by use of the formula $P = M/E_n$ where P is the load applied at the new length E_n . Example: for part T012-090-055, what is the load when $E_n = 0.187$? $P = M/E_n = 0.047/0.187 = 0.25\text{lb}$.

Torque values at intermediate deflections can be computed by direct proration.

Example: For part T030-180-250, the torque at 90° deflection is 0.312 in-lb (35.3 N-mm)

d= Wire diameter

OD= Outside diameter

T= Torque

R= Loaded position all parts

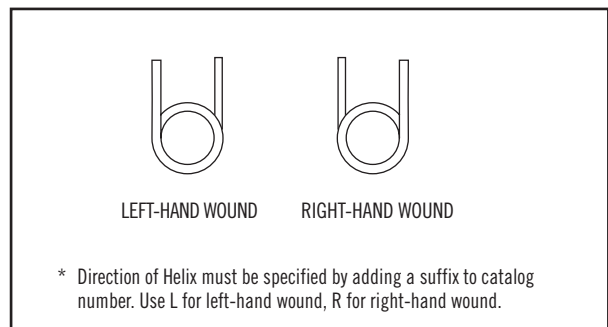
M= Recommended Mandrel Size

E= Leg length (from centerline)

A= Min Axial Length (Axial space)

Fig= Position of legs

Deg°= Degrees deflection



TORSION SPRINGS - STAINLESS STEEL

Catalog Number	d Wire Diameter		OD Outside Diameter		Fig. Position of Ends	Deflection Degree*	T Approximate Torque Reference		Test Point 1/2 E		M Suggested Mandrel Size		E Leg Length		A Min. Axial Space**	
	in	mm	in	mm			Fig.	in-lb	N-mm	in	mm	in	mm	in	mm	in
T012-090-055			0.093	2.36	1	90					0.055	1.40			0.054	1.37
T012-180-067			0.109	2.77	2	180			0.187	4.75	0.067	1.70	0.375	9.52	0.090	2.29
T012-270-062	0.012	0.30	0.102	2.59	3	270					0.062	1.57			0.139	3.53
T012-180-109			0.166	4.22	2	180	0.047	5.31			0.109	2.77			0.066	1.68
T012-270-109			0.170	4.32	3	270					0.109	2.77			0.090	2.29
T012-360-109			0.174	4.42	4	360			0.250	6.35	0.109	2.77	0.500	12.70	0.114	2.90
T014-090-063			0.124	3.15	1	90					0.063	1.60			0.067	1.70
T014-180-078			0.133	3.38	2	180					0.078	1.98			0.105	2.67
T014-270-063	0.014	0.36	0.124	3.15	3	270	0.070	7.91			0.063	1.60			0.161	4.09
T014-180-109			0.194	4.93	2	180					0.109	2.77			0.077	1.96
T014-270-125			0.201	5.11	3	270			0.375	9.52	0.125	3.18	0.750	19.05	0.105	2.67
T014-360-125			0.204	5.18	4	360					0.125	3.18			0.133	3.38
T015-090-062			0.110	2.79	1	90					0.062	1.57			0.068	1.71
T015-180-078			0.130	3.30	2	180			0.250	6.35	0.078	1.98	0.500	12.70	0.113	2.86
T015-270-078	0.015	0.38	0.124	3.15	3	270	0.093	10.51			0.078	1.98			0.173	4.39
T015-180-109			0.183	4.65	2	180					0.109	2.77			0.083	2.10
T015-270-109			0.199	5.05	3	270			0.375	9.52	0.109	2.77	0.750	19.05	0.113	2.86
T015-360-109			0.207	5.26	4	360					0.109	2.77			0.143	3.62
T017-090-093			0.160	4.06	1	90					0.093	2.36			0.081	2.06
T017-180-093			0.172	4.37	2	180			0.250	6.35	0.093	2.36	0.500	12.70	0.128	3.24
T017-270-093	0.017	0.43	0.160	4.06	3	270	0.117	13.22			0.093	2.36			0.196	4.97
T017-180-156			0.249	6.32	2	180					0.156	3.96			0.094	2.39
T017-270-156			0.259	6.58	3	270			0.375	9.52	0.156	3.96	0.750	19.05	0.128	3.24
T017-360-140			0.235	5.97	4	360					0.140	3.56			0.170	4.32
T018-090-109			0.177	4.50	1	90					0.109	2.77			0.081	2.06
T018-180-109			0.164	4.17	2	180			0.250	6.35	0.109	2.77	0.500	12.70	0.153	3.89
T018-270-109			0.160	4.06	3	270					0.109	2.77			0.228	5.79
T018-180-140	0.018	0.46	0.216	5.49	2	180	0.140	15.82			0.140	3.56			0.117	2.97
T018-270-156			0.245	6.22	3	270					0.156	3.96			0.150	3.81
T018-360-156			0.233	5.92	4	360			0.375	9.52	0.156	3.96	0.750	19.05	0.210	5.33
T020-090-109			0.191	4.85	1	90					0.109	2.77			0.095	2.41
T020-180-109			0.179	4.55	2	180					0.109	2.77			0.170	4.32
T020-270-093	0.020	0.51	0.175	4.45	3	270	0.187	21.10			0.093	2.36			0.250	6.35
T020-180-140			0.242	6.15	2	180					0.140	3.56			0.130	3.30
T020-270-172			0.268	6.81	3	270			0.500	12.70	0.172	4.37	1.000	25.40	0.165	4.19
T020-360-156			0.254	6.45	4	360					0.156	3.96			0.250	6.35
T021-090-109			0.186	4.72	1	90					0.109	2.77			0.095	2.40
T021-180-109			0.185	4.70	2	180			0.375	9.52	0.109	2.77	0.750	19.05	0.179	4.53
T021-270-109	0.021	0.53	0.184	4.67	3	270	0.218	24.60			0.109	2.77			0.266	6.76
T021-180-156			0.247	6.27	2	180					0.156	3.96			0.137	3.47
T021-270-187			0.283	7.19	3	270			0.500	12.70	0.187	4.75	1.000	25.40	0.179	4.53
T021-360-187			0.271	6.88	4	360					0.187	4.75			0.242	6.15
T023-090-109			0.204	5.18	1	90					0.109	2.77			0.109	2.77
T023-180-109			0.191	4.85	2	180			0.375	9.52	0.109	2.77	0.750	19.05	0.196	4.98
T023-270-109	0.023	0.58	0.187	4.75	3	270	0.308	34.80			0.109	2.77			0.288	7.30
T023-180-156			0.259	6.58	2	180					0.156	3.96			0.150	3.81
T023-270-156			0.251	6.38	3	270			0.500	12.70	0.156	3.96	1.000	25.40	0.219	5.55
T023-360-172			0.271	6.88	4	360					0.172	4.37			0.265	6.72
T025-090-140			0.235	5.97	1	90					0.140	3.56			0.113	2.86
T025-180-140			0.224	5.69	2	180			0.375	9.52	0.140	3.56	0.750	19.05	0.213	5.40
T025-270-140	0.025	0.64	0.219	5.56	3	270	0.375	42.40			0.140	3.56			0.316	8.03
T025-180-203			0.304	7.72	2	180					0.203	5.16			0.163	4.13
T025-270-218			0.340	8.64	3	270					0.218	5.54			0.213	5.40
T025-360-218			0.324	8.23	4	360					0.218	5.54			0.288	7.32
T028-090-156			0.267	6.78	1	90					0.156	3.96			0.133	3.38
T028-180-140			0.249	6.32	2	180			0.500	12.70	0.140	3.56	1.000	25.40	0.238	6.05
T028-270-140	0.028	0.71	0.245	6.22	3	270	0.515	58.20			0.140	3.56			0.350	8.89
T028-180-203			0.340	8.64	2	180					0.203	5.16			0.182	4.62
T028-270-203			0.329	8.36	3	270					0.203	5.16			0.266	6.76
T028-360-218			0.355	9.02	4	360					0.218	5.54			0.350	8.89

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TORSION SPRINGS - STAINLESS STEEL

Catalog Number	d Wire Diameter		OD Outside Diameter		Fig. Position of Ends	Deflection Degree*	T Approximate Torque Reference		Test Point 1/2 E		M Suggested Mandrel Size		E Leg Length		A Min. Axial Space**	
	in	mm	in	mm			Fig.	in-lb	N-mm	in	mm	in	mm	in	mm	in
T030-090-172			0.281	7.14	1	90					0.172	4.37			0.135	3.43
T030-180-172			0.272	6.91	2	180					0.172	4.37			0.255	6.48
T030-270-172	0.030	0.76	0.270	6.86	3	270	0.625	70.60			0.172	4.37			0.380	9.65
T030-180-250			0.394	10.01	2	180					0.250	6.35			0.195	4.95
T030-270-250			0.377	9.58	3	270					0.250	6.35			0.280	7.11
T030-360-250			0.410	10.41	4	360			0.500	12.70	0.250	6.35	1.000	25.40	0.346	8.79
T032-090-172			0.288	7.32	1	90					0.172	4.36			0.152	3.86
T032-180-156			0.270	6.86	2	180					0.156	3.96			0.272	6.91
T032-270-156	0.032	0.81	0.264	6.71	3	270	0.820	92.70			0.156	3.96			0.432	10.97
T032-180-218			0.366	9.30	2	180					0.218	5.54			0.208	5.28
T032-270-218			0.354	8.99	3	270					0.218	5.54			0.304	7.72
T032-360-234			0.382	9.70	4	360					0.234	5.95			0.368	9.35
T035-090-187			0.315	8.00	1	90					0.187	4.75			0.158	4.00
T035-180-187			0.303	7.70	2	180					0.187	4.75			0.298	7.56
T035-270-187	0.035	0.89	0.311	7.90	3	270	1.000	113.00			0.187	4.75			0.442	11.23
T035-180-281			0.450	11.43	2	180					0.281	7.14			0.228	5.78
T035-270-281			0.435	11.05	3	270					0.281	7.14			0.333	8.45
T035-360-312			0.471	11.96	4	360					0.312	7.92			0.405	10.29
T038-090-234			0.386	9.80	1	90					0.234	5.94			0.180	4.57
T038-180-218			0.368	9.35	2	180			0.625	15.88	0.218	5.54	1.250	31.75	0.323	8.20
T038-270-218	0.038	0.97	0.353	8.97	3	270	1.190	134.50			0.218	5.54			0.475	12.07
T038-180-312			0.487	12.37	2	180					0.318	8.08			0.247	6.27
T038-270-312			0.477	12.12	3	270					0.312	7.92			0.361	9.17
T038-360-328			0.514	13.06	4	360					0.328	8.33			0.475	12.07
T040-090-187			0.309	7.85	1	90					0.187	4.75			0.220	5.59
T040-180-218			0.348	8.84	2	180					0.218	5.54			0.380	9.65
T040-270-218	0.040	1.02	0.358	9.09	3	270	1.375	155.40			0.218	5.54			0.550	13.97
T040-180-343			0.518	13.16	2	180					0.343	8.71			0.260	6.60
T040-270-343			0.511	12.98	3	270			1.000	25.40	0.343	8.71	2.000	50.80	0.380	9.65
T040-360-343			0.507	12.88	4	360					0.343	8.71			0.508	12.90
T045-090-203			0.357	9.07	1	90					0.203	5.16			0.259	6.58
T045-180-218			0.377	9.58	2	180			0.625	15.88	0.218	5.54	1.250	31.75	0.428	10.86
T045-270-234	0.045	1.14	0.382	9.70	3	270	2.000	226.00			0.234	5.94			0.608	15.43
T045-180-359			0.575	14.61	2	180					0.359	9.12			0.293	7.44
T045-270-359			0.556	14.12	3	270			1.000	25.40	0.359	9.12	2.000	50.80	0.428	10.86
T045-360-359			0.549	13.94	4	360					0.359	9.12			0.563	14.29
T048-090-218			0.375	9.53	1	90					0.218	5.54			0.264	6.71
T048-180-250			0.404	10.26	2	180			0.625	15.88	0.250	6.35	1.250	31.75	0.456	11.58
T048-270-250	0.048	1.22	0.416	10.57	3	270	2.500	282.00			0.250	6.35			0.660	16.76
T048-180-406			0.618	15.70	2	180					0.406	10.31			0.312	7.92
T048-270-406			0.600	15.24	3	270					0.406	10.31			0.456	11.58
T048-360-406			0.594	15.09	4	360					0.406	10.31			0.610	15.49
T051-090-234			0.408	10.36	1	90					0.234	5.94			0.293	7.44
T051-180-250			0.430	10.92	2	180					0.250	6.35			0.485	12.32
T051-270-266	0.051	1.30	0.439	11.15	3	270	2.900	328.00			0.266	6.76			0.689	17.49
T051-180-344			0.556	14.12	2	180					0.344	8.74			0.383	9.72
T051-270-359			0.571	14.50	3	270					0.359	9.12			0.536	13.60
T051-360-406			0.628	15.95	4	360					0.406	10.31			0.638	16.19
T054-090-296			0.484	12.29	1	90					0.296	7.52			0.310	7.87
T054-180-312			0.509	12.93	2	180			1.000	25.40	0.312	7.92	2.000	50.80	0.512	13.00
T054-270-312	0.054	1.37	0.514	13.06	3	270	3.275	370.00			0.312	7.92			0.715	18.16
T054-180-421			0.654	16.61	2	180					0.421	10.69			0.405	10.29
T054-270-437			0.664	16.87	3	270					0.437	11.10			0.567	14.40
T054-360-453			0.694	17.63	4	360					0.453	11.51			0.705	17.91
T059-090-296			0.499	12.67	1	90					0.296	7.52			0.340	8.64
T059-180-328			0.526	13.36	2	180					0.328	8.33			0.561	14.24
T059-270-328	0.059	1.50	0.537	13.64	3	270	4.200	475.00			0.328	8.33			0.797	20.23
T059-180-437			0.681	17.30	2	180					0.437	11.10			0.445	11.30
T059-270-453			0.699	17.75	3	270					0.453	11.51			0.620	15.74
T059-360-459			0.709	18.01	4	360					0.456	11.66			0.797	20.23



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TORSION SPRINGS - STAINLESS STEEL

Catalog Number	d Wire Diameter		OD Outside Diameter		Fig. Position of Ends	Deflection Degree*	T Approximate Torque Reference		Test Point 1/2 E		M Suggested Mandrel Size		E Leg Length		A Min. Axial Space**	
	in	mm	in	mm			Fig.	in-lb	N-mm	in	mm	in	mm	in	mm	in
T063-090-343			0.560	14.22	1	90					0.343	8.71			0.362	9.19
T063-180-359			0.591	15.01	2	180					0.359	9.12			0.600	15.24
T063-270-375	0.063	1.60	0.600	15.24	3	270	5.150	582.00			0.375	9.53			0.851	21.60
T063-180-500			0.767	19.48	2	180					0.500	12.70			0.475	12.07
T063-270-516			0.784	19.91	3	270					0.516	13.11			0.662	16.80
T063-360-516			0.798	20.27	4	360					0.516	13.11			0.851	21.60
T070-090-359			0.593	15.06	1	90					0.359	9.12			0.400	10.16
T070-180-390			0.625	15.88	2	180					0.390	9.91			0.665	16.89
T070-270-390	0.070	1.78	0.639	16.23	3	270	7.000	791.00			0.390	9.91			0.945	24.00
T070-180-515			0.810	20.57	2	180					0.515	13.08			0.525	13.34
T070-270-531			0.826	20.98	3	270					0.531	13.49			0.735	18.67
T070-360-546			0.843	21.41	4	360			1.000	25.40	0.546	13.87	2.000	50.80	0.945	24.00
T075-090-375			0.635	16.13	1	90					0.375	9.53			0.430	10.92
T075-180-422			0.675	17.15	2	180					0.422	10.72			0.713	18.10
T075-270-500	0.075	1.91	0.700	17.78	3	270	8.750	989.00			0.440	12.70			1.013	25.72
T075-180-484			0.775	19.69	2	180					0.484	12.29			0.640	16.26
T075-270-531			0.825	20.96	3	270					0.531	13.49			0.863	21.91
T075-360-640			0.975	24.77	4	360					0.640	16.26			1.050	26.67
T078-090-406			0.678	17.22	1	90					0.406	10.31			0.450	11.43
T078-180-453			0.728	18.49	2	180					0.453	11.51			0.741	18.82
T078-270-453	0.078	1.98	0.728	18.49	3	270	9.750	1102.00			0.453	11.51			1.030	26.16
T078-180-500			0.803	20.40	2	180					0.500	12.70			0.663	16.84
T078-270-546			0.853	21.67	3	270					0.546	13.87			0.897	22.78
T078-360-578			0.903	22.94	4	360					0.578	14.68			1.131	28.73
T085-090-422			0.715	18.16	1	90					0.422	10.72			0.489	12.42
T085-180-469			0.760	19.30	2	180					0.469	11.91			0.808	20.52
T085-270-500	0.085	2.16	0.790	20.07	3	270	12.000	1356.00	1.250	31.75	0.500	12.70	2.500	63.50	1.148	29.15
T085-180-641			0.994	25.25	2	180					0.641	16.28			0.638	16.21
T085-270-672			1.040	26.42	3	270					0.672	17.07			0.893	22.67
T085-360-688			1.054	26.77	4	360					0.688	17.48			1.148	29.15
T095-090-453			0.776	19.71	1	90					0.453	11.51			0.546	13.87
T095-180-531			0.869	22.07	2	180					0.531	13.49			0.903	22.94
T095-270-578	0.095	2.41	0.925	23.50	3	270	16.000	1808.00	1.500	38.10	0.578	14.68	3.000	76.20	1.283	32.58
T095-180-734			1.131	28.73	2	180					0.734	18.64			0.713	18.11
T095-270-797			1.203	30.56	3	270					0.797	20.24			0.998	25.34
T095-360-813			1.225	31.12	4	360					0.813	20.65			1.283	32.58
T105-090-500			0.848	21.54	1	90					0.500	12.70			0.604	15.34
T105-180-609			0.982	24.94	2	180					0.609	15.47			0.998	25.35
T105-270-703	0.105	2.67	1.090	27.69	3	270	21.000	2373.00	1.750	44.45	0.703	17.86	3.500	88.90	1.418	36.00
T105-180-813			1.248	31.70	2	180					0.813	20.65			0.788	20.02
T105-270-891			1.342	34.09	3	270					0.891	22.63			1.103	28.00
T105-360-906			1.369	34.77	4	360					0.906	23.01			1.418	36.00
T115-090-594			0.978	24.84	1	90					0.594	15.09			0.661	16.79
T115-180-641			1.043	26.49	2	180					0.641	16.28			1.093	27.76
T115-270-688	0.115	2.92	1.086	27.58	3	270	28.000	3164.00			0.688	17.48			1.553	39.43
T115-180-859			1.347	34.21	2	180					0.859	21.82			0.863	21.92
T115-270-938			1.435	36.45	3	270					0.938	23.83			1.208	30.67
T115-360-969			1.465	37.21	4	360					0.969	24.61			1.553	39.43
T125-090-591			0.989	25.12	1	90					0.591	15.01			0.844	21.44
T125-180-666			1.082	27.48	2	180					0.666	16.92			1.438	36.53
T125-270-751	0.125	3.18	1.189	30.20	3	270	32.000	3616.00	2.000	50.80	0.751	19.08	4.000	101.60	1.938	49.21
T125-180-885			1.356	34.44	2	180					0.885	22.48			1.188	30.18
T125-270-1013			1.516	38.51	3	270					1.013	25.73			1.563	39.69
T125-360-1084			1.605	40.77	4	360					1.084	27.53			1.938	49.21
T135-090-666			1.102	27.99	1	90					0.666	16.92			0.911	23.14
T135-180-735			1.189	30.20	2	180					0.735	18.67			1.553	39.45
T135-270-825	0.135	3.43	1.301	33.05	3	270	40.000	4519.00			0.825	20.96			2.093	53.15
T135-180-977			1.491	37.87	2	180					0.977	24.82			1.283	32.59
T135-270-1112			1.660	42.16	3	270					1.112	28.24			1.688	42.86
T135-360-1188			1.755	44.58	4	360					1.188	30.18			2.093	53.15

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TORSION SPRINGS - MUSIC WIRE

Catalog Number	d Wire Diameter		OD Outside Diameter		Fig. Position of Ends	Deflection Degree*	T Approximate Torque Reference		Test Point 1/2 E		M Suggested Mandrel Size		E Leg Length		A Min. Axial Space**	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
					Fig.											
T016-120-125			0.190	4.830	5	120									0.091	0.091
T016-210-125	0.016	0.410	0.188	4.780	6	210	0.110	12.00	0.375	9.52	0.125	3.180	0.750	19.05	0.135	0.135
T016-300-125			0.188	4.780	7	300									0.179	0.179
T020-120-187			0.273	6.990	5	120									0.113	0.113
T020-210-187	0.020	0.510	0.274	6.960	6	210	0.180	20.00			0.187	4.750			0.168	0.168
T020-300-187			0.273	6.930	7	300									0.223	0.223
T024-120-250			0.362	9.190	5	120									0.136	0.136
T024-210-250	0.024	0.610	0.360	9.140	6	210	0.280	32.00							0.202	0.202
T024-300-250			0.359	9.120	7	300									0.268	0.268
T026-120-250			0.366	9.300	5	120							1.000	25.40	0.147	0.147
T026-210-250	0.026	0.660	0.364	9.250	6	210	0.380	43.00	0.500	12.70					0.219	0.219
T026-300-250			0.364	9.250	7	300									0.290	0.290
T029-120-250			0.365	9.270	5	120	0.470	53.00							0.193	0.193
T029-210-250	0.029	0.740	0.366	9.300	6	210	0.510	58.00			0.250	6.350			0.273	0.273
T029-300-250			0.367	9.320	7	300	0.530	60.00							0.353	0.353
T032-120-250			0.371	9.420	5	120	0.690	78.00							0.213	0.213
T032-210-250	0.032	0.810	0.369	9.370	6	210	0.660	75.00							0.333	0.333
T032-300-250			0.371	9.420	7	300	0.700	79.00							0.421	0.421
T035-120-250			0.377	9.580	5	120	0.960	108.00							0.233	0.233
T035-210-250	0.035	0.890	0.375	9.530	6	210	0.920	104.00							0.365	0.365
T035-300-250			0.377	9.580	7	300	0.990	112.00							0.461	0.461
T038-120-375			0.547	13.890	5	120	1.210	137.00			0.375	9.530			0.215	0.215
T038-210-312	0.038	0.970	0.461	11.710	6	210	1.190	134.00	0.625	15.88	0.312	7.920	1.250	31.75	0.358	0.358
T038-300-312			0.462	11.730	7	300	1.240	140.00			0.312	7.920			0.462	0.462
T040-120-375			0.552	14.020	5	120	1.480	167.00			0.375	9.530			0.227	0.227
T040-210-312	0.040	1.020	0.465	11.810	6	210	1.460	165.00							0.377	0.377
T040-300-312			0.463	11.760	7	300	1.370	155.00							0.527	0.527
T042-120-312			0.467	11.860	5	120	1.550	175.00							0.280	0.280
T042-210-312	0.042	1.070	0.465	11.810	6	210	1.510	170.00			0.312	7.920			0.438	0.438
T042-300-312			0.464	11.790	7	300	1.500	169.00							0.595	0.595
T045-120-312			0.474	12.040	5	120	2.030	229.00							0.300	0.300
T045-210-312	0.045	1.140	0.471	11.960	6	210	1.980	224.00							0.469	0.469
T045-300-312			0.470	11.940	7	300	1.960	221.00							0.638	0.638
T049-120-375			0.559	14.200	5	120	2.450	277.00							0.327	0.327
T049-210-375	0.049	1.240	0.556	14.120	6	210	2.360	266.00							0.511	0.511
T049-300-375			0.558	14.170	7	300	2.540	287.00	1.000	25.40					0.645	0.645
T055-120-375			0.564	14.330	5	120	3.160	357.00							0.422	0.422
T055-210-375	0.055	1.400	0.564	14.330	6	210	3.310	374.00					2.000	50.80	0.628	0.628
T055-300-375			0.564	14.330	7	300	3.380	382.00			0.375	9.530			0.834	0.834
T059-120-375			0.572	14.530	5	120	4.150	469.00							0.453	0.453
T059-210-375	0.059	1.500	0.569	14.450	6	210	3.930	444.00							0.733	0.733
T059-300-375			0.570	14.480	7	300	4.120	465.00							0.954	0.954
T063-120-375			0.575	14.610	5	120	4.540	513.00							0.546	0.546
T063-210-375	0.063	1.600	0.578	14.680	6	210	5.070	572.00							0.782	0.782
T063-300-375			0.577	14.660	7	300	4.970	561.00							1.082	1.082
T072-120-500			0.749	19.020	5	120	7.110	803.00							0.552	0.552
T072-210-500	0.072	1.830	0.750	19.050	6	210	7.400	835.00							0.822	0.822
T072-300-500			0.750	19.050	7	300	7.520	849.00							1.092	1.092
T081-120-500			0.761	19.330	5	120	9.390	1060.00			0.500	12.700			0.702	0.702
T081-210-500	0.081	2.060	0.764	19.410	6	210	10.470	1182.00							1.006	1.006
T081-300-500			0.763	19.380	7	300	10.240	1156.00	1.250	31.75			2.500	63.50	1.391	1.391
T085-120-625			0.926	23.520	5	120	11.110	1254.00							0.652	0.652
T085-210-625	0.085	2.160	0.927	23.550	6	210	11.570	1306.00							0.971	0.971
T085-300-625			0.927	23.550	7	300	11.760	1328.00							1.289	1.289
T092-120-625			0.940	23.880	5	120	14.940	1687.00			0.625	15.880			0.706	0.706
T092-210-625	0.092	2.340	0.936	23.770	6	210	14.110	1593.00							1.143	1.143
T092-300-625			0.938	23.830	7	300	14.790	1670.00	1.500	38.10			3.000	76.20	1.488	1.488
T096-120-625			0.949	24.100	5	120	17.630	1990.00							0.736	0.736
T096-210-625	0.096	2.440	0.944	23.980	6	210	16.650	1880.00							1.192	1.192
T096-300-625			0.943	23.950	7	300	16.290	1839.00							1.648	1.648



* For critical applications requiring greater angular rotation than recommended maximum deflection, please contact our engineering department.
 ** Space needed on application to allow for operation of the springs. This dimension does not refer to the length of the coils.

TORSION SPRINGS - MUSIC WIRE

Catalog Number	d Wire Diameter		OD Outside Diameter		Fig. Position of Ends	Deflection Degree*	T Approximate Torque Reference		Test Point 1/2 E		M Suggested Mandrel Size		E Leg Length		A Min. Axial Space**	
	in	mm	in	mm			Fig.	in-lb	N-mm	in	mm	in	mm	in	mm	in
T105-120-750			1.117	28.370	5	120	21.280	2403.00							0.805	0.805
T105-210-750	0.105	2.670	1.118	28.400	6	210	22.240	2511.00	1.750	44.45			3.500	88.90	1.199	1.199
T105-300-750			1.114	28.300	7	300	21.040	2375.00							1.698	1.698
T112-120-750			1.132	28.750	5	120	27.090	3058.00							0.859	0.859
T112-210-750	0.112	2.840	1.126	28.600	6	210	25.680	2899.00							1.391	1.391
T112-300-750			1.128	28.650	7	300	26.940	3042.00			0.750	19.050			1.811	1.811
T125-120-750			1.148	29.160	5	120	35.240	3979.00							1.084	1.084
T125-210-750	0.125	3.180	1.148	29.160	6	210	35.870	4050.00	2.000	50.80			4.000	101.60	1.678	1.678
T125-300-750			1.145	29.080	7	300	34.020	3841.00							2.396	2.396
T135-120-750			1.162	29.510	5	120	41.240	4656.00							1.305	1.305
T135-210-750	0.135	3.430	1.160	29.460	6	210	41.090	4639.00							2.082	2.082
T135-300-750			1.162	29.510	7	300	43.290	4887.00							2.723	2.723

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



* For critical applications requiring greater angular rotation than recommended maximum deflection, please contact our engineering department.

** Space needed on application to allow for operation of the springs. This dimension does not refer to the length of the coils.

SPEC Torsion springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.



316 STAINLESS STEEL TORSION SPRINGS

Stock sizes in 316 stainless steel

ASRaymond now offers a complete line of 316 Stainless Steel torsion springs. 316 Stainless steel provides superior temperature and corrosion resistance, which makes it particularly suitable for:

- Medical, surgical, veterinary and pharmaceutical applications
- Food and food preparation machinery and equipment
- Marine, aircraft and aerospace uses
- Harsh environment projects

Materials

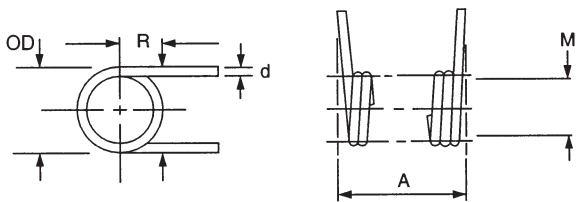
Stainless Steel: Type 316 per ASTM A313 (Chemical and Physical only)

Stainless steel is not recommended above 300 degrees C. (570 degrees F.).

Stainless steel 316 is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not affect the function of the part.

Wire diameter is prior to forming.

No charge for certificate of compliance when requested.



Position of Legs

STAINLESS STEEL SPRINGS

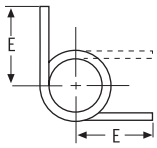


Fig 1. 90° Deflexion

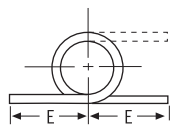


Fig 2. 180° Deflexion

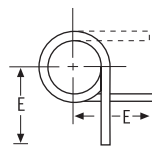


Fig 3. 270° Deflexion

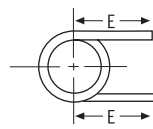


Fig 4. 360° Deflexion

SPEC Extension springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact ASRaymond's engineering team for design and application assistance.

Ends

Straight torsion ends are standard. Special end treatment available. Allow additional time.

Finish

Plain wire, passivated per ASTM A967. Special finishes available upon request. See page 312 for alternative finishes.

Direction of Helix

Must be specified by adding a suffix to the catalog number. Use L for left-hand wound, or R for right-hand wound. **See illustration below.** Coil count if for reference only.

Tolerances

Torque is for reference only and should not be specified.

O.D. ±2% 316 Stainless Steel

For inspection purposes, the load should be applied at 1/2 leg length (E). Using other lengths appreciably alters the active length of wire and affects the test results.

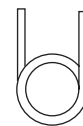
The reference torque values listed can be translated to the approximate direct load by use of the formula $P = M/En$ where P is the load applied at the new length En. Example: for part T012-090-055-X, what is the load when $E_n = 0.187$? $P = M/En = 0.025/0.187 = 0.134lb$.

Torque values at intermediate deflections can be computed by direct proration. Example: For part T030-180-250-X, the torque at 90° deflection is 0.373 in-lb (42.19 N-mm)

- d = Wire diameter
- OD = Outside diameter
- T = Torque
- R = Loaded position all parts
- M = Recommended Mandrel Size
- E = Leg length (from centerline)
- A = Min Axial Length (Axial space)
- Fig = Position of legs
- Deg° = Degrees deflection



LEFT-HAND WOUND



RIGHT-HAND WOUND

* Direction of Helix must be specified by adding a suffix to catalog number. Use L for left-hand wound, R for right-hand wound.

316 STAINLESS STEEL TORSION SPRINGS

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg* (MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T012-090-055-X			0.093	2.36	1	27	0.022	2.49			0.055	1.40			0.054	1.37
T012-180-067-X			0.109	2.77	2	73	0.023	2.54	0.187	4.75	0.067	1.70	0.375	9.52	0.090	2.29
T012-270-062-X	0.012	0.30	0.102	2.59	3	118	0.022	2.52			0.062	1.57			0.139	3.53
T012-180-109-X			0.166	4.22	2	72	0.023	2.64			0.109	2.77			0.066	1.68
T012-270-109-X			0.170	4.32	3	118	0.023	2.64			0.109	2.77			0.090	2.29
T012-360-109-X			0.174	4.42	4	165	0.023	2.65	0.250	6.35	0.109	2.77	0.500	12.70	0.114	2.90
T014-090-063-X			0.124	3.15	1	32	0.036	4.01			0.063	1.60			0.067	1.70
T014-180-078-X			0.133	3.38	2	77	0.036	4.04			0.078	1.98			0.105	2.67
T014-270-063-X	0.014	0.36	0.124	3.15	3	124	0.036	4.01			0.063	1.60			0.161	4.09
T014-180-109-X			0.194	4.93	2	72	0.037	4.18			0.109	2.77			0.077	1.96
T014-270-125-X			0.201	5.11	3	119	0.037	4.18	0.375	9.52	0.125	3.18	0.750	19.05	0.105	2.67
T014-360-125-X			0.204	5.18	4	165	0.037	4.19			0.125	3.18			0.133	3.38
T015-090-062-X			0.110	2.79	1	25	0.042	4.80			0.062	1.57			0.068	1.71
T015-180-078-X			0.130	3.30	2	69	0.043	4.91	0.250	6.35	0.078	1.98	0.500	12.70	0.113	2.86
T015-270-078-X	0.015	0.38	0.124	3.15	3	113	0.043	4.88			0.078	1.98			0.173	4.39
T015-180-109-X			0.183	4.65	2	62	0.045	5.08			0.109	2.77			0.083	2.10
T015-270-109-X			0.199	5.05	3	108	0.045	5.11	0.375	9.52	0.109	2.77	0.750	19.05	0.113	2.86
T015-360-109-X			0.207	5.26	4	155	0.045	5.12			0.109	2.77			0.143	3.62
T017-090-093-X			0.160	4.06	1	34	0.064	7.19			0.093	2.36			0.081	2.06
T017-180-093-X			0.172	4.37	2	83	0.064	7.24	0.250	6.35	0.093	2.36	0.500	12.70	0.128	3.24
T017-270-093-X	0.017	0.43	0.160	4.06	3	132	0.064	7.19			0.093	2.36			0.196	4.97
T017-180-156-X			0.249	6.32	2	76	0.066	7.45			0.156	3.96			0.094	2.39
T017-270-156-X			0.259	6.58	3	126	0.066	7.47	0.375	9.52	0.156	3.96	0.750	19.05	0.128	3.24
T017-360-140-X			0.235	5.97	4	179	0.066	7.43			0.140	3.56			0.170	4.32
T018-090-109-X			0.177	4.50	1	36	0.076	8.55			0.109	2.77			0.081	2.06
T018-180-109-X			0.164	4.17	2	87	0.075	8.48	0.250	6.35	0.109	2.77	0.500	12.70	0.153	3.89
T018-270-109-X	0.018	0.46	0.160	4.06	3	137	0.075	8.46			0.109	2.77			0.228	5.79
T018-180-140-X			0.216	5.49	2	81	0.077	8.71			0.140	3.56			0.117	2.97
T018-270-156-X			0.245	6.22	3	111	0.078	8.79			0.156	3.96			0.150	3.81
T018-360-156-X			0.233	5.92	4	187	0.078	8.76	0.375	9.52	0.156	3.96	0.750	19.05	0.210	5.33
T020-090-109-X			0.191	4.85	1	34	0.103	11.65			0.109	2.77			0.095	2.41
T020-180-109-X			0.179	4.55	2	85	0.102	11.57			0.109	2.77			0.170	4.32
T020-270-093-X	0.020	0.51	0.175	4.45	3	134	0.102	11.53			0.093	2.36			0.250	6.35
T020-180-140-X			0.242	6.15	2	81	0.105	11.90			0.140	3.56			0.130	3.30
T020-270-172-X			0.268	6.81	3	109	0.106	11.99	0.500	12.70	0.172	4.37	1.000	25.40	0.165	4.19
T020-360-156-X			0.254	6.45	4	183	0.106	11.95			0.156	3.96			0.250	6.35
T021-090-109-X			0.186	4.72	1	31	0.118	13.34			0.109	2.77			0.095	2.40
T021-180-109-X			0.185	4.70	2	83	0.118	13.34	0.375	9.52	0.109	2.77	0.750	19.05	0.179	4.53
T021-270-109-X	0.021	0.53	0.184	4.67	3	134	0.118	13.33			0.109	2.77			0.266	6.76
T021-180-156-X			0.247	6.27	2	78	0.121	13.72			0.156	3.96			0.137	3.47
T021-270-187-X			0.283	7.19	3	132	0.123	13.86	0.500	12.70	0.187	4.75	1.000	25.40	0.179	4.53
T021-360-187-X			0.271	6.88	4	186	0.122	13.82			0.187	4.75			0.242	6.15
T023-090-109-X			0.204	5.18	1	31	0.155	17.46			0.109	2.77			0.109	2.77
T023-180-109-X	0.023	0.58	0.191	4.85	2	77	0.153	17.32	0.375	9.52	0.109	2.77	0.750	19.05	0.196	4.98
T023-270-109-X			0.187	4.75	3	121	0.153	17.27			0.109	2.77			0.288	7.30

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



316 STAINLESS STEEL TORSION SPRINGS

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg* (MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T023-180-156-X			0.259	6.58	2	74	0.158	17.88			0.156	3.96			0.150	3.81
T023-270-156-X	0.023	0.58	0.251	6.38	3	121	0.158	17.84	0.500	12.70	0.156	3.96	1.000	25.40	0.219	5.55
T023-360-172-X			0.271	6.88	4	166	0.159	17.95			0.172	4.37			0.265	6.72
T025-090-140-X			0.235	5.97	1	33	0.199	22.48			0.140	3.56			0.113	2.86
T025-180-140-X			0.224	5.69	2	84	0.198	22.35	0.375	9.52	0.140	3.56	0.750	19.05	0.213	5.40
T025-270-140-X	0.025	0.64	0.219	5.56	3	133	0.197	22.30			0.140	3.56			0.316	8.03
T025-180-203-X			0.304	7.72	2	81	0.204	23.01			0.203	5.16			0.163	4.13
T025-270-218-X			0.340	8.64	3	132	0.205	23.20			0.218	5.54			0.213	5.40
T025-360-218-X			0.324	8.23	4	185	0.205	23.12			0.218	5.54			0.288	7.32
T028-090-156-X			0.267	6.78	1	34	0.278	31.43			0.156	3.96			0.133	3.38
T028-180-140-X			0.249	6.32	2	83	0.276	31.18			0.140	3.56			0.238	6.05
T028-270-140-X	0.028	0.71	0.245	6.22	3	132	0.275	31.12			0.140	3.56			0.350	8.89
T028-180-203-X			0.340	8.64	2	80	0.284	32.13			0.203	5.16			0.182	4.62
T028-270-203-X			0.329	8.36	3	130	0.284	32.04			0.203	5.16			0.266	6.76
T028-360-218-X			0.355	9.02	4	200	0.285	32.23			0.218	5.54			0.350	8.89
T030-090-172-X			0.281	7.14	1	33	0.340	38.41			0.172	4.37			0.135	3.43
T030-180-172-X			0.272	6.91	2	84	0.339	38.27	0.500	12.70	0.172	4.37	1.000	25.40	0.255	6.48
T030-270-172-X	0.030	0.76	0.270	6.86	3	136	0.338	38.24			0.172	4.37			0.380	9.65
T030-180-250-X			0.394	10.01	2	87	0.350	39.58			0.250	6.35			0.195	4.95
T030-270-250-X			0.377	9.58	3	119	0.349	39.45			0.250	6.35			0.280	7.11
T030-360-250-X			0.410	10.41	4	194	0.351	39.68			0.250	6.35			0.346	8.79
T032-090-172-X			0.288	7.32	1	31	0.409	46.22			0.172	4.36			0.152	3.86
T032-180-156-X			0.270	6.86	2	77	0.406	45.86			0.156	3.96			0.272	6.91
T032-270-156-X	0.032	0.81	0.264	6.71	3	134	0.405	45.73			0.156	3.96			0.432	10.97
T032-180-218-X			0.366	9.30	2	74	0.419	47.32			0.218	5.54			0.208	5.28
T032-270-218-X			0.354	8.99	3	120	0.418	47.19			0.218	5.54			0.304	7.72
T032-360-234-X			0.382	9.70	4	166	0.420	47.49			0.234	5.95			0.368	9.35
T035-090-187-X			0.315	8.00	1	31	0.532	60.09			0.187	4.75			0.158	4.00
T035-180-187-X			0.303	7.70	2	79	0.529	59.81			0.187	4.75			0.298	7.56
T035-270-187-X	0.035	0.89	0.311	7.90	3	132	0.531	60.00			0.187	4.75			0.442	11.23
T035-180-281-X			0.450	11.43	2	84	0.550	62.09			0.281	7.14			0.228	5.78
T035-270-281-X			0.435	11.05	3	137	0.548	61.93			0.281	7.14			0.333	8.45
T035-360-312-X			0.471	11.96	4	189	0.551	62.29			0.312	7.92			0.405	10.29
T038-090-234-X			0.386	9.80	1	36	0.685	77.40			0.234	5.94			0.180	4.57
T038-180-218-X			0.368	9.35	2	90	0.682	77.03	0.625	15.88	0.218	5.54	1.250	31.75	0.323	8.20
T038-270-218-X	0.038	0.97	0.353	8.97	3	139	0.679	76.68			0.218	5.54			0.475	12.07
T038-180-312-X			0.487	12.37	2	84	0.699	78.94			0.318	8.08			0.247	6.27
T038-270-312-X			0.477	12.12	3	138	0.698	78.81			0.312	7.92			0.361	9.17
T038-360-328-X			0.514	13.06	4	211	0.701	79.24			0.328	8.33			0.475	12.07
T040-090-187-X			0.309	7.85	1	37	0.770	87.02			0.187	4.75			0.220	5.59
T040-180-218-X			0.348	8.84	2	91	0.782	88.39			0.218	5.54			0.380	9.65
T040-270-218-X	0.040	1.02	0.358	9.09	3	146	0.785	88.68			0.218	5.54			0.550	13.97
T040-180-343-X			0.518	13.16	2	84	0.812	91.74			0.343	8.71			0.260	6.60
T040-270-343-X			0.511	12.98	3	140	0.811	91.65	1.000	25.40	0.343	8.71	2.000	50.80	0.380	9.65
T040-360-343-X			0.507	12.88	4	175	0.811	91.60			0.343	8.71			0.508	12.90



316 STAINLESS STEEL TORSION SPRINGS

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg* (MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
	T045-090-203-X			0.357			9.07	1	37	1.089	123.04			0.203	5.16	
T045-180-218-X			0.377	9.58	2	86	1.097	123.93	0.625	15.88	0.218	5.54	1.250	31.75	0.428	10.86
T045-270-234-X	0.045	1.14	0.382	9.70	3	135	1.099	124.13			0.234	5.94			0.608	15.43
T045-180-359-X			0.575	14.61	2	82	1.143	129.11			0.359	9.12			0.293	7.44
T045-270-359-X			0.556	14.12	3	133	1.140	128.79	1.000	25.40	0.359	9.12	2.000	50.80	0.428	10.86
T045-360-359-X			0.549	13.94	4	185	1.139	128.66			0.359	9.12			0.563	14.29
T048-090-218-X			0.375	9.53	1	36	1.310	148.04			0.218	5.54			0.264	6.71
T048-180-250-X			0.404	10.26	2	86	1.323	149.52	0.625	15.88	0.250	6.35	1.250	31.75	0.456	11.58
T048-270-250-X	0.048	1.22	0.416	10.57	3	137	1.328	150.06			0.250	6.35			0.660	16.76
T048-180-406-X			0.618	15.70	2	82	1.379	155.77			0.406	10.31			0.312	7.92
T048-270-406-X			0.600	15.24	3	134	1.376	155.43			0.406	10.31			0.456	11.58
T048-360-406-X			0.594	15.09	4	187	1.375	155.31			0.406	10.31			0.610	15.49
T051-090-234-X			0.408	10.36	1	26	1.567	177.01			0.234	5.94			0.293	7.44
T051-180-250-X			0.430	10.92	2	74	1.578	178.23			0.250	6.35			0.485	12.32
T051-270-266-X	0.051	1.30	0.439	11.15	3	135	1.582	178.69			0.266	6.76			0.689	17.49
T051-180-344-X			0.556	14.12	2	84	1.621	183.17			0.344	8.74			0.383	9.72
T051-270-359-X			0.571	14.50	3	134	1.625	183.59			0.359	9.12			0.536	13.60
T051-360-406-X			0.628	15.95	4	184	1.638	185.02			0.406	10.31			0.638	16.19
T054-090-296-X			0.484	12.29	1	30	1.874	211.76			0.296	7.52			0.310	7.87
T054-180-312-X			0.509	12.93	2	84	1.885	212.95			0.312	7.92			0.512	13.00
T054-270-312-X	0.054	1.37	0.514	13.06	3	138	1.887	213.18			0.312	7.92			0.715	18.16
T054-180-421-X			0.654	16.61	2	76	1.929	217.93			0.421	10.69			0.405	10.29
T054-270-437-X			0.664	16.87	3	149	1.931	218.19			0.437	11.10			0.567	14.40
T054-360-453-X			0.694	17.63	4	192	1.938	218.91			0.453	11.51			0.705	17.91
T059-090-296-X			0.499	12.67	1	39	2.401	271.31			0.296	7.52			0.340	8.64
T059-180-328-X			0.526	13.36	2	91	2.417	273.04			0.328	8.33			0.561	14.24
T059-270-328-X	0.059	1.50	0.537	13.64	3	143	2.423	273.69	1.000	25.40	0.328	8.33	2.000	50.80	0.797	20.23
T059-180-437-X			0.681	17.30	2	88	2.479	280.09			0.437	11.10			0.445	11.30
T059-270-453-X			0.699	17.75	3	141	2.484	280.69			0.453	11.51			0.620	15.74
T059-360-459-X			0.709	18.01	4	195	2.487	281.01			0.456	11.66			0.797	20.23
T063-090-343-X			0.560	14.22	1	29	2.916	329.43			0.343	8.71			0.362	9.19
T063-180-359-X			0.591	15.01	2	82	2.934	331.44			0.359	9.12			0.600	15.24
T063-270-375-X	0.063	1.60	0.600	15.24	3	150	2.938	331.98			0.375	9.53			0.851	21.60
T063-180-500-X			0.767	19.48	2	93	3.005	339.50			0.500	12.70			0.475	12.07
T063-270-516-X			0.784	19.91	3	148	3.010	340.07			0.516	13.11			0.662	16.80
T063-360-516-X			0.798	20.27	4	205	3.014	340.52			0.516	13.11			0.851	21.60
T070-090-359-X			0.593	15.06	1	38	3.916	442.43			0.359	9.12			0.400	10.16
T070-180-390-X			0.625	15.88	2	89	3.941	445.25			0.390	9.91			0.665	16.89
T070-270-390-X	0.070	1.78	0.639	16.23	3	140	3.951	446.38			0.390	9.91			0.945	24.00
T070-180-515-X			0.810	20.57	2	87	4.043	456.76			0.515	13.08			0.525	13.34
T070-270-531-X			0.826	20.98	3	137	4.049	457.49			0.531	13.49			0.735	18.67
T070-360-546-X			0.843	21.41	4	190	4.056	458.23			0.546	13.87			0.945	24.00
T075-090-375-X			0.635	16.13	1	38	4.764	538.18			0.375	9.53			0.430	10.92
T075-180-422-X	0.075	1.91	0.675	17.15	2	88	4.799	542.15			0.422	10.72			0.713	18.10
T075-270-500-X			0.700	17.78	3	142	4.818	544.37			0.440	12.70			1.013	25.72



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

316 STAINLESS STEEL TORSION SPRINGS

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg ² (MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T075-180-484-X			0.775	19.69	2	90	4.869	550.08			0.484	12.29			0.640	16.26
T075-270-531-X	0.075	1.91	0.825	20.96	3	141	4.897	553.25			0.531	13.49			0.863	21.91
T075-360-640-X			0.975	24.77	4	206	4.962	560.65			0.640	16.26			1.050	26.67
T078-090-406-X			0.678	17.22	1	39	5.340	603.33			0.406	10.31			0.450	11.43
T078-180-453-X			0.728	18.49	2	92	5.384	608.29	1.000	25.40	0.453	11.51	2.000	50.80	0.741	18.82
T078-270-453-X	0.078	1.98	0.728	18.49	3	141	5.384	608.29			0.453	11.51			1.030	26.16
T078-180-500-X			0.803	20.40	2	89	5.439	614.45			0.500	12.70			0.663	16.84
T078-270-546-X			0.853	21.67	3	139	5.469	617.90			0.546	13.87			0.897	22.78
T078-360-578-X			0.903	22.94	4	196	5.496	620.92			0.578	14.68			1.131	28.73
T085-090-422-X			0.715	18.16	1	37	6.777	765.64			0.422	10.72			0.489	12.42
T085-180-469-X			0.760	19.30	2	86	6.827	771.33			0.469	11.91			0.808	20.52
T085-270-500-X	0.085	2.16	0.790	20.07	3	138	6.857	774.71	1.250	31.75	0.500	12.70	2.500	63.50	1.148	29.15
T085-180-641-X			0.994	25.25	2	85	7.009	791.82			0.641	16.28			0.638	16.21
T085-270-672-X			1.040	26.42	3	138	7.034	794.67			0.672	17.07			0.893	22.67
T085-360-688-X			1.054	26.77	4	191	7.041	795.48			0.688	17.48			1.148	29.15
T095-090-453-X			0.776	19.71	1	35	9.217	1041.32			0.453	11.51			0.546	13.87
T095-180-531-X			0.869	22.07	2	86	9.345	1055.79			0.531	13.49			0.903	22.94
T095-270-578-X	0.095	2.41	0.925	23.50	3	143	9.408	1062.93	1.500	38.10	0.578	14.68	3.000	76.20	1.283	32.58
T095-180-734-X			1.131	28.73	2	85	9.582	1082.58			0.734	18.64			0.713	18.11
T095-270-797-X			1.203	30.56	3	141	9.628	1087.72			0.797	20.24			0.998	25.34
T095-360-813-X			1.225	31.12	4	195	9.640	1089.16			0.813	20.65			1.283	32.58
T105-090-500-X			0.848	21.54	1	34	12.149	1372.54			0.500	12.70			0.604	15.34
T105-180-609-X			0.982	24.94	2	87	12.366	1397.15			0.609	15.47			0.998	25.35
T105-270-703-X	0.105	2.67	1.090	27.69	3	151	12.499	1412.10	1.750	44.45	0.703	17.86	3.500	88.90	1.418	36.00
T105-180-813-X			1.248	31.70	2	83	12.647	1428.89			0.813	20.65			0.788	20.02
T105-270-891-X			1.342	34.09	3	139	12.718	1436.85			0.891	22.63			1.103	28.00
T105-360-906-X			1.369	34.77	4	193	12.736	1438.92			0.906	23.01			1.418	36.00
T115-090-594-X			0.978	24.84	1	35	15.706	1774.44			0.594	15.09			0.661	16.79
T115-180-641-X			1.043	26.49	2	82	15.827	1788.09			0.641	16.28			1.093	27.76
T115-270-688-X	0.115	2.92	1.086	27.58	3	132	15.898	1796.12			0.688	17.48			1.553	39.43
T115-180-859-X			1.347	34.21	2	79	16.223	1832.83			0.859	21.82			0.863	21.92
T115-270-938-X			1.435	36.45	3	132	16.303	1841.94			0.938	23.83			1.208	30.67
T115-360-969-X			1.465	37.21	4	184	16.328	1844.78			0.969	24.61			1.553	39.43
T125-090-591-X			0.989	25.12	1	41	19.526	2206.00			0.591	15.01			0.844	21.44
T125-180-666-X			1.082	27.48	2	97	19.754	2231.83			0.666	16.92			1.438	36.53
T125-270-751-X	0.125	3.18	1.189	30.20	3	154	19.968	2255.95	2.000	50.80	0.751	19.08	4.000	101.60	1.938	49.21
T125-180-885-X			1.356	34.44	2	99	20.227	2285.21			0.885	22.48			1.188	30.18
T125-270-1013-X			1.516	38.51	3	157	20.417	2306.66			1.013	25.73			1.563	39.69
T125-360-1084-X			1.605	40.77	4	216	20.505	2316.59			1.084	27.53			1.938	49.21
T135-090-666-X			1.102	27.99	1	41	24.134	2726.69			0.666	16.92			0.911	23.14
T135-180-735-X			1.189	30.20	2	97	24.365	2752.74			0.735	18.67			1.553	39.45
T135-270-825-X	0.135	3.43	1.301	33.05	3	153	24.611	2780.55			0.825	20.96			2.093	53.15
T135-180-977-X			1.491	37.87	2	99	24.936	2817.22			0.977	24.82			1.283	32.59
T135-270-1112-X			1.660	42.16	3	156	25.156	2842.16			1.112	28.24			1.688	42.86
T135-360-1188-X			1.755	44.58	4	214	25.260	2853.90			1.188	30.18			2.093	53.15



Blank lined area for notes.

**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
TORSION SPRINGS. SEE PAGE 170.**

CONICAL COMPRESSION SPRINGS

Stock sizes in stainless steel

SPEC conical springs are cone shaped compression springs designed to provide a near constant spring rate and a solid height lower than a normal spring. Each spring features a variable pitch to achieve the constant spring rate and coils which nest during deflection to provide a solid height approximately equal to two wire diameters.

All springs are manufactured from stainless steel for use in a multitude of environments.

Material

Stainless Type 302 per ASTM A313 or AMS 5688 spring temper. (Chemical and physical only.)

Stainless steel springs are not recommended for applications where the temperature exceeds 500°F (260°C)

Certificate of chemical analysis available at additional charge.

Finish

Plain wire passivated. See page 312 for alternative finishes.

Direction of Helix

Right hand.

Ends

Squared ends not ground.

Spring Rate

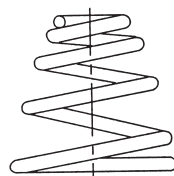
The spring rate is linear due to the variable pitch.

Coils

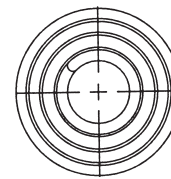
Springs are designed to permit active coils to nest within each other. This provides a solid height of approximately two wire diameters.

Solid Height

Due to coil nesting, the solid height is approximately equal to two wire diameters.



SIDE VIEW



TOP VIEW

CONICAL COMPRESSION SPRINGS

Catalog Number	Outside Diameter Large End		Outside Diameter Small End		Wire Diameter		Free Height Approximate		Load at 50% of Free Length		Load at Solid Approximate		Spring Rate	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
A0360-029-0250-S	0.360	9.14	0.125	3.18	0.029	0.74	0.250	6.35	3.45	15.35	5.29	23.53	27.58	4.83
A0420-029-0375-S	0.420	10.67	0.156	3.96	0.029	0.74	0.375	9.53	2.50	11.12	4.23	18.82	13.35	2.34
A0420-029-0312-S	0.420	10.67	0.187	4.75	0.029	0.74	0.312	7.92	2.26	10.05	3.68	16.37	14.48	2.54
A0420-029-0250-S	0.420	10.67	0.218	5.54	0.029	0.74	0.250	6.35	2.04	9.07	3.14	13.97	16.38	2.87
A0420-032-0312-S	0.420	10.67	0.156	3.96	0.032	0.81	0.312	7.92	3.63	16.15	5.77	25.66	23.25	4.07
A0420-032-0250-S	0.420	10.67	0.187	4.75	0.032	0.81	0.250	6.35	3.19	14.19	4.74	21.08	25.49	4.46
A0420-035-0250-S	0.420	10.67	0.187	4.75	0.035	0.89	0.250	6.35	5.09	22.64	7.33	32.60	40.80	7.14
A0480-029-0625-S	0.480	12.19	0.187	4.75	0.029	0.74	0.625	15.88	2.15	9.56	3.90	17.35	6.88	1.20
A0480-029-0500-S	0.480	12.19	0.218	5.54	0.029	0.74	0.500	12.70	1.93	8.58	3.40	15.12	7.70	1.35
A0480-029-0375-S	0.480	12.19	0.250	6.35	0.029	0.74	0.375	9.53	1.59	7.07	2.70	12.01	8.50	1.49
A0480-029-0312-S	0.480	12.19	0.281	7.14	0.029	0.74	0.312	7.92	1.53	6.81	2.49	11.08	9.79	1.71
A0480-032-0625-S	0.480	12.19	0.156	3.96	0.032	0.81	0.625	15.88	3.42	15.21	6.13	27.27	10.93	1.91
A0480-032-0500-S	0.480	12.19	0.187	4.75	0.032	0.81	0.500	12.70	2.88	12.81	5.02	22.33	11.51	2.02
A0480-032-0375-S	0.480	12.19	0.218	5.54	0.032	0.81	0.375	9.53	2.56	11.39	4.24	18.86	13.63	2.39
A0480-032-0312-S	0.480	12.19	0.250	6.35	0.032	0.81	0.312	7.92	2.37	10.54	3.78	16.81	15.21	2.66
A0480-035-0375-S	0.480	12.19	0.187	4.75	0.035	0.89	0.375	9.53	3.92	17.44	6.37	28.33	20.91	3.66
A0480-035-0312-S	0.480	12.19	0.218	5.54	0.035	0.89	0.312	7.92	3.48	15.48	5.39	23.97	22.26	3.90
A0480-038-0312-S	0.480	12.19	0.187	4.75	0.038	0.97	0.312	7.92	5.02	22.33	7.60	33.80	32.13	5.63
A0480-038-0250-S	0.480	12.19	0.218	5.54	0.038	0.97	0.250	6.35	4.75	21.13	6.61	29.40	38.02	6.66
A0600-026-1250-S	0.600	15.24	0.312	7.92	0.026	0.66	1.250	31.75	1.00	4.45	1.92	8.54	1.61	0.28
A0600-026-1000-S	0.600	15.24	0.343	8.71	0.026	0.66	1.000	25.40	0.84	3.74	1.58	7.03	1.67	0.29
A0600-026-0750-S	0.600	15.24	0.375	9.53	0.026	0.66	0.750	19.05	0.73	3.25	1.36	6.05	1.94	0.34
A0600-029-1250-S	0.600	15.24	0.250	6.35	0.029	0.74	1.250	31.75	1.56	6.94	2.97	13.21	2.49	0.44
A0600-029-1000-S	0.600	15.24	0.281	7.14	0.029	0.74	1.000	25.40	1.39	6.18	2.61	11.61	2.77	0.49
A0600-029-0750-S	0.600	15.24	0.343	8.71	0.029	0.74	0.750	19.05	1.18	5.25	2.19	9.74	3.16	0.55
A0600-029-0625-S	0.600	15.24	0.375	9.53	0.029	0.74	0.625	15.88	1.12	4.98	2.03	9.03	3.57	0.63
A0600-032-0750-S	0.600	15.24	0.281	7.14	0.032	0.81	0.750	19.05	1.80	8.01	3.30	14.68	4.81	0.84
A0600-032-0625-S	0.600	15.24	0.343	8.71	0.032	0.81	0.625	15.88	1.64	7.29	2.95	13.12	5.25	0.92
A0600-032-0500-S	0.600	15.24	0.375	9.53	0.032	0.81	0.500	12.70	1.53	6.81	2.67	11.88	6.13	1.07
A0600-035-0750-S	0.600	15.24	0.218	5.54	0.035	0.89	0.750	19.05	2.72	12.10	4.93	21.93	7.25	1.27
A0600-035-0625-S	0.600	15.24	0.281	7.14	0.035	0.89	0.625	15.88	2.41	10.72	4.28	19.04	7.70	1.35
A0600-035-0500-S	0.600	15.24	0.312	7.92	0.035	0.89	0.500	12.70	2.16	9.61	3.72	16.55	8.64	1.51
A0600-038-0625-S	0.600	15.24	0.250	6.35	0.038	0.97	0.625	15.88	3.57	15.88	6.27	27.89	11.42	2.00
A0600-038-0500-S	0.600	15.24	0.281	7.14	0.038	0.97	0.500	12.70	3.22	14.32	5.45	24.24	12.88	2.26
A0600-038-0375-S	0.600	15.24	0.312	7.92	0.038	0.97	0.375	9.53	2.62	11.65	4.18	18.59	13.99	2.45
A0600-040-0625-S	0.600	15.24	0.218	5.54	0.040	1.02	0.625	15.88	4.56	20.28	7.95	35.36	14.59	2.55

CONICAL COMPRESSION SPRINGS

Catalog Number	Outside Diameter Large End		Outside Diameter Small End		Wire Diameter		Free Height Approximate		Load at 50% of Free Length		Load at Solid Approximate		Spring Rate	
	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N	lb/in	N/mm
A0600-040-0500-S	0.600	15.24	0.250	6.35	0.040	1.02	0.500	12.70	4.07	18.10	6.83	30.38	16.28	2.85
A0600-040-0375-S	0.600	15.24	0.312	7.92	0.040	1.02	0.375	9.53	3.56	15.83	5.61	24.95	18.98	3.32
A0600-042-0500-S	0.600	15.24	0.218	5.54	0.042	1.07	0.500	12.70	5.13	22.82	8.53	37.94	20.49	3.59
A0600-042-0375-S	0.600	15.24	0.281	7.14	0.042	1.07	0.375	9.53	4.35	19.35	6.75	30.02	23.19	4.06
A0600-045-0375-S	0.600	15.24	0.250	6.35	0.045	1.14	0.375	9.53	6.09	27.09	9.25	41.14	32.49	5.69
A0720-035-1250-S	0.720	18.29	0.343	8.71	0.035	0.89	1.250	31.75	2.04	9.07	3.86	17.17	3.27	0.57
A0720-035-1000-S	0.720	18.29	0.375	9.53	0.035	0.89	1.000	25.40	1.80	8.01	3.34	14.86	3.59	0.63
A0720-035-0750-S	0.720	18.29	0.438	11.13	0.035	0.89	0.750	19.05	1.62	7.21	2.94	13.08	4.33	0.76
A0720-038-1250-S	0.720	18.29	0.281	7.14	0.038	0.97	1.250	31.75	2.99	13.30	5.61	24.95	4.78	0.84
A0720-038-1000-S	0.720	18.29	0.343	8.71	0.038	0.97	1.000	25.40	2.64	11.74	4.88	21.71	5.29	0.93
A0720-038-0750-S	0.720	18.29	0.375	9.53	0.038	0.97	0.750	19.05	2.19	9.74	3.94	17.53	5.84	1.02
A0720-038-0625-S	0.720	18.29	0.438	11.13	0.038	0.97	0.625	15.88	2.10	9.34	3.69	16.41	6.72	1.18
A0720-040-1000-S	0.720	18.29	0.281	7.14	0.040	1.02	1.000	25.40	3.31	14.72	6.08	27.04	6.61	1.16
A0720-040-0750-S	0.720	18.29	0.343	8.71	0.040	1.02	0.750	19.05	2.76	12.28	4.92	21.88	7.35	1.29
A0720-040-0625-S	0.720	18.29	0.375	9.53	0.040	1.02	0.625	15.88	2.45	10.90	4.27	18.99	7.84	1.37
A0720-040-0500-S	0.720	18.29	0.438	11.13	0.040	1.02	0.500	12.70	2.37	10.54	3.98	17.70	9.47	1.66
A0720-042-1000-S	0.720	18.29	0.281	7.14	0.042	1.07	1.000	25.40	4.19	18.64	7.67	34.12	8.37	1.47
A0720-042-0750-S	0.720	18.29	0.343	8.71	0.042	1.07	0.750	19.05	3.44	15.30	6.11	27.18	9.17	1.61
A0720-042-0625-S	0.720	18.29	0.375	9.53	0.042	1.07	0.625	15.88	3.25	14.46	5.62	25.00	10.39	1.82
A0720-045-0750-S	0.720	18.29	0.281	7.14	0.045	1.14	0.750	19.05	4.83	21.48	8.49	37.76	12.87	2.25
A0720-045-0625-S	0.720	18.29	0.343	8.71	0.045	1.14	0.625	15.88	4.35	19.35	7.44	33.09	13.91	2.44
A0720-045-0500-S	0.720	18.29	0.375	9.53	0.045	1.14	0.500	12.70	3.89	17.30	6.37	28.33	15.55	2.72
A0720-049-0625-S	0.720	18.29	0.281	7.14	0.049	1.24	0.625	15.88	6.46	28.73	10.90	48.48	20.67	3.62
A0720-049-0500-S	0.720	18.29	0.343	8.71	0.049	1.24	0.500	12.70	5.73	25.49	9.21	40.97	22.92	4.01
A0720-049-0375-S	0.720	18.29	0.375	9.53	0.049	1.24	0.375	9.53	4.84	21.53	7.15	31.80	25.82	4.52
A0720-055-0500-S	0.720	18.29	0.281	7.14	0.055	1.40	0.500	12.70	10.12	45.01	15.78	70.19	40.50	7.09
A0720-055-0375-S	0.720	18.29	0.312	7.92	0.055	1.40	0.375	9.53	8.34	37.10	11.78	52.40	44.49	7.79
A0850-042-1500-S	0.850	21.59	0.343	8.71	0.042	1.07	1.500	38.10	3.08	13.70	5.82	25.89	4.11	0.72
A0850-042-1250-S	0.850	21.59	0.375	9.53	0.042	1.07	1.250	31.75	2.70	12.01	5.04	22.42	4.32	0.76
A0850-042-1000-S	0.850	21.59	0.438	11.13	0.042	1.07	1.000	25.40	2.35	10.45	4.31	19.17	4.71	0.82
A0850-042-0750-S	0.850	21.59	0.560	14.22	0.042	1.07	0.750	19.05	2.36	10.50	4.19	18.64	6.28	1.10
A0850-045-1500-S	0.850	21.59	0.343	8.71	0.045	1.14	1.500	38.10	4.19	18.64	7.88	35.05	5.59	0.98
A0850-045-1250-S	0.850	21.59	0.375	9.53	0.045	1.14	1.250	31.75	3.75	16.68	6.96	30.96	6.00	1.05
A0850-045-1000-S	0.850	21.59	0.438	11.13	0.045	1.14	1.000	25.40	3.28	14.59	5.97	26.55	6.56	1.15
A0850-045-0750-S	0.850	21.59	0.500	12.70	0.045	1.14	0.750	19.05	3.00	13.34	5.27	23.44	7.99	1.40
A0850-049-1250-S	0.850	21.59	0.312	7.92	0.049	1.24	1.250	31.75	5.68	25.26	10.47	46.57	9.09	1.59
A0850-049-0750-S	0.850	21.59	0.438	11.13	0.049	1.24	0.750	19.05	4.26	18.95	7.40	32.92	11.35	1.99
A0850-049-0625-S	0.850	21.59	0.500	12.70	0.049	1.24	0.625	15.88	4.04	17.97	6.82	30.34	12.93	2.26
A0850-055-1000-S	0.850	21.59	0.281	7.14	0.055	1.40	1.000	25.40	8.50	37.81	15.14	67.34	17.01	2.98
A0850-055-0750-S	0.850	21.59	0.343	8.71	0.055	1.40	0.750	19.05	7.18	31.94	12.25	54.49	19.14	3.35
A0850-055-0625-S	0.850	21.59	0.438	11.13	0.055	1.40	0.625	15.88	6.58	29.27	10.84	48.22	21.05	3.69
A0850-059-0750-S	0.850	21.59	0.312	7.92	0.059	1.50	0.750	19.05	10.00	44.48	16.85	74.95	26.67	4.67
A0850-059-0625-S	0.850	21.59	0.375	9.53	0.059	1.50	0.625	15.88	8.86	39.41	14.37	63.92	28.36	4.97
A0850-063-0625-S	0.850	21.59	0.312	7.92	0.063	1.60	0.625	15.88	12.22	54.35	19.51	86.78	39.07	6.84
A0850-063-0500-S	0.850	21.59	0.375	9.53	0.063	1.60	0.500	12.70	11.09	49.33	16.60	73.84	44.33	7.76
A0850-067-0500-S	0.850	21.59	0.375	9.53	0.067	1.70	0.500	12.70	14.85	66.05	21.74	96.70	59.45	10.41
A0975-049-1500-S	0.975	24.77	0.438	11.13	0.049	1.24	1.500	38.10	3.88	17.26	7.26	32.29	5.18	0.91
A0975-049-1250-S	0.975	24.77	0.500	12.70	0.049	1.24	1.250	31.75	3.56	15.83	6.56	29.18	5.69	1.00
A0975-049-1000-S	0.975	24.77	0.560	14.22	0.049	1.24	1.000	25.40	3.29	14.63	5.93	26.38	6.58	1.15
A0975-049-0750-S	0.975	24.77	0.625	15.88	0.049	1.24	0.750	19.05	2.93	13.03	5.09	22.64	7.81	1.37
A0975-055-1500-S	0.975	24.77	0.375	9.53	0.055	1.40	1.500	38.10	6.88	30.60	12.76	56.76	9.18	1.61
A0975-055-1250-S	0.975	24.77	0.438	11.13	0.055	1.40	1.250	31.75	6.09	27.09	11.10	49.37	9.74	1.71
A0975-055-1000-S	0.975	24.77	0.500	12.70	0.055	1.40	1.000	25.40	5.40	24.02	9.61	42.75	10.79	1.89
A0975-055-0750-S	0.975	24.77	0.560	14.22	0.055	1.40	0.750	19.05	4.83	21.48	8.24	36.65	12.87	2.25
A0975-059-1250-S	0.975	24.77	0.343	8.71	0.059	1.50	1.250	31.75	8.47	37.67	15.34	68.23	13.55	2.37
A0975-059-1000-S	0.975	24.77	0.438	11.13	0.059	1.50	1.000	25.40	7.40	32.92	13.06	58.09	14.81	2.59
A0975-059-0750-S	0.975	24.77	0.500	12.70	0.059	1.50	0.750	19.05	6.44	28.65	10.85	48.26	17.18	3.01
A0975-063-1000-S	0.975	24.77	0.343	8.71	0.063	1.60	1.000	25.40	10.02	44.57	17.51	77.88	20.03	3.51
A0975-063-0750-S	0.975	24.77	0.438	11.13	0.063	1.60	0.750	19.05	8.59	38.21	14.29	63.56	22.92	4.01
A0975-067-0750-S	0.975	24.77	0.375	9.53	0.067	1.70	0.750	19.05	11.44	50.89	18.78	83.53	30.51	5.34
A0975-067-0625-S	0.975	24.77	0.438	11.13	0.067	1.70	0.625	15.88	10.27	45.68	16.14	71.79	32.85	5.75
A0975-072-0750-S	0.975	24.77	0.375	9.53	0.072	1.83	0.750	19.05	16.11	71.66	26.03	115.78	42.98	7.53
A0975-072-0625-S	0.975	24.77	0.438	11.13	0.072	1.83	0.625	15.88	14.85	66.05	22.85	101.64	47.49	8.32
A0975-074-0625-S	0.975	24.77	0.438	11.13	0.074	1.88	0.625	15.88	16.85	74.95	25.71	114.36	53.94	9.44



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CONTINUOUS LENGTH SPRINGS

Round Wire Compression Springs

Engineers, designers, specifiers, repair and maintenance personnel find continuous length compression and extension springs extremely convenient for prototype and maintenance use. These springs are designed to be cut to the length required by any application.

Material

Either hard drawn or music wire will be supplied for continuous length springs, based on availability at time of shipment.

Finish

Oil

Rate

To calculate rate at desired cut length: original rate X original length ÷ new length.

ROUND WIRE COMPRESSION SPRINGS - 10" (25 cm)									
Catalog Number	Hole Size*		Wire Diameter		Spring Rate (□ 20%)		Approx. Solid Height		Min. Order
	in	mm	in	mm	lb/in	N/mm	in	mm	
C093-010-10-L	0.093	2.36	0.010	0.254	0.12	0.021	2.80	71.12	12
C093-014-10-L	0.093	2.36	0.014	0.356	0.50	0.088	3.99	101.35	12
C125-012-10-L	0.125	3.18	0.012	0.305	0.11	0.019	3.00	76.20	12
C125-016-10-L	0.125	3.18	0.016	0.406	0.38	0.067	4.00	101.60	12
C188-014-10-L	0.188	4.78	0.014	0.356	0.08	0.014	1.96	49.78	12
C188-018-10-L	0.188	4.78	0.018	0.457	0.26	0.046	2.52	64.01	12
C188-026-10-L	0.188	4.78	0.026	0.660	1.39	0.243	3.38	85.85	12
C188-035-10-L	0.188	4.78	0.035	0.889	3.84	0.672	6.65	168.91	12
C250-018-10-L	0.250	6.35	0.018	0.457	0.14	0.025	1.71	43.43	12
C250-022-10-L	0.250	6.35	0.022	0.559	0.26	0.046	2.53	64.26	12
C250-026-10-L	0.250	6.35	0.026	0.660	0.69	0.121	2.47	62.74	12
C250-031-10-L	0.250	6.35	0.031	0.787	1.46	0.256	3.10	78.74	12
C250-035-10-L	0.250	6.35	0.035	0.889	1.82	0.319	4.55	115.57	12
C250-041-10-L	0.250	6.35	0.041	1.041	5.83	1.021	3.69	93.73	12
C250-047-10-L	0.250	6.35	0.047	1.194	9.35	1.637	4.70	119.38	12
C312-022-10-L	0.312	7.92	0.022	0.559	0.15	0.026	2.20	55.88	12
C312-031-10-L	0.312	7.92	0.031	0.787	0.63	0.110	3.41	86.61	12
C312-037-10-L	0.312	7.92	0.037	0.940	1.35	0.236	4.07	103.38	12
C312-041-10-L	0.312	7.92	0.041	1.041	2.88	0.504	3.28	83.31	12
C312-047-10-L	0.312	7.92	0.047	1.194	6.06	1.061	3.53	89.66	12
C312-055-10-L	0.312	7.92	0.055	1.397	11.45	2.005	4.40	111.76	12
C375-031-10-L	0.375	9.53	0.031	0.787	0.33	0.058	3.41	86.61	12
C375-035-10-L	0.375	9.53	0.035	0.889	0.61	0.107	3.50	88.90	12
C375-043-10-L	0.375	9.53	0.043	1.092	2.19	0.383	3.01	76.45	12
C375-047-10-L	0.375	9.53	0.047	1.194	2.67	0.468	4.00	101.60	12
C375-055-10-L	0.375	9.53	0.055	1.397	7.03	1.231	3.30	83.82	12
C375-062-10-L	0.375	9.53	0.062	1.575	12.36	2.164	4.03	102.36	12
C375-075-10-L	0.375	9.53	0.075	1.905	27.77	4.863	5.25	133.35	12
C438-035-10-L	0.438	11.13	0.035	0.889	0.54	0.095	2.45	62.23	12
C438-047-10-L	0.438	11.13	0.047	1.194	1.87	0.327	3.29	83.57	12
C438-055-10-L	0.438	11.13	0.055	1.397	4.49	0.786	3.30	83.82	12
C438-062-10-L	0.438	11.13	0.062	1.575	6.90	1.208	4.03	102.36	12
C438-075-10-L	0.438	11.13	0.075	1.905	19.81	3.469	4.13	104.90	12
C438-085-10-L	0.438	11.13	0.085	2.159	31.15	5.454	5.10	129.54	12
C500-035-10-L	0.500	12.70	0.035	0.889	0.25	0.044	3.15	80.01	12
C500-047-10-L	0.500	12.70	0.047	1.194	1.10	0.193	3.53	89.66	12
C500-055-10-L	0.500	12.70	0.055	1.397	2.33	0.408	3.85	97.79	12
C500-062-10-L	0.500	12.70	0.062	1.575	7.11	1.245	2.40	60.96	12
C500-075-10-L	0.500	12.70	0.075	1.905	15.03	2.632	3.38	85.85	12
C500-091-10-L	0.500	12.70	0.091	2.311	32.54	5.698	4.55	115.57	12
C500-115-10-L	0.500	12.70	0.115	2.921	91.47	16.016	6.33	160.78	12

* Hole size refers to the diameter of the hole the spring can be inserted in.

Assortments/Kits

Assortment A-10-R consists of one each of the above 41 different springs. Material will be hard drawn wire.

ROUND WIRE COMPRESSION SPRINGS - 18" (45 cm)									
Catalog Number	Hole Size*		Wire Diameter		Spring Rate (□ 20%)		Approx. Solid Height		Min. Order
	in	mm	in	mm	lb/in	N/mm	in	mm	
C500-041-18-L	0.500	12.70	0.041	1.04	0.61	0.107	3.32	84.33	12
C500-054-18-L	0.500	12.70	0.054	1.37	2.32	0.406	3.89	98.81	12
C562-062-18-L	0.562	14.27	0.062	1.57	1.86	0.326	6.42	163.07	12
C562-072-18-L	0.562	14.27	0.072	1.83	5.30	0.928	5.18	131.57	12
C625-054-18-L	0.625	15.88	0.054	1.37	1.42	0.249	2.92	74.17	12
C688-062-18-L	0.688	17.48	0.062	1.57	1.87	0.327	3.35	85.09	12
C688-068-18-L	0.688	17.48	0.068	1.73	2.26	0.396	4.28	108.71	12
C688-072-18-L	0.688	17.48	0.072	1.83	3.17	0.555	4.21	106.93	12
C812-062-18-L	0.812	20.62	0.062	1.57	1.25	0.219	2.79	70.87	12
C812-080-18-L	0.812	20.62	0.080	2.03	3.85	0.674	3.60	91.44	12
C875-098-18-L	0.875	22.23	0.098	2.49	7.95	1.392	3.97	100.84	12
C938-080-18-L	0.938	23.83	0.080	2.03	2.32	0.406	3.53	89.66	12
C938-125-18-L	0.938	23.83	0.125	3.18	14.52	2.542	6.19	157.23	12
C1000-098-18-L	1.000	25.40	0.098	2.49	5.72	1.002	3.44	87.38	12
C1062-085-18-L	1.062	26.97	0.085	2.16	2.21	0.387	7.29	185.17	12
C1062-125-18-L	1.062	26.97	0.125	3.18	13.61	2.383	4.50	114.30	12
C1125-125-18-L	1.125	28.58	0.125	3.18	7.89	1.382	3.60	91.44	12
C1125-135-18-L	1.125	28.58	0.135	3.43	9.98	1.747	6.19	157.23	12
C1188-090-18-L	1.188	30.18	0.090	2.29	2.77	0.485	2.84	72.14	12
C1188-125-18-L	1.188	30.18	0.125	3.18	9.10	1.593	4.50	114.30	12
C1375-148-18-L	1.375	34.93	0.148	3.76	12.83	2.247	4.46	113.28	12
C1625-148-18-L	1.625	41.28	0.148	3.76	8.09	1.417	3.99	101.35	12
C1875-148-18-L	1.875	47.63	0.148	3.76	4.66	0.816	4.66	118.36	12

* Hole size refers to the diameter of the hole the spring can be inserted in.

Assortments/Kits

Assortment A-18-R consists of one each of the above 23 different springs. Material will be hard drawn wire.



CONTINUOUS LENGTH SPRINGS

Round Wire Extension Springs

Continuous length Extension Springs are designed to be cut to the length required by any specific application.

To determine the rate per inch of extension at the final cut length, use the formula on the right:

$N =$ Number of coils per inch x length in inches

Rate = C/N , C being the constant for each size of spring, as per tables below.

To determine load at an extended length, multiply the deflection by the rate.

Finish: Stainless Steel parts have plain finish. Hard Drawn steel parts have oil finish.

ROUND WIRE EXTENSION SPRINGS - 20" (50 cm) - NO LOOPS - STAINLESS STEEL						
Catalog Number	Outside Diameter		Wire Diameter		Approx. Number of coils/ inch	C*
	in	mm	in	mm		
E0125-013-CS	0.125	3.175	0.013	0.33	76	25
E0125-017-CS	0.125	3.175	0.017	0.43	57.5	83
E0187-015-CS	0.187	4.750	0.015	0.38	66.5	12
E0187-020-CS	0.187	4.750	0.020	0.51	49	43
E0187-026-CS	0.187	4.750	0.026	0.66	38.5	137
E0250-017-CS	0.250	6.350	0.017	0.43	57.5	8
E0250-020-CS	0.250	6.350	0.020	0.51	49	16
E0250-032-CS	0.250	6.350	0.032	0.81	31.5	131
E0312-020-CS	0.312	7.925	0.020	0.51	49	8
E0312-026-CS	0.312	7.925	0.026	0.66	38.5	24
E0312-032-CS	0.312	7.925	0.032	0.81	31.5	59
E0312-041-CS	0.312	7.925	0.041	1.04	24	176
E0375-032-CS	0.375	9.525	0.032	0.81	31.5	32
E0375-041-CS	0.375	9.525	0.041	1.04	24	95
E0375-054-CS	0.375	9.525	0.054	1.37	18.5	321
E0438-041-CS	0.438	11.125	0.041	1.04	24	57
E0438-054-CS	0.438	11.125	0.054	1.37	18.5	188
E0500-054-CS	0.500	12.700	0.054	1.37	18.5	120
E0500-072-CS	0.500	12.700	0.072	1.83	14	428
E0562-072-CS	0.562	14.275	0.072	1.83	14	286
E0562-091-CS	0.562	14.275	0.091	2.31	10.5	820
E0625-072-CS	0.625	15.875	0.072	1.83	14	199
E0625-091-CS	0.625	15.875	0.091	2.31	10.5	563
E0750-091-CS	0.750	19.050	0.091	2.31	10.5	300

*C is the constant for each size of spring.



Spring Looping Tool

Loops springs from 1/8" (3.175 mm) to 1/2" (12.7 mm) O.D.

Catalog Number H1

Used to make cross over loops on continuous length extension springs up to 1/2" (12.7 mm) outside diameter and up to .062" (1.57 mm) diameter wire. In addition, two forming punches are provided with the tool.

ROUND WIRE EXTENSION SPRINGS - 20" (50 cm) - NO LOOPS - HARD DRAWN						
Catalog Number	Outside Diameter		Wire Diameter		Approx. Number of coils/ inch	C*
	in	mm	in	mm		
E0125-017-CH	0.125	3.175	0.016	0.41	61.5	73
E0125-023-CH	0.125	3.175	0.023	0.58	43.5	379
E0187-023-CH	0.187	4.750	0.023	0.58	43.5	91
E0187-028-CH	0.187	4.750	0.028	0.71	36	220
E0250-028-CH	0.250	6.350	0.028	0.71	36	81
E0250-035-CH	0.250	6.350	0.035	0.89	30	217
E0312-035-CH	0.312	7.925	0.035	0.89	30	101
E0312-047-CH	0.312	7.925	0.047	1.19	21	395
E0375-035-CH	0.375	9.525	0.035	0.89	30	55
E0375-047-CH	0.375	9.525	0.047	1.19	21	208
E0438-035-CH	0.438	11.125	0.035	0.89	30	33
E0438-047-CH	0.438	11.125	0.047	1.19	21	123
E0500-047-CH	0.500	12.700	0.047	1.83	21	79
E0500-072-CH	0.500	12.700	0.072	1.83	14	493
E0562-063-CH	0.562	14.275	0.063	1.60	16	128
E0625-080-CH	0.625	15.875	0.080	2.03	12.5	380
E0750-105-CH	0.750	19.050	0.105	2.67	9.5	651
E0875-105-CH	0.875	22.225	0.105	2.67	9.5	383
E1000-092-CH	1.000	25.400	0.092	2.34	10.5	138
E1000-120-CH	1.000	25.400	0.120	3.05	8.5	446
E1125-135-CH	1.125	28.575	0.135	3.43	8	492

*C is the constant for each size of spring.

Assortments/Kits

Each package assortment includes a range of sizes that enables the user to customize the spring to the application. Our spring loop tool assists in making correctly looped ends.

Assortment E0125-E0250 (8 items) - includes one piece each of springs:

E0125-017-CH	E0187-023-CH	E0250-028-CH
E0125-023-CH	E0187-028-CH	E0250-035-CH
E0312-035-CH	E0312-047-CH	

Assortment E0375-E0625 (8 items) - includes one piece each of springs:

E0375-035-CH	E0438-035-CH	E0500-047-CH
E0375-047-CH	E0438-047-CH	E0500-072-CH
E0562-063-CH	E0625-080-CH	

Assortment E0625-E1125 (6 items) - includes one piece each of springs:

E0625-080-CH	E0875-105-CH	E1000-120-CH
E0750-105-CH	E1000-092-CH	E1125-135-CH

Assortment E017-E120 (6 items) - includes one piece each of springs:

E0125-017-CH	E0250-035-CH	E0625-080-CH
E0187-023-CH	E0375-047-CH	E1000-120-CH

Assortment E023-E105 (6 items) - includes one piece each of springs:

E0125-023-CH	E0250-035-CH	E0375-035-CH
E0187-028-CH	E0750-105-CH	E0500-072-CH



BELLEVILLE SPRING WASHERS

Stock sizes in high-carbon and stainless steels

Belleville spring washers are especially suited for applications requiring high loads in small spaces. By combining them in varying sequences, each size gives numerous load-carrying possibilities. These washers have had all set removed during the manufacturing process.

Material

Spring Steel

Commercial 1074 – Certified to ASTM-A684

Commercial 6150 – Chrome Vanadium

Stainless Steel (Parts with suffix “S” or “S1”)

- Commercial – Type 302,
- Government AMS 5906 type 302 (Chemistry only).
- Commercial – Type 17-7 PH certified to AMS 5528.

Other materials available. Call us at (800) 872-7732.

Certificate of compliance available upon request. Certificate of chemical analysis available at extra cost.

Check our value-add services such as shot peening, and others, on page 312.

Load and Deflection

Typical load-deflection curves for three characteristic proportions of washers listed are shown in Figure 1 below. From them, loads at intermediate heights may be estimated. The nominal amount of dish or cone (h) is found by subtracting “t” from “H”.

Finish:

Steel parts have oil finish. Stainless Steel parts have plain finish.

See page 312 for alternative finishes.

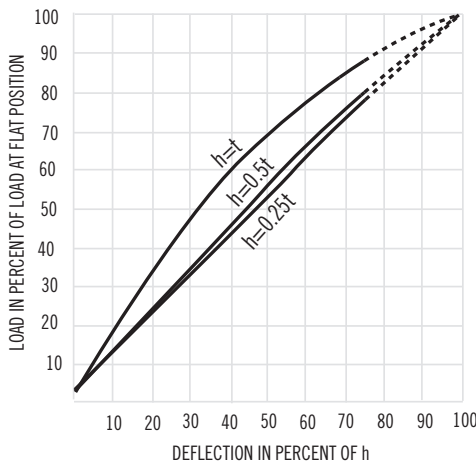


Figure 1

EXAMPLE: Using part B1250-040, estimate the load at 75% deflection.

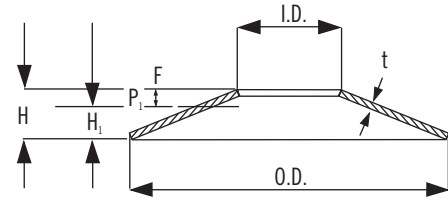
$$h = H - t = 0.082 \text{ in. (2.08 mm)} - 0.040 \text{ (1.02 mm)} = 0.042 \text{ (1.07 mm)};$$

$$h/t = 0.042/0.040 \sim 1$$

From Fig. 1, using the curve “h = t”, the load at 75% of the deflection is approximately 87% of the load at flat position. From the tables (see following pages), calculated load at flat is 330 lbs (1,468 N) .87 x 330 = 287 lbs (1,277 N).

The typical curves in Fig. 1 are shown with dotted lines beyond 75% of deflection to indicate that load characteristics in this area are not reliable because of partial bottoming of the washers.

For applications with AQL requirements, contact engineering.



O.D.= Outside Diameter

I.D.= Inside Diameter

t= Thickness

H= Approx. Free height

H₁= Loaded Height

P₁= Load at deflection F

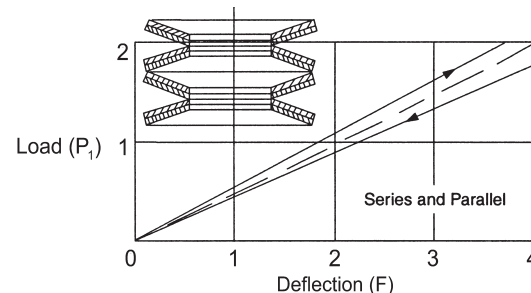
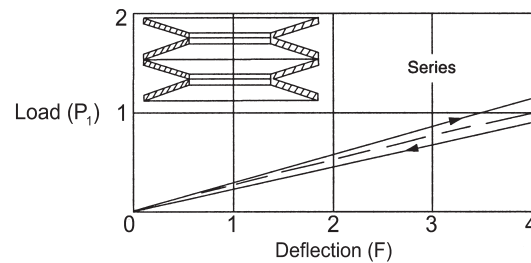
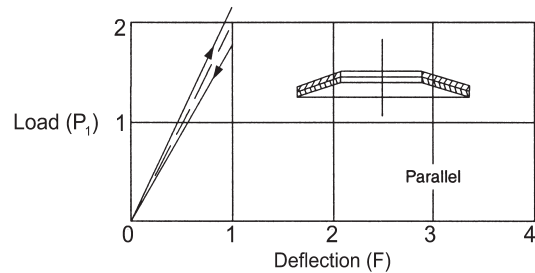
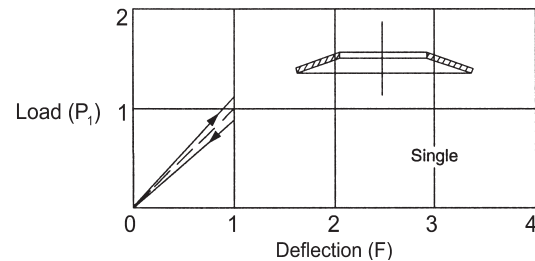
F= Deflection H-H₁

Stacked Spring Washers

Additional load or deflection can be obtained by stacking spring washers in series or in parallel. See charts below.

Contact our engineering department for tolerances.

Shown below are the comparative force/deflection graphs for the alternative methods of stacking.



BELLEVILLE SPRING WASHERS

Catalog Number*	Material	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _L)		Load at H _L (P _L) (Min./Max.)		Ref. Load at Flat Position (P)	
		in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
B0187-007	C1074											0.0065	0.17	0.013	0.33	0.010	0.25	5.7-7.8	25.4-34.7	9.9	44
B0187-007-S	SS 302	3/32	0.093	2.36	0.093	2.36	0.187	4.75	3/16	0.1875	4.76	0.0065	0.17	0.013	0.33	0.010	0.25	5.7-7.8	25.4-34.7	9.9	44
B0187-010	C1074											0.010	0.25	0.015	0.38	0.013	0.32	13-17.6	57.8-78.3	27.8	124
B0187-010-S	SS 302											0.010	0.25	0.015	0.38	0.013	0.32	13-17.6	57.8-78.3	27.8	124
B0250-009	C1074											0.0086	0.22	0.017	0.44	0.013	0.33	9.9-13.5	44-60.1	16.9	75
B0250-009-S	SS 302											0.0086	0.22	0.017	0.44	0.013	0.33	9.9-13.5	44-60.1	16.9	75
B0250-013	C1074	1/8	0.125	3.18	0.125	3.18	0.250	6.35	1/4	0.250	6.35	0.0133	0.34	0.020	0.51	0.017	0.43	22-30	97.9-133.5	48	214
B0250-013-S	SS 302											0.0133	0.34	0.020	0.51	0.017	0.43	22-30	97.9-133.5	48	214
B0375-019	C1074						0.375	9.53	3/8	0.375	9.53	0.0185	0.47	0.028	0.71	0.023	0.58	35.3-47.7	156.7-211.8	73	325
B0375-019-S	SS 302						0.375	9.53	3/8	0.375	9.53	0.0185	0.47	0.028	0.71	0.023	0.58	28-38	125-168	61	275
B0281-010	C1074											0.010	0.25	0.020	0.51	0.015	0.38	12.8-17.3	56.8-76.8	23	102
B0281-010-S	SS 302											0.010	0.25	0.020	0.51	0.015	0.38	11-14	47-63	23	103
B0281-013	C1074											0.013	0.33	0.021	0.53	0.017	0.43	20.8-28.2	92.5-125.4	43	191
B0281-013-S	SS 302	#6	0.138	3.51	0.138	3.51	0.281	7.14	9/32	0.281	7.14	0.013	0.33	0.021	0.53	0.017	0.43	17-23	76-102	37	167
B0281-015	C1074											0.015	0.38	0.023	0.58	0.019	0.48	28.5-38.5	124.3-173.2	62	276
B0281-015-S	SS 302											0.015	0.38	0.023	0.58	0.019	0.48	28.5-38.5	126.8-171.2	62	276
B0437-022	C1074						0.437	11.10	7/16	0.438	11.13	0.022	0.56	0.032	0.81	0.027	0.69	46.8-63.3	208.2-281.6	99	440
B0437-022-S	SS 302						0.437	11.10	7/16	0.438	11.13	0.022	0.56	0.032	0.81	0.027	0.69	37-50	165-222	81	364
B0312-011	C1074											0.0108	0.27	0.022	0.55	0.016	0.41	15.8-21.4	70.3-95.2	27	120
B0312-011-S	SS 302	5/32	0.156	3.97	0.156	3.96	0.312	7.92	5/16	0.313	7.95	0.0108	0.27	0.022	0.55	0.016	0.41	15.8-21.4	70.3-95.2	27	120
B0312-017	C1074											0.0166	0.42	0.025	0.64	0.021	0.53	35-48	155.7-214	75	334
B0312-017-S	SS 302											0.0166	0.42	0.025	0.64	0.021	0.53	35-48	155.7-214	75	334
B0343-013	C1074											0.013	0.33	0.024	0.61	0.018	0.46	21.3-28.8	94.6-127.9	38	169
B0343-013-S	SS 302											0.013	0.33	0.024	0.61	0.018	0.46	18-24	78-105	38	172
B0343-016	C1074											0.016	0.41	0.026	0.66	0.021	0.53	30.6-41.4	136.1-184.1	65	289
B0343-016-S	SS 302	#8	0.164	4.17	0.164	4.17	0.343	8.71	11/32	0.344	8.74	0.016	0.41	0.026	0.66	0.021	0.53	31-42	138-185	65	289
B0343-019	C1074											0.0185	0.47	0.028	0.71	0.023	0.58	43-68	191.3-302.5	93	414
B0343-019-S	SS 302											0.0185	0.47	0.028	0.71	0.023	0.58	43-68	191.3-302.5	93	414
B0499-025	C1074						0.500	12.70	1/2	0.500	12.70	0.025	0.64	0.037	0.94	0.031	0.79	61.6-83.4	274-371	131	583
B0499-025-S	SS 302						0.500	12.70	1/2	0.500	12.70	0.025	0.64	0.037	0.94	0.031	0.79	50-68	222-301	110	491
B0375-015	C1074											0.015	0.38	0.027	0.69	0.021	0.53	29-40	129-177.9	55	245
B0375-015-S	SS 302											0.015	0.38	0.027	0.69	0.021	0.53	29-40	129-177.9	55	245
B0375-018	C1074											0.0175	0.44	0.028	0.71	0.023	0.58	39.1-52.9	173-236	81	360
B0375-018-S	SS 302											0.0175	0.44	0.028	0.71	0.023	0.58	31-42	138-186	68	305
B0375-020	C1074											0.020	0.51	0.030	0.76	0.025	0.64	51-69	227-307	110	489
B0375-020-S	SS 302	3/16	0.188	4.78	0.190	4.83	0.375	9.53	3/8	0.375	9.53	0.020	0.51	0.030	0.76	0.025	0.64	51-69	227-307	110	489
B0375-030	C1074											0.030	0.76	0.036	0.91	0.033	0.84	106-144	471.5-640.6	233	1036
B0375-030-S	SS 302											0.030	0.76	0.036	0.91	0.033	0.84	108-144	480-642	233	1036
B0562-019	C1074											0.019	0.48	0.037	0.94	0.028	0.71	38.3-51.8	169-231	67	298
B0562-019-S	SS 302						0.562	14.27	9/16	0.563	14.30	0.019	0.48	0.037	0.94	0.028	0.71	38-52	170-230	67	300
B0562-028	C1074											0.028	0.71	0.042	1.07	0.035	0.89	74-100	329-445	163	725
B0562-028-S	SS 302											0.028	0.71	0.042	1.07	0.035	0.89	74-100	329-445	163	730
B0437-016	C1074											0.016	0.41	0.031	0.79	0.023	0.58	34-46	151.2-205	60	267
B0437-016-S	SS 302											0.016	0.41	0.031	0.79	0.023	0.58	34-46	151.2-205	60	267
B0437-020	C1074											0.020	0.51	0.032	0.81	0.026	0.66	48.5-65.6	213-393	98	436
B0437-020-S	SS 302	#12	0.216	5.49	0.220	5.59	0.437	11.10	7/16	0.438	11.13	0.020	0.51	0.032	0.81	0.026	0.66	49-66	219-293	98	436
B0437-023	C1074											0.023	0.58	0.034	0.86	0.029	0.74	64.6-87.4	289-396	139	618
B0437-023-S	SS 302											0.023	0.58	0.034	0.86	0.029	0.74	66-88	292-390	139	618
B0687-034	C1074						0.687	17.45	11/16	0.688	17.48	0.034	0.86	0.050	1.27	0.042	1.07	106-144	471-641	229	1019
B0687-034-S	SS 302						0.687	17.45	11/16	0.688	17.48	0.034	0.86	0.050	1.27	0.042	1.07	108-144	480-642	229	1019
B0500-018	C1074											0.018	0.46	0.034	0.86	0.026	0.66	38-52	169-231	70	311
B0500-018-S	SS 302											0.018	0.46	0.034	0.86	0.026	0.66	38-52	169-231	70	311
B0500-022	C1074											0.0215	0.55	0.036	0.91	0.029	0.74	55-77	245-343	115	512
B0500-022-S	SS 302											0.0215	0.55	0.036	0.91	0.029	0.74	55-77	245-343	115	512
B0500-025	C1074											0.025	0.64	0.038	0.97	0.031	0.79	80-110	356-489	160	712
B0500-025-S	SS 302											0.025	0.64	0.038	0.97	0.031	0.79	80-110	356-489	160	712
B0500-038	C1074	1/4	0.250	6.35	0.255	6.48	0.500	12.70	1/2	0.500	12.70	0.038	0.97	0.047	1.19	0.043	1.09	161-219	716-974	400	1779
B0500-038-S	SS 302											0.038	0.97	0.047	1.19	0.043	1.09	161-219	716-974	400	1779
B0562-042	C1074						0.562	14.27	9/16	0.563	14.30	0.042	1.07	0.055	1.40	0.045	1.14	345-462	1536-2055	567	2522
B0562-042-S	SS 302						0.562	14.27	9/16	0.563	14.30	0.042	1.07	0.055	1.40	0.045	1.14	345-462	1536-2055	567	2522
B0637-032	C1074						0.637	16.18	41/64	0.641	16.28	0.032	0.81	0.048	1.22	0.040	1.02	100-136	444-605	222	988
B0637-032-S	SS 302						0.637	16.18	41/64	0.641	16.28	0.032	0.81	0.048	1.22	0.040	1.02	82-111	365-493	180	806
B0687-052	C1074						0.687	17.45	11/16	0.688	17.48	0.052	1.32	0.069	1.75	0.055	1.40	535-716	2382-3185	884	3932
B0687-052-S	SS 302						0.687	17.45	11/16	0.688	17.48	0.052	1.32	0.069	1.75	0.055	1.40	535-716	2382-3185	884	3932

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



* Part numbers with the suffix "S" and "S1" are stainless steel.



BELLEVILLE SPRING WASHERS

Catalog Number*	Material	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _L)		Load at H _L (P _L) (Min./Max.)		Ref. Load at Flat Position (P)	
		in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	lb	N	lb	N		
B0750-025	C1074											0.025	0.64	0.049	1.24	0.037	0.94	65-89	289-395	114	507
B0750-025-S	SS 302											0.025	0.64	0.049	1.24	0.037	0.94	67-89	296-396	114	507
B0750-036	C1074											0.036	0.91	0.054	1.37	0.045	1.14	125-169	555-750	261	1161
B0750-036-S	SS 302	1/4	0.250	6.35	0.255	6.48	0.750	19.05	3/4	0.750	19.05	0.036	0.91	0.054	1.37	0.045	1.14	127-170	565-755	261	1161
B0750-052	C1074											0.052	1.32	0.065	1.65	0.058	1.47	264-358	1174-1592	560	2491
B0750-052-S	SS 302											0.052	1.32	0.065	1.65	0.058	1.47	264-358	1174-1592	560	2509
B0812-061	C1074				0.265	6.73	0.812	20.62	13/16	0.813	20.65	0.061	1.55	0.084	2.13	0.066	1.68	820-1097	3649-4881	1350	6005
B0812-061-S	SS 302											0.061	1.55	0.084	2.13	0.066	1.68	820-1097	3649-4881	1350	6005
B0875-050	C1074											0.050	1.27	0.066	1.68	0.053	1.35	268-358	1191-1593	445	1979
B0875-050-S	SS 302											0.050	1.27	0.066	1.68	0.053	1.35	268-358	1191-1593	445	1979
B0875-075	C1074	9/32	0.2813	7.14	0.282	7.16	0.875	22.23	7/8	0.875	22.23	0.075	1.91	0.086	2.18	0.077	1.96	622-832	2766-3699	1032	4590
B0875-075-S	SS 17-7											0.075	1.91	0.086	2.18	0.077	1.96	622-832	2766-3699	1032	4590
B0875-075-S1	SS 302											0.075	1.91	0.086	2.18	0.077	1.96	711-942	3163-4188	1451	6500
B0625-022	C1074											0.022	0.56	0.042	1.07	0.032	0.81	59-81	262-360	105	467
B0625-022-S	SS 302											0.022	0.56	0.042	1.07	0.032	0.81	59-81	262-360	105	467
B0625-032	C1074				0.317	8.05	0.625	15.88	5/8	0.625	15.88	0.032	0.81	0.048	1.22	0.040	1.02	123-167	547-743	260	1157
B0625-032-S	SS 302											0.032	0.81	0.048	1.22	0.040	1.02	123-167	547-743	260	1157
B0625-047	C1074											0.047	1.19	0.059	1.50	0.053	1.35	255-345	1134-1535	600	2669
B0625-047-S	SS 302											0.047	1.19	0.059	1.50	0.053	1.35	255-345	1134-1535	600	2669
B0687-0520	C1074	5/16	0.3125	7.94	0.328	8.33	0.687	17.45	11/16	0.688	17.48	0.052	1.32	0.068	1.73	0.055	1.40	544-728	2420-3237	892	3968
B0687-0520-S	SS 302											0.052	1.32	0.068	1.73	0.055	1.40	544-728	2420-3237	892	3968
B0812-0610	C1074						0.812	20.62	13/16	0.813	20.65	0.061	1.55	0.081	2.06	0.065	1.65	734-982	3265-4367	1214	5400
B0812-0610-S	SS 302											0.061	1.55	0.081	2.06	0.065	1.65	734-982	3265-4367	1214	5400
B0937-030	C1074											0.030	0.76	0.060	1.52	0.045	1.14	93.5-127	415.9-564.9	159	707
B0937-030-S	SS 302				0.317	8.05	0.937	23.80	15/16	0.938	23.83	0.030	0.76	0.060	1.52	0.058	1.47	95-127	423-565	159	707
B0937-045	C1074											0.045	1.14	0.067	1.70	0.056	1.42	185-251	823-1117	395	1757
B0937-045-S	SS 302											0.045	1.14	0.067	1.70	0.056	1.42	185-251	823-1117	395	1757
B0937-070	C1074				0.328	8.33	0.937	23.80	15/16	0.938	23.83	0.070	1.78	0.094	2.39	0.075	1.91	976-1305	4341-5805	1610	7161
B0937-070-S	SS 302											0.070	1.78	0.094	2.39	0.075	1.91	976-1305	4341-5805	1610	7161
B1000-090	C1074											0.090	2.29	0.102	2.59	0.092	2.34	898-1201	3995-5343	1499	6668
B1000-090-S	SS 17-7	11/32	0.3438	8.73	0.344	8.74	1.000	25.40	1	1.000	25.40	0.090	2.29	0.102	2.59	0.092	2.34	898-1201	3995-5343	1499	6668
B1000-090-S1	SS 302											0.090	2.29	0.102	2.59	0.092	2.34	1032-1367	4590-6079	2106	9434
B1125-062	C1074						1.125	28.58	1 1/8	1.125	28.58	0.062	1.57	0.083	2.11	0.066	1.68	406-543	1806-2415	671	2985
B1125-062-S	SS 302											0.062	1.57	0.083	2.11	0.066	1.68	406-543	1806-2415	671	2985
B0750-028	C1074											0.028	0.71	0.051	1.30	0.039	0.99	93-127	414-565	175	778
B0750-028-S	SS 302											0.028	0.71	0.051	1.30	0.039	0.99	93-127	414-565	175	778
B0750-034	C1074											0.034	0.86	0.055	1.40	0.044	1.12	141-191	627-850	282	1254
B0750-034-S	SS 302											0.034	0.86	0.055	1.40	0.044	1.12	141-191	627-850	282	1254
B0750-040	C1074											0.040	1.02	0.059	1.50	0.049	1.24	199-271	885-1205	415	1846
B0750-040-S	SS 302											0.040	1.02	0.059	1.50	0.049	1.24	199-271	885-1205	415	1846
B0750-056	C1074											0.056	1.42	0.070	1.78	0.063	1.60	365-495	1624-2202	845	3759
B0750-056-S	SS 302											0.056	1.42	0.070	1.78	0.063	1.60	365-495	1624-2202	845	3759
B0812-06101	C1074	3/8	0.375	9.53	0.390	9.91	0.812	20.62	13/16	0.813	20.65	0.061	1.55	0.079	2.01	0.065	1.65	700-936	3112-4161	1163	5173
B0812-06101-S	SS 302											0.061	1.55	0.079	2.01	0.065	1.65	700-936	3112-4161	1163	5173
B0937-0700	C1074						0.937	23.80	15/16	0.938	23.83	0.070	1.78	0.092	2.34	0.074	1.88	924-1236	4110-5497	1528	6797
B0937-0700-S	SS 302											0.070	1.78	0.092	2.34	0.074	1.88	924-1236	4110-5497	1528	6797
B0950-047	C1074				0.380	9.65	0.950	24.13	61/64	0.953	24.21	0.047	1.19	0.070	1.78	0.058	1.47	222-300	986-1334	463	2060
B0950-047-S	SS 302											0.047	1.19	0.070	1.78	0.058	1.47	180-243	801-1082	395	1769
B1125-053	C1074											0.053	1.35	0.080	2.03	0.066	1.68	254-344	1128-1530	535	2380
B1125-053-S	SS 302						1.125	28.58	1 1/8	1.125	28.58	0.053	1.35	0.080	2.03	0.066	1.68	254-344	1128-1530	535	2380
B1125-078	C1074											0.078	1.98	0.097	2.46	0.088	2.24	507-687	2251-3056	1235	5494
B1125-078-S	SS 17-7											0.078	1.98	0.097	2.46	0.088	2.24	351-465	1561-2068	716	3209
B1250-065	C1074				0.390	9.91	1.250	31.75	1 1/4	1.250	31.75	0.065	1.65	0.085	2.16	0.069	1.75	363-485	1613-2158	598	2660
B1250-065-S	SS 302											0.065	1.65	0.085	2.16	0.069	1.75	363-485	1613-2158	598	2660
B0875-062	C1074											0.062	1.57	0.074	1.88	0.064	1.63	411-550	1828-2445	644	2865
B0875-062-S	SS 302											0.062	1.57	0.074	1.88	0.064	1.63	411-550	1828-2445	644	2865
B0875-089	C1074											0.089	2.26	0.100	2.54	0.091	2.31	1114-1490	4955-6627	1871	8322
B0875-089-S	SS 17-7											0.089	2.26	0.100	2.54	0.091	2.31	1114-1490	4955-6627	1871	8322
B0875-089-S1	SS 302	13/32	0.4063	10.32	0.407	10.34	0.875	22.23	7/8	0.875	22.23	0.089	2.26	0.1	2.54	0.091	2.31	1288-1706	5729-7587	2628	11775
B0875-109	C1074											0.109	2.77	0.124	3.15	0.112	2.84	2790-3731	12408-16594	4687	20848
B0875-109-S	SS 17-7											0.109	2.77	0.124	3.15	0.112	2.84	2790-3731	12408-16594	4687	20848
B0875-109-S1	SS 302											0.109	2.77	0.124	3.15	0.112	2.84	3227-4274	14354-19009	6585	29501
B1000-062	C1074						1.000	25.40	1	1.000	25.40	0.062	1.57	0.092	2.34	0.068	1.73	777-1040	3457-4624	1262	5613
B1000-062-S	SS 302											0.062	1.57	0.092	2.34	0.068	1.73	777-1040	3457-4624	1262	5613



BELLEVILLE SPRING WASHERS

Catalog Number*	Material	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _L)		Load at H _L (P _L) (Min/Max.)		Ref. Load at Flat Position (P)	
		in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
B1000-105	C1074											0.105	2.67	0.118	3.00	0.108	2.74	1580-2114	7030-9402	2657	11818
B1000-105-S	SS 17-7						1.000	25.40	1	1.000	25.40	0.105	2.67	0.118	3.00	0.108	2.74	1580-2114	7030-9402	2657	11818
B1000-105-S1	SS 302											0.105	2.67	0.118	3.00	0.108	2.74	1828-2421	8131-10768	3730	16711
B1188-098	C1074											0.098	2.49	0.119	3.02	0.102	2.59	1434-1917	6377-8528	2400	10675
B1188-098-S	SS 17-7											0.098	2.49	0.119	3.02	0.102	2.59	1434-1917	6377-8528	2400	10675
B1188-098-S1	SS 302											0.098	2.49	0.119	3.02	0.102	2.59	1658-2196	7375-9767	3383	15157
B1188-105	C1074	13/32	0.4063	10.32	0.407	10.34	1.188	30.18	13/16	1.188	30.16	0.105	2.67	0.125	3.18	0.109	2.77	1684-2252	7491-10018	2812	12508
B1188-105-S	SS 17-7											0.105	2.67	0.125	3.18	0.109	2.77	1684-2252	7491-10018	2812	12508
B1188-105-S1	SS 302											0.105	2.67	0.125	3.18	0.109	2.77	1940-2569	8629-11428	3959	17735
B1240-072	C1074											0.072	1.83	0.096	2.44	0.077	1.96	605-809	2689-3596	994	4421
B1240-072-S	SS 17-7						1.240	31.50	1 15/64	1.234	31.34	0.072	1.83	0.096	2.44	0.077	1.96	605-809	2689-3596	994	4421
B1240-072-S1	SS 302											0.072	1.83	0.096	2.44	0.077	1.96	692-916	3078-4076	1412	6326
B1250-074	C1074											0.074	1.88	0.098	2.49	0.079	2.01	639-855	2843-3802	1061	4719
B1250-074-S	SS 17-7						1.250	31.75	1 1/4	1.250	31.75	0.074	1.88	0.098	2.49	0.079	2.01	639-855	2843-3802	1061	4719
B1250-074-S1	SS 302											0.074	1.88	0.098	2.49	0.079	2.01	738-977	3283-4347	1506	6747
B0875-031	C1074											0.031	0.79	0.059	1.50	0.045	1.14	114-156	507-694	205	912
B0875-031-S	SS 302											0.031	0.79	0.059	1.50	0.045	1.14	114-156	507-694	205	912
B0875-045	C1074				0.442	11.23	0.875	22.23	7/8	0.875	22.23	0.045	1.14	0.067	1.70	0.056	1.42	229-311	1018-1383	495	2202
B0875-045-S	SS 302											0.045	1.14	0.067	1.70	0.056	1.42	229-311	1018-1383	495	2202
B0875-059	C1074											0.059	1.50	0.083	2.11	0.064	1.63	777-1040	3457-4624	1272	5658
B0875-059-S	SS 302	7/16	0.4375	11.11	0.460	11.68	0.875	22.23	7/8	0.875	22.23	0.059	1.50	0.083	2.11	0.064	1.63	777-1040	3457-4624	1272	5658
B0937-07001	C1074				0.453	11.51	0.937	23.80	15/16	0.938	23.83	0.070	1.78	0.090	2.29	0.074	1.88	890-1190	3957-5292	1471	6543
B0937-07001-S	SS 302											0.070	1.78	0.090	2.29	0.074	1.88	890-1190	3957-5292	1471	6543
B1188-089	C1074											0.089	2.26	0.120	3.05	0.095	2.41	1632-2183	7260-9710	2698	12001
B1188-089-S	SS 17-7				0.453	11.51	1.188	30.18	13/16	1.1875	30.16	0.089	2.26	0.120	3.05	0.095	2.41	1632-2183	7260-9710	2698	12001
B1188-089-S1	SS 302											0.089	2.26	0.12	3.05	0.095	2.41	1880-2490	8362-11074	3836	17187
B1000-035	C1074											0.035	0.89	0.067	1.70	0.051	1.30	148-202	658-899	260	1157
B1000-035-S	SS 302											0.035	0.89	0.067	1.70	0.051	1.30	148-202	658-899	260	1157
B1000-043	C1074											0.043	1.09	0.071	1.80	0.057	1.45	213-288	943-1281	431	1917
B1000-043-S	SS 302						1.000	25.40	1	1.000	25.40	0.043	1.09	0.071	1.80	0.057	1.45	212-288	943-1281	431	1917
B1000-050	C1074											0.050	1.27	0.075	1.91	0.062	1.57	289-391	1286-1739	600	2669
B1000-050-S	SS 302											0.050	1.27	0.075	1.91	0.062	1.57	289-391	1286-1739	600	2669
B1000-073	C1074											0.073	1.85	0.091	2.31	0.082	2.08	573-777	2549-3456	1335	5938
B1000-073-S	SS 17-7											0.073	1.85	0.091	2.31	0.082	2.08	573-777	2549-3456	1335	5938
B1262-060	C1074	1/2	0.500	12.70	0.505	12.83	1.262	32.05	1 17/64	1.266	32.16	0.060	1.52	0.091	2.31	0.075	1.91	348-470	1548-2091	731	3252
B1262-060-S	SS 302											0.060	1.52	0.091	2.31	0.075	1.91	324-429	1441-1909	661	2962
B1500-047	C1074											0.047	1.19	0.093	2.36	0.070	1.78	213-289	947-1285	366	1628
B1500-047-S	SS 17-7											0.047	1.19	0.093	2.36	0.070	1.78	217-290	964-1289	366	1628
B1500-070	C1074						1.500	38.10	1 1/2	1.500	38.10	0.070	1.78	0.104	2.64	0.087	2.21	420-570	1868-2535	896	3986
B1500-070-S	SS 302											0.070	1.78	0.104	2.64	0.087	2.21	420-570	1868-2535	896	3986
B1500-102	C1074											0.102	2.59	0.128	3.25	0.115	2.92	883-1195	3928-5316	2060	9163
B1500-102-S	SS 17-7											0.102	2.59	0.128	3.25	0.115	2.92	897-1200	3991-5338	2060	9163
B1000-0620	C1074											0.062	1.57	0.085	2.16	0.067	1.70	665-889	2958-3956	1090	4848
B1000-0620-S	SS 302											0.062	1.57	0.085	2.16	0.067	1.70	665-889	2958-3956	1090	4848
B1000-089	C1074						1.000	25.40	1	1.000	25.40	0.089	2.26	0.100	2.54	0.091	2.31	924-1236	4110-5497	1542	6859
B1000-089-S	SS 17-7											0.089	2.26	0.100	2.54	0.091	2.31	924-1236	4110-5497	1542	6859
B1000-089-S1	SS 302											0.089	2.26	0.1	2.54	0.091	2.31	1061-1405	4719-6250	2165	9699
B1063-090	C1074											0.090	2.29	0.106	2.69	0.093	2.36	1183-1582	5263-7038	1977	8794
B1063-090-S	SS 17-7											0.090	2.29	0.106	2.69	0.093	2.36	1183-1582	5263-7038	1977	8794
B1063-090-S1	SS 302						1.063	27.00	1 1/16	1.000	25.40	0.090	2.29	0.106	2.69	0.093	2.36	1363-1805	6063-8029	2781	12460
B1063-100	C1074											0.100	2.54	0.116	2.95	0.103	2.62	1615-2160	7184-9607	2712	12063
B1063-100-S	SS 17-7											0.100	2.54	0.116	2.95	0.103	2.62	1615-2160	7184-9607	2712	12063
B1125-0620	C1074	17/32	0.5313	13.49	0.532	13.51	1.125	28.58	1 1/8	1.125	28.58	0.062	1.57	0.083	2.11	0.066	1.68	449-601	1997-2671	736	3274
B1125-0620-S	SS 302											0.062	1.57	0.083	2.11	0.066	1.68	449-601	1997-2671	736	3274
B1218-074	C1074											0.074	1.88	0.104	2.64	0.080	2.03	898-1201	3995-5343	1475	6561
B1218-074-S	SS 17-7						1.218	30.94	1 7/32	1.219	30.96	0.074	1.88	0.104	2.64	0.080	2.03	898-1201	3995-5343	1475	6561
B1218-074-S1	SS 302											0.074	1.88	0.104	2.64	0.080	2.03	1035-1371	4604-6097	2112	9462
B1250-0620	C1074											0.062	1.57	0.092	2.34	0.068	1.73	501-670	2228-2980	860	3825
B1250-0620-S	SS 302											0.062	1.57	0.092	2.34	0.068	1.73	501-670	2228-2980	860	3825
B1250-078	C1074											0.078	1.98	0.103	2.62	0.083	2.11	812-1086	3611-4829	1429	6356
B1250-078-S	SS 17-7						1.250	31.75	1 1/4	1.250	31.75	0.078	1.98	0.103	2.62	0.083	2.11	812-1086	3611-4829	1429	6356
B1250-078-S1	SS 302											0.078	1.98	0.103	2.62	0.083	2.11	944-1250	4199-5561	1926	8630
B1250-090	C1074											0.090	2.29	0.114	2.90	0.095	2.41	1200-1605	5339-7141	2003	8909
B1250-090-S	SS 17-7											0.090	2.29	0.114	2.90	0.095	2.41	1200-1605	5339-7141	2003	8909

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* Part numbers with the suffix "S" and "S1" are stainless steel.



BELLEVILLE SPRING WASHERS																					
Catalog Number*	Material	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _L)		Load at H _L (P _L) (Min./Max.)		Ref. Load at Flat Position (P)	
		in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
B2000-097	C1074											0.097	2.46	0.145	3.68	0.121	3.07	1002-1358	4457-6041	2140	9519
B2000-097-S	SS 17-7						2.000	50.80	2	2.000	50.80	0.097	2.46	0.145	3.68	0.121	3.07	1002-1358	4457-6041	2140	9519
B2000-142	C1074	1	1.000	25.40	1.000	25.40						0.142	3.61	0.177	4.50	0.160	4.06	2048-2772	9110-12330	4824	21458
B3000-090	C1074						3.000	76.20	3	3.000	76.20	0.090	2.29	0.180	4.57	0.135	3.43	727-983	3234-4372	1244	5534
B3000-135	C1074											0.135	3.43	0.202	5.13	0.168	4.27	1548-1893	6886-8420	3118	13870
B2250-073	C1074											0.073	1.85	0.148	3.76	0.113	2.87	621-840	2762-3736	1100	4893
B2250-111	C1074	1 1/8	1.125	28.58	1.125	28.58	2.250	57.15	2 1/4	2.250	57.15	0.111	2.82	0.165	4.19	0.139	3.53	1241-1679	5520-7468	2780	12366
B2250-159	C1074											0.159	4.04	0.198	5.03	0.179	4.55	2550-3460	11343-15390	5973	26569
B2500-080	C1074											0.080	2.03	0.160	4.06	0.120	3.05	739-1000	3287-4448	1260	5605
B2500-080-S	SS 17-7											0.080	2.03	0.160	4.06	0.120	3.05	739-1000	3287-4448	1260	5605
B2500-120	C1074	1 1/4	1.250	31.75	1.250	31.75	2.500	63.50	2 1/2	2.500	63.50	0.120	3.05	0.180	4.57	0.150	3.81	1496-2024	6655-9003	3200	14234
B2500-120-S	SS 17-7											0.120	3.05	0.180	4.57	0.150	3.81	1469-2024	6655-9003	3200	14234
B2500-175	C1074											0.175	4.45	0.219	5.56	0.197	5.00	3085-4175	13722-18571	7149	31800
B3750-168	C1074						3.750	95.25	3 3/4	3.750	95.25	0.168	4.27	0.251	6.38	0.209	5.31	2348-2870	10444-12766	4754	21147
B2750-087	C1074	1 3/8	1.375	34.93	1.375	34.93	2.750	69.85	2 3/4	2.750	69.85	0.087	2.21	0.173	4.39	0.132	3.35	816-1104	3630-4911	1440	6405
B2750-132	C1074											0.132	3.35	0.196	4.98	0.165	4.19	1658-2243	7375-9977	3210	14279
B2750-0870	C1074	1 13/32	1.4063	35.72	1.407	35.74	2.750	69.85	2.75	2.750	69.85	0.087	2.21	0.173	4.39	0.104	2.64	967-1294	4303-5754	1440	6405
B3000-093	C1074	1 1/2	1.500	38.10	1.500	38.10	3.000	76.20	3	3.000	76.20	0.093	2.36	0.189	4.80	0.143	3.63	944-1277	4199-5681	1630	7251
B3000-143	C1074											0.143	3.63	0.213	5.41	0.180	4.57	2052-2508	9127-11156	4380	19483
B3000-0930	C1074	1 17/32	1.5313	38.89	1.532	38.91	3.000	76.20	3	3.000	76.20	0.093	2.36	0.189	4.80	0.112	2.84	1114-1490	4955-6627	1630	7250
B4000-125	C1074	2	2.000	50.80	2.000	50.80	4.000	101.60	4	4.000	101.60	0.125	3.18	0.250	6.35	0.187	4.75	1709-2312	7602-10284	2910	12944
B4000-187	C1074											0.187	4.75	0.280	7.11	0.233	5.92	3409-4612	15163-20514	7280	32383

ULTRA PRECISION BELLEVILLE SPRING WASHERS																					
Catalog Number*	Material	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _L)		Load at H _L (P _L) (Min./Max.)		Ref. Load at Flat Position (P)	
		in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
B1250-125	C1074	17/32	0.532	13.51	0.532	13.51	1.250	31.75	1 1/4	1.250	31.75	0.125	3.18	0.143	3.63	0.129	3.28	2660-3072	11831-13665	4421	19664
B1250-125-S	SS 17-7											0.125	3.18	0.143	3.63	0.129	3.28	2660a-3072	11831-13665	4421	19664
B1750-140	6150											0.140	3.56	0.183	4.65	0.149	3.78	4449-5138	19790-22857	7441	33100
B1750-140-S	SS 17-7	21/32	0.657	16.69	0.657	16.69	1.750	44.45	1 3/4	1.750	44.45	0.140	3.56	0.183	4.65	0.149	3.78	4449-5138	19790-22857	7441	33100
B2000-150	6150						2.000	50.80	2	2.000	50.80	0.150	3.81	0.206	5.23	0.161	4.09	5386-6221	23960-27674	9024	40141
B2000-150-S	SS 17-7											0.150	3.81	0.206	5.23	0.161	4.09	5386-6221	23960-27674	9024	40141
B2000-125	C1074											0.125	3.18	0.161	4.09	0.132	3.35	2009-2321	8937-10323	3322	14778
B2000-125-S	SS 17-7	11/16	0.688	17.48	0.688	17.48	2.000	50.80	2	2.000	50.80	0.125	3.18	0.161	4.09	0.132	3.35	2009-2321	8937-10323	3322	14778
B2375-187	6150						2.375	60.33	2 3/8	2.375	60.33	0.187	4.75	0.227	5.77	0.195	4.95	5205-6011	23152-26740	8717	38776
B2375-187-S	SS 17-7											0.187	4.75	0.227	5.77	0.195	4.95	5205-6011	23152-26740	8717	38776
B2250-156	6150											0.156	3.96	0.202	5.13	0.165	4.19	3951-4564	17577-20301	6601	29364
B2250-156-S	SS 17-7						2.250	57.15	2 1/4	2.250	57.15	0.156	3.96	0.202	5.13	0.165	4.19	3951-4564	17577-20301	6601	29364
B2375-156	6150	13/16	0.813	20.65	0.813	20.65	2.375	60.33	2 3/8	2.375	60.33	0.156	3.96	0.205	5.21	0.166	4.22	3760-4343	16725-19318	6278	27927
B2375-156-S	SS 17-7											0.156	3.96	0.205	5.21	0.166	4.22	3760-4343	16725-19318	6278	27927
B3500-312	6150						3.500	88.90	3 1/2	3.500	88.90	0.312	7.92	0.346	8.79	0.319	8.10	9500-10474	42260-46592	15240	67794
B2750-187	6150	15/16	0.938	23.83	0.938	23.83	2.750	69.85	2 3/4	2.750	69.85	0.187	4.75	0.235	5.97	0.197	5.00	4717-5448	20981-24233	7893	35112
B2750-187-S	SS 17-7											0.187	4.75	0.235	5.97	0.197	5.00	4717-5448	20981-24233	7893	35112
B3500-219	6150	1 1/16	1.063	27.00	1.063	27.00	3.500	88.90	3 1/2	3.500	88.90	0.219	5.56	0.281	7.14	0.231	5.87	5999-6928	26684-30820	10057	44740
B4000-312	6150						4.000	101.60	4	4.000	101.60	0.312	7.92	0.372	9.45	0.324	8.23	12772-14081	56815-62639	20513	91249
B2437-250	6150	1 3/16	1.188	30.18	1.188	30.18	2.437	61.90	2 7/16	2.437	61.90	0.250	6.35	0.278	7.06	0.256	6.50	9165-10105	40771-44950	14700	65393
B2500-175-S	SS 17-7	1 1/4	1.250	31.75	1.250	31.75	2.500	63.50	2 1/2	2.500	63.50	0.175	4.45	0.219	5.56	0.197	5.00	347-401	1545-1784	517	2298
B4000-3120	6150	1 5/16	1.313	33.35	1.313	33.35	4.000	101.60	4	4.000	101.60	0.312	7.92	0.382	9.70	0.326	8.28	14992-16528	66689-73524	24090	107161
B4000-437	6150											0.437	11.10	0.477	12.12	0.445	11.30	23420-25821	104183-114861	37673	167583
B2750-1320	6150	1 13/32	1.407	35.74	1.407	35.74	2.750	69.85	2 3/4	2.750	69.85	0.132	3.35	0.196	4.98	0.145	3.68	2554-2950	11363-13124	4243	18874
B3875-250	6150						3.875	98.43	3 7/8	3.875	98.43	0.250	6.35	0.312	7.92	0.262	6.65	7376-8132	32812-36176	11817	52568
B3000-1430	6150	1 17/32	1.532	38.91	1.532	38.91	3.000	76.20	3	3.000	76.20	0.143	3.63	0.213	5.41	0.157	3.99	2985-3448	13278-15336	4970	22107
B2750-219	6150						2.750	69.85	2 3/4	2.750	69.85	0.219	5.56	0.255	6.48	0.226	5.74	6793-7846	30216-34900	11398	50703
B3250-250	6150	1 9/16	1.563	39.70	1.563	39.70	3.250	82.55	3 1/4	3.250	82.55	0.250	6.35	0.305	7.75	0.261	6.63	10103-11138	44942-49548	16211	72114
B4750-437	6150	1 11/16	1.688	42.88	1.688	42.88	4.750	120.65	4 3/4	4.750	120.65	0.437	11.10	0.497	12.62	0.449	11.40	25152-27730	111886-123354	40463	179997
B5000-250	6150	1 15/16	1.938	49.23	1.938	49.23	5.000	127.00	5	5.000	127.00	0.250	6.35	0.333	8.46	0.267	6.78	6037-6656	26854-29607	9659	42966
B3750-281	6150						3.750	95.25	3 3/4	3.750	95.25	0.281	7.14	0.360	9.14	0.297	7.54	16159-17815	71881-79249	25971	115528
B4500-250	6150	2 5/16	2.313	58.75	2.313	58.75	4.500	114.30	4 1/2	4.500	114.30	0.250	6.35	0.360	9.14	0.272	6.91	11117-12256	49453-54522	17846	79384
B5000-2500	6150											0.250	6.35	0.312	7.92	0.262	6.65	4994-5506	22215-24492	7978	35491
B5000-281	6150	2 9/16	2.563	65.10	2.563	65.10	5.000	127.00	5	5.000	127.00	0.281	7.14	0.387	9.83	0.302	7.67	12227-13480	54389-59964	19634	87340
B5250-394	6150						5.250	133.35	5 1/4	5.250	133.35	0.394	10.01	0.510	12.95	0.417	10.59				

CLOVER® DOME SPRING WASHERS

Stock Sizes in stainless steel and carbon steel

Clover® Dome spring washers are well suited for applications where a bellville washer or disc spring does not provide adequate deflection, or where the load obtained from a wave washer is not sufficient for the application. By combining washers in varying sequences, each size provides multiple load-carrying or deflection possibilities. These washers have had the set removed during the manufacturing process.

Material

Stainless Steel Type 17-7 PH - Chemistry per AMS 5529

Carbon Steel SAE 1070 to SAE 1074 (based on availability at time of manufacture).

Certificate of compliance available upon request.

Certificate of chemical analysis available at extra cost.

Finish:

Steel parts have oil finish. Stainless Steel parts have plain finish.

See page 312 for alternative finishes.

Load and Deflection

Typical load-deflection curves for four characteristic proportions of washers listed are shown in Figure 1 below. From them, loads at intermediate heights may be estimated. The nominal amount of dish or cone (h) is found by subtracting "t" from "H".

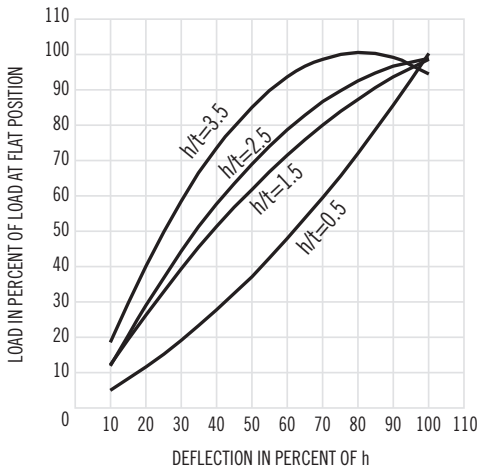
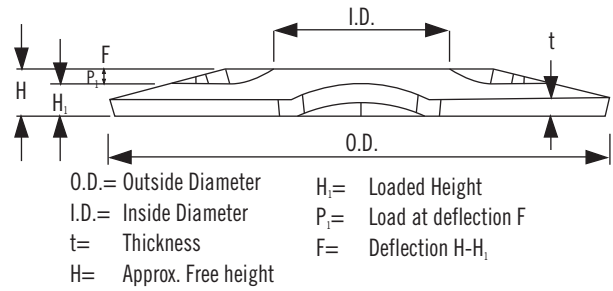


Figure 1

EXAMPLE: Using part BC-0709-015-S, estimate the load at 50% deflection. $h/t = .052 / .015 \sim 3.5$.

From Figure 1 above, using the curve for $h/t = 3.5$, the load at 50% of the deflection is approximately 85% of the load at flat position. From the table (see following page), the load at flat is 27 lbs. To calculate the load at 50%, $27 \text{ lbs} \times .85 = 22.95 \text{ lbs}$.

The typical curves in Figure 1 show deflections beyond 75%. The area beyond 75% deflection should be avoided due to the partial bottoming of the Clover® Dome and excessive stress concentrations above 75% deflection.

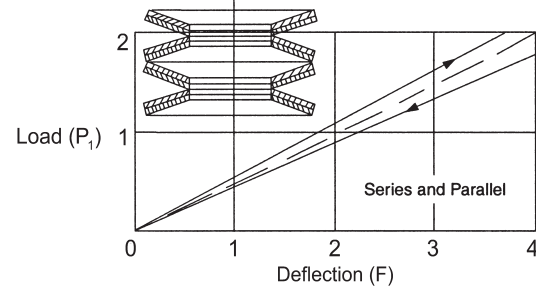
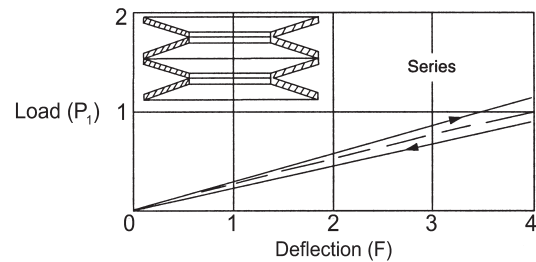
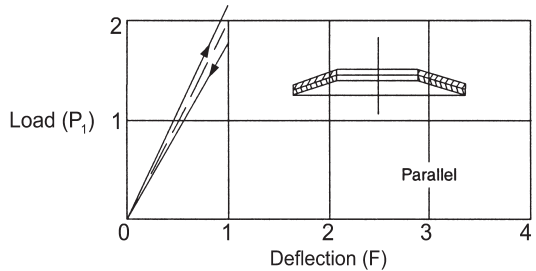
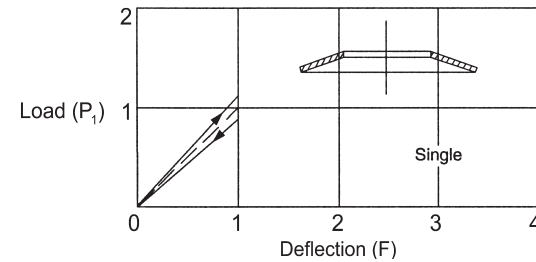


Stacked Clover® Dome Washers

Additional load of deflection can be obtained by stacking washers in series or in parallel. See charts below.

Contact our engineering department for tolerances.

Shown below are comparative force/deflection graphs by alternate methods of stacking.



US Patent #6,705,813. Patents pending outside USA.

CLOVER® DOME STAINLESS STEEL SPRING WASHERS

Catalog Number	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _i)		Load at H _i (P _i) (Min./Max.)		Ref. Load at Flat Position (P)	
	in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
BC0250-008-S	1/8	0.125	3.18	0.125	3.18	0.250	6.35	1/4	0.250	6.35	0.008	0.20	0.022	0.56	0.012	0.29	6.1 – 9.1	27.1 – 40.5	11	49
BC0250-012-S											0.012	0.30	0.026	0.66	0.016	0.39	17.6 – 26.3	78.3 – 117	34	151
BC0312-012-S	#6	0.138	3.51	0.143	3.63	0.312	7.92	5/16	0.313	7.95	0.012	0.30	0.032	0.81	0.017	0.43	18.3 – 27.5	81.4 – 122.4	23	102
BC0312-018-S											0.018	0.46	0.038	0.97	0.023	0.58	44.6 – 67	198 – 299	89	396
BC0343-014-S											0.014	0.36	0.034	0.86	0.019	0.48	23.9 – 35.9	106.3 – 159.7	35	156
BC0343-016-S	#8	0.164	4.17	0.169	4.29	0.343	8.71	11/32	0.344	8.74	0.016	0.41	0.036	0.91	0.021	0.53	26.7 – 40.1	118 – 179	52	231
BC0343-020-S											0.020	0.51	0.040	1.02	0.025	0.64	52.1 – 78.3	231 – 349	104	463
BC0375-010-S											0.010	0.25	0.031	0.79	0.015	0.39	10.8 – 16.4	48 – 73	10	44
BC0375-016-S											0.016	0.41	0.037	0.94	0.021	0.54	23.1 – 34.7	102 – 155	45	200
BC0375-018-S	#10	0.195	4.95	0.195	4.95	0.375	9.53	3/8	0.375	9.53	0.018	0.46	0.039	0.99	0.023	0.59	32.8 – 49.4	145 – 220	64	285
BC0375-020-S											0.020	0.51	0.041	1.04	0.025	0.64	45.1 – 67.8	200 – 302	90	400
BC0562-020-S						0.562	14.27	9/16	0.563	14.30	0.020	0.51	0.062	1.57	0.031	0.77	40.9 – 61.5	181 – 274	70	311
BC0562-030-S											0.030	0.76	0.072	1.83	0.041	1.03	138 – 208	613 – 926	272	1210
BC0437-018-S	#12	0.22	5.59	0.220	5.59	0.437	11.10	7/16	0.438	11.13	0.018	0.46	0.043	1.09	0.024	0.62	36 – 54	160.1 – 240.2	71	316
BC0437-022-S											0.022	0.56	0.047	1.19	0.028	0.72	81.7 – 122.6	363.4 – 545.4	163	725
BC0500-014-S											0.014	0.36	0.042	1.07	0.021	0.53	21.1 – 31.6	93.9 – 140.6	36	160
BC0500-018-S											0.018	0.46	0.046	1.17	0.025	0.64	28.7 – 43.1	127.7 – 191.7	50	222
BC0500-022-S	1/4	0.25	6.35	0.255	6.48	0.500	12.70	1/2	0.500	12.70	0.022	0.56	0.050	1.27	0.029	0.74	68.2 – 102.3	303.4 – 455.1	134	596
BC0500-026-S											0.026	0.66	0.054	1.37	0.033	0.84	89.4 – 134.1	397.7 – 596.5	179	796
BC0709-015-S											0.015	0.38	0.067	1.70	0.028	0.71	17.8 – 26.7	79.2 – 118.8	27	120
BC0709-020-S						0.709	18.01	23/32	0.719	18.26	0.020	0.51	0.072	1.83	0.033	0.84	33.9 – 50.9	151 – 226.4	56	249
BC0709-025-S											0.025	0.64	0.077	1.96	0.038	0.97	56.8 – 85.2	252.7 – 379	97	431
BC0625-018-S											0.018	0.46	0.054	1.37	0.027	0.69	25.3 – 38	112.5 – 169	44	196
BC0625-022-S				0.317	8.05	0.625	15.88	5/8	0.625	15.88	0.022	0.56	0.058	1.47	0.031	0.79	52.5 – 78.7	233.5 – 350.1	92	409
BC0625-030-S											0.030	0.76	0.066	1.68	0.039	0.99	140.7 – 211.5	626 – 940.6	277	1232
BC0625-033-S	5/16	0.313	7.95								0.033	0.84	0.069	1.75	0.042	1.07	152.3 – 228.4	677.5 – 1016	304	1352
BC0896-015-S											0.015	0.38	0.081	2.06	0.032	0.80	17.1 – 25.7	76.2 – 114.3	19	85
BC0896-020-S				0.320	8.13	0.896	22.76	29/32	0.906	23.02	0.020	0.51	0.086	2.18	0.037	0.93	31.9 – 47.8	141.9 – 212.8	47	209
BC0896-025-S											0.025	0.64	0.091	2.31	0.042	1.05	54.4 – 81.6	241.9 – 362.9	90	400
BC0750-022-S											0.022	0.56	0.065	1.65	0.033	0.83	46.2 – 69.3	205.5 – 308.3	79	351
BC0750-026-S											0.026	0.66	0.069	1.75	0.037	0.93	73.4 – 110.1	326.5 – 489.8	128	569
BC0750-030-S											0.030	0.76	0.073	1.85	0.041	1.04	103 – 154.5	458.2 – 687.3	202	899
BC0750-033-S	3/8	0.375	9.53	0.380	9.65	0.750	19.08	3/4	0.750	19.05	0.033	0.84	0.076	1.93	0.044	1.11	138 – 207	613.9 – 920.8	271	1205
BC0750-039-S											0.039	0.99	0.082	2.08	0.050	1.26	220.7 – 331	981.7 – 1472.4	440	1957
BC0750-043-S											0.043	1.09	0.086	2.18	0.054	1.37	297.6 – 446.4	1323.8 – 1985.7	594	2642
BC1070-020-S				0.400	10.16	1.069	27.15	1 7/64	1.100	28.00	0.020	0.51	0.097	2.46	0.039	1.00	31.9 – 47.8	141.8 – 212.7	47	209
BC1070-025-S											0.025	0.64	0.102	2.59	0.044	1.12	49.9 – 74.9	222.3 – 334.4	78	347
BC0875-030-S	7/16	0.438	11.13	0.442	11.23	0.875	22.25	7/8	0.875	22.23	0.030	0.76	0.080	2.03	0.043	1.08	92.1 – 138.2	409.7 – 614.7	161	716
BC0875-033-S											0.033	0.84	0.083	2.11	0.046	1.16	119 – 178.4	529.3 – 793.6	233	1036
BC1000-033-S											0.033	0.84	0.090	2.29	0.047	1.20	102.2 – 153.2	454.6 – 681.5	178	792
BC1000-037-S	1/2	0.5	12.70	0.505	12.83	1.000	25.43	1	1.000	25.40	0.037	0.94	0.094	2.39	0.051	1.30	151.1 – 226.7	672.1 – 1008.4	263	1170
BC1000-039-S											0.039	0.99	0.096	2.44	0.053	1.35	184.8 – 277.3	822 – 1233.5	362	1610
BC1000-043-S											0.043	1.09	0.100	2.54	0.057	1.45	254.2 – 381.2	1130.7 – 1695.7	498	2215

**OTHER DIMENSIONS AND CUSTOM DESIGNS ARE AVAILABLE.
PLEASE CALL 1-800-345-7732 FOR ADDITIONAL INFORMATION.**



CLOVER® DOME CARBON STEEL SPRING WASHERS

Catalog Number	Free Fit over Rod Ø			Minimum I.D.		Maximum O.D.		Free Fit in Hole Ø			Stock Thickness (t)		Free Height (H) Approximate		Loaded Height (H _i)		Load at H _i (P _i) (Min./Max.)		Ref. Load at Flat Position (P)	
	in	in	mm	in	mm	in	mm	in	in	mm	in	mm	in	mm	in	mm	lb	N	lb	N
	BC0250-008-CA	0.110	0.110	2.79	0.118	3.00	0.250	6.35	1/4	0.250	6.35	0.008	0.20	0.022	0.57	0.011	0.29	4.5 – 6.7	19.8 – 29.7	8
BC0250-012-CA	1/8	0.125	3.18	0.125	3.18						0.012	0.30	0.026	0.66	0.015	0.39	22.1 – 33.2	98.5 – 147.7	40	177
BC0312-012-CA	#6	0.138	3.51	0.143	3.63	0.312	7.92	5/16	0.313	7.95	0.012	0.30	0.031	0.78	0.017	0.43	21.9 – 32.8	97.2 – 145.9	36	159
BC0312-018-CA						0.320	8.13	21/64	0.328	8.20	0.018	0.46	0.031	0.80	0.023	0.58	36.9 – 55.3	164.1 – 246.2	57	252
BC0343-014-CA											0.014	0.35	0.031	0.80	0.019	0.48	27.4 – 41.1	121.9 – 182.8	59	262
BC0343-016-CA	#8	0.164	4.17	0.169	4.29	0.343	8.71	11/32	0.344	8.74	0.016	0.41	0.032	0.81	0.021	0.53	36.2 – 54.4	161.2 – 241.8	72	319
BC0343-020-CA											0.020	0.51	0.033	0.84	0.025	0.64	40.3 – 60.4	179.1 – 268.6	78	348
BC0375-010-CA											0.010	0.25	0.031	0.80	0.015	0.38	11.3 – 17.0	50.4 – 75.6	13	59
BC0375-016-CA											0.016	0.41	0.032	0.82	0.021	0.54	37.2 – 55.7	165.3 – 247.9	83	368
BC0375-018-CA	#10	0.190	4.83	0.190	4.95	0.380	9.65	25/64	0.391	9.93	0.018	0.46	0.033	0.83	0.023	0.59	40.0 – 60.0	177.8 – 266.7	68	303
BC0375-020-CA											0.020	0.51	0.032	0.82	0.025	0.64	54.0 – 80.9	240.0 – 360.0	67	296
BC0562-020-CA						0.562	14.27	9/16	0.563	14.30	0.020	0.51	0.056	1.42	0.030	0.77	34.1 – 51.2	151.9 – 227.9	58	259
BC0562-030-CA											0.030	0.76	0.060	1.52	0.041	1.03	120.4 – 180.6	535.6 – 803.4	300	1334
BC0437-018-CA	#12	0.216	5.49	0.220	5.59	0.437	11.10	7/16	0.438	11.13	0.018	0.45	0.043	1.08	0.024	0.62	44.6 – 66.9	198.3 – 297.4	73	324
BC0437-022-CA											0.022	0.55	0.046	1.17	0.028	0.72	78.5 – 117.7	349.1 – 523.7	115	510
BC0500-014-CA											0.014	0.35	0.042	1.07	0.021	0.53	20.3 – 30.5	90.5 – 135.7	55	245
BC0500-018-CA											0.018	0.45	0.046	1.16	0.025	0.64	39.7 – 59.5	176.6 – 264.9	81	358
BC0500-022-CA	1/4	0.250	6.35	0.255	6.48	0.502	12.75	33/64	0.516	13.11	0.022	0.55	0.049	1.25	0.029	0.74	73.6 – 110.4	327.3 – 491.0	148	660
BC0500-026-CA											0.026	0.65	0.053	1.34	0.033	0.84	105.0 – 157.5	467.0 – 700.5	156	693
BC0709-015-CA											0.015	0.38	0.067	1.70	0.028	0.71	205.5 – 308.2	914.1 – 1371.1	463	2060
BC0709-020-CA						0.719	18.26	47/64	0.735	18.67	0.020	0.51	0.071	1.80	0.033	0.84	25.2 – 37.8	112.2 – 168.2	88	392
BC0709-025-CA											0.025	0.64	0.075	1.90	0.038	0.96	98.0 – 147.1	436.1 – 654.1	454	2021
BC0625-018-CA											0.018	0.45	0.054	1.36	0.027	0.69	31.5 – 47.2	140.1 – 210.1	95	422
BC0625-022-CA						0.630	16.00	41/64	0.641	16.28	0.022	0.55	0.057	1.45	0.031	0.79	56.4 – 84.6	250.8 – 376.1	168	746
BC0625-030-CA											0.030	0.75	0.064	1.63	0.039	0.99	133.7 – 200.5	594.6 – 891.9	291	1295
BC0625-033-CA	5/16	0.313	7.95	0.317	8.05						0.033	0.85	0.068	1.72	0.042	1.07	175.0 – 262.5	778.4 – 1167.5	364	1619
BC0896-015-CA											0.015	0.38	0.084	2.13	0.031	0.80	15.3 – 23.0	68.1 – 102.2	39	172
BC0896-020-CA						0.905	22.99	29/32	0.906	23.02	0.020	0.51	0.089	2.26	0.037	0.94	26.5 – 39.8	118.0 – 176.9	77	343
BC0896-025-CA											0.025	0.64	0.093	2.36	0.042	1.07	54.1 – 81.2	240.8 – 361.2	313	1391
BC0750-022-CA											0.022	0.55	0.065	1.64	0.033	0.83	56.9 – 85.4	253.3 – 380.0	161	716
BC0750-026-CA											0.026	0.65	0.068	1.73	0.050	1.26	61.1 – 91.7	271.9 – 407.9	187	834
BC0750-030-CA											0.030	0.75	0.072	1.82	0.041	1.04	122.3 – 183.5	544.2 – 816.3	287	1275
BC0750-033-CA	3/8	0.375	9.53	0.380	9.65	0.760	19.30	49/64	0.766	19.46	0.033	0.85	0.075	1.91	0.044	1.11	175.9 – 263.9	782.5 – 1173.7	412	1834
BC0750-039-CA											0.039	1.00	0.081	2.05	0.050	1.26	183.4 – 275.1	815.7 – 1223.5	514	2286
BC0750-043-CA											0.043	1.10	0.084	2.14	0.054	1.37	328.8 – 493.3	1462.8 – 2194.2	739	3286
BC1070-020-CA				0.400	10.16	1.069	27.15	1 7/64	1.110	28.19	0.020	0.51	0.099	2.51	0.040	1.01	28.7 – 43.0	127.6 – 191.4	84	373
BC1070-025-CA											0.025	0.64	0.100	2.54	0.044	1.12	41.0 – 61.5	182.5 – 273.7	249	1109
BC0875-030-CA	7/16	0.438	11.13	0.442	11.23	0.879	22.33	57/64	0.891	22.63	0.030	0.75	0.080	2.02	0.043	1.08	110.1 – 165.2	489.8 – 734.7	260	1157
BC0875-033-CA											0.033	0.85	0.083	2.11	0.046	1.16	132.7 – 199.0	590.2 – 885.3	237	1055
BC1000-033-CA											0.033	0.85	0.091	2.30	0.047	1.20	131.0 – 196.5	582.7 – 874.0	384	1709
BC1000-037-CA	1/2	0.500	12.70	0.505	12.83	1.005	25.53	1 1/64	1.016	25.80	0.037	0.95	0.094	2.39	0.051	1.30	164.8 – 247.2	733.1 – 1099.7	397	1766
BC1000-039-CA											0.039	1.00	0.096	2.43	0.050	1.26	214.1 – 321.2	952.5 – 1428.7	485	2158
BC1000-043-CA											0.043	1.10	0.099	2.52	0.057	1.45	186.0 – 279.0	827.3 – 1241.0	578	2570

**OTHER DIMENSIONS AND CUSTOM DESIGNS ARE AVAILABLE.
PLEASE CALL 1-800-345-7732 FOR ADDITIONAL INFORMATION.**



Blank lined area for notes.

**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
COMPRESSION SPRINGS. SEE PAGE 48.**

METRIC DISC SPRING WASHERS

Stock sizes in high carbon, chrome vanadium, and stainless steel

Manufactured to DIN2093 specifications, and are suitable for general purpose use. These items are manufactured under strict quality control to meet the physical dimensions listed in the following tables (pages 191-195). Our SPEC disc spring washers are ideal for general purpose applications where a tight load tolerance is not required. These parts have been set out to minimize height loss after compression.

Stacked disc springs

Additional load or deflection can be obtained by stacking disc springs in series or in parallel. See charts below.

Material

Carbon Steel per C1074-1075 or Chrome Vanadium per SAE 6150

(By thickness per DIN2093 Requirements)

Stainless Steel Type 17-7 PH

Finish:

Steel parts have oil finish. Stainless Steel parts have plain finish.

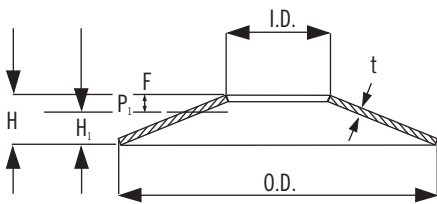
See page 316 for alternative finishes.

Tolerances

Diameter: I.D. and O.D. shown on pages 191-195 are minimum and maximum dimensions, respectively. For manufacturing tolerances, please contact our Engineering Department at 1-800-872-7732.

Load: Values shown on pages 191-195 are Nominal values. Loads are per DIN2093 specifications. For applications that require tight load tolerances, please contact our Engineering Department at the above number for feasibility.

Check our value-add services such as shot peening, and others, on page 312.



O.D.= Outside Diameter

I.D.= Inside Diameter

t= Thickness

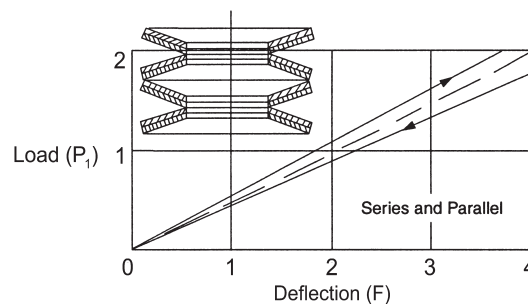
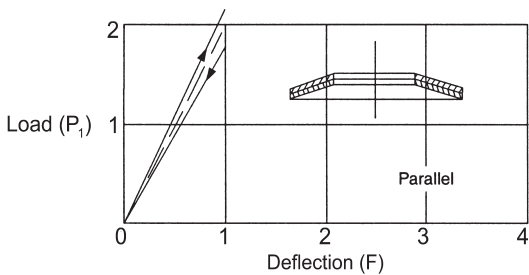
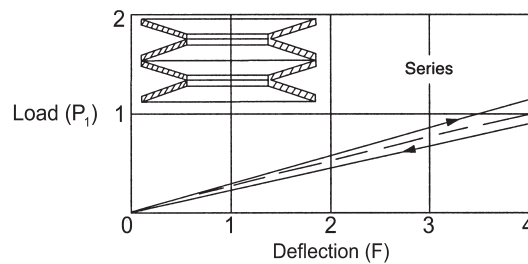
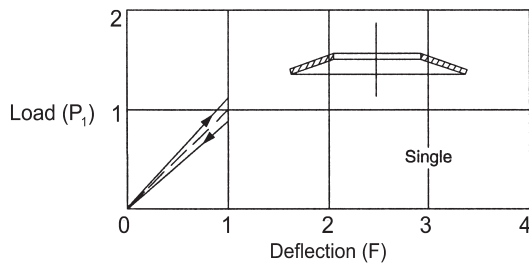
H= Approx. Free height

H₁= Loaded Height

P₁= Load at deflection F (Reference only)

F= Deflection H-H₁

Shown below are the comparative force/deflection graphs for the alternative methods of stacking.



METRIC DISC SPRING WASHERS – STAINLESS STEEL

Catalog Number*	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H _L)		Load at H _L (P _L) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
	BD008-030-0042-S	0.165	4.20	0.315	8.00	0.0118	0.30	0.020	0.50	0.014	0.35	18.9
BD008-040-0042-S	0.165	4.20	0.315	8.00	0.0157	0.40	0.024	0.60	0.018	0.45	51.0	227
BD010-040-0052-S	0.205	5.20	0.394	10.00	0.0157	0.40	0.026	0.65	0.018	0.46	35.3	157
BD010-050-0052-S	0.205	5.20	0.394	10.00	0.0197	0.50	0.030	0.75	0.022	0.56	78.9	351
BD012-050-0042-S	0.165	4.20	0.472	12.00	0.0197	0.50	0.031	0.80	0.022	0.57	49.5	220
BD012-050-0062-S	0.244	6.20	0.472	12.00	0.0197	0.50	0.033	0.85	0.023	0.59	67.7	301
BD013-050-0062-S	0.244	6.20	0.492	12.50	0.0197	0.50	0.033	0.85	0.021	0.53	80.9	360
BD013-070-0062-S	0.244	6.20	0.492	12.50	0.0276	0.70	0.039	1.00	0.031	0.80	143.0	636
BD014-080-0072-S	0.283	7.20	0.551	14.00	0.0315	0.80	0.043	1.10	0.034	0.87	165.2	735
BD015-080-0082-S	0.323	8.20	0.591	15.00	0.0315	0.80	0.049	1.25	0.036	0.91	231.3	1029
BD016-060-0082-S	0.323	8.20	0.630	16.00	0.0236	0.60	0.041	1.05	0.025	0.64	112.0	498
BD016-070-0082-S	0.323	8.20	0.630	16.00	0.0276	0.70	0.045	1.15	0.032	0.81	154.9	689
BD016-090-0082-S	0.323	8.20	0.630	16.00	0.0354	0.90	0.049	1.25	0.039	1.00	232.0	1032
BD018-080-0062-S	0.244	6.20	0.709	18.00	0.0315	0.80	0.051	1.30	0.036	0.92	176.0	783
BD018-100-0092-S	0.362	9.20	0.709	18.00	0.0394	1.00	0.055	1.40	0.043	1.10	260.1	1157
BD020-080-0102-S	0.402	10.20	0.787	20.00	0.0315	0.80	0.053	1.35	0.037	0.94	155.1	690
BD020-090-0102-S	0.402	10.20	0.787	20.00	0.0354	0.90	0.057	1.45	0.041	1.03	254.9	1134
BD020-100-0102-S	0.402	10.20	0.787	20.00	0.0394	1.00	0.061	1.55	0.046	1.16	330.0	1468
BD020-110-0102-S	0.402	10.20	0.787	20.00	0.0433	1.10	0.061	1.55	0.048	1.21	315.4	1403
BD025-090-0122-S	0.480	12.20	0.984	25.00	0.0354	0.90	0.063	1.60	0.042	1.07	178.7	795
BD025-150-0122-S	0.480	12.20	0.984	25.00	0.0591	1.50	0.081	2.05	0.067	1.69	629.0	2798
BD028-100-0142-S	0.559	14.20	1.102	28.00	0.0394	1.00	0.071	1.80	0.042	1.07	301.9	1343
BD028-150-0142-S	0.559	14.20	1.102	28.00	0.0591	1.50	0.085	2.15	0.067	1.69	654.8	2913
BD032-175-0163-S	0.642	16.30	1.240	31.50	0.0689	1.75	0.091	2.30	0.074	1.89	657.8	2926
BD032-200-0163-S	0.642	16.30	1.240	31.50	0.0787	2.00	0.108	2.75	0.090	2.29	1247.0	5547
BD036-200-0183-S	0.720	18.30	1.398	35.50	0.0787	2.00	0.110	2.80	0.088	2.23	1183.8	5266
BD040-150-0204-S	0.803	20.40	1.575	40.00	0.0591	1.50	0.096	2.45	0.069	1.74	459.9	2046
BD040-200-0204-S	0.803	20.40	1.575	40.00	0.0787	2.00	0.11	2.80	0.087	2.20	885.7	3940
BD045-175-0224-S	0.882	22.40	1.772	45.00	0.0689	1.75	0.110	2.80	0.079	2.01	624.9	2780
BD045-250-0224-S	0.882	22.40	1.772	45.00	0.0984	2.50	0.130	3.30	0.106	2.70	1335.3	5940
BD050-200-0254-S	1.000	25.40	1.969	50.00	0.0787	2.00	0.124	3.15	0.090	2.29	834.0	3710
BD050-250-0254-S	1.000	25.40	1.969	50.00	0.0984	2.50	0.138	3.50	0.108	2.75	1380.5	6141
BD056-200-0285-S	1.122	28.50	2.205	56.00	0.0787	2.00	0.134	3.40	0.093	2.35	829.5	3690
BD056-300-0285-S	1.122	28.50	2.205	56.00	0.1181	3.00	0.159	4.05	0.128	3.26	1987.7	8842
BD063-250-0310-S	1.220	31.00	2.480	63.00	0.0984	2.50	0.156	3.95	0.113	2.86	1271.0	5654
BD080-300-0410-S	1.614	41.00	3.150	80.00	0.1181	3.00	0.193	4.90	0.137	3.47	1845.6	8210

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

* Part numbers with the suffix "S" and "S1" are stainless steel.

METRIC DISC SPRING WASHERS – CARBON STEEL

Catalog Number	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H _L)		Load at H _L (P _L) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
	BD006-030	0.126	3.20	0.236	6.00	0.0118	0.30	0.018	0.45	0.013	0.34	26.8
BD008-020-0032	0.126	3.20	0.315	8.00	0.0079	0.20	0.016	0.40	0.010	0.25	5.8	26
BD008-030-0032	0.126	3.20	0.315	8.00	0.0118	0.30	0.022	0.55	0.014	0.36	23.4	104
BD008-040-0032	0.126	3.20	0.315	8.00	0.0157	0.40	0.024	0.60	0.018	0.45	41.6	185
BD008-050-0032	0.126	3.20	0.315	8.00	0.0197	0.50	0.028	0.70	0.022	0.55	80.3	357
BD008-020	0.165	4.20	0.315	8.00	0.0079	0.20	0.018	0.45	0.010	0.26	8.8	39
BD008-030	0.165	4.20	0.315	8.00	0.0118	0.30	0.022	0.55	0.014	0.36	26.8	119
BD008-040	0.165	4.20	0.315	8.00	0.0157	0.40	0.024	0.60	0.018	0.45	47.2	210
BD010-030	0.126	3.20	0.394	10.00	0.0118	0.30	0.026	0.65	0.015	0.39	22.0	98
BD010-040-0032	0.126	3.20	0.394	10.00	0.0157	0.40	0.028	0.70	0.019	0.48	40.2	179
BD010-050-0032	0.126	3.20	0.394	10.00	0.0197	0.50	0.030	0.75	0.022	0.56	62.5	278
BD010-040-0042	0.165	4.20	0.394	10.00	0.0157	0.40	0.028	0.70	0.019	0.48	42.5	189
BD010-050-0042	0.165	4.20	0.394	10.00	0.0197	0.50	0.030	0.75	0.022	0.56	66.1	294
BD010-060-0042	0.165	4.20	0.394	10.00	0.0236	0.60	0.033	0.85	0.026	0.66	112.8	502
BD010-025	0.205	5.20	0.394	10.00	0.0098	0.25	0.022	0.55	0.013	0.33	13.0	58
BD010-040	0.205	5.20	0.394	10.00	0.0157	0.40	0.028	0.70	0.019	0.48	47.9	213
BD010-050	0.205	5.20	0.394	10.00	0.0197	0.50	0.030	0.75	0.022	0.56	74.0	329
BD012-040-0042	0.165	4.20	0.472	12.00	0.0157	0.40	0.031	0.80	0.020	0.50	40.0	178
BD012-050-0042	0.165	4.20	0.472	12.00	0.0197	0.50	0.033	0.85	0.023	0.59	63.8	284
BD012-060-0042	0.165	4.20	0.472	12.00	0.0236	0.60	0.039	1.00	0.028	0.70	125.0	556

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METRIC DISC SPRING WASHERS – CARBON STEEL

Catalog Number	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H _L)		Load at H _L (P _L) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
	BD012-050-0052	0.205	5.20	0.472	12.00	0.0197	0.50	0.035	0.90	0.024	0.60	78.5
BD012-060-0052	0.205	5.20	0.472	12.00	0.0236	0.60	0.037	0.95	0.027	0.69	113.7	506
BD012-050	0.244	6.20	0.472	12.00	0.0197	0.50	0.033	0.85	0.023	0.59	73.3	326
BD012-060	0.244	6.20	0.472	12.00	0.0236	0.60	0.037	0.95	0.027	0.69	123.9	551
BD013-050-0052	0.205	5.20	0.492	12.50	0.0197	0.50	0.033	0.85	0.023	0.59	61.1	272
BD013-035	0.244	6.20	0.492	12.50	0.0138	0.35	0.031	0.80	0.018	0.46	34.2	152
BD013-050	0.244	6.20	0.492	12.50	0.0197	0.50	0.033	0.85	0.023	0.59	65.4	291
BD013-070	0.244	6.20	0.492	12.50	0.0276	0.70	0.039	1.00	0.031	0.78	151.3	673
BD014-035	0.283	7.20	0.551	14.00	0.0138	0.35	0.031	0.80	0.018	0.46	27.7	123
BD014-050	0.283	7.20	0.551	14.00	0.0197	0.50	0.035	0.90	0.024	0.60	62.7	279
BD014-080	0.283	7.20	0.551	14.00	0.0315	0.80	0.043	1.10	0.034	0.87	182.8	813
BD015-040-0052	0.205	5.20	0.591	15.00	0.0157	0.40	0.037	0.95	0.021	0.54	39.3	175
BD015-050-0052	0.205	5.20	0.591	15.00	0.0197	0.50	0.039	1.00	0.025	0.63	62.5	278
BD015-060-0052	0.205	5.20	0.591	15.00	0.0236	0.60	0.041	1.05	0.028	0.71	91.5	407
BD015-070-0052	0.205	5.20	0.591	15.00	0.0276	0.70	0.043	1.10	0.031	0.80	124.8	555
BD015-050-0062	0.244	6.20	0.591	15.00	0.0197	0.50	0.039	1.00	0.025	0.63	65.0	289
BD015-060-0062	0.244	6.20	0.591	15.00	0.0236	0.60	0.041	1.05	0.028	0.71	95.1	423
BD015-070-0062	0.244	6.20	0.591	15.00	0.0276	0.70	0.043	1.10	0.031	0.80	129.7	577
BD015-050	0.323	8.20	0.591	15.00	0.0197	0.50	0.039	1.00	0.025	0.63	74.9	333
BD015-070	0.323	8.20	0.591	15.00	0.0276	0.70	0.043	1.10	0.031	0.80	149.5	665
BD015-080	0.323	8.20	0.591	15.00	0.0315	0.80	0.047	1.20	0.035	0.90	220.8	982
BD016-040	0.323	8.20	0.630	16.00	0.0157	0.40	0.035	0.90	0.021	0.53	34.8	155
BD016-060	0.323	8.20	0.630	16.00	0.0236	0.60	0.041	1.05	0.028	0.71	92.6	412
BD016-070	0.323	8.20	0.630	16.00	0.0276	0.70	0.045	1.15	0.032	0.81	143.2	637
BD016-080	0.323	8.20	0.630	16.00	0.0315	0.80	0.047	1.20	0.035	0.90	185.5	825
BD016-090	0.323	8.20	0.630	16.00	0.0354	0.90	0.049	1.25	0.039	0.99	224.8	1000
BD018-040-0062	0.244	6.20	0.709	18.00	0.0157	0.40	0.039	1.00	0.022	0.55	31.2	139
BD018-050-0062	0.244	6.20	0.709	18.00	0.0197	0.50	0.043	1.10	0.026	0.65	55.1	245
BD018-060-0062	0.244	6.20	0.709	18.00	0.0236	0.60	0.047	1.20	0.030	0.75	89.9	400
BD018-070-0062	0.244	6.20	0.709	18.00	0.0276	0.70	0.049	1.25	0.033	0.84	124.1	552
BD018-080-0062	0.244	6.20	0.709	18.00	0.0315	0.80	0.051	1.30	0.036	0.92	163.0	725
BD018-050-0082	0.323	8.20	0.709	18.00	0.0197	0.50	0.043	1.10	0.026	0.65	59.6	265
BD018-070-0082	0.323	8.20	0.709	18.00	0.0276	0.70	0.049	1.25	0.033	0.84	134.0	596
BD018-080-0082	0.323	8.20	0.709	18.00	0.0315	0.80	0.051	1.30	0.036	0.92	130.8	582
BD018-100-0082	0.323	8.20	0.709	18.00	0.0394	1.00	0.055	1.40	0.043	1.10	265.5	1181
BD018-045	0.362	9.20	0.709	18.00	0.0177	0.45	0.041	1.05	0.024	0.60	48.1	214
BD018-070	0.362	9.20	0.709	18.00	0.0276	0.70	0.047	1.20	0.033	0.83	128.6	572
BD018-100	0.362	9.20	0.709	18.00	0.0394	1.00	0.055	1.40	0.043	1.10	281.0	1250
BD020-050-0082	0.323	8.20	0.787	20.00	0.0197	0.50	0.045	1.15	0.026	0.66	51.9	231
BD020-060-0082	0.323	8.20	0.787	20.00	0.0236	0.60	0.051	1.30	0.030	0.77	92.6	412
BD020-070-0082	0.323	8.20	0.787	20.00	0.0276	0.70	0.053	1.35	0.034	0.86	127.7	568
BD020-080-0082	0.323	8.20	0.787	20.00	0.0315	0.80	0.055	1.40	0.037	0.95	168.8	751
BD020-090-0082	0.323	8.20	0.787	20.00	0.0354	0.90	0.057	1.45	0.041	1.04	214.2	953
BD020-100-0082	0.323	8.20	0.787	20.00	0.0394	1.00	0.061	1.55	0.045	1.14	290.9	1294
BD020-040-0102	0.402	10.20	0.787	20.00	0.0157	0.40	0.035	0.90	0.021	0.53	22.3	99
BD020-050	0.402	10.20	0.787	20.00	0.0197	0.50	0.045	1.15	0.026	0.66	57.1	254
BD020-080	0.402	10.20	0.787	20.00	0.0315	0.80	0.053	1.35	0.037	0.94	167.5	745
BD020-090	0.402	10.20	0.787	20.00	0.0354	0.90	0.057	1.45	0.041	1.04	235.8	1049
BD020-100	0.402	10.20	0.787	20.00	0.0394	1.00	0.061	1.55	0.045	1.14	320.1	1424
BD020-110	0.402	10.20	0.787	20.00	0.0433	1.10	0.061	1.55	0.048	1.21	343.9	1530
BD020-125	0.402	10.20	0.787	20.00	0.0492	1.25	0.069	1.75	0.054	1.38	556.4	2475
BD020-150	0.402	10.20	0.787	20.00	0.0591	1.50	0.071	1.80	0.062	1.58	566.5	2520
BD023-070-0082	0.323	8.20	0.906	23.00	0.0276	0.70	0.059	1.50	0.035	0.90	122.1	543
BD023-080-0082	0.323	8.20	0.906	23.00	0.0315	0.80	0.061	1.55	0.039	0.99	161.4	718
BD023-090-0082	0.323	8.20	0.906	23.00	0.0354	0.90	0.063	1.60	0.042	1.07	206.4	918
BD023-100-0082	0.323	8.20	0.906	23.00	0.0394	1.00	0.067	1.70	0.046	1.17	278.5	1239
BD023-090-0102	0.402	10.20	0.906	23.00	0.0354	0.90	0.065	1.65	0.043	1.09	237.6	1057
BD023-100-0102	0.402	10.20	0.906	23.00	0.0394	1.00	0.067	1.70	0.046	1.17	295.6	1315
BD023-125-0102	0.402	10.20	0.906	23.00	0.0492	1.25	0.075	1.90	0.056	1.41	458.1	2038
BD023-060	0.441	11.20	0.906	23.00	0.0236	0.60	0.055	1.40	0.031	0.80	95.8	426
BD023-080	0.441	11.20	0.906	23.00	0.0315	0.80	0.057	1.45	0.038	0.96	159.6	710
BD023-125	0.441	11.20	0.906	23.00	0.0492	1.25	0.069	1.75	0.054	1.38	438.4	1950
BD023-100-0122	0.480	12.20	0.906	23.00	0.0394	1.00	0.063	1.60	0.045	1.15	273.6	1217
BD023-125-0122	0.480	12.20	0.906	23.00	0.0492	1.25	0.073	1.85	0.055	1.40	523.8	2330



METRIC DISC SPRING WASHERS – CARBON STEEL

Catalog Number	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H _L)		Load at H _L (P _L) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
BD023-150-0122	0.480	12.20	0.906	23.00	0.0591	1.50	0.079	2.00	0.064	1.63	740.7	3295
BD025-100-0102	0.402	10.20	0.984	25.00	0.0394	1.00	0.069	1.75	0.047	1.19	263.2	1171
BD025-070	0.480	12.20	0.984	25.00	0.0276	0.70	0.063	1.60	0.036	0.92	135.1	601
BD025-090	0.480	12.20	0.984	25.00	0.0354	0.90	0.063	1.60	0.042	1.07	195.1	868
BD025-100	0.480	12.20	0.984	25.00	0.0394	1.00	0.071	1.80	0.047	1.20	305.3	1358
BD025-125	0.480	12.20	0.984	25.00	0.0492	1.25	0.077	1.95	0.056	1.42	497.5	2213
BD025-150	0.480	12.20	0.984	25.00	0.0591	1.50	0.081	2.05	0.065	1.64	654.2	2910
BD028-080-0102	0.402	10.20	1.102	28.00	0.0315	0.80	0.069	1.75	0.041	1.04	148.6	661
BD028-100-0102	0.402	10.20	1.102	28.00	0.0394	1.00	0.075	1.90	0.048	1.23	253.8	1129
BD028-125-0102	0.402	10.20	1.102	28.00	0.0492	1.25	0.081	2.05	0.057	1.45	416.3	1852
BD028-150-0102	0.402	10.20	1.102	28.00	0.0591	1.50	0.089	2.25	0.066	1.67	611.7	2721
BD028-100-0122	0.480	12.20	1.102	28.00	0.0394	1.00	0.077	1.95	0.049	1.24	284.8	1267
BD028-125-0122	0.480	12.20	1.102	28.00	0.0492	1.25	0.083	2.10	0.057	1.46	467.8	2081
BD028-150-0122	0.480	12.20	1.102	28.00	0.0591	1.50	0.089	2.25	0.067	1.69	691.3	3075
BD028-080	0.559	14.20	1.102	28.00	0.0315	0.80	0.071	1.80	0.041	1.05	180.1	801
BD028-100	0.559	14.20	1.102	28.00	0.0394	1.00	0.071	1.80	0.047	1.20	247.7	1102
BD028-125	0.559	14.20	1.102	28.00	0.0492	1.25	0.083	2.10	0.057	1.46	503.1	2238
BD028-150	0.559	14.20	1.102	28.00	0.0591	1.50	0.085	2.15	0.065	1.66	640.7	2850
BD032-100-0122	0.480	12.20	1.240	31.50	0.0394	1.00	0.083	2.10	0.051	1.30	263.0	1170
BD032-125-0122	0.480	12.20	1.240	31.50	0.0492	1.25	0.087	2.20	0.059	1.50	406.9	1810
BD032-150-0122	0.480	12.20	1.240	31.50	0.0591	1.50	0.093	2.35	0.067	1.71	603.8	2686
BD032-080	0.642	16.30	1.240	31.50	0.0315	0.80	0.073	1.85	0.042	1.06	154.4	687
BD032-125	0.642	16.30	1.240	31.50	0.0492	1.25	0.085	2.15	0.058	1.48	429.8	1912
BD032-150	0.642	16.30	1.240	31.50	0.0591	1.50	0.094	2.40	0.068	1.73	725.7	3228
BD032-175	0.642	16.30	1.240	31.50	0.0689	1.75	0.096	2.45	0.076	1.92	876.7	3900
BD032-200	0.642	16.30	1.240	31.50	0.0787	2.00	0.108	2.75	0.086	2.19	1387.0	6170
BD034-100-0122	0.480	12.20	1.339	34.00	0.0394	1.00	0.089	2.25	0.052	1.31	263.5	1172
BD034-125-0122	0.480	12.20	1.339	34.00	0.0492	1.25	0.093	2.35	0.060	1.53	407.8	1814
BD034-150-0122	0.480	12.20	1.339	34.00	0.0591	1.50	0.098	2.50	0.069	1.75	611.2	2719
BD034-125-0143	0.563	14.30	1.339	34.00	0.0492	1.25	0.094	2.40	0.061	1.54	446.9	1988
BD034-150-0143	0.563	14.30	1.339	34.00	0.0591	1.50	0.100	2.55	0.069	1.76	670.4	2982
BD034-150	0.642	16.30	1.339	34.00	0.0591	1.50	0.100	2.55	0.069	1.76	708.8	3153
BD034-200	0.642	16.30	1.339	34.00	0.0787	2.00	0.112	2.85	0.087	2.21	1299.1	5779
BD036-090	0.720	18.30	1.398	35.50	0.0354	0.90	0.081	2.05	0.047	1.19	186.8	831
BD036-125	0.720	18.30	1.398	35.50	0.0492	1.25	0.089	2.25	0.059	1.50	382.2	1700
BD036-200	0.720	18.30	1.398	35.50	0.0787	2.00	0.110	2.80	0.087	2.20	1166.7	5190
BD040-125-0142	0.559	14.20	1.575	40.00	0.0492	1.25	0.104	2.65	0.063	1.60	399.9	1779
BD040-150-0142	0.559	14.20	1.575	40.00	0.0591	1.50	0.108	2.75	0.071	1.81	571.9	2544
BD040-200-0142	0.559	14.20	1.575	40.00	0.0787	2.00	0.120	3.05	0.089	2.26	1071.4	4766
BD040-150-0163	0.642	16.30	1.575	40.00	0.0591	1.50	0.110	2.80	0.072	1.83	617.8	2748
BD040-200-0163	0.642	16.30	1.575	40.00	0.0787	2.00	0.122	3.10	0.090	2.28	1161.3	5166
BD040-200-0183	0.720	18.30	1.575	40.00	0.0787	2.00	0.124	3.15	0.090	2.29	1270.8	5653
BD040-100	0.803	20.40	1.575	40.00	0.0394	1.00	0.091	2.30	0.052	1.33	228.4	1016
BD040-150	0.803	20.40	1.575	40.00	0.0591	1.50	0.104	2.65	0.070	1.79	589.0	2620
BD040-200	0.803	20.40	1.575	40.00	0.0787	2.00	0.122	3.10	0.090	2.28	1280.9	5698
BD040-225	0.803	20.40	1.575	40.00	0.0886	2.25	0.124	3.15	0.098	2.48	1460.5	6497
BD040-250	0.803	20.40	1.575	40.00	0.0984	2.50	0.136	3.45	0.108	2.74	2109.5	9384
BD045-125	0.882	22.40	1.772	45.00	0.0492	1.25	0.112	2.85	0.065	1.65	424.9	1890
BD045-175	0.882	22.40	1.772	45.00	0.0689	1.75	0.120	3.05	0.082	2.08	819.2	3644
BD045-250	0.882	22.40	1.772	45.00	0.0984	2.50	0.138	3.50	0.108	2.75	1735.5	7720
BD050-150-0183	0.720	18.30	1.969	50.00	0.0591	1.50	0.130	3.30	0.077	1.95	584.9	2602
BD050-200-0183	0.720	18.30	1.969	50.00	0.0787	2.00	0.138	3.50	0.094	2.38	1026.0	4564
BD050-250-0183	0.720	18.30	1.969	50.00	0.0984	2.50	0.161	4.10	0.114	2.90	2090.6	9300
BD050-300-0183	0.720	18.30	1.969	50.00	0.1181	3.00	0.173	4.40	0.132	3.35	3072.1	13666
BD050-200-0204	0.803	20.40	1.969	50.00	0.0787	2.00	0.138	3.50	0.094	2.38	1053.2	4685
BD050-250-0204	0.803	20.40	1.969	50.00	0.0984	2.50	0.152	3.85	0.112	2.84	1779.3	7915
BD050-200-0224	0.882	22.40	1.969	50.00	0.0787	2.00	0.142	3.60	0.094	2.40	1173.2	5219
BD050-250-0224	0.882	22.40	1.969	50.00	0.0984	2.50	0.154	3.90	0.112	2.85	1911.9	8505
BD050-125	1.000	25.40	1.969	50.00	0.0492	1.25	0.112	2.85	0.065	1.65	348.4	1550
BD050-150-0254	1.000	25.40	1.969	50.00	0.0591	1.50	0.122	3.10	0.075	1.90	564.7	2512
BD050-200	1.000	25.40	1.969	50.00	0.0787	2.00	0.134	3.40	0.093	2.35	1070.0	4760
BD050-250	1.000	25.40	1.969	50.00	0.0984	2.50	0.154	3.90	0.112	2.85	2036.2	9058
BD050-300	1.000	25.40	1.969	50.00	0.1181	3.00	0.161	4.10	0.129	3.28	2690.9	11970
BD056-150	1.122	28.50	2.205	56.00	0.0591	1.50	0.136	3.45	0.078	1.99	589.0	2620



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

METRIC DISC SPRING WASHERS – CARBON STEEL

Catalog Number	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H _L)		Load at H _L (P _L) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
	BD056-200	1.122	28.50	2.205	56.00	0.0787	2.00	0.142	3.60	0.094	2.40	998.1
BD056-250-0285	1.122	28.50	2.205	56.00	0.0984	2.50	0.165	4.20	0.115	2.93	2018.3	8978
BD056-300	1.122	28.50	2.205	56.00	0.1181	3.00	0.169	4.30	0.131	3.33	2558.7	11382
BD060-200-0205	0.807	20.50	2.362	60.00	0.0787	2.00	0.161	4.10	0.099	2.52	1062.0	4724
BD060-250-0205	0.807	20.50	2.362	60.00	0.0984	2.50	0.169	4.30	0.116	2.95	1639.5	7293
BD060-300-0205	0.807	20.50	2.362	60.00	0.1181	3.00	0.185	4.70	0.135	3.42	2599.4	11563
BD060-250-0255	1.004	25.50	2.362	60.00	0.0984	2.50	0.183	4.65	0.117	2.97	1834.1	8159
BD060-300-0255	1.004	25.50	2.362	60.00	0.1181	3.00	0.183	4.65	0.134	3.41	2644.1	11762
BD060-250	1.201	30.50	2.362	60.00	0.0984	2.50	0.169	4.30	0.116	2.95	1874.2	8337
BD060-250-0305	1.201	30.50	2.362	60.00	0.0984	2.50	0.177	4.50	0.118	3.00	2120.3	9432
BD060-275-0305	1.201	30.50	2.362	60.00	0.1083	2.75	0.187	4.75	0.128	3.25	2777.6	12356
BD060-300	1.201	30.50	2.362	60.00	0.1181	3.00	0.185	4.70	0.135	3.42	2971.6	13219
BD060-350	1.201	30.50	2.362	60.00	0.1378	3.50	0.197	5.00	0.153	3.88	4078.5	18143
BD063-180	1.220	31.00	2.480	63.00	0.0709	1.80	0.163	4.15	0.094	2.39	953.2	4240
BD063-250	1.220	31.00	2.480	63.00	0.0984	2.50	0.167	4.25	0.116	2.94	1614.1	7180
BD063-300	1.220	31.00	2.480	63.00	0.1181	3.00	0.189	4.80	0.136	3.45	2816.7	12530
BD063-350	1.220	31.00	2.480	63.00	0.1378	3.50	0.193	4.90	0.152	3.85	3372.0	15000
BD070-200-0255	1.004	25.50	2.756	70.00	0.0787	2.00	0.177	4.50	0.104	2.63	997.0	4435
BD070-250-0305	1.201	30.50	2.756	70.00	0.0984	2.50	0.193	4.90	0.122	3.10	1804.2	8026
BD070-300-0305	1.201	30.50	2.756	70.00	0.1181	3.00	0.201	5.10	0.139	3.52	2567.2	11420
BD070-300	1.398	35.50	2.756	70.00	0.1181	3.00	0.201	5.10	0.139	3.52	2760.8	12281
BD070-350-0355	1.398	35.50	2.756	70.00	0.1378	3.50	0.209	5.30	0.139	3.95	3636.6	16177
BD070-400	1.398	35.50	2.756	70.00	0.1575	4.00	0.228	5.80	0.175	4.45	5375.0	23910
BD070-400-0405	1.594	40.50	2.756	70.00	0.1575	4.00	0.220	5.60	0.173	4.40	5246.4	23338
BD070-500-0405	1.594	40.50	2.756	70.00	0.1969	5.00	0.244	6.20	0.209	5.30	7565.2	33653
BD071-200	1.417	36.00	2.795	71.00	0.0787	2.00	0.181	4.60	0.104	2.65	1155.5	5140
BD071-250	1.417	36.00	2.795	71.00	0.0984	2.50	0.177	4.50	0.118	3.00	1512.9	6730
BD071-400	1.417	36.00	2.795	71.00	0.1575	4.00	0.220	5.60	0.173	4.40	4608.4	20500
BD080-250-0310	1.220	31.00	3.150	80.00	0.0984	2.50	0.209	5.30	0.126	3.20	1626.4	7235
BD080-300-0310	1.220	31.00	3.150	80.00	0.1181	3.00	0.217	5.50	0.143	3.63	2325.8	10346
BD080-400-0310	1.220	31.00	3.150	80.00	0.1575	4.00	0.240	6.10	0.178	4.52	4357.5	19384
BD080-300-0360	1.417	36.00	3.150	80.00	0.1181	3.00	0.224	5.70	0.144	3.67	2677.8	11912
BD080-400-0360	1.417	36.00	3.150	80.00	0.1575	4.00	0.244	6.20	0.179	4.55	4808.0	21388
BD080-225	1.614	41.00	3.150	80.00	0.0886	2.25	0.205	5.20	0.118	2.99	1485.9	6610
BD080-300	1.614	41.00	3.150	80.00	0.1181	3.00	0.209	5.30	0.141	3.58	2360.4	10500
BD080-400	1.614	41.00	3.150	80.00	0.1575	4.00	0.244	6.20	0.179	4.55	5139.2	22861
BD080-500	1.614	41.00	3.150	80.00	0.1969	5.00	0.264	6.70	0.213	5.42	7575.8	33700
BD090-250	1.811	46.00	3.543	90.00	0.0984	2.50	0.224	5.70	0.130	3.30	1726.5	7680
BD090-350	1.811	46.00	3.543	90.00	0.1378	3.50	0.236	6.00	0.163	4.13	3192.2	14200
BD090-500	1.811	46.00	3.543	90.00	0.1969	5.00	0.276	7.00	0.217	5.50	7058.7	31400
BD090-400-0410	1.614	41.00	3.937	100.00	0.1575	4.00	0.283	7.20	0.189	4.80	4550.0	20240
BD090-500-0410	1.614	41.00	3.937	100.00	0.1969	5.00	0.305	7.75	0.224	5.69	7270.9	32344
BD100-270	2.008	51.00	3.937	100.00	0.1063	2.70	0.244	6.20	0.141	3.58	1935.5	8610
BD100-350	2.008	51.00	3.937	100.00	0.1378	3.50	0.248	6.30	0.165	4.20	2944.9	13100
BD100-400	2.008	51.00	3.937	100.00	0.1575	4.00	0.276	7.00	0.187	4.75	4644.8	20662
BD100-500	2.008	51.00	3.937	100.00	0.1969	5.00	0.307	7.80	0.224	5.70	8164.5	36319
BD100-600	2.008	51.00	3.937	100.00	0.2362	6.00	0.323	8.20	0.258	6.55	10790.4	48000
BD112-300	2.244	57.00	4.409	112.00	0.1181	3.00	0.272	6.90	0.156	3.97	2356.6	10483
BD112-400	2.244	57.00	4.409	112.00	0.1575	4.00	0.283	7.20	0.192	4.87	3988.6	17743
BD112-600	2.244	57.00	4.409	112.00	0.2362	6.00	0.335	8.50	0.261	6.63	9819.9	43683
BD125-400-0410	1.614	41.00	4.921	125.00	0.1575	4.00	0.323	8.20	0.199	5.05	3897.1	17336
BD125-400-0510	2.008	51.00	4.921	125.00	0.1575	4.00	0.335	8.50	0.202	5.13	4452.4	19806
BD125-500-0510	2.008	51.00	4.921	125.00	0.1969	5.00	0.350	8.90	0.235	5.97	6890.6	30652
BD125-600-0510	2.008	51.00	4.921	125.00	0.2362	6.00	0.370	9.40	0.270	6.85	9954.8	44283
BD125-500-0061	2.402	61.00	4.921	125.00	0.1969	5.00	0.354	9.00	0.236	6.00	7631.3	33947
BD125-600-0061	2.402	61.00	4.921	125.00	0.2362	6.00	0.378	9.60	0.272	6.90	11396.0	50694
BD125-750-0061	2.402	61.00	4.921	125.00	0.2953	7.50	0.429	10.90	0.343	8.72	21024.6	93526
BD125-800-0610	2.402	61.00	4.921	125.00	0.3150	8.00	0.429	10.90	0.344	8.73	21036.1	93577
BD125-350	2.520	64.00	4.921	125.00	0.1378	3.50	0.315	8.00	0.182	4.63	3463.5	15407
BD125-500	2.520	64.00	4.921	125.00	0.1969	5.00	0.335	8.50	0.231	5.88	6719.7	29892
BD125-600-0640	2.520	64.00	4.921	125.00	0.2362	6.00	0.378	9.60	0.272	6.90	11724.4	52155
BD125-700-0640	2.520	64.00	4.921	125.00	0.2756	7.00	0.394	10.00	0.305	7.75	15110.2	67216
BD125-750	2.520	64.00	4.921	125.00	0.2953	7.50	0.417	10.60	0.341	8.65	19305.6	85879
BD125-800-0640	2.520	64.00	4.921	125.00	0.3150	8.00	0.417	10.60	0.341	8.65	19316.2	85926



METRIC DISC SPRING WASHERS – CARBON STEEL

Catalog Number*	Min I.D.		Max O.D.		Thickness (t)		Free Height (H)		Loaded Height (H ₁)		Load at H ₁ (P ₁) (Nominal)	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N
	BD125-600-0710	2.795	71.00	4.921	125.00	0.2362	6.00	0.366	9.30	0.271	6.88	11507.3
BD125-750-0710	2.795	71.00	4.921	125.00	0.2953	7.50	0.409	10.40	0.339	8.60	19208.5	85447
BD125-800-0710	2.795	71.00	4.921	125.00	0.3150	8.00	0.429	10.90	0.344	8.73	23371.1	103964
BD125-930-0710	2.795	71.00	4.921	125.00	0.3661	9.30	0.465	11.80	0.411	10.45	27887.8	124056
BD125-1000-0710	2.795	71.00	4.921	125.00	0.3937	10.00	0.465	11.80	0.411	10.45	27903.1	124124
BD140-380	2.835	72.00	5.512	140.00	0.1496	3.80	0.330	8.38	0.198	5.02	3863.4	17186
BD140-500	2.835	72.00	5.512	140.00	0.1969	5.00	0.354	9.00	0.236	6.00	6273.0	27905
BD140-750	2.835	72.00	5.512	140.00	0.2953	7.50	0.441	11.20	0.346	8.80	19153.9	85204
BD150-500-0610	2.402	61.00	5.906	150.00	0.1969	5.00	0.406	10.30	0.271	6.88	6974.2	31024
BD150-600-0610	2.402	61.00	5.906	150.00	0.2362	6.00	0.425	10.80	0.283	7.20	10224.1	45481
BD150-600	2.795	71.00	5.906	150.00	0.2362	6.00	0.425	10.80	0.283	7.20	10819.4	48129
BD150-750	2.795	71.00	5.906	150.00	0.2953	7.50	0.472	12.00	0.354	9.00	20187.5	89802
BD150-750-0810	3.189	81.00	5.906	150.00	0.2953	7.50	0.461	11.70	0.351	8.92	20115.8	89483
BD150-940-0810	3.189	81.00	5.906	150.00	0.3701	9.40	0.512	13.00	0.423	10.75	31258.7	139051
BD160-430	3.228	82.00	6.299	160.00	0.1693	4.30	0.390	9.90	0.224	5.70	4907.6	21831
BD160-600	3.228	82.00	6.299	160.00	0.2362	6.00	0.413	10.50	0.281	7.13	9213.4	40985
BD160-940	3.228	82.00	6.299	160.00	0.3701	9.40	0.531	13.50	0.428	10.88	31079.7	138255
BD180-480-0920	3.622	92.00	7.087	180.00	0.1890	4.80	0.433	11.00	0.250	6.35	5950.0	26468
BD180-600-0920	3.622	92.00	7.087	180.00	0.2362	6.00	0.437	11.10	0.286	7.27	8425.7	37481
BD180-940-0920	3.622	92.00	7.087	180.00	0.3701	9.40	0.551	14.00	0.433	11.00	28178.5	125349
BD200-760-0820	3.228	82.00	7.874	200.00	0.2992	7.60	0.559	14.20	0.376	9.55	17532.6	77992
BD200-960-0820	3.228	82.00	7.874	200.00	0.3780	9.60	0.610	15.50	0.448	11.38	29083.3	129374
BD200-1150-0820	3.228	82.00	7.874	200.00	0.4528	11.50	0.654	16.60	0.518	13.15	41056.8	182637
BD200-950-0920	3.622	92.00	7.874	200.00	0.3740	9.50	0.614	15.60	0.449	11.40	30935.2	137612
BD200-1140-0920	3.622	92.00	7.874	200.00	0.4488	11.40	0.661	16.80	0.520	13.20	44771.2	199160
BD200-1320-0920	3.622	92.00	7.874	200.00	0.5197	13.20	0.713	18.10	0.591	15.02	60039.8	267081
BD200-600	4.016	102.00	7.874	200.00	0.2362	6.00	0.492	12.50	0.285	7.25	8113.5	36092
BD200-750	4.016	102.00	7.874	200.00	0.2953	7.50	0.535	13.60	0.370	9.40	17160.3	76336
BD200-950	4.016	102.00	7.874	200.00	0.3740	9.50	0.614	15.60	0.449	11.40	32658.3	145277
BD200-1140	4.016	102.00	7.874	200.00	0.4488	11.40	0.637	16.19	0.514	13.05	41120.4	182920
BD200-1310	4.016	102.00	7.874	200.00	0.5157	13.10	0.717	18.20	0.593	15.05	64972.4	289023
BD200-1140-1120	4.409	112.00	7.874	200.00	0.4488	11.40	0.638	16.20	0.514	13.05	43998.5	195723
BD200-1310-1120	4.409	112.00	7.874	200.00	0.5157	13.10	0.689	17.50	0.586	14.88	57687.7	256618
BD200-1470-1120	4.409	112.00	7.874	200.00	0.5787	14.70	0.740	18.80	0.657	16.70	68549.2	304934
BD225-620	4.409	112.00	8.858	225.00	0.2441	6.20	0.535	13.60	0.326	8.27	10016.2	44556
BD225-750	4.409	112.00	8.858	225.00	0.2953	7.50	0.571	14.50	0.379	9.63	15895.6	70710
BD225-1130	4.409	112.00	8.858	225.00	0.4449	11.30	0.669	17.00	0.522	13.25	38423.5	170923
BD250-970-1020	4.016	102.00	9.843	250.00	0.3819	9.70	0.709	18.00	0.472	12.00	28396.3	126318
BD250-1130-1020	4.016	102.00	9.843	250.00	0.4449	11.30	0.748	19.00	0.541	13.75	41107.4	182862
BD250-650	5.000	127.00	9.843	250.00	0.2559	6.50	0.583	14.80	0.352	8.95	11338.5	50438
BD250-940	5.000	127.00	9.843	250.00	0.3701	9.40	0.669	17.00	0.463	11.75	26748.5	118988
BD250-1130-1030	5.000	127.00	9.843	250.00	0.4449	11.30	0.760	19.30	0.544	13.82	47363.3	210691
BD250-1310	5.000	127.00	9.843	250.00	0.5157	13.10	0.772	19.60	0.606	15.40	55906.0	248692
BD250-1510	5.000	127.00	9.843	250.00	0.5945	15.10	0.858	21.80	0.687	17.45	86055.0	382807

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SPEC



Area with horizontal lines for notes.

YOU HAVE A SPECIAL PROJECT? WE CAN CUSTOM DESIGN YOUR PART. SEE PAGE 310.



CURVED SPRING WASHERS

Precision engineered curved washers are available from ASRaymond in many stock sizes. These washers are made of finely tempered spring steel with some sizes being made of stainless steel. They come deburred and we have had all set removed during manufacture. Curved washers exert relatively light thrust loads and are often used to absorb axial end play.

The rate is approximately linear between 10% and 80% of available deflection.

Finish

Standard finish for high carbon steel is plain finish. Stainless steel is supplied in plain finish. On special order, high carbon steel washers may be mechanically plated, a process which substantially reduces the possibility of hydrogen embrittlement. Recommendations for specific applications will be made on request. See page 312 for alternative finishes.

Material

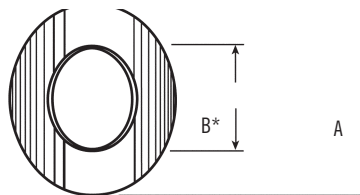
Stainless Steel (Parts with suffix "S")

Commercial - Type 301 per ASTM-A666 (chemical only).

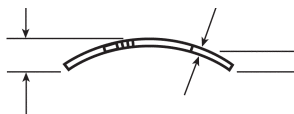
High Carbon Steel

Commercial - 1074-1095 per ASTM-A684

Certificate of compliance available upon request - Certificate of chemical analysis available at extra cost.



* This is the long axis of the hole in the free position, providing a free fit on the nominal size screw or rod.



- A = Outside Diameter (max)
- B = Inside Diameter
- t = Thickness
- H = Free Height (ref)
- H₁ = Loaded Height
- P₁ = Load at H₁

CURVED SPRINGS WASHERS																	
Catalog Number*	Free Fit Screw or Rod Size			Min B		Max A		Free fit in hole dia.		H (ref.)		H ₁		Load at H ₁ ± 20% (P ₁)		Thickness (t)	
	in	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm
U093-0045-S	3/32	0.093	2.36	0.100	2.54	0.215	5.46	7/32	5.54	0.028	0.71	0.015	0.38	1.5	6.67	0.0045	0.11
U093-0056-S	3/32	0.093	2.36	0.100	2.54	0.215	5.46	7/32	5.54	0.025	0.64	0.015	0.38	2.25	10.01	0.0056	0.14
U125-0040-S	5	0.125	3.18	0.135	3.43	0.245	6.22	1/4	6.30	0.049	1.24	0.026	0.66	1.0	4.45	0.004	0.10
U125-0060-S	5	0.125	3.18	0.135	3.43	0.245	6.22	1/4	6.30	0.034	0.86	0.020	0.51	2.00	8.90	0.006	0.15
U125-0050-S	5	0.125	3.18	0.135	3.43	0.270	6.86	9/32	6.94	0.038	0.97	0.020	0.51	1.5	6.67	0.005	0.13
U125-0075-S	5	0.125	3.18	0.135	3.43	0.270	6.86	9/32	6.94	0.029	0.74	0.018	0.46	3.0	13.34	0.0075	0.19
U125-0072-S	5	0.125	3.18	0.135	3.43	0.307	7.80	5/16	7.88	0.037	0.94	0.020	0.51	4.0	17.80	0.0072	0.18
U125-0088-S	5	0.125	3.18	0.135	3.43	0.307	7.80	5/16	7.88	0.034	0.86	0.020	0.51	6.0	26.7	0.0088	0.22
U138-0045-S	6	0.138	3.51	0.148	3.76	0.270	6.89	9/32	6.94	0.052	1.32	0.028	0.71	1.25	5.56	0.0045	0.11
U138-0070-S	6	0.138	3.51	0.148	3.76	0.270	6.89	9/32	6.94	0.035	0.89	0.022	0.56	2.5	11.12	0.007	0.18
U138-0082-S	6	0.138	3.51	0.148	3.76	0.322	8.18	11/32	8.26	0.037	0.94	0.021	0.53	5.0	22.2	0.0082	0.21
U138-0100-S	6	0.138	3.51	0.148	3.76	0.322	8.18	11/32	8.26	0.034	0.86	0.021	0.53	7.5	33.4	0.01	0.25
U164-0050-S	8	0.164	4.17	0.174	4.42	0.322	8.18	11/32	8.26	0.064	1.63	0.034	0.86	1.5	6.67	0.005	0.13
U164-0075-S	8	0.164	4.17	0.174	4.42	0.322	8.18	11/32	8.26	0.042	1.07	0.025	0.64	3.0	13.34	0.0075	0.19
U164-0090-S	8	0.164	4.17	0.174	4.42	0.370	9.40	3/8	9.48	0.044	1.12	0.024	0.61	6.0	26.7	0.009	0.23
U164-0113	8	0.164	4.17	0.174	4.42	0.370	9.40	3/8	9.48	0.039	0.99	0.024	0.61	9.0	40.0	0.0113	0.29
U164-0113-S	8	0.164	4.17	0.174	4.42	0.370	9.40	3/8	9.48	0.039	0.99	0.024	0.61	9.0	40.0	0.0113	0.29
U190-0050-S	10	0.190	4.83	0.203	5.16	0.322	8.18	11/32	8.26	0.053	1.35	0.026	0.66	1.12	4.98	0.005	0.13
U190-0065-S	10	0.190	4.83	0.203	5.16	0.322	8.18	11/32	8.26	0.043	1.09	0.025	0.64	1.75	7.79	0.0065	0.17
U190-0060-S	10	0.190	4.83	0.200	5.08	0.370	9.40	3/8	9.48	0.069	1.75	0.035	0.89	2.25	10.01	0.006	0.15
U190-0090-S	10	0.190	4.83	0.200	5.08	0.370	9.40	3/8	9.48	0.047	1.19	0.028	0.71	4.5	20.0	0.009	0.23
U190-0113	10	0.190	4.83	0.200	5.08	0.423	10.74	7/16	10.83	0.047	1.19	0.027	0.69	9.0	40.0	0.0113	0.29
U190-0113-S	10	0.190	4.83	0.200	5.08	0.423	10.74	7/16	10.83	0.047	1.19	0.027	0.69	9.0	40.0	0.0113	0.29
U190-0140	10	0.190	4.83	0.200	5.08	0.423	10.74	7/16	10.83	0.043	1.09	0.027	0.69	13.5	60.1	0.014	0.36
U216-0065-S	12	0.216	5.49	0.231	5.87	0.423	10.74	7/16	10.83	0.081	2.06	0.042	1.07	2.5	11.12	0.0065	0.17
U216-0100-S	12	0.216	5.49	0.231	5.87	0.423	10.74	7/16	10.83	0.053	1.35	0.032	0.81	5.0	22.2	0.01	0.25
U216-0120	12	0.216	5.49	0.231	5.87	0.490	12.45	1/2	12.53	0.057	1.45	0.032	0.81	10.0	44.5	0.012	0.30
U216-0150	12	0.216	5.49	0.231	5.87	0.490	12.45	1/2	12.53	0.050	1.27	0.032	0.81	15.0	66.7	0.015	0.38
U250-0065-S	1/4	0.250	6.35	0.269	6.83	0.423	10.74	7/16	10.83	0.070	1.78	0.037	0.94	1.75	7.78	0.0065	0.17
U250-0082-S	1/4	0.250	6.35	0.269	6.83	0.423	10.74	7/16	10.83	0.055	1.40	0.032	0.81	2.5	11.12	0.0082	0.21
U250-0075-S	1/4	0.250	6.35	0.265	6.73	0.490	12.45	1/2	12.53	0.091	2.31	0.046	1.17	3.5	15.57	0.0075	0.19
U250-0110	1/4	0.250	6.35	0.265	6.73	0.490	12.45	1/2	12.53	0.063	1.60	0.034	0.86	7.0	31.1	0.011	0.28
U250-0110-S	1/4	0.250	6.35	0.265	6.73	0.490	12.45	1/2	12.53	0.063	1.60	0.034	0.86	7.0	31.1	0.011	0.28
U250-0145	1/4	0.250	6.35	0.265	6.73	0.551	14.00	9/16	14.08	0.060	1.52	0.034	0.86	14.0	62.3	0.0145	0.37

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SPEC

* Numbers with the suffix "S" are stainless steel.



CURVED SPRINGS WASHERS

Catalog Number*	Free Fit Screw or Rod Size			Min B		Max A		Free fit in hole dia.		H (ref.)		H ₁		Load at H ₁ ± 20% (P ₁)		Thickness (t)	
	in	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	in	mm
	U250-0185	1/4	0.250	6.35	0.265	6.73	0.551	14.00	9/16	14.08	0.052	1.32	0.034	0.86	21.0	93.4	0.0185
U250-0185-S	1/4	0.250	6.35	0.265	6.73	0.551	14.00	9/16	14.08	0.052	1.32	0.034	0.86	21.0	93.4	0.0185	0.47
U281-0085-S	9/32	0.281	7.14	0.296	7.52	0.551	14.00	9/16	14.08	0.101	2.57	0.055	1.40	4.0	17.80	0.0085	0.22
U281-0120	9/32	0.281	7.14	0.296	7.52	0.551	14.00	9/16	14.08	0.070	1.78	0.038	0.97	8.0	35.6	0.012	0.30
U312-0075-S	5/16	0.312	7.92	0.331	8.41	0.490	12.45	1/2	12.53	0.077	1.96	0.041	1.04	2.25	10.01	0.0075	0.19
U312-0110	5/16	0.312	7.92	0.331	8.41	0.490	12.45	1/2	12.53	0.062	1.57	0.035	0.89	4.5	20.0	0.011	0.28
U312-0110-S	5/16	0.312	7.92	0.331	8.41	0.490	12.45	1/2	12.53	0.062	1.57	0.035	0.89	4.5	20.0	0.011	0.28
U312-0090-S	5/16	0.312	7.92	0.327	8.31	0.612	15.54	5/8	15.63	0.113	2.87	0.060	1.52	4.5	20.0	0.009	0.23
U312-0130	5/16	0.312	7.92	0.327	8.31	0.612	15.54	5/8	15.63	0.077	1.96	0.042	1.07	9.0	40.0	0.013	0.33
U312-0130-S	5/16	0.312	7.92	0.327	8.31	0.612	15.54	5/8	15.63	0.077	1.96	0.042	1.07	9.0	40.0	0.013	0.33
U312-0170	5/16	0.312	7.92	0.327	8.31	0.735	18.67	3/4	18.75	0.076	1.93	0.046	1.17	15.0	66.7	0.017	0.43
U312-0210	5/16	0.312	7.92	0.327	8.31	0.735	18.67	3/4	18.75	0.070	1.78	0.045	1.14	22.5	100.1	0.021	0.53
U343-0100-S	11/32	0.343	8.71	0.363	9.22	0.672	17.07	11/16	17.15	0.120	3.05	0.063	1.60	5.5	24.5	0.01	0.25
U343-0150	11/32	0.343	8.71	0.363	9.22	0.672	17.07	11/16	17.15	0.081	2.06	0.047	1.19	11.0	48.9	0.015	0.38
U375-0090-S	3/8	0.375	9.53	0.400	10.16	0.612	15.45	5/8	15.63	0.098	2.49	0.056	1.42	3.0	13.34	0.009	0.23
U375-0130	3/8	0.375	9.53	0.400	10.16	0.612	15.45	5/8	15.63	0.074	1.88	0.043	1.09	6.0	26.7	0.013	0.33
U375-0100-S	3/8	0.375	9.53	0.400	10.16	0.672	17.07	11/16	17.15	0.115	2.92	0.059	1.50	4.5	20.0	0.01	0.25
U375-0150	3/8	0.375	9.53	0.400	10.16	0.672	17.07	11/16	17.15	0.079	2.01	0.046	1.17	9.0	40.0	0.015	0.38
U375-0110	3/8	0.375	9.53	0.395	10.03	0.735	18.67	3/4	18.75	0.129	3.28	0.073	1.85	6.0	26.7	0.011	0.28
U375-0110-S	3/8	0.375	9.53	0.395	10.03	0.735	18.67	3/4	18.75	0.129	3.28	0.073	1.85	6.0	26.7	0.011	0.28
U375-0160	3/8	0.375	9.53	0.395	10.03	0.735	18.67	3/4	18.75	0.086	2.18	0.050	1.27	12.0	53.4	0.016	0.41
U375-0160-S	3/8	0.375	9.53	0.395	10.03	0.735	18.67	3/4	18.75	0.086	2.18	0.050	1.27	12.0	53.4	0.016	0.41
U437-0100-S	7/16	0.437	11.10	0.467	11.86	0.672	17.07	11/16	17.15	0.115	2.92	0.060	1.52	3.75	16.68	0.01	0.25
U437-0150	7/16	0.437	11.10	0.467	11.86	0.672	17.07	11/16	17.15	0.084	2.13	0.045	1.14	7.5	33.4	0.015	0.38
U437-0150-S	7/16	0.437	11.10	0.467	11.86	0.672	17.07	11/16	17.15	0.084	2.13	0.045	1.14	7.5	33.4	0.015	0.38
U437-0120	7/16	0.437	11.10	0.462	11.73	0.857	21.77	7/8	21.85	0.152	3.86	0.079	2.01	7.5	33.4	0.012	0.30
U437-0180	7/16	0.437	11.10	0.462	11.73	0.857	21.77	7/8	21.85	0.100	2.54	0.057	1.45	15.0	66.7	0.018	0.46
U437-0180-S	7/16	0.437	11.10	0.462	11.73	0.857	21.77	7/8	21.85	0.100	2.54	0.057	1.45	15.0	66.7	0.018	0.46
U437-0210	7/16	0.437	11.10	0.462	11.73	0.980	24.89	1	24.97	0.107	2.72	0.061	1.55	22.5	100.1	0.021	0.53
U500-0113	1/2	0.500	12.70	0.531	13.48	0.795	20.20	13/16	20.27	0.129	3.28	0.069	1.75	5.0	22.2	0.0113	0.29
U500-0170	1/2	0.500	12.70	0.531	13.48	0.795	20.20	13/16	20.27	0.098	2.49	0.054	1.37	10.0	44.5	0.017	0.43
U500-0140	1/2	0.500	12.70	0.525	13.34	0.980	24.89	1	24.97	0.164	4.17	0.083	2.11	10.0	44.5	0.014	0.36
U500-0180	1/2	0.500	12.70	0.525	13.34	0.980	24.89	1	24.97	0.131	3.33	0.073	1.85	15.0	66.7	0.018	0.46
U500-0210	1/2	0.500	12.70	0.525	13.34	0.980	24.89	1	24.97	0.110	2.79	0.063	1.60	20.0	89.0	0.021	0.53
U500-0210-S	1/2	0.500	12.70	0.525	13.34	0.980	24.89	1	24.97	0.110	2.79	0.063	1.60	20.0	89.0	0.021	0.53
U500-0211	1/2	0.500	12.70	0.525	13.34	1.225	31.12	1 1/4	31.20	0.151	3.84	0.085	2.16	25.0	111.2	0.021	0.53
U562-0120-S	9/16	0.562	14.27	0.598	15.19	0.857	21.77	7/8	21.85	0.145	3.68	0.074	1.88	5.5	24.5	0.012	0.30
U562-0180	9/16	0.562	14.27	0.598	15.19	0.857	21.77	7/8	21.85	0.110	2.79	0.059	1.50	11.0	48.9	0.018	0.46
U562-0180-S	9/16	0.562	14.27	0.598	15.19	0.857	21.77	7/8	21.85	0.110	2.79	0.059	1.50	11.0	48.9	0.018	0.46
U625-0140	5/8	0.625	15.88	0.663	16.84	0.980	24.89	1	24.97	0.169	4.29	0.092	2.34	7.0	31.1	0.014	0.36
U625-0210	5/8	0.625	15.88	0.663	16.84	0.980	24.89	1	24.97	0.118	3.00	0.067	1.70	14.0	62.3	0.021	0.53
U750-0160	3/4	0.750	19.05	0.800	20.32	1.103	28.02	1 1/8	28.10	0.185	4.70	0.098	2.49	8.0	35.6	0.016	0.41
U750-0210	3/4	0.750	19.05	0.800	20.32	1.103	28.02	1 1/8	28.10	0.138	3.51	0.069	1.75	12.0	53.4	0.021	0.53
U750-0210-S	3/4	0.750	19.05	0.800	20.32	1.103	28.02	1 1/8	28.10	0.138	3.51	0.069	1.75	12.0	53.4	0.021	0.53

SPEC

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

* Numbers with the suffix "S" are stainless steel.



WAVE SPRING WASHERS

Stock sizes in high carbon and stainless steel

Wave spring washers are normally used in thrust-loading applications for small deflections, particularly where radial space is limited. A typical example is the axial loading of ball bearings.

The spring rate is approximately linear between 20% and 80% of available deflection.

Material

Stainless Steel (Parts with suffix "S")

- Commercial Type 302
- Government AMS 5906 (Chemical only) - Type 302

High Carbon Steel

Part W0367-006 to W0855-010

- Commercial 1074-1095- Certified to ASTM-A684

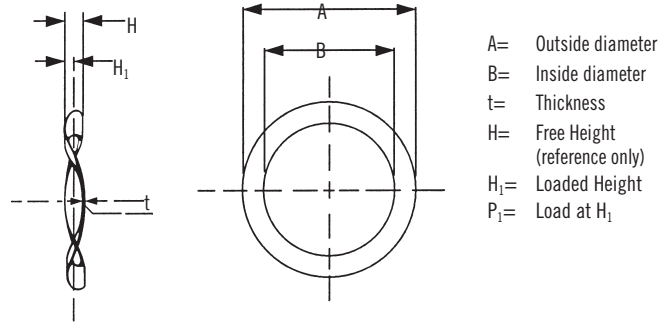
Part W0925-010 to W7325-065

- Commercial 1074- Certified to ASTM-A684

Certificate of compliance available upon request - Certificate of chemical analysis available at extra cost.

Finish

Washers are carried in stock in plain finish suitable for various types of finishes: either electroplated or mechanically plated (a process which reduces the possibility of hydrogen embrittlement). Please call us for recommendations on special or specific applications. See page 312 for alternative finishes.



- A= Outside diameter
- B= Inside diameter
- t= Thickness
- H= Free Height (reference only)
- H₁= Loaded Height
- P₁= Load at H₁

For applications with AQL requirements please contact engineering.

WAVE SPRING WASHERS													
Catalog Number*	Outside Diameter (A)		Inside Diameter (B)		Stock Thickness (t)		Height (H) Approximate		Loaded Height H ₁		Load at Height H ₁ (P ₁)		Former Catalog Number
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	
§ W0183-004-S	0.183	4.65	0.134	3.40	0.0035	0.09	0.023	0.58	0.012	0.30	.25-.5	1.1-2.2	-
§ W0242-006-S	0.242	6.15	0.194	4.93	0.0057	0.14	0.030	0.76	0.015	0.38	.5-1	2.2-4.4	-
§ W0305-007-S	0.305	7.75	0.243	6.17	0.0066	0.17	0.030	0.76	0.015	0.38	.5-1	2.2-4.4	-
W0367-006	0.367	9.32	0.265	6.73	0.006	0.15	0.030	0.76	0.015	0.38	2-4	9-18	R2
W0367-006-S	0.367	9.32	0.265	6.73	0.006	0.15	0.030	0.76	0.015	0.38	2-4	9-18	R2
W0484-009	0.484	12.29	0.397	10.08	0.009	0.23	0.029	0.74	0.020	0.51	3-5	13-22	-
W0492-007	0.492	12.50	0.350	8.89	0.007	0.18	0.035	0.89	0.020	0.51	3-5	13-22	R3
W0492-007-S	0.492	12.50	0.350	8.89	0.007	0.18	0.035	0.89	0.020	0.51	3-5	13-22	R3
W0608-008	0.608	15.44	0.459	11.66	0.008	0.20	0.037	0.94	0.025	0.64	3-5	13-22	-
W0608-008-S	0.608	15.44	0.459	11.66	0.008	0.20	0.037	0.94	0.025	0.64	3-5	13-22	-
W0618-008	0.618	15.70	0.440	11.18	0.008	0.20	0.040	1.02	0.025	0.64	3-5	13-22	R4
W0618-008-S	0.618	15.70	0.440	11.18	0.008	0.20	0.040	1.02	0.025	0.64	3-5	13-22	R4
W0731-009	0.731	18.57	0.588	14.94	0.009	0.23	0.047	1.19	0.030	0.76	3-5	13-22	-
W0734-009	0.734	18.64	0.531	13.49	0.009	0.23	0.050	1.27	0.030	0.76	4-7	18-31	R5
W0734-009-S	0.734	18.64	0.531	13.49	0.009	0.23	0.050	1.27	0.030	0.76	4-7	18-31	R5
W0855-010	0.855	21.72	0.650	16.51	0.01	0.25	0.060	1.52	0.030	0.76	4-7	18-31	R6
W0855-010-S	0.855	21.72	0.650	16.51	0.01	0.25	0.060	1.52	0.030	0.76	4-7	18-31	R6
W0925-010	0.925	23.50	0.719	18.26	0.01	0.25	0.066	1.68	0.033	0.84	6-9	27-40	24
W0925-010-S	0.925	23.50	0.719	18.26	0.01	0.25	0.066	1.68	0.033	0.84	6-9	27-40	24
W1004-011	1.004	25.50	0.780	19.81	0.0105	0.27	0.071	1.80	0.035	0.89	7-10	31-45	26
W1004-011-S	1.004	25.50	0.780	19.81	0.0105	0.27	0.071	1.80	0.035	0.89	7-10	31-45	26
W1080-012	1.080	27.43	0.839	21.31	0.0115	0.29	0.073	1.85	0.036	0.91	8-12	36-53	28
W1102-012	1.102	27.99	0.856	21.74	0.012	0.30	0.075	1.91	0.037	0.94	9-13	40-58	R8
W1159-013	1.159	29.44	0.901	22.89	0.013	0.33	0.080	2.03	0.040	1.02	10-14	44-62	30
W1235-014	1.235	31.37	0.961	24.41	0.014	0.36	0.087	2.21	0.043	1.09	12-18	53-80	32
W1351-015	1.351	34.32	1.051	26.70	0.015	0.38	0.099	2.51	0.049	1.24	15-21	67-93	35
W1351-015-S	1.351	34.32	1.051	26.70	0.015	0.38	0.099	2.51	0.049	1.24	14-20	62-89	35
W1543-017	1.543	39.19	1.201	30.51	0.017	0.43	0.105	2.67	0.052	1.32	17-25	76-111	40
W1543-020	1.543	39.19	1.201	30.51	0.02	0.51	0.125	3.18	0.062	1.57	25-37	111-165	-
W1593-018	1.593	40.46	1.239	31.47	0.018	0.46	0.110	2.79	0.055	1.40	20-28	89-125	R12
W1621-019	1.621	41.17	1.261	32.03	0.0185	0.47	0.112	2.84	0.056	1.42	21-30	93-133	42
W1819-020	1.819	46.20	1.404	35.66	0.02	0.51	0.125	3.18	0.062	1.57	25-35	111-156	47
W2028-022	2.028	51.51	1.575	40.01	0.022	0.56	0.140	3.56	0.069	1.75	29-41	129-182	52
W2132-023	2.132	54.15	1.658	42.11	0.023	0.58	0.148	3.76	0.073	1.85	31-45	138-200	55
W2420-025	2.420	61.47	1.872	47.55	0.025	0.64	0.168	4.27	0.082	2.08	37-53	165-236	62

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

§ Available in 2 waves only. All other items have 3 waves.

* Numbers with the suffix "S" are stainless steel.



WAVE SPRING WASHERS

Catalog Number*	Outside Diameter (A)		Inside Diameter (B)		Stock Thickness (t)		Height (H) Approximate		Loaded Height H ₁		Load at Height H ₁ (P ₁)		Former Catalog Number
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	
W2645-028	2.645	67.18	2.057	52.25	0.028	0.71	0.184	4.67	0.090	2.29	47-67	209-298	68
W2816-030	2.816	71.53	2.200	55.88	0.03	0.76	0.197	5.00	0.097	2.46	53-77	236-343	72
W3118-035	3.118	79.20	2.420	61.47	0.035	0.89	0.207	5.26	0.104	2.64	72-104	320-463	80
W3328-036	3.328	84.53	2.603	66.12	0.036	0.91	0.227	5.77	0.112	2.84	74-106	329-472	85
W3519-038	3.519	89.38	2.740	69.60	0.038	0.97	0.234	5.94	0.116	2.95	82-118	365-525	90
W3917-042	3.917	99.49	3.047	77.39	0.042	1.07	0.258	6.55	0.128	3.25	98-142	436-632	100
W4300-045	4.300	109.22	3.370	85.60	0.045	1.14	0.302	7.67	0.148	3.76	115-165	512-734	110
W4627-047	4.627	117.53	3.612	91.74	0.047	1.19	0.334	8.48	0.162	4.11	130-188	578-836	120
W4997-050	4.997	126.92	3.890	98.81	0.05	1.27	0.355	9.02	0.172	4.37	145-209	645-930	130
W5408-053	5.408	137.36	4.208	106.88	0.053	1.35	0.388	9.86	0.187	4.75	162-232	721-1032	140
W5817-055	5.817	147.75	4.530	115.06	0.055	1.40	0.440	11.18	0.209	5.31	178-256	792-1139	150
W6173-058	6.173	156.79	4.803	122.00	0.058	1.47	0.463	11.76	0.220	5.59	196-282	872-1254	160
W6550-061	6.550	166.37	5.120	130.05	0.061	1.55	0.496	12.60	0.235	5.97	209-301	930-1339	170
W6945-063	6.945	176.40	5.408	137.36	0.063	1.60	0.538	13.67	0.253	6.43	231-333	1028-1481	180
W7325-065	7.325	186.06	5.672	144.07	0.065	1.65	0.575	14.61	0.269	6.83	250-360	1112-1601	190



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

MULTIWAVE COMPRESSION SPRINGS

Stock and custom sizes in stainless steel

Multiwave springs replace conventional round wire springs when space is critical; they will occupy only 1/3 to 1/2 of the compressed height space of a traditional round wire spring, while providing more deflection with the same load specifications.

SPEC Multiwave springs should be used for all applications requiring tight load deflection specifications where axial space is critical.

Additional stock sizes and custom-engineered designed are available upon request.

Unique manufacturing

A single filament of round-edged, pre-tempered flat wire is used to form the springs from a continuous coil. This results in uniform diameters and wave heights.

Material

Stainless steel commercial type 17-7 PH (slightly magnetic).

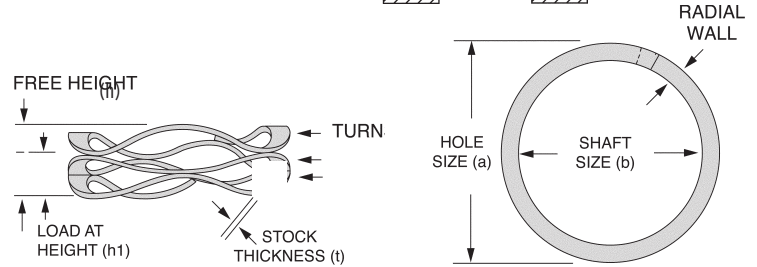
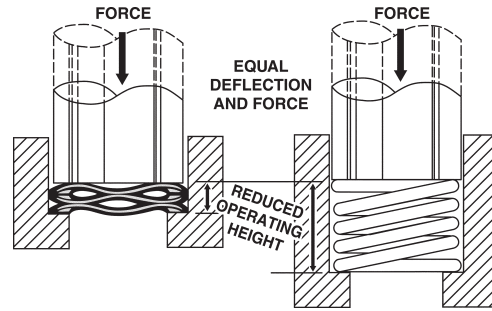
Maximum application temperature is 650°F (340°C).

Certificate of compliance available upon request.

Finish

Plain finish is standard. See page 312 for alternative finishes.

Design Comparison



MULTI-WAVE COMPRESSION SPRINGS														
Catalog Number	Fits In Hole Size (a)		Shaft (b)		Stock Thickness (t)		Free Height (h) Approximate		Load Height (h1)		Nominal Load at Height		Spring Rate	
	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	N	lbs/in	N/mm
MW0375-0150-04S	0.375	9.5	0.250	6.4	0.008	0.2	0.150	3.8	0.062	1.575	4	17.8	45	7.9
MW0375-0250-04S	0.375	9.5	0.250	6.4	0.008	0.2	0.250	6.4	0.108	2.743	4	17.8	28	4.9
MW0375-0350-04S	0.375	9.5	0.250	6.4	0.008	0.2	0.350	8.9	0.150	3.810	4	17.8	20	3.5
MW0375-0450-04S	0.375	9.5	0.250	6.4	0.008	0.2	0.450	11.4	0.195	4.953	4	17.8	16	2.8
MW0375-0150-07S	0.375	9.5	0.250	6.4	0.011	0.3	0.150	3.8	0.081	2.057	7	31.1	101	17.7
MW0375-0250-07S	0.375	9.5	0.250	6.4	0.011	0.3	0.250	6.4	0.145	3.683	7	31.1	67	11.7
MW0375-0350-07S	0.375	9.5	0.250	6.4	0.011	0.3	0.350	8.9	0.202	5.131	7	31.1	47	8.2
MW0375-0450-07S	0.375	9.5	0.250	6.4	0.011	0.3	0.450	11.4	0.262	6.655	7	31.1	37	6.5
MW0437-0165-04S	0.437	11.1	0.281	7.1	0.008	0.2	0.165	4.2	0.063	1.600	4	17.8	39	6.8
MW0437-0275-04S	0.437	11.1	0.281	7.1	0.008	0.2	0.275	7.0	0.109	2.769	4	17.8	24	4.2
MW0437-0385-04S	0.437	11.1	0.281	7.1	0.008	0.2	0.385	9.8	0.160	4.064	4	17.8	18	3.2
MW0437-0165-08S	0.437	11.1	0.281	7.1	0.011	0.3	0.165	4.2	0.082	2.083	8	35.6	96	16.8
MW0437-0275-08S	0.437	11.1	0.281	7.1	0.011	0.3	0.275	7.0	0.142	3.607	8	35.6	60	10.5
MW0437-0385-08S	0.437	11.1	0.281	7.1	0.011	0.3	0.385	9.8	0.198	5.029	8	35.6	43	7.5
MW0500-0180-05S	0.500	12.7	0.312	7.9	0.008	0.2	0.180	4.6	0.062	1.575	5	22.2	42	7.4
MW0500-0300-05S	0.500	12.7	0.312	7.9	0.008	0.2	0.300	7.6	0.107	2.718	5	22.2	26	4.6
MW0500-0420-05S	0.500	12.7	0.312	7.9	0.008	0.2	0.420	10.7	0.150	3.810	5	22.2	19	3.3
MW0500-0180-10S	0.500	12.7	0.312	7.9	0.010	0.3	0.180	4.6	0.065	1.651	10	44.5	87	15.2
MW0500-0300-10S	0.500	12.7	0.312	7.9	0.010	0.3	0.300	7.6	0.114	2.896	10	44.5	54	9.5
MW0500-0420-10S	0.500	12.7	0.312	7.9	0.010	0.3	0.420	10.7	0.162	4.115	10	44.5	39	6.8
MW0562-0195-05S	0.562	14.3	0.375	9.5	0.009	0.2	0.195	5.0	0.080	2.032	5	22.2	43	7.5
MW0562-0325-05S	0.562	14.3	0.375	9.5	0.009	0.2	0.325	8.3	0.135	3.429	5	22.2	26	4.6
MW0562-0455-05S	0.562	14.3	0.375	9.5	0.009	0.2	0.455	11.6	0.190	4.826	5	22.2	19	3.3
MW0562-0195-11S	0.562	14.3	0.375	9.5	0.012	0.3	0.195	5.0	0.086	2.184	11	48.9	101	17.7
MW0562-0325-11S	0.562	14.3	0.375	9.5	0.012	0.3	0.325	8.3	0.145	3.683	11	48.9	61	10.7
MW0562-0455-11S	0.562	14.3	0.375	9.5	0.012	0.3	0.455	11.6	0.209	5.309	11	48.9	45	7.9
MW0625-0180-06S	0.625	15.9	0.450	11.4	0.010	0.3	0.180	4.6	0.055	1.397	6	26.7	48	8.4
MW0625-0300-06S	0.625	15.9	0.450	11.4	0.010	0.3	0.300	7.6	0.085	2.159	6	26.7	28	4.9
MW0625-0420-06S	0.625	15.9	0.450	11.4	0.010	0.3	0.420	10.7	0.128	3.251	6	26.7	21	3.7
MW0625-0780-06S	0.625	15.9	0.450	11.4	0.010	0.3	0.780	19.8	0.238	6.045	6	26.7	11	1.9
MW0625-0180-12S	0.625	15.9	0.450	11.4	0.010	0.3	0.180	4.6	0.104	2.642	12	53.4	158	27.7
MW0625-0300-12S	0.625	15.9	0.450	11.4	0.010	0.3	0.300	7.6	0.175	4.445	12	53.4	96	16.8
MW0625-0420-12S	0.625	15.9	0.450	11.4	0.010	0.3	0.420	10.7	0.246	6.248	12	53.4	69	12.1
MW0625-0780-12S	0.625	15.9	0.450	11.4	0.010	0.3	0.780	19.8	0.454	11.532	12	53.4	37	6.5
MW0750-0250-07S	0.750	19.1	0.550	14.0	0.008	0.2	0.250	6.4	0.142	3.607	7	31.1	65	11.4
MW0750-0417-07S	0.750	19.1	0.550	14.0	0.008	0.2	0.417	10.6	0.246	6.248	7	31.1	41	7.2
MW0750-0250-13S	0.750	19.1	0.550	14.0	0.010	0.3	0.250	6.4	0.159	4.039	13	57.8	143	25
MW0750-0417-13S	0.750	19.1	0.550	14.0	0.010	0.3	0.417	10.6	0.270	6.858	13	57.8	88	15.4
MW0750-0250-22S	0.750	19.1	0.550	14.0	0.013	0.3	0.250	6.4	0.169	4.293	22	97.9	272	47.6
MW0750-0417-22S	0.750	19.1	0.550	14.0	0.013	0.3	0.417	10.6	0.291	7.391	22	97.9	175	30.6
MW0875-0250-12S	0.875	22.2	0.600	15.2	0.010	0.3	0.250	6.4	0.117	2.972	12	53.4	90	15.8
MW0875-0417-12S	0.875	22.2	0.600	15.2	0.010	0.3	0.417	10.6	0.207	5.258	12	53.4	57	10

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MULTI-WAVE COMPRESSION SPRINGS

Catalog Number	Fits In Hole Size		Shaft (b)		Stock Thickness (t)		Free Height (h) Approximate		Load Height (h1)		Nominal Load at Height		Spring Rate	
	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	N	lbs/in	N/mm
	MW0875-0250-18S	0.875	22.2	0.600	15.2	0.012	0.3	0.250	6.4	0.124	3.150	18	80.1	143
MW0875-0417-18S	0.875	22.2	0.600	15.2	0.012	0.3	0.417	10.6	0.214	5.436	18	80.1	89	15.6
MW0875-0250-25S	0.875	22.2	0.600	15.2	0.015	0.4	0.250	6.4	0.166	4.216	25	111.2	298	52.2
MW0875-0417-25S	0.875	22.2	0.600	15.2	0.015	0.4	0.417	10.6	0.278	7.061	25	111.2	180	31.5
MW0875-0583-25S	0.875	22.2	0.600	15.2	0.015	0.4	0.583	14.8	0.395	10.033	25	111.2	133	23.3
MW1000-0250-12S	1.000	25.4	0.730	18.5	0.010	0.3	0.250	6.4	0.084	2.134	12	53.4	72	12.6
MW1000-0417-12S	1.000	25.4	0.730	18.5	0.010	0.3	0.417	10.6	0.145	3.683	12	53.4	44	7.7
MW1000-0583-12S	1.000	25.4	0.730	18.5	0.010	0.3	0.583	14.8	0.201	5.105	12	53.4	31	5.4
MW1000-0250-18S	1.000	25.4	0.730	18.5	0.012	0.3	0.250	6.4	0.087	2.210	18	80.1	110	19.3
MW1000-0417-18S	1.000	25.4	0.730	18.5	0.012	0.3	0.417	10.6	0.148	3.759	18	80.1	67	11.7
MW1000-0583-18S	1.000	25.4	0.730	18.5	0.012	0.3	0.583	14.8	0.212	5.385	18	80.1	49	8.6
MW1000-0250-25S	1.000	25.4	0.730	18.5	0.015	0.4	0.250	6.4	0.131	3.327	25	111.2	210	36.8
MW1000-0417-25S	1.000	25.4	0.730	18.5	0.015	0.4	0.417	10.6	0.227	5.766	25	111.2	132	23.1
MW1000-0583-25S	1.000	25.4	0.730	18.5	0.015	0.4	0.583	14.8	0.319	8.103	25	111.2	95	16.6
MW1125-0300-12S	1.125	28.6	0.850	21.6	0.012	0.3	0.300	7.6	0.146	3.71	12	53.4	78	13.7
MW1125-0500-12S	1.125	28.6	0.850	21.6	0.012	0.3	0.500	12.7	0.250	6.35	12	53.4	48	8.4
MW1125-0700-12S	1.125	28.6	0.850	21.6	0.012	0.3	0.700	17.8	0.344	8.74	12	53.4	34	6.0
MW1125-0300-20S	1.125	28.6	0.850	21.6	0.015	0.4	0.300	7.6	0.160	4.06	20	89.0	143	25.0
MW1125-0500-20S	1.125	28.6	0.850	21.6	0.015	0.4	0.500	12.7	0.270	6.86	20	89.0	87	15.2
MW1125-0700-20S	1.125	28.6	0.850	21.6	0.015	0.4	0.700	17.8	0.381	9.68	20	89.0	63	11.0
MW1125-0300-30S	1.125	28.6	0.850	21.6	0.018	0.5	0.300	7.6	0.178	4.52	30	133.4	246	43.1
MW1125-0500-30S	1.125	28.6	0.850	21.6	0.018	0.5	0.500	12.7	0.303	7.70	30	133.4	152	26.6
MW1125-0700-30S	1.125	28.6	0.850	21.6	0.018	0.5	0.700	17.8	0.421	10.69	30	133.4	108	18.9
MW1250-0300-12S	1.250	31.8	1.000	25.4	0.012	0.3	0.300	7.6	0.084	2.13	12	53.4	56	9.8
MW1250-0500-12S	1.250	31.8	1.000	25.4	0.012	0.3	0.500	12.7	0.149	3.78	12	53.4	34	6.0
MW1250-0700-12S	1.250	31.8	1.000	25.4	0.012	0.3	0.700	17.8	0.207	5.26	12	53.4	24	4.2
MW1250-0300-20S	1.250	31.8	1.000	25.4	0.015	0.4	0.300	7.6	0.124	3.15	20	89.0	114	20.0
MW1250-0500-20S	1.250	31.8	1.000	25.4	0.015	0.4	0.500	12.7	0.215	5.46	20	89.0	70	12.3
MW1250-0700-20S	1.250	31.8	1.000	25.4	0.015	0.4	0.700	17.8	0.303	7.70	20	89.0	50	8.8
MW1250-0300-30S	1.250	31.8	1.000	25.4	0.019	0.5	0.300	7.6	0.158	4.01	30	133.4	210	36.8
MW1250-0500-30S	1.250	31.8	1.000	25.4	0.019	0.5	0.500	12.7	0.272	6.91	30	133.4	132	23.1
MW1250-0700-30S	1.250	31.8	1.000	25.4	0.019	0.5	0.700	17.8	0.384	9.75	30	133.4	95	16.6
MW1375-0300-15S	1.375	34.9	1.030	26.2	0.012	0.3	0.300	7.6	0.075	1.91	15	66.7	67	11.7
MW1375-0500-15S	1.375	34.9	1.030	26.2	0.012	0.3	0.500	12.7	0.129	3.28	15	66.7	40	7.0
MW1375-0700-15S	1.375	34.9	1.030	26.2	0.012	0.3	0.700	17.8	0.179	4.55	15	66.7	29	5.1
MW1375-0300-25S	1.375	34.9	1.030	26.2	0.016	0.4	0.300	7.6	0.142	3.61	25	111.2	158	27.7
MW1375-0500-25S	1.375	34.9	1.030	26.2	0.016	0.4	0.500	12.7	0.240	6.10	25	111.2	96	16.8
MW1375-0700-25S	1.375	34.9	1.030	26.2	0.016	0.4	0.700	17.8	0.340	8.64	25	111.2	69	12.1
MW1375-0300-35S	1.375	34.9	1.030	26.2	0.018	0.5	0.300	7.6	0.149	3.78	35	155.7	232	40.6
MW1375-0500-35S	1.375	34.9	1.030	26.2	0.018	0.5	0.500	12.7	0.247	6.27	35	155.7	138	24.2
MW1375-0700-35S	1.375	34.9	1.030	26.2	0.018	0.5	0.700	17.8	0.343	8.71	35	155.7	98	17.2
MW1500-0300-20S	1.500	38.1	1.140	29.0	0.016	0.4	0.300	7.6	0.129	3.28	20	89.0	117	20.5
MW1500-0500-20S	1.500	38.1	1.140	29.0	0.016	0.4	0.500	12.7	0.213	5.41	20	89.0	70	12.3
MW1500-0700-20S	1.500	38.1	1.140	29.0	0.016	0.4	0.700	17.8	0.301	7.65	20	89.0	50	8.8
MW1500-0300-35S	1.500	38.1	1.140	29.0	0.018	0.5	0.300	7.6	0.122	3.10	35	155.7	197	34.5
MW1500-0500-35S	1.500	38.1	1.140	29.0	0.018	0.5	0.500	12.7	0.206	5.23	35	155.7	119	20.8
MW1500-0700-35S	1.500	38.1	1.140	29.0	0.018	0.5	0.700	17.8	0.291	7.39	35	155.7	86	15.1
MW1500-0300-60S	1.500	38.1	1.140	29.0	0.018	0.5	0.300	7.6	0.166	4.22	60	266.9	448	78.4
MW1500-0500-60S	1.500	38.1	1.140	29.0	0.018	0.5	0.500	12.7	0.278	7.06	60	266.9	270	47.3
MW1500-0700-60S	1.500	38.1	1.140	29.0	0.018	0.5	0.700	17.8	0.390	9.91	60	266.9	194	34.0
MW1750-0375-25S	1.750	44.5	1.340	34.0	0.018	0.5	0.375	9.5	0.155	3.94	25	111.2	114	20.0
MW1750-0625-25S	1.750	44.5	1.340	34.0	0.018	0.5	0.625	15.9	0.265	6.73	25	111.2	69	12.1
MW1750-0870-25S	1.750	44.5	1.340	34.0	0.018	0.5	0.870	22.1	0.367	9.32	25	111.2	50	8.8
MW1750-0375-50S	1.750	44.5	1.340	34.0	0.018	0.5	0.375	9.5	0.188	4.78	50	222.4	267	46.7
MW1750-0625-50S	1.750	44.5	1.340	34.0	0.018	0.5	0.625	15.9	0.315	8.00	50	222.4	161	28.2
MW1750-0870-50S	1.750	44.5	1.340	34.0	0.018	0.5	0.870	22.1	0.452	11.48	50	222.4	120	21.0
MW1750-0375-90S	1.750	44.5	1.340	34.0	0.024	0.6	0.375	9.5	0.232	5.89	90	400.3	629	110.1
MW1750-0625-90S	1.750	44.5	1.340	34.0	0.024	0.6	0.625	15.9	0.409	10.39	90	400.3	417	73.0
MW1750-0870-90S	1.750	44.5	1.340	34.0	0.024	0.6	0.870	22.1	0.577	14.66	90	400.3	307	53.7
MW2000-0375-25S	2.000	50.8	1.600	40.6	0.018	0.5	0.375	9.5	0.094	2.39	25	111.2	89	15.6
MW2000-0625-25S	2.000	50.8	1.600	40.6	0.018	0.5	0.625	15.9	0.158	4.01	25	111.2	54	9.5
MW2000-0870-25S	2.000	50.8	1.600	40.6	0.018	0.5	0.870	22.1	0.217	5.51	25	111.2	38	6.7
MW2000-0375-50S	2.000	50.8	1.600	40.6	0.018	0.5	0.375	9.5	0.140	3.56	50	222.4	213	37.3
MW2000-0625-50S	2.000	50.8	1.600	40.6	0.018	0.5	0.625	15.9	0.245	6.22	50	222.4	132	23.1
MW2000-0870-50S	2.000	50.8	1.600	40.6	0.018	0.5	0.870	22.1	0.345	8.76	50	222.4	95	16.6
MW2000-0375-90S	2.000	50.8	1.600	40.6	0.024	0.6	0.375	9.5	0.197	5.00	90	400.3	506	88.6
MW2000-0625-90S	2.000	50.8	1.600	40.6	0.024	0.6	0.625	15.9	0.332	8.43	90	400.3	307	53.7
MW2000-0870-90S	2.000	50.8	1.600	40.6	0.024	0.6	0.870	22.1	0.465	11.81	90	400.3	222	38.9



FINGER SPRING WASHERS

Stock sizes in high carbon steel

Our washers are designed to counteract noise, excess wear and vibrations, especially at high speeds. They promote efficiency and smooth operation, reducing skidding wear on rotating elements, as in ball-bearing applications.

They are also extremely useful in cases of unavoidable loose internal clearance due to special application conditions.

Material

High Carbon Steel Commercial Type 1074— Certified to ASTM-A684

Certificate of compliance available upon request— Certificate of chemical analysis available at extra cost.

Finish

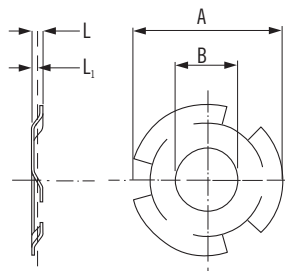
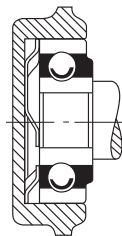
Plain finish suitable for various types of finishes including phosphate and black oxide processes, which reduce the possibility of hydrogen embrittlement.

Please call us for recommendations on special or specific applications.

See page 312 for alternative finishes.

Specification

Finger height (L) is approximately 1/8 in. (3.17mm) for all sizes except F0595-010 which has approximately 3/32 in. (2.38 mm) finger height. Load height (L₁) is 0.062 in. (1.57mm)



A= Outside Diameter
B= Inside Diameter
P₁= Load at Height



FINGER SPRING WASHERS										
Catalog Number	Nominal Outside Diameter (A)***		Inside Diameter (B)		Load (P ₁) at Height		Material Thickness	For use with Bearing O.D.**		Former Catalog Number
	in	mm	in	mm	@L ₁ .062 in	@L ₁ 1.577 mm		in	mm	
					lb	N				
F0595-010*	0.595	15.11	0.312	7.92	0.3-1.0	1.33-4.45	0.010	0.6299	16.0	S-04
F0728-006	0.728	18.49	0.344	8.74	4-8	17.79-35.6	0.006	0.748	19.0	S-05
F0846-006	0.846	21.49	0.453	11.51	3-7	13.34-31.1	0.006	0.8661	22.0	S-102
F0846-008	0.846	21.49	0.453	11.51	9-14	40.0-62.2	0.008	0.8661	22.0	S-102A
F0926-007	0.926	23.52	0.453	11.51	6-10	26.7-44.5	0.007	0.9449	24.0	S-08
F0926-010	0.926	23.52	0.344	8.74	21-30	93.3-133.4	0.010	0.9449	24.0	S-08A
F1004-006	1.004	25.50	0.516	13.11	5-10	22.2-44.5	0.006	1.0236	26.0	S-09A
F1004-007	1.004	25.50	0.516	13.11	7-13	31.1-57.8	0.007	1.0236	26.0	S-09
F1164-009	1.164	29.57	0.688	17.48	8-14	35.6-62.2	0.009	1.1811	30.0	S-10
F1164-010	1.164	29.57	0.406	10.31	14-23	62.2-102.2	0.010	1.1811	30.0	S-10B
F1164-018	1.164	29.57	0.688	17.48	55-81	244.5-360	0.018	1.1811	30.0	S-10A
F1240-008	1.240	31.50	0.688	17.48	9-15	40-66.7	0.008	1.2598	32.0	S-12
F1240-009	1.240	31.50	0.563	14.30	15-22	66.7-97.8	0.009	1.2598	32.0	S-12A
F1240-010	1.240	31.50	0.688	17.48	14-23	62.2-102.2	0.010	1.2598	32.0	S-12B
F1360-011	1.360	34.54	0.814	20.68	10-17	44.5-75.6	0.011	1.378	35.0	S-15
F1360-014	1.360	34.54	0.814	20.68	16-26	71.1-115.6	0.014	1.378	35.0	S-15A
F1555-014	1.555	39.50	0.971	24.66	13-23	57.8-102.2	0.014	1.5748	40.0	S-17
F1555-018	1.555	39.50	1.000	25.40	28-42	124.5-186.7	0.018	1.5748	40.0	S-17A
F1830-016	1.830	46.48	1.189	30.20	14-26	62.2-115.6	0.016	1.8504	47.0	S-20
F2022-019	2.022	51.36	1.359	34.52	13-27	57.8-120.0	0.019	2.0472	52.0	S-25

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SPEC

* This washer design has 3 fingers only. All others have 6 fingers.

** Not adapted to some special shaped bearings or bearings with double-protruding seals.

*** Maximum outside diameter of washer to be the same as specified bearing outside diameter.

URETHANE COMPRESSION SPRINGS

Stock sizes in multiple durometers

Stock Urethane compression springs are designed to complement our steel wire applications where corrosion, vibration and magnetism prevent the use of a conventional steel spring. The SPEC line of urethane springs feature multiple durometers. This allows various load capacities within each specific size. SPEC urethane springs are compounded specially for optimized spring characteristics. Typical applications include vibration dampening, corrosive environments, high loads in confined spaces, cycle and static loading and nonmagnetic requirements.

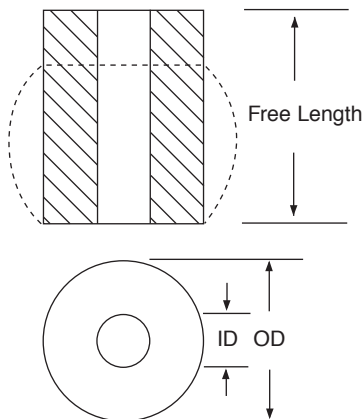
Material

Urethane rubber Durometers of 60A, 80A, 90A, 95A.

SPEC urethane is compounded to provide optimum spring characteristics.

Loading Applications

Urethane is a non-compressible material. The load of urethane spring is obtained by bulging of the tube walls. Most of the bulging is to the outside diameter. The growth in outside diameter is approximately equal to the percentage of spring deflection. Example: a 25mm spring is deflected 5mm or 20%. Increase the outside diameter by 20%. A spring with an initial outside diameter 19mm would bulge to 23mm. This expansion should be considered when selecting O.D. clearances.



Note:

Load data shown is from laboratory testing. Load-deflection curves for 95A durometers are not provided due to extremely high spring rates. 95A durometer is recommended for cushioning applications only.

Inside Diameters

Urethane springs can be guided through the I.D. by a rod. The rod can be that of the size listed in the data tables for an interference fit whereby the spring I.D. grips the rod. Or, the rod can be reduced for a free fit.

Properties

- Water and oil resistant.
- Operating temperatures:
From -60 degrees F. (-17.8 degrees C.) to 200 degrees F. (93.3 degrees C.).
- Non magnetic.
- 360 degree contact area.
- Bondable to mating parts.
- Can be mated to soft materials.
- Series stackable for additional deflection with use of spacers.

Durometer	Color
95A	Amber (Yellow)
90A	Red
80A	Green
70A	Blue
60A	Natural (Clear Yellow)
50A	Yellow
40A	Light Green

STOCK URETHANE COMPRESSION SPRINGS

Catalog Number	Interference Rod Fit	Inside Diameter (ID)		Outside Diameter (OD)		Free Length (approx.)		Durometer	Load Data Graph
	in	in	mm	in	mm	in	mm		
P0188-0500-60A						0.500	12.70	60A	P0188-XXXX-60A
P0188-0750-60A						0.750	19.05	60A	P0188-XXXX-60A
P0188-1000-60A						1.000	25.40	60A	P0188-XXXX-60A
P0188-1250-60A						1.250	31.75	60A	P0188-XXXX-60A
P0188-0500-80A						0.500	12.70	80A	P0188-XXXX-80A
P0188-0750-80A						0.750	19.05	80A	P0188-XXXX-80A
P0188-1000-80A						1.000	25.40	80A	P0188-XXXX-80A
P0188-1250-80A						1.250	31.75	80A	P0188-XXXX-80A
P0188-0500-90A	3/16	4.32	0.170	0.688	17.48	0.500	12.70	90A	P0188-XXXX-90A
P0188-0750-90A						0.750	19.05	90A	P0188-XXXX-90A
P0188-1000-90A						1.000	25.40	90A	P0188-XXXX-90A
P0188-1250-90A						1.250	31.75	90A	P0188-XXXX-90A
P0188-0500-95A						0.500	12.70	95A	-
P0188-0750-95A						0.750	19.05	95A	-
P0188-1000-95A						1.000	25.40	95A	-
P0188-1250-95A						1.250	31.75	95A	-
P0250-0500-60A						0.500	12.70	60A	P0250-XXXX-60A
P0250-0750-60A						0.750	19.05	60A	P0250-XXXX-60A
P0250-1000-60A	1/4	0.230	5.84	0.750	19.05	1.000	25.40	60A	P0250-XXXX-60A
P0250-1250-60A						1.250	31.75	60A	P0250-XXXX-60A
P0250-1500-60A						1.500	38.10	60A	P0250-XXXX-60A



STOCK URETHANE COMPRESSION SPRINGS

Catalog Number	Rod Fit	Inside Diameter		Outside Diameter		Free Length (approx.)		Durometer	Load Data Graph
	in	in	mm	in	mm	in	mm		
P0250-0500-80A						0.500	12.70	80A	P0250-XXXX-80A
P0250-0750-80A						0.750	19.05	80A	P0250-XXXX-80A
P0250-1000-80A						1.000	25.40	80A	P0250-XXXX-80A
P0250-1250-80A						1.250	31.75	80A	P0250-XXXX-80A
P0250-1500-80A						1.500	38.10	80A	P0250-XXXX-80A
P0250-0500-90A						0.500	12.70	90A	P0250-XXXX-90A
P0250-0750-90A						0.750	19.05	90A	P0250-XXXX-90A
P0250-1000-90A	1/4	0.230	5.84	0.750	19.050	1.000	25.40	90A	P0250-XXXX-90A
P0250-1250-90A						1.250	31.75	90A	P0250-XXXX-90A
P0250-1500-90A						1.500	38.10	90A	P0250-XXXX-90A
P0250-0500-95A						0.500	12.70	95A	-
P0250-0750-95A						0.750	19.05	95A	-
P0250-1000-95A						1.000	25.40	95A	-
P0250-1250-95A						1.250	31.75	95A	-
P0250-1500-95A						1.500	38.10	95A	-
P0312-0500-60A						0.500	12.70	60A	P0312-XXXX-60A
P0312-0750-60A						0.750	19.05	60A	P0312-XXXX-60A
P0312-1000-60A						1.000	25.40	60A	P0312-XXXX-60A
P0312-1250-60A						1.250	31.75	60A	P0312-XXXX-60A
P0312-1500-60A						1.500	38.10	60A	P0312-XXXX-60A
P0312-0500-80A						0.500	12.70	80A	P0312-XXXX-80A
P0312-0750-80A						0.750	19.05	80A	P0312-XXXX-80A
P0312-1000-80A						1.000	25.40	80A	P0312-XXXX-80A
P0312-1250-80A						1.250	31.75	80A	P0312-XXXX-80A
P0312-1500-80A						1.500	38.10	80A	P0312-XXXX-80A
P0312-0500-90A	5/16	0.295	7.49	0.813	20.650	0.500	12.70	90A	P0312-XXXX-90A
P0312-0750-90A						0.750	19.05	90A	P0312-XXXX-90A
P0312-1000-90A						1.000	25.40	90A	P0312-XXXX-90A
P0312-1250-90A						1.250	31.75	90A	P0312-XXXX-90A
P0312-1500-90A						1.500	38.10	90A	P0312-XXXX-90A
P0312-0500-95A						0.500	12.70	95A	-
P0312-0750-95A						0.750	19.05	95A	-
P0312-1000-95A						1.000	25.40	95A	-
P0312-1250-95A						1.250	31.75	95A	-
P0312-1500-95A						1.500	38.10	95A	-
P0375-0500-60A						0.500	12.70	60A	P0375-XXXX-60A
P0375-0750-60A						0.750	19.05	60A	P0375-XXXX-60A
P0375-1000-60A						1.000	25.40	60A	P0375-XXXX-60A
P0375-1250-60A						1.250	31.75	60A	P0375-XXXX-60A
P0375-1500-60A						1.500	38.10	60A	P0375-XXXX-60A
P0375-0500-80A						0.500	12.70	80A	P0375-XXXX-80A
P0375-0750-80A						0.750	19.05	80A	P0375-XXXX-80A
P0375-1000-80A						1.000	25.40	80A	P0375-XXXX-80A
P0375-1250-80A						1.250	31.75	80A	P0375-XXXX-80A
P0375-1500-80A						1.500	38.10	80A	P0375-XXXX-80A
P0375-1750-80A	3/8	0.355	9.02	0.875	22.230	1.750	44.45	80A	P0375-XXXX-80A
P0375-0500-90A						0.500	12.70	90A	P0375-XXXX-90A
P0375-0750-90A						0.750	19.05	90A	P0375-XXXX-90A
P0375-1000-90A						1.000	25.40	90A	P0375-XXXX-90A
P0375-1250-90A						1.250	31.75	90A	P0375-XXXX-90A
P0375-1500-90A						1.500	38.10	90A	P0375-XXXX-90A
P0375-1750-90A						1.750	44.45	90A	P0375-XXXX-90A
P0375-0500-95A						0.500	12.70	95A	-
P0375-0750-95A						0.750	19.05	95A	-
P0375-1000-95A						1.000	25.40	95A	-
P0375-1250-95A						1.250	31.75	95A	-
P0375-1500-95A						1.500	38.10	95A	-
P0375-1750-95A						1.750	44.45	95A	-
P0500-0500-60A						0.500	12.70	60A	P0500-XXXX-60A
P0500-0750-60A						0.750	19.05	60A	P0500-XXXX-60A
P0500-1000-60A	1/2	0.475	12.07	1.000	25.400	1.000	25.40	60A	P0500-XXXX-60A
P0500-1250-60A						1.250	31.75	60A	P0500-XXXX-60A
P0500-1500-60A						1.500	38.10	60A	P0500-XXXX-60A
P0500-0500-80A						0.500	12.70	80A	P0500-XXXX-80A



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SPEC

STOCK URETHANE COMPRESSION SPRINGS

Catalog Number	Rod Fit		Inside Diameter		Outside Diameter		Free Length (approx.)		Durometer	Load Data Graph
	in		in	mm	in	mm	in	mm		
P0500-0750-80A							0.750	19.05	80A	P0500-XXXX-80A
P0500-1000-80A							1.000	25.40	80A	P0500-XXXX-80A
P0500-1250-80A							1.250	31.75	80A	P0500-XXXX-80A
P0500-1500-80A							1.500	38.10	80A	P0500-XXXX-80A
P0500-1750-80A							1.750	44.45	80A	P0500-XXXX-80A
P0500-2000-80A							2.000	50.80	80A	P0500-XXXX-80A
P0500-0500-90A							0.500	12.70	90A	P0500-XXXX-90A
P0500-0750-90A							0.750	19.05	90A	P0500-XXXX-90A
P0500-1000-90A							1.000	25.40	90A	P0500-XXXX-90A
P0500-1250-90A	1/2		0.475	12.07	1.000	25.400	1.250	31.75	90A	P0500-XXXX-90A
P0500-1500-90A							1.500	38.10	90A	P0500-XXXX-90A
P0500-1750-90A							1.750	44.45	90A	P0500-XXXX-90A
P0500-2000-90A							2.000	50.80	90A	P0500-XXXX-90A
P0500-0500-95A							0.500	12.70	95A	-
P0500-0750-95A							0.750	19.05	95A	-
P0500-1000-95A							1.000	25.40	95A	-
P0500-1250-95A							1.250	31.75	95A	-
P0500-1500-95A							1.500	38.10	95A	-
P0500-1750-95A							1.750	44.45	95A	-
P0500-2000-95A							2.000	50.80	95A	-
P0625-0500-60A							0.500	12.70	60A	P0625-XXXX-60A
P0625-0750-60A							0.750	19.05	60A	P0625-XXXX-60A
P0625-1000-60A							1.000	25.40	60A	P0625-XXXX-60A
P0625-1250-60A							1.250	31.75	60A	P0625-XXXX-60A
P0625-1500-60A							1.500	38.10	60A	P0625-XXXX-60A
P0625-0500-80A							0.500	12.70	80A	P0625-XXXX-80A
P0625-0750-80A							0.750	19.05	80A	P0625-XXXX-80A
P0625-1000-80A							1.000	25.40	80A	P0625-XXXX-80A
P0625-1250-80A							1.250	31.75	80A	P0625-XXXX-80A
P0625-1500-80A							1.500	38.10	80A	P0625-XXXX-80A
P0625-1750-80A							1.750	44.45	80A	P0625-XXXX-80A
P0625-2000-80A							2.000	50.80	80A	P0625-XXXX-80A
P0625-0500-90A	5/8		0.600	15.24	1.125	28.580	0.500	12.70	90A	P0625-XXXX-90A
P0625-0750-90A							0.750	19.05	90A	P0625-XXXX-90A
P0625-1000-90A							1.000	25.40	90A	P0625-XXXX-90A
P0625-1250-90A							1.250	31.75	90A	P0625-XXXX-90A
P0625-1500-90A							1.500	38.10	90A	P0625-XXXX-90A
P0625-1750-90A							1.750	44.45	90A	P0625-XXXX-90A
P0625-2000-90A							2.000	50.80	90A	P0625-XXXX-90A
P0625-0500-95A							0.500	12.70	95A	-
P0625-0750-95A							0.750	19.05	95A	-
P0625-1000-95A							1.000	25.40	95A	-
P0625-1250-95A							1.250	31.75	95A	-
P0625-1500-95A							1.500	38.10	95A	-
P0625-1750-95A							1.750	44.45	95A	-
P0625-2000-95A							2.000	50.80	95A	-
P0750-0750-60A							0.750	19.05	60A	P0750-XXXX-60A
P0750-1000-60A							1.000	25.40	60A	P0750-XXXX-60A
P0750-1250-60A							1.250	31.75	60A	P0750-XXXX-60A
P0750-1500-60A							1.500	38.10	60A	P0750-XXXX-60A
P0750-1750-60A							1.750	44.45	60A	P0750-XXXX-60A
P0750-2000-60A							2.000	50.80	60A	P0750-XXXX-60A
P0750-0750-80A							0.750	19.05	80A	P0750-XXXX-80A
P0750-1000-80A							1.000	25.40	80A	P0750-XXXX-80A
P0750-1250-80A	3/4		0.740	18.80	1.375	34.930	1.250	31.75	80A	P0750-XXXX-80A
P0750-1500-80A							1.500	38.10	80A	P0750-XXXX-80A
P0750-1750-80A							1.750	44.45	80A	P0750-XXXX-80A
P0750-2000-80A							2.000	50.80	80A	P0750-XXXX-80A
P0750-0750-90A							0.750	19.05	90A	P0750-XXXX-90A
P0750-1000-90A							1.000	25.40	90A	P0750-XXXX-90A
P0750-1250-90A							1.250	31.75	90A	P0750-XXXX-90A
P0750-1500-90A							1.500	38.10	90A	P0750-XXXX-90A
P0750-1750-90A							1.750	44.45	90A	P0750-XXXX-90A
P0750-2000-90A							2.000	50.80	90A	P0750-XXXX-90A

URETHANE SPRINGS



STOCK URETHANE COMPRESSION SPRINGS

Catalog Number	Rod Fit	Inside Diameter		Outside Diameter		Free Length (approx.)		Durometer	Load Data Graph
	in	in	mm	in	mm	in	mm		
P0750-2500-90A						2.500	63.50	90A	P0750-XXXX-90A
P0750-0750-95A						0.750	19.05	95A	-
P0750-1000-95A						1.000	25.40	95A	-
P0750-1250-95A	3/4	0.740	18.80	1.375	34.930	1.250	31.75	95A	-
P0750-1500-95A						1.500	38.10	95A	-
P0750-1750-95A						1.750	44.45	95A	-
P0750-2000-95A						2.000	50.80	95A	-
P0750-2500-95A						2.500	63.50	95A	-
P0875-1000-60A						1.000	25.40	60A	P0875-XXXX-60A
P0875-1250-60A						1.250	31.75	60A	P0875-XXXX-60A
P0875-1500-60A						1.500	38.10	60A	P0875-XXXX-60A
P0875-1750-60A						1.750	44.45	60A	P0875-XXXX-60A
P0875-2000-60A						2.000	50.80	60A	P0875-XXXX-60A
P0875-2500-60A						2.500	63.50	60A	P0875-XXXX-60A
P0875-3000-60A						3.000	76.20	60A	P0875-XXXX-60A
P0875-1000-80A						1.000	25.40	80A	P0875-XXXX-80A
P0875-1250-80A						1.250	31.75	80A	P0875-XXXX-80A
P0875-1500-80A						1.500	38.10	80A	P0875-XXXX-80A
P0875-1750-80A						1.750	44.45	80A	P0875-XXXX-80A
P0875-2000-80A						2.000	50.80	80A	P0875-XXXX-80A
P0875-2500-80A						2.500	63.50	80A	P0875-XXXX-80A
P0875-3000-80A	7/8	0.865	21.97	1.625	41.280	3.000	76.20	80A	P0875-XXXX-80A
P0875-1000-90A						1.000	25.40	90A	P0875-XXXX-90A
P0875-1250-90A						1.250	31.75	90A	P0875-XXXX-90A
P0875-1500-90A						1.500	38.10	90A	P0875-XXXX-90A
P0875-1750-90A						1.750	44.45	90A	P0875-XXXX-90A
P0875-2000-90A						2.000	50.80	90A	P0875-XXXX-90A
P0875-2500-90A						2.500	63.50	90A	P0875-XXXX-90A
P0875-3000-90A						3.000	76.20	90A	P0875-XXXX-90A
P0875-1000-95A						1.000	25.40	95A	-
P0875-1250-95A						1.250	31.75	95A	-
P0875-1500-95A						1.500	38.10	95A	-
P0875-1750-95A						1.750	44.45	95A	-
P0875-2000-95A						2.000	50.80	95A	-
P0875-2500-95A						2.500	63.50	95A	-
P0875-3000-95A						3.000	76.20	95A	-
P1000-1000-60A						1.000	25.40	60A	P1000-XXXX-60A
P1000-1250-60A						1.250	31.75	60A	P1000-XXXX-60A
P1000-1500-60A						1.500	38.10	60A	P1000-XXXX-60A
P1000-1750-60A						1.750	44.45	60A	P1000-XXXX-60A
P1000-2000-60A						2.000	50.80	60A	P1000-XXXX-60A
P1000-2500-60A						2.500	63.50	60A	P1000-XXXX-60A
P1000-3000-60A						3.000	76.20	60A	P1000-XXXX-60A
P1000-1000-80A						1.000	25.40	80A	P1000-XXXX-80A
P1000-1250-80A						1.250	31.75	80A	P1000-XXXX-80A
P1000-1500-80A						1.500	38.10	80A	P1000-XXXX-80A
P1000-1750-80A						1.750	44.45	80A	P1000-XXXX-80A
P1000-2000-80A						2.000	50.80	80A	P1000-XXXX-80A
P1000-2500-80A						2.500	63.50	80A	P1000-XXXX-80A
P1000-3000-80A	1.0	0.990	25.15	1.750	44.450	3.000	76.20	80A	P1000-XXXX-80A
P1000-1000-90A						1.000	25.40	90A	P1000-XXXX-90A
P1000-1250-90A						1.250	31.75	90A	P1000-XXXX-90A
P1000-1500-90A						1.500	38.10	90A	P1000-XXXX-90A
P1000-1750-90A						1.750	44.45	90A	P1000-XXXX-90A
P1000-2000-90A						2.000	50.80	90A	P1000-XXXX-90A
P1000-2500-90A						2.500	63.50	90A	P1000-XXXX-90A
P1000-3000-90A						3.000	76.20	90A	P1000-XXXX-90A
P1000-1000-95A						1.000	25.40	95A	-
P1000-1250-95A						1.250	31.75	95A	-
P1000-1500-95A						1.500	38.10	95A	-
P1000-1750-95A						1.750	44.45	95A	-
P1000-2000-95A						2.000	50.80	95A	-
P1000-2500-95A						2.500	63.50	95A	-
P1000-3000-95A						3.000	76.20	95A	-

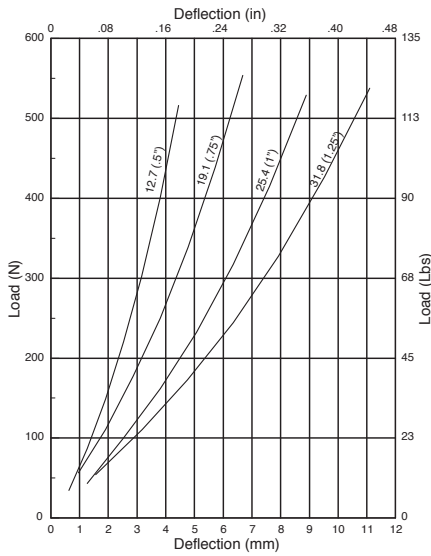


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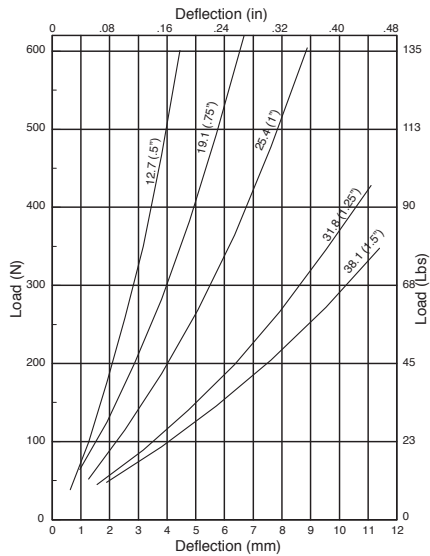
SPEC

STOCK URETHANE COMPRESSION SPRINGS Multiple Durometers

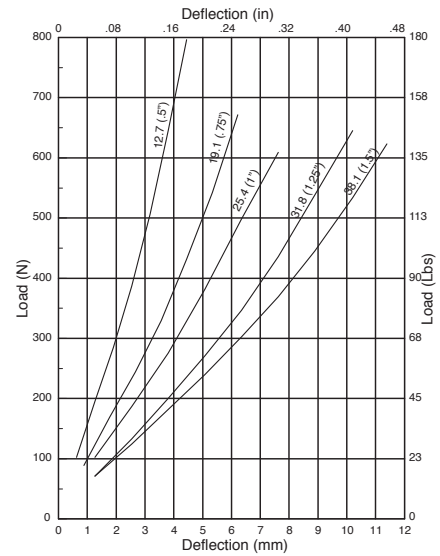
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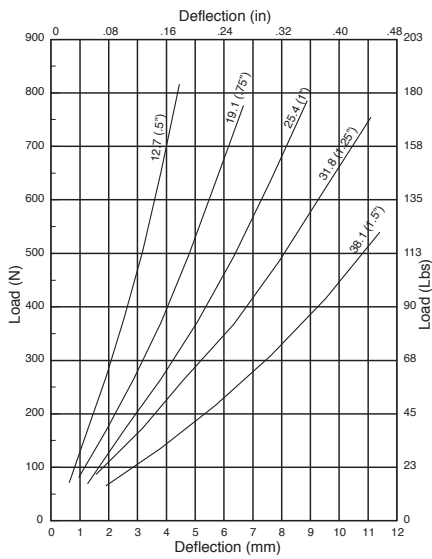
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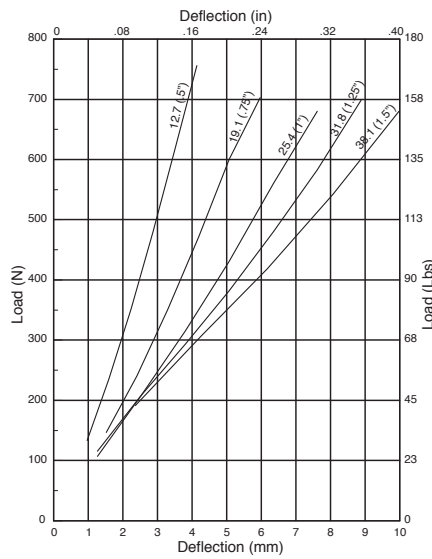
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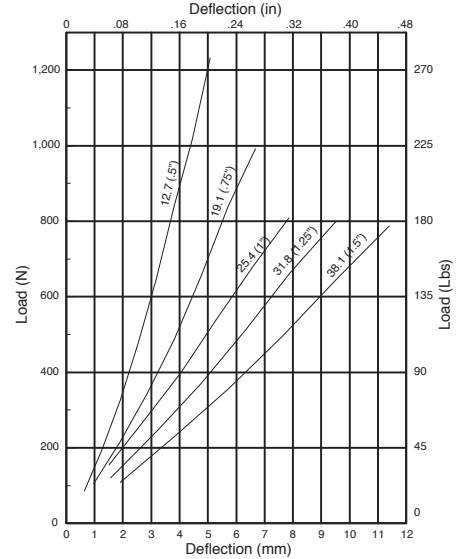
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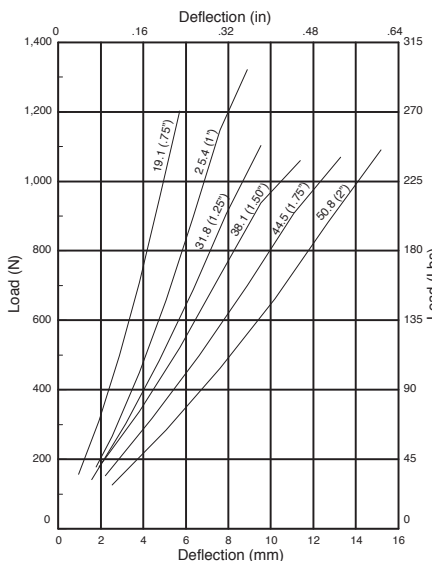
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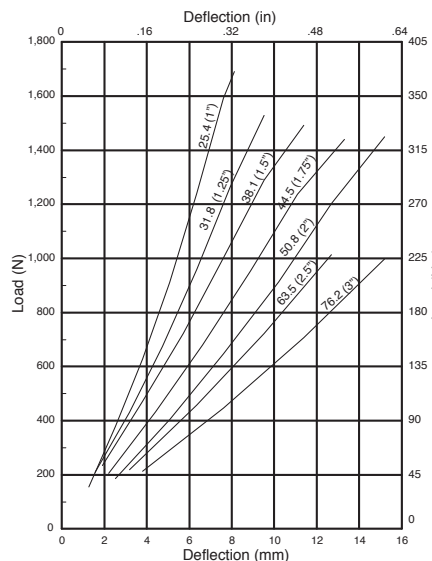
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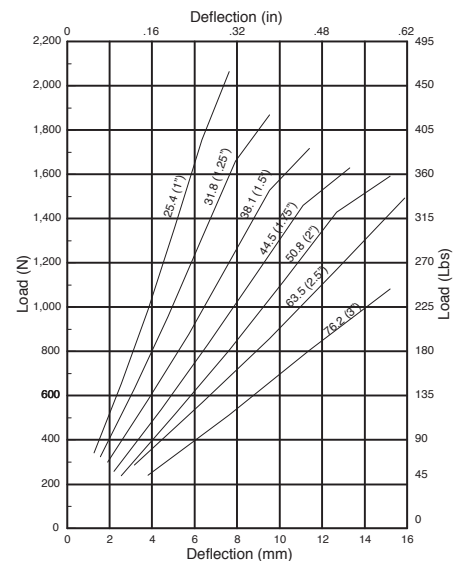
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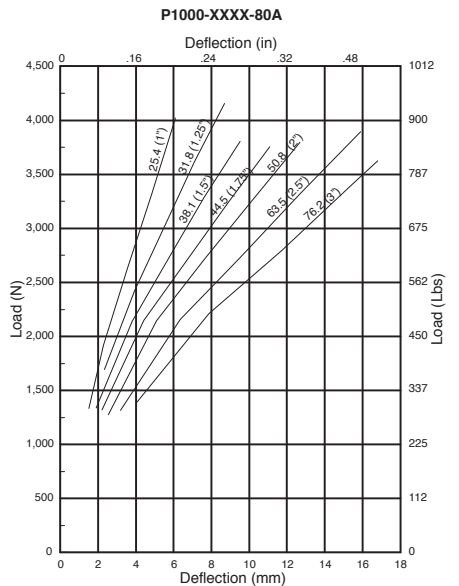
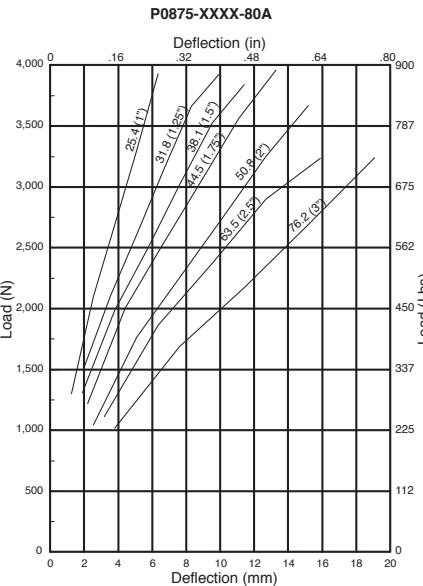
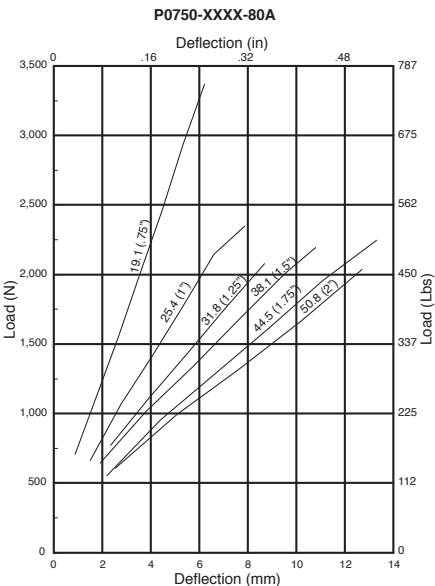
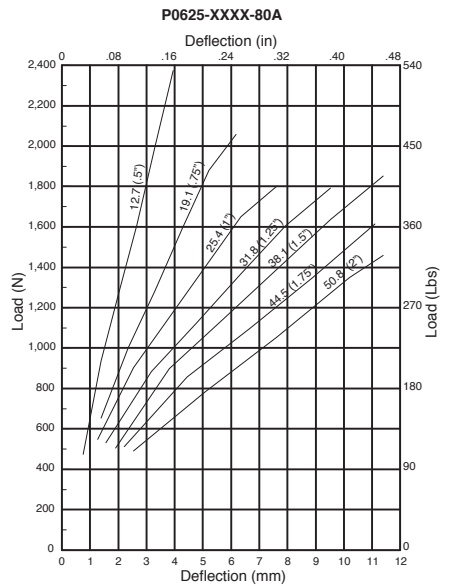
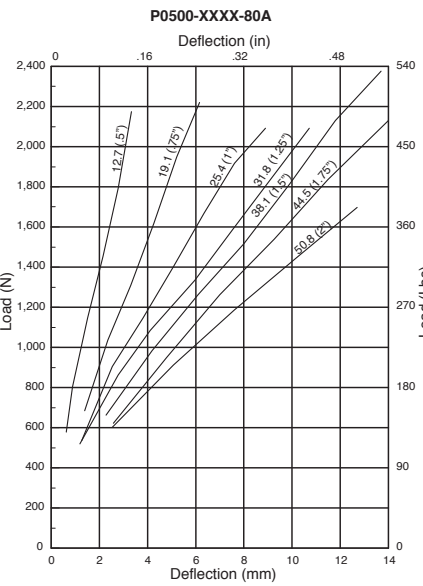
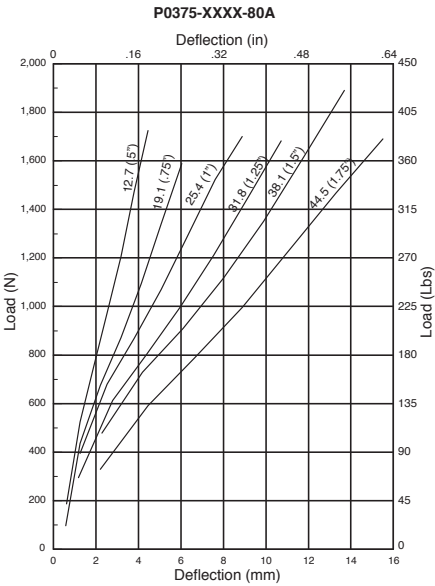
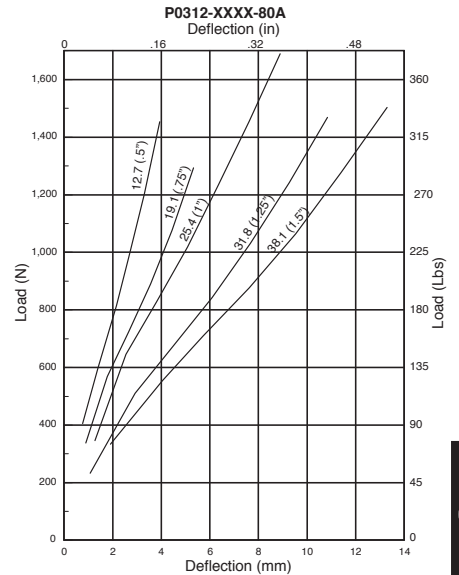
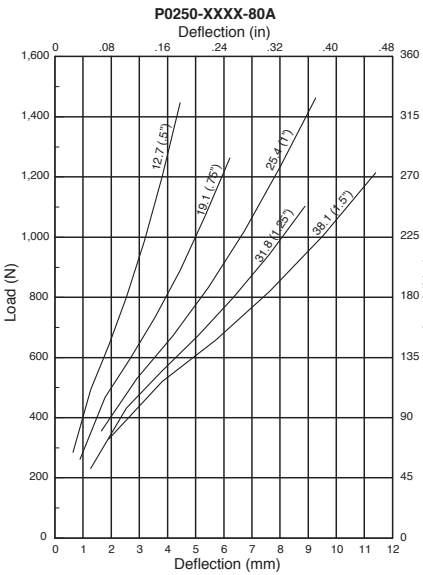
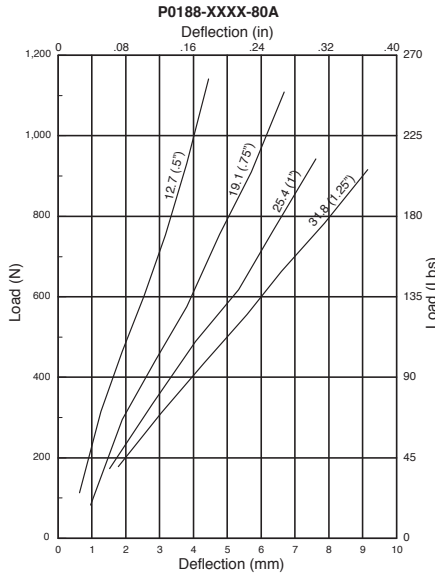
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P1000-XXXX-60A



STOCK URETHANE COMPRESSION SPRINGS Multiple Durometers

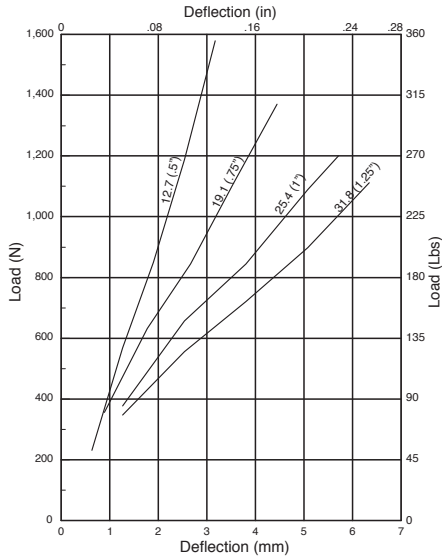


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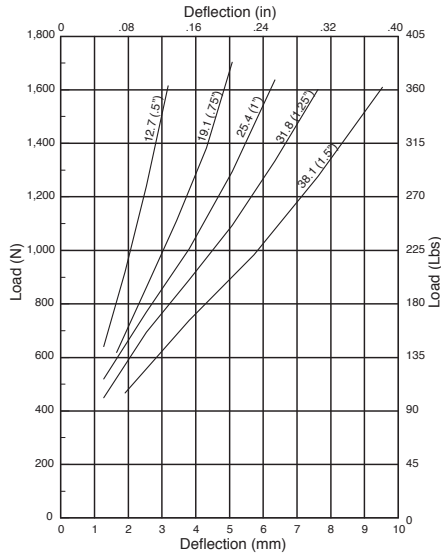


STOCK URETHANE COMPRESSION SPRINGS Multiple Durometers

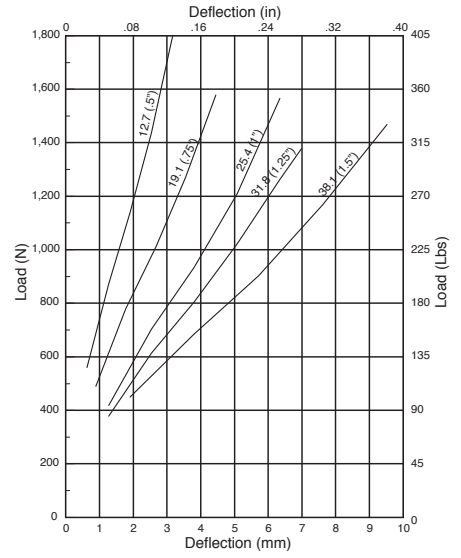
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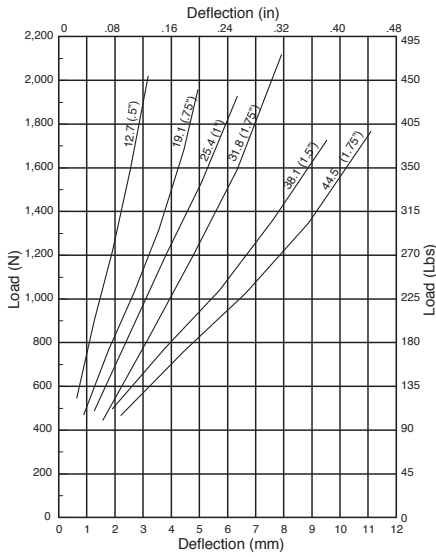
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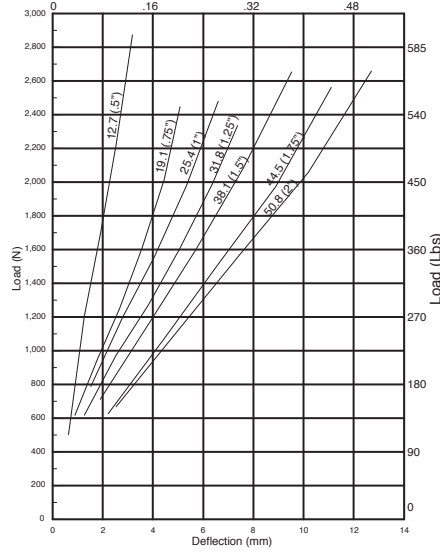
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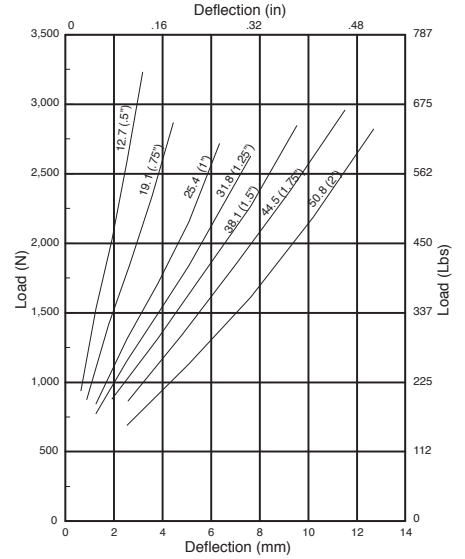
P0375-XXXX-90A



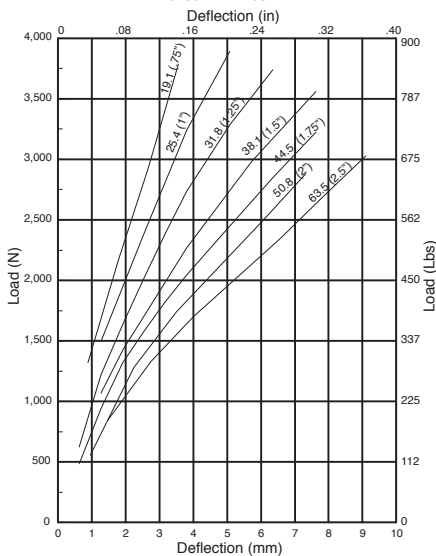
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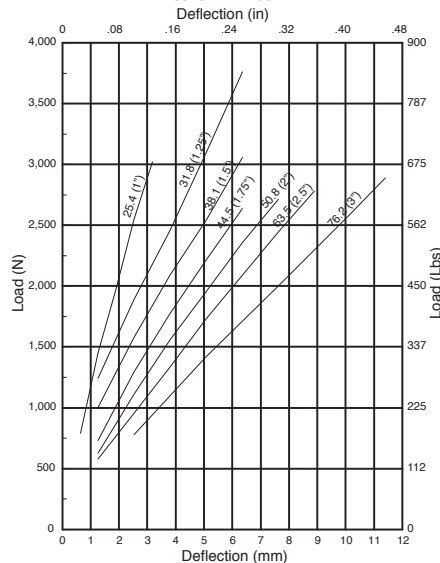
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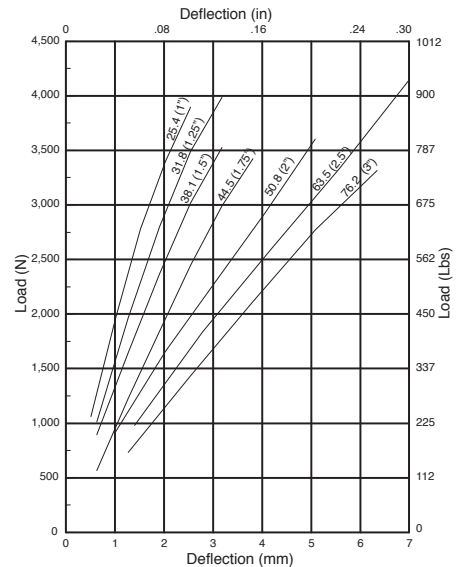
P0750-XXXX-90A



P0875-XXXX-90A



P1000-XXXX-90A



STOCK URETHANE URETHANE TUBES - 12" Lengths

Catalog Number	Interference Rod Fit	Inside Diameter		Outside Diameter		Free Length (approx.)		Durometer
	in	in	mm	in	mm	in	mm	
P0188-12000-60A								60A
P0188-12000-70A								70A
P0188-12000-80A	3/16	0.170	4.32	0.688	17.48			80A
P0188-12000-90A								90A
P0188-12000-95A								95A
P0250-12000-60A								60A
P0250-12000-70A								70A
P0250-12000-80A	1/4	0.230	5.84	0.750	19.05			80A
P0250-12000-90A								90A
P0250-12000-95A								95A
P0312-12000-60A								60A
P0312-12000-70A								70A
P0312-12000-80A	5/16	0.295	7.49	0.813	20.65			80A
P0312-12000-90A								90A
P0312-12000-95A								95A
P0375-12000-60A								60A
P0375-12000-70A								70A
P0375-12000-80A	3/8	0.355	9.02	0.875	22.23			80A
P0375-12000-90A								90A
P0375-12000-95A						12.0	304.8	95A
P0500-12000-60A								60A
P0500-12000-70A								70A
P0500-12000-80A	1/2	0.475	12.07	1.000	25.40			80A
P0500-12000-90A								90A
P0500-12000-95A								95A
P0625-12000-60A								60A
P0625-12000-70A								70A
P0625-12000-80A	5/8	0.600	15.24	1.125	28.58			80A
P0625-12000-90A								90A
P0625-12000-95A								95A
P0750-12000-60A								60A
P0750-12000-70A								70A
P0750-12000-80A	3/4	0.740	18.80	1.375	34.93			80A
P0750-12000-90A								90A
P0750-12000-95A								95A
P0875-12000-60A								60A
P0875-12000-70A								70A
P0875-12000-80A	7/8	0.865	21.97	1.625	41.28			80A
P0875-12000-90A								90A
P0875-12000-95A								95A
P1000-12000-60A								60A
P1000-12000-70A								70A
P1000-12000-80A	1.0	0.990	25.15	1.750	44.45			80A
P1000-12000-90A								90A
P1000-12000-95A								95A

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STOCK URETHANE FULL LENGTH RODS - 12" Lengths

Catalog Number	Outside Diameter		Durometer	Catalog Number	Outside Diameter		Durometer
	in	mm			in	mm	
PR0250-12000-60A			60A	PR0750-12000-60A			60A
PR0250-12000-70A			70A	PR0750-12000-70A			70A
PR0250-12000-80A	0.250	6.35	80A	PR0750-12000-80A	0.750	19.05	80A
PR0250-12000-90A			90A	PR0750-12000-90A			90A
PR0250-12000-95A			95A	PR0750-12000-95A			95A
PR0375-12000-60A			60A	PR0875-12000-60A			60A
PR0375-12000-70A			70A	PR0875-12000-70A			70A
PR0375-12000-80A	0.375	9.53	80A	PR0875-12000-80A	0.875	22.23	80A
PR0375-12000-90A			90A	PR0875-12000-90A			90A
PR0375-12000-95A			95A	PR0875-12000-95A			95A
PR0500-12000-60A			60A	PR1000-12000-60A			60A
PR0500-12000-70A			70A	PR1000-12000-70A			70A
PR0500-12000-80A	0.500	12.70	80A	PR1000-12000-80A	1.000	25.40	80A
PR0500-12000-90A			90A	PR1000-12000-90A			90A
PR0500-12000-95A			95A	PR1000-12000-95A			95A
PR0625-12000-60A			60A	PR1250-12000-60A			60A
PR0625-12000-70A			70A	PR1250-12000-70A			70A
PR0625-12000-80A	0.625	15.88	80A	PR1250-12000-80A	1.250	31.75	80A
PR0625-12000-90A			90A	PR1250-12000-90A			90A
PR0625-12000-95A			95A	PR1250-12000-95A			95A

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FULL LENGTH TUBE ASSORTMENTS

Each assortment contains 1 piece of the part number listed

Catalog Number	Assortment Number	Catalog Number	Assortment Number
P0188-12000-60A	KP0188	P0625-12000-80A	KP0625-2
P0188-12000-70A	KP0188	P0625-12000-90A	KP0625-2
P0188-12000-80A	KP0188	P0625-12000-95A	KP0625-2
P0188-12000-90A	KP0188		
P0188-12000-95A	KP0188	P0750-12000-60A	KP0750-1
		P0750-12000-70A	KP0750-1
P0250-12000-60A	KP0250	P0750-12000-80A	KP0750-1
P0250-12000-70A	KP0250		
P0250-12000-80A	KP0250	P0750-12000-80A	KP0750-2
P0250-12000-90A	KP0250	P0750-12000-90A	KP0750-2
P0250-12000-95A	KP0250	P0750-12000-95A	KP0750-2
P0312-12000-60A	KP0312	P0875-12000-60A	KP0875-1
P0312-12000-70A	KP0312	P0875-12000-70A	KP0875-1
P0312-12000-80A	KP0312	P0875-12000-80A	KP0875-1
P0312-12000-90A	KP0312		
P0312-12000-95A	KP0312	P0875-12000-80A	KP0875-2
		P0875-12000-90A	KP0875-2
P0375-12000-60A	KP0375	P0875-12000-95A	KP0875-2
P0375-12000-70A	KP0375		
P0375-12000-80A	KP0375	P1000-12000-60A	KP1000-1
P0375-12000-90A	KP0375	P1000-12000-70A	KP1000-1
P0375-12000-95A	KP0375	P1000-12000-80A	KP1000-1
P0500-12000-60A	KP0500	P1000-12000-80A	KP1000-2
P0500-12000-70A	KP0500	P1000-12000-90A	KP1000-2
P0500-12000-80A	KP0500	P1000-12000-95A	KP1000-2
P0500-12000-90A	KP0500		
P0500-12000-95A	KP0500		
P0625-12000-60A	KP0625-1		
P0625-12000-70A	KP0625-1		
P0625-12000-80A	KP0625-1		

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Area with horizontal lines for notes.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

INTERLOCK GARTER SPRINGS

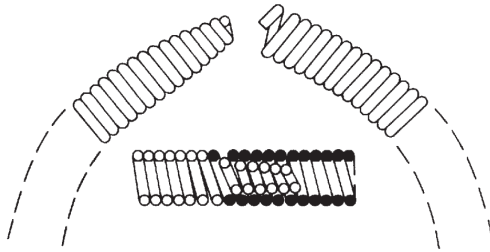
Stock sizes in stainless steel and hard-drawn steel

Garter springs are extension springs with the ends fastened together to form a ring. They are primarily used to maintain controlled pressure of a radial lip seal on a shaft and to compensate for lip wear, changes in volume or stiffness of the elastomer caused by the fluid, and the effect of temperature changes and time. Other uses include small motor belts and electrical connectors.

SPEC garter springs are engineered and manufactured to provide a consistent and reliable product. They feature high initial tension to provide constant load and a special tapered end to assure a strong connection and a continuous near uniform body diameter.

Applications

- Oil Seals • Lip Seals • Small Motor Belts • Electrical Connectors



Lengths

SPEC garter springs are available in a variety of standard lengths which can be ordered to meet your required inside diameter. The springs are already assembled, as per the illustration below.

Material

Stainless steel: per ASTM A313 (Chemical and physical only).
 Hard drawn steel: per ASTM A227 (Chemical and physical only).
 Certificate of chemical analysis available at additional charge.

Finish

Plain wire. See page 312 for alternative finishes.

Tolerances

Body O.D. $\pm .005$ (0.13mm)
 Load at extended length $\pm 20\%$ or ± 1.0 oz (.28N), whichever is greater.

Ends

Springs are sold assembled with interlocked ends.



INTERLOCK GARTER SPRINGS - STAINLESS STEEL

Catalog Number	Body O.D.		Wire Diameter		I.D. Assembled		Active Body Length		Extended Length (L1)		Load at Extended Length (P1)		Maximum Expanded I.D.	
	in	mm	in	mm	in	mm	in	mm	in	mm	oz	N	in	mm
G040-008-0813-S	0.040	1.02	0.008	0.20	2.580	65.53	8.130	206.50	8.255	209.68	2.50	0.70	3.143	79.83
G050-009-0170-S	0.050	1.27	0.009	0.23	0.534	13.56	1.706	43.33	1.929	49.00	5.50	1.53	0.641	16.29
G050-009-0249-S	0.050	1.27	0.009	0.23	0.785	19.94	2.494	63.35	2.853	72.47	4.75	1.32	1.006	25.56
G050-010-0370-S	0.050	1.27	0.010	0.25	1.170	29.72	3.707	94.16	3.996	101.50	5.50	1.53	1.416	35.97
G050-010-0695-S	0.050	1.27	0.010	0.25	2.205	56.01	6.959	176.76	7.273	184.73	6.50	1.81	2.560	65.03
G050-011-0492-S	0.050	1.27	0.011	0.28	1.557	39.55	4.926	125.12	5.237	133.02	6.75	1.88	1.821	46.25
G062-008-0078-S	0.062	1.57	0.008	0.20	0.241	6.12	0.782	19.86	1.030	26.16	2.50	0.70	0.325	8.26
G062-010-0168-S	0.062	1.57	0.010	0.25	0.526	13.36	1.684	42.77	1.979	50.27	5.50	1.53	0.694	17.63
G062-010-0350-S	0.062	1.57	0.010	0.25	1.104	28.04	3.500	88.90	3.687	93.65	3.26	0.91	1.468	37.30
G062-010-0700-S	0.062	1.57	0.010	0.25	2.218	56.34	7.000	177.80	7.187	182.55	2.88	0.80	2.994	76.06
G062-010-1400-S	0.062	1.57	0.010	0.25	4.446	112.93	14.000	355.60	14.187	360.35	2.69	0.75	6.002	152.45
G062-011-0249-S	0.062	1.57	0.011	0.28	0.784	19.91	2.494	63.35	2.915	74.04	4.80	1.33	1.058	26.88
G062-011-0350-S	0.062	1.57	0.011	0.28	1.103	28.02	3.500	88.90	3.687	93.65	4.30	1.20	1.445	36.70
G062-011-0366-S	0.062	1.57	0.011	0.28	1.156	29.36	3.666	93.12	4.093	103.96	5.81	1.62	1.518	38.55
G062-011-0700-S	0.062	1.57	0.011	0.28	2.217	56.31	7.000	177.80	7.187	182.55	3.64	1.01	2.953	75.02
G062-011-1400-S	0.062	1.57	0.011	0.28	4.445	112.90	14.000	355.60	14.187	360.35	3.32	0.92	5.969	151.60
G062-012-0350-S	0.062	1.57	0.012	0.30	1.102	27.99	3.500	88.90	3.687	93.65	6.15	1.71	1.352	34.33
G062-012-0538-S	0.062	1.57	0.012	0.30	1.703	43.26	5.388	136.86	5.765	146.43	7.00	1.95	2.106	53.48
G062-012-0694-S	0.062	1.57	0.012	0.30	2.199	55.85	6.946	176.43	7.402	188.01	7.84	2.18	2.679	68.04
G062-012-0700-S	0.062	1.57	0.012	0.30	2.216	56.29	7.000	177.80	7.187	182.55	5.07	1.41	2.766	70.26
G062-012-1074-S	0.062	1.57	0.012	0.30	3.409	86.59	10.747	272.97	11.479	291.57	12.00	3.34	3.828	97.22
G062-012-1400-S	0.062	1.57	0.012	0.30	4.444	112.88	14.000	355.60	14.187	360.35	4.53	1.26	5.598	142.18
G062-013-0820-S	0.062	1.57	0.013	0.33	2.600	66.04	8.209	208.51	8.677	220.40	9.50	2.64	3.067	77.90
G062-013-0952-S	0.062	1.57	0.013	0.33	3.020	76.71	9.528	242.01	10.063	255.60	10.50	2.92	3.519	89.38
G062-015-1281-S	0.062	1.57	0.015	0.38	4.063	103.20	12.811	325.40	13.305	337.95	15.00	4.17	4.388	111.45
G078-010-0107-S	0.078	1.98	0.010	0.25	0.331	8.41	1.071	27.20	1.414	35.92	3.25	0.90	0.447	11.35
G078-011-0217-S	0.078	1.98	0.011	0.28	0.681	17.30	2.174	55.22	2.560	65.02	4.50	1.25	0.919	23.35
G078-012-0350-S	0.078	1.98	0.012	0.30	1.102	27.99	3.500	88.90	3.687	93.65	7.43	2.07	1.395	35.44
G078-012-0700-S	0.078	1.98	0.012	0.30	2.216	56.29	7.000	177.80	7.187	182.55	6.96	1.93	2.870	72.90
G078-012-1400-S	0.078	1.98	0.012	0.30	4.444	112.88	14.000	355.60	14.187	360.35	6.73	1.87	5.817	147.75
G078-013-0324-S	0.078	1.98	0.013	0.33	1.019	25.88	3.242	82.35	3.541	89.94	7.00	1.95	1.358	34.51
G078-014-0350-S	0.078	1.98	0.014	0.36	1.100	27.94	3.500	88.90	3.687	93.65	12.22	3.40	1.268	32.22
G078-014-0700-S	0.078	1.98	0.014	0.36	2.214	56.24	7.000	177.80	7.187	182.55	11.10	3.09	2.617	66.47
G078-014-0869-S	0.078	1.98	0.014	0.36	2.752	69.90	8.690	220.73	9.145	232.28	9.50	2.64	3.446	87.52
G078-014-1400-S	0.078	1.98	0.014	0.36	4.442	112.83	14.000	355.60	14.187	360.35	10.55	2.93	5.314	134.98
G078-015-0491-S	0.078	1.98	0.015	0.38	1.550	39.37	4.917	124.89	5.356	136.04	12.00	3.34	1.897	48.19

INTERLOCK GARTER SPRINGS - STAINLESS STEEL

Catalog Number	Body O.D.		Wire Diameter		I.D. Assembled		Active Body Length		Extended Length (L1)		Load at Extended Length (P1)		Maximum Expanded I.D.	
	in	mm	in	mm	in	mm	in	mm	in	mm	oz	N	in	mm
	G078-015-0700-S	0.078	1.98	0.015	0.38	2.214	56.24	7.003	177.88	7.458	189.43	13.00	3.61	2.644
G078-015-1390-S	0.078	1.98	0.015	0.38	4.412	112.06	13.908	353.26	14.470	367.54	12.00	3.34	5.294	134.47
G080-016-1413-S	0.080	2.03	0.016	0.41	4.484	113.89	14.137	359.08	14.684	372.97	14.00	3.89	5.286	134.27
G080-016-1663-S	0.080	2.03	0.016	0.41	5.279	134.09	16.635	422.53	17.255	438.28	14.00	3.89	6.227	158.16
G094-014-0350-S	0.094	2.39	0.014	0.36	1.100	27.94	3.500	88.90	3.687	93.65	8.14	2.26	1.485	37.71
G094-014-0700-S	0.094	2.39	0.014	0.36	2.214	56.24	7.000	177.80	7.187	182.55	7.57	2.10	2.989	75.92
G094-014-1400-S	0.094	2.39	0.014	0.36	4.442	112.83	14.000	355.60	14.187	360.35	7.29	2.03	5.997	152.32
G094-016-0350-S	0.094	2.39	0.016	0.41	1.098	27.89	3.500	88.90	3.687	93.65	10.64	2.96	1.389	35.29
G094-016-0700-S	0.094	2.39	0.016	0.41	2.212	56.18	7.000	177.80	7.187	182.55	9.43	2.62	2.876	73.05
G094-016-1400-S	0.094	2.39	0.016	0.41	4.440	112.78	14.000	355.60	14.187	360.35	8.83	2.45	5.846	148.48
G094-017-1279-S	0.094	2.39	0.017	0.43	4.056	103.02	12.796	325.02	13.418	340.82	13.00	3.61	5.103	129.62
G094-017-1443-S	0.094	2.39	0.017	0.43	4.579	116.31	14.439	366.75	15.146	384.71	14.50	4.03	5.664	143.87
G094-018-1589-S	0.094	2.39	0.018	0.46	5.042	128.07	15.896	403.76	16.556	420.52	15.50	4.31	6.132	155.76
G094-018-2065-S	0.094	2.39	0.018	0.46	6.555	166.50	20.650	524.51	21.309	541.25	19.25	5.35	7.644	194.16
G109-016-0350-S	0.109	2.77	0.016	0.41	1.098	27.89	3.500	88.90	3.687	93.65	8.77	2.44	1.482	37.65
G109-016-0700-S	0.109	2.77	0.016	0.41	2.212	56.18	7.000	177.80	7.187	182.55	8.06	2.24	2.986	75.85
G109-016-1400-S	0.109	2.77	0.016	0.41	4.440	112.78	14.000	355.60	14.187	360.35	7.71	2.14	5.994	152.25
G109-018-0350-S	0.109	2.77	0.018	0.46	1.096	27.84	3.500	88.90	3.687	93.65	11.28	3.14	1.435	36.44
G109-018-0700-S	0.109	2.77	0.018	0.46	2.210	56.13	7.000	177.80	7.187	182.55	9.91	2.75	2.982	75.74
G109-018-1400-S	0.109	2.77	0.018	0.46	4.438	112.73	14.000	355.60	14.187	360.35	9.23	2.57	5.991	152.18
G125-020-0700-S	0.125	3.18	0.020	0.51	2.204	55.98	7.000	177.80	7.187	182.55	18.17	5.05	2.768	70.32
G125-020-1400-S	0.125	3.18	0.020	0.51	4.432	112.57	14.000	355.60	14.187	360.35	16.08	4.47	5.776	146.71
G125-020-1587-S	0.125	3.18	0.020	0.51	5.032	127.81	15.871	403.12	16.619	422.12	15.50	4.31	6.789	172.43
G125-020-1959-S	0.125	3.18	0.020	0.51	6.218	157.94	19.597	497.76	20.172	512.37	12.25	3.41	8.394	213.22
G125-020-2600-S	0.125	3.18	0.020	0.51	8.252	209.60	26.000	660.40	26.187	665.15	15.11	4.20	10.930	277.62
G125-024-2167-S	0.125	3.18	0.024	0.61	6.875	174.63	21.675	550.55	22.246	565.05	27.25	7.58	8.192	208.09
G188-024-0700-S	0.188	4.76	0.024	0.61	2.204	55.98	7.000	177.80	7.187	182.55	12.58	3.50	2.975	75.58
G188-024-1400-S	0.188	4.76	0.024	0.61	4.432	112.57	14.000	355.60	14.187	360.35	12.09	3.36	5.983	151.97
G188-024-2600-S	0.188	4.76	0.024	0.61	8.252	209.60	26.000	660.40	26.187	665.15	11.86	3.30	11.140	282.96
G250-024-0700-S	0.250	6.35	0.024	0.61	2.204	55.98	7.000	177.80	7.187	182.55	11.36	3.16	2.975	75.58
G250-024-1400-S	0.250	6.35	0.024	0.61	4.432	112.57	14.000	355.60	14.187	360.35	11.18	3.11	5.983	151.97
G250-024-2600-S	0.250	6.35	0.024	0.61	8.252	209.60	26.000	660.40	26.187	665.15	11.09	3.08	11.140	282.96

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



INTERLOCK GARTER SPRINGS - HARD DRAWN STEEL

Catalog Number	Body O.D.		Wire Diameter		I.D. Assembled		Active Body Length		Extended Length (L1)		Load at Extended Length (P1)		Maximum Expanded I.D.	
	in	mm	in	mm	in	mm	in	mm	in	mm	oz	N	in	mm
	G050-009-0157	0.050	1.27	0.009	0.23	0.491	12.47	1.571	39.90	1.866	47.40	5.00	1.39	0.652
G050-009-0259	0.050	1.27	0.009	0.23	0.816	20.73	2.592	65.84	2.881	73.18	5.25	1.46	1.035	26.30
G050-010-0369	0.050	1.27	0.010	0.25	1.163	29.54	3.698	93.93	3.958	100.53	5.50	1.53	1.433	36.41
G050-010-0506	0.050	1.27	0.010	0.25	1.601	40.67	5.063	128.60	5.375	136.53	6.17	1.72	1.936	49.18
G050-010-0731	0.050	1.27	0.010	0.25	2.318	58.88	7.314	185.78	7.687	195.25	6.70	1.86	2.761	70.12
G062-010-0248	0.062	1.57	0.010	0.25	0.782	19.86	2.488	63.20	2.655	67.44	4.00	1.11	0.966	24.54
G062-010-0350	0.062	1.57	0.010	0.25	1.104	28.04	3.500	88.90	3.687	93.65	3.26	0.91	1.393	35.37
G062-010-0700	0.062	1.57	0.010	0.25	2.218	56.34	7.000	177.80	7.187	182.55	2.88	0.80	2.812	71.43
G062-010-1400	0.062	1.57	0.010	0.25	4.446	112.93	14.000	355.60	14.187	360.35	2.69	0.75	6.002	152.45
G062-011-0159	0.062	1.57	0.011	0.28	0.496	12.60	1.593	40.46	1.906	48.41	4.00	1.11	0.670	17.01
G062-011-0350	0.062	1.57	0.011	0.28	1.103	28.02	3.500	88.90	3.687	93.65	4.30	1.20	1.470	37.34
G062-011-0489	0.062	1.57	0.011	0.28	1.548	39.32	4.898	124.41	5.316	135.03	6.75	1.88	1.996	50.70
G062-011-0700	0.062	1.57	0.011	0.28	2.217	56.31	7.000	177.80	7.187	182.55	3.64	1.01	2.993	76.02
G062-011-1400	0.062	1.57	0.011	0.28	4.445	112.90	14.000	355.60	14.187	360.35	3.32	0.92	6.001	152.42
G062-012-0350	0.062	1.57	0.012	0.30	1.102	27.99	3.500	88.90	3.687	93.65	6.15	1.71	1.371	34.83
G062-012-0700	0.062	1.57	0.012	0.30	2.216	56.29	7.000	177.80	7.187	182.55	5.07	1.41	2.798	71.07
G062-012-0796	0.062	1.57	0.012	0.30	2.524	64.11	7.968	202.39	8.281	210.34	9.87	2.74	2.940	74.67
G062-012-0950	0.062	1.57	0.012	0.30	3.014	76.56	9.506	241.45	10.063	255.60	10.50	2.92	3.560	90.43
G062-012-1018	0.062	1.57	0.012	0.30	3.229	82.02	10.182	258.62	10.534	267.56	8.50	2.36	3.882	98.60
G062-012-1400	0.062	1.57	0.012	0.30	4.444	112.88	14.000	355.60	14.187	360.35	4.53	1.26	5.652	143.55
G062-013-0700	0.062	1.57	0.013	0.33	2.218	56.34	7.009	178.03	7.405	188.09	8.50	2.36	2.675	67.94
G062-014-0350	0.062	1.57	0.014	0.36	1.102	27.99	3.506	89.05	3.836	97.43	17.00	4.73	1.242	31.55
G078-010-0214	0.078	1.98	0.010	0.25	0.672	17.07	2.143	54.43	2.756	70.00	4.50	1.25	0.907	23.04
G078-011-0349	0.078	1.98	0.011	0.28	1.101	27.97	3.493	88.72	3.927	99.75	5.50	1.53	1.486	37.75
G078-012-0350	0.078	1.98	0.012	0.30	1.102	27.99	3.500	88.90	3.687	93.65	7.43	2.07	1.452	36.89
G078-012-0498	0.078	1.98	0.012	0.30	1.575	40.01	4.986	126.64	5.397	137.08	6.75	1.88	2.126	54.01

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INTERLOCK GARTER SPRINGS - HARD DRAWN STEEL

Catalog Number	Body O.D.		Wire Diameter		I.D. Assembled		Active Body Length		Extended Length (L1)		Load at Extended Length (P1)		Maximum Expanded I.D.	
	in	mm	in	mm	in	mm	in	mm	in	mm	oz	N	in	mm
	G078-012-0700	0.078	1.98	0.012	0.30	2.216	56.29	7.000	177.80	7.187	182.55	6.96	1.93	2.977
G078-012-1400	0.078	1.98	0.012	0.30	4.444	112.88	14.000	355.60	14.187	360.35	6.73	1.87	5.999	152.38
G078-014-0350	0.078	1.98	0.014	0.36	1.100	27.94	3.500	88.90	3.687	93.65	12.22	3.40	1.303	33.11
G078-014-0700	0.078	1.98	0.014	0.36	2.214	56.24	7.000	177.80	7.187	182.55	11.10	3.09	2.679	68.04
G078-014-0813	0.078	1.98	0.014	0.36	2.574	65.38	8.130	206.50	8.567	217.60	9.50	2.64	3.282	83.36
G078-014-1038	0.078	1.98	0.014	0.36	3.293	83.64	10.389	263.88	10.945	278.00	11.13	3.09	4.159	105.65
G078-014-1400	0.078	1.98	0.014	0.36	4.442	112.83	14.000	355.60	14.187	360.35	10.55	2.93	5.430	137.92
G078-015-0702	0.078	1.98	0.015	0.38	2.221	56.41	7.025	178.44	7.427	188.65	14.60	4.06	2.630	66.80
G078-015-1394	0.078	1.98	0.015	0.38	4.424	112.37	13.946	354.23	14.442	366.83	13.00	3.61	5.304	134.72
G080-011-0358	0.080	2.03	0.011	0.28	1.130	28.70	3.585	91.06	3.989	101.32	4.50	1.25	1.526	38.75
G080-014-0547	0.080	2.03	0.014	0.36	1.727	43.87	5.470	138.94	6.007	152.58	12.00	3.34	2.180	55.36
G080-015-0713	0.080	2.03	0.015	0.38	2.255	57.28	7.131	181.13	7.431	188.75	9.10	2.53	2.846	72.29
G080-016-0282	0.080	2.03	0.016	0.41	0.884	22.45	2.827	71.81	3.302	83.87	22.00	6.12	1.043	26.49
G080-017-0946	0.080	2.03	0.017	0.43	2.995	76.07	9.462	240.33	9.852	250.24	17.12	4.76	3.461	87.90
G080-017-1184	0.080	2.03	0.017	0.43	3.754	95.35	11.847	300.91	12.255	311.28	16.32	4.54	4.351	110.51
G080-017-1407	0.080	2.03	0.017	0.43	4.464	113.39	14.077	357.56	14.611	371.12	18.72	5.20	5.118	130.00
G094-013-0425	0.094	2.39	0.013	0.33	1.341	34.06	4.254	108.05	5.049	128.24	7.00	1.95	1.810	45.98
G094-014-0350	0.094	2.39	0.014	0.36	1.100	27.94	3.500	88.90	3.687	93.65	8.14	2.26	1.485	37.72
G094-014-0525	0.094	2.39	0.014	0.36	1.657	42.09	5.250	133.35	5.791	147.09	9.98	2.77	2.237	56.82
G094-014-0700	0.094	2.39	0.014	0.36	2.214	56.24	7.000	177.80	7.187	182.55	7.57	2.10	2.989	75.92
G094-014-1400	0.094	2.39	0.014	0.36	4.442	112.83	14.000	355.60	14.187	360.35	7.29	2.03	5.997	152.32
G094-016-0350	0.094	2.39	0.016	0.41	1.098	27.89	3.500	88.90	3.687	93.65	10.64	2.96	1.410	35.81
G094-016-0700	0.094	2.39	0.016	0.41	2.212	56.18	7.000	177.80	7.187	182.55	9.43	2.62	2.909	73.90
G094-016-1400	0.094	2.39	0.016	0.41	4.440	112.78	14.000	355.60	14.187	360.35	8.83	2.45	5.906	150.02
G094-017-1443	0.094	2.39	0.017	0.43	4.579	116.31	14.439	366.75	15.146	384.71	14.50	4.03	5.747	145.97
G094-017-1613	0.094	2.39	0.017	0.43	5.120	130.05	16.138	409.91	16.823	427.30	15.50	4.31	6.329	160.74
G094-018-0918	0.094	2.39	0.018	0.46	2.906	73.81	9.186	233.32	9.723	246.96	21.00	5.84	3.427	87.03
G094-018-1120	0.094	2.39	0.018	0.46	3.550	90.17	11.209	284.71	11.690	296.93	20.10	5.59	4.180	106.16
G094-018-2065	0.094	2.39	0.018	0.46	6.555	166.50	20.650	524.51	21.313	541.35	19.25	5.35	7.765	197.23
G094-019-2937	0.094	2.39	0.019	0.48	9.332	237.03	29.377	746.18	29.980	761.49	26.00	7.23	10.485	266.31
G109-016-0350	0.109	2.77	0.016	0.41	1.098	27.89	3.500	88.90	3.687	93.65	8.77	2.44	1.482	37.65
G109-016-0700	0.109	2.77	0.016	0.41	2.212	56.18	7.000	177.80	7.187	182.55	8.06	2.24	2.986	75.85
G109-016-1400	0.109	2.77	0.016	0.41	4.440	112.78	14.000	355.60	14.187	360.35	7.71	2.14	5.994	152.25
G109-018-0350	0.109	2.77	0.018	0.46	1.096	27.84	3.500	88.90	3.687	93.65	11.28	3.14	1.448	36.78
G109-018-0700	0.109	2.77	0.018	0.46	2.210	56.13	7.000	177.80	7.187	182.55	9.91	2.75	2.984	75.78
G109-018-1400	0.109	2.77	0.018	0.46	4.438	112.73	14.000	355.60	14.187	360.35	9.23	2.57	5.991	152.18
G125-020-0700	0.125	3.18	0.020	0.51	2.204	55.98	7.000	177.80	7.187	182.55	18.17	5.05	2.818	71.57
G125-020-1400	0.125	3.18	0.020	0.51	4.432	112.57	14.000	355.60	14.187	360.35	16.08	4.47	5.850	148.58
G125-020-2600	0.125	3.18	0.020	0.51	8.252	209.60	26.000	660.40	26.187	665.15	15.11	4.20	11.048	280.62
G125-025-0927	0.125	3.18	0.025	0.64	2.928	74.37	9.277	235.64	9.507	241.48	29.44	8.18	3.400	86.35
G188-024-0700	0.188	4.76	0.024	0.61	2.204	55.98	7.000	177.80	7.187	182.55	12.58	3.50	2.975	75.58
G188-024-1400	0.188	4.76	0.024	0.61	4.432	112.57	14.000	355.60	14.187	360.35	12.09	3.36	5.983	151.97
G188-024-2600	0.188	4.76	0.024	0.61	8.252	209.60	26.000	660.40	26.187	665.15	11.86	3.30	11.140	282.96
G250-024-0700	0.250	6.35	0.024	0.61	2.204	55.98	7.000	177.80	7.187	182.55	11.36	3.16	2.975	75.58
G250-024-1400	0.250	6.35	0.024	0.61	4.432	112.57	14.000	355.60	14.187	360.35	11.18	3.11	5.983	151.97
G250-024-2600	0.250	6.35	0.024	0.61	8.252	209.60	26.000	660.40	26.187	665.15	11.09	3.08	11.140	282.96



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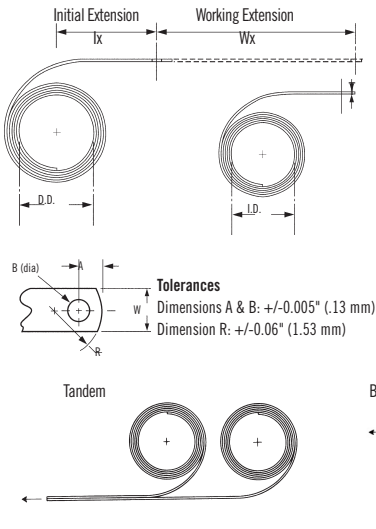


CONSTANT FORCE SPRINGS

Stock sizes in stainless steel

Constant-force springs are a special variety of extension spring. They consist of a spiral of strip material with built-in curvature so that each turn of the strip wraps tightly on its inner neighbor. When the strip is extended (deflected) the inherent stress resists the loading force, just as in a common extension spring, but at a nearly constant (zero) rate.

The constant-force spring is well suited to long extensions with no load build-up. In use, the spring is usually mounted with the ID tightly wrapped on a drum and the free end attached to the loading force, such as in a counterbalance application. This relationship can be reversed, however, with the free end mounted stationary and the spring itself providing the working force, as with carbon brushes in electrical apparatus.



- T= Material Thickness
- W= Width
- L= Length
- I.D.= Inside Diameter
- D.D.= Drum Diameter
- P= Load (+/- 10%)
- A= End Configuration Centerline to End
- B= End Configuration Hole Diameter
- R= End Configuration Radius

Material

Type 301 Stainless Steel

Finish

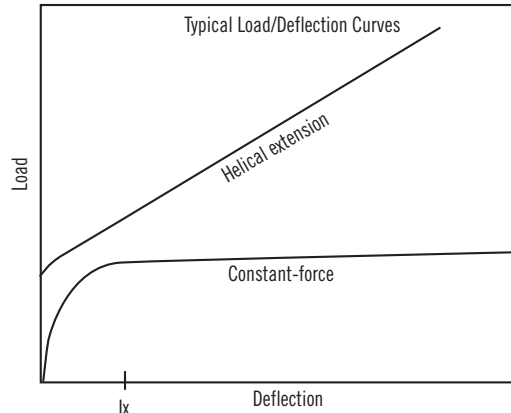
Plain

Note

Be sure to allow at least 1 1/2 coils of material on the drum at full extension. The spring ID will wrap tightly on the drum so that in most applications no fastening method on the drum is required.

How to Multiply Constant Force Spring Load

Considerable flexibility is possible with constant-force springs because the load capacity can be multiplied by using two or more strips in tandem or back-to-back, as illustrated.



Initial Extension (minimum amount of extension needed to operate the spring and achieve a constant rate)

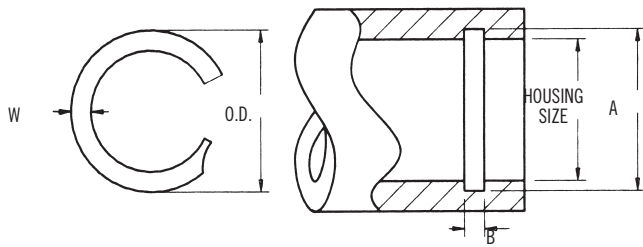
CONSTANT FORCE SPRINGS - STAINLESS STEEL

Catalog Number	Thickness (T)		Width (W)		Length (L)		Initial Extension (lx)		Working Extension (Wlx) Max		Inside Diameter (I.D.)		Drum Diameter		Load (P)		End Configuration						Fatigue Life Cycles
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N	A		B		R		
CF012-0037	0.003	0.08	0.187	4.75	12	305	0.50	12.70	9	229	0.21	5.33	0.25	6.35	0.37	1.65	0.093	2.36	0.096	2.44	1/2	12.7	2500
CF015-0049	0.004	0.10	0.187	4.75	15	381	0.61	15.49	12	305	0.29	7.37	0.34	8.64	0.49	2.18	0.093	2.36	0.096	2.44	1/2	12.7	2500
CF015-0066	0.004	0.10	0.250	6.35	15	381	0.61	15.49	12	305	0.25	6.35	0.30	7.62	0.66	2.94	3/8	9.5	0.13	3.3	1/2	12.7	2500
CF017-0103	0.005	0.13	0.312	7.92	17	432	0.75	19.05	14	356	0.37	9.40	0.44	11.18	1.03	4.58	3/8	9.5	0.13	3.3	1/2	12.7	2500
CF024-0148	0.006	0.15	0.375	9.53	24	610	0.92	23.37	20	508	0.45	11.43	0.54	13.72	1.48	6.58	3/8	9.5	0.13	3.3	1/2	12.7	2500
CF025-0197	0.006	0.15	0.500	12.70	25	635	0.92	23.37	21	533	0.45	11.43	0.54	13.72	1.97	8.76	3/8	9.5	0.20	5.1	1/2	12.7	2500
CF030-0263	0.008	0.20	0.500	12.70	30	762	1.22	30.99	25	635	0.59	14.99	0.70	17.78	2.63	11.70	3/8	9.5	0.19	4.7	1/2	12.7	2500
CF030-0329	0.008	0.20	0.625	15.88	30	762	1.22	30.99	25	635	0.61	15.49	0.73	18.42	3.29	14.63	3/8	9.5	0.20	5.1	1/2	12.7	2500
CF024-0400	0.008	0.20	0.750	19.05	24	610	1.22	30.99	20	508	0.61	15.49	0.73	18.42	4.00	17.79	3/8	9.5	0.19	4.7	3/4	19.1	2500
CF033-0495	0.010	0.25	0.750	19.05	33	838	1.53	38.86	27	686	0.71	18.03	0.85	21.59	4.95	22.02	3/8	9.5	0.19	4.7	3/4	19.1	2500
CF039-0594	0.012	0.30	0.750	19.05	39	991	1.84	46.74	32	813	0.88	22.35	1.00	25.40	5.94	26.42	3/8	9.5	0.19	4.7	3/4	19.1	2500
CF039-0792	0.012	0.30	1.000	25.40	39	991	1.84	46.74	32	813	0.88	22.35	1.00	25.40	7.92	35.23	3/8	9.5	0.19	4.7	3/4	19.1	2500
CF040-1060	0.016	0.41	1.000	25.40	40	1016	2.21	56.13	33	838	1.20	30.48	1.40	35.56	10.60	47.15	3/8	9.5	0.20	5.1	1/2	12.7	2500
CF050-1650	0.020	0.51	1.250	31.75	50	1270	2.82	71.63	43	1092	1.47	37.34	1.75	44.45	16.50	73.40	3/8	9.5	0.20	5.1	1/2	12.7	2500
CF015-0050	0.004	0.10	0.25	6.35	15	381	0.61	15.49	12	305	0.34	8.64	0.40	10.16	0.50	2.22	3/8	9.5	0.131	3.3	1/2	12.7	4000
CF018-0075	0.005	0.13	0.31	7.87	18	457	0.75	19.05	15	381	0.42	10.67	0.50	12.70	0.75	3.34	3/8	9.5	0.131	3.3	1/2	12.7	4000
CF022-0112	0.006	0.15	0.37	9.40	22	559	0.92	23.37	18	457	0.51	12.95	0.62	15.75	1.12	4.98	3/8	9.5	0.131	3.3	1/2	12.7	4000
CF026-0162	0.007	0.18	0.50	12.70	26	660	1.06	26.92	21	533	0.59	14.99	0.75	19.05	1.62	7.21	3/8	9.5	0.131	3.3	1/2	12.7	4000
CF030-0237	0.008	0.20	0.59	14.99	30	762	1.22	30.99	24	610	0.68	17.27	0.87	22.10	2.37	10.54	3/8	9.5	0.187	4.7	3/4	19.1	4000
CF034-0350	0.010	0.25	0.68	17.27	34	864	1.53	38.86	27	686	0.85	21.59	1.00	25.40	3.50	15.57	3/8	9.5	0.187	4.7	3/4	19.1	4000
CF038-0500	0.012	0.30	0.81	20.57	38	965	1.84	46.74	30	762	1.02	25.91	1.25	31.75	5.00	22.24	3/8	9.5	0.187	4.7	3/4	19.1	4000
CF043-0700	0.014	0.36	1.00	25.40	43	1092	2.14	54.36	33	838	1.19	30.23	1.50	38.10	7.00	31.14	3/8	9.5	0.187	4.7	3/4	19.1	4000
CF018-0023	0.004	0.10	0.25	6.35	18	457	0.62	16.00	15	381	0.53	13.45	0.59	14.98	0.23	1.02	3/8	9.5	0.13	3.3	1/2	12.7	25000
CF018-0043	0.005	0.13	0.38	9.52	25	635	0.78	20.00	22	558	0.65	16.50	0.73	18.53	0.43	1.91	3/8	9.5	0.13	3.3	1/2	12.7	25000
CF025-0052	0.006	0.15	0.38	9.52	25	635	0.90	23.00	21	533	0.77	19.55	0.86	21.83	0.52	2.31	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF025-0070	0.006	0.15	0.50	12.69	25	635	0.92	23.00	21	533	0.80	20.31	0.90	22.85	0.70	3.11	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF033-0093	0.008	0.20	0.50	12.69	33	838	1.23	31.00	28	711	1.07	27.16	1.20	30.46	0.93	4.14	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF035-0146	0.010	0.25	0.63	15.87	35	888	1.53	39.00	29	736	1.36	34.52	1.52	38.58	1.46	6.49	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF045-0209	0.012	0.30	0.75	19.04	45	1142	1.82	46.00	38	965	1.60	40.62	1.79	45.44	2.09	9.29	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF045-0280	0.012	0.30	1.00	25.38	45	1142	1.84	47.00	38	965	1.60	40.62	1.79	45.44	2.80	12.45	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF048-0350	0.015	0.38	1.00	25.38	48	1218	2.20	56.00	39	990	1.96	49.75	2.20	55.85	3.50	15.56	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF046-0410	0.016	0.41	1.00	25.38	46	1168	2.21	56.00	37	939	1.96	49.75	2.20	55.85	4.10	18.23	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF048-0437	0.015	0.38	1.25	31.73	48	1218	2.29	58.00	39	990	2.03	51.53	2.27	57.62	4.37	19.43	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF055-0583	0.020	0.51	1.25	31.73	55	1396	2.82	72.00	43	1092	2.53	64.22	2.83	71.84	5.83	25.92	3/8	9.5	0.20	4.9	1/2	12.7	25000
CF021-0025	0.006	0.15	0.37	9.40	21	533	2.03	51.56	12	305	1.13	28.70	1.36	34.54	0.25	1.11	3/8	9.5	0.131	3.3	1/2	12.7	40000
CF025-0037	0.007	0.18	0.50	12.70	25	635	2.36	59.94	15	381	1.31	33.27	1.58	40.13	0.37	1.65	3/8	9.5	0.131	3.3	1/2	12.7	40000
CF030-0050	0.008	0.20	0.59	14.99	30	762	2.72	69.09	18	457	1.51	38.35	1.81	45.97	0.50	2.22	3/8	9.5	0.187	4.7	3/4	19.1	40000
CF036-0075	0.010	0.25	0.68	17.27	36	914	3.38	85.85	21	533	1.88	47.75	2.26	57.40	0.75	3.34	3/8	9.5	0.187	4.7	3/4	19.1	40000
CF042-0112	0.012	0.30	0.81	20.57	42	1067	4.07	103.40	24	610	2.26	57.40	2.71	68.83	1.12	4.98	3/8	9.5	0.187	4.7	3/4	19.1	40000
CF048-0162	0.014	0.36	1.00	25.40	48	1219	4.74	120.40	27	686	2.63	66.80	3.16	80.26	1.62	7.21	3/8	9.5	0.187	4.7	3/4	19.1	40000

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC

RETAINING RINGS



Material
Carbon Spring Steel

Finish
Plain

Light duty single coil retaining rings are installed in applications where light axial retainment is required. A single notched end is supplied for removal.

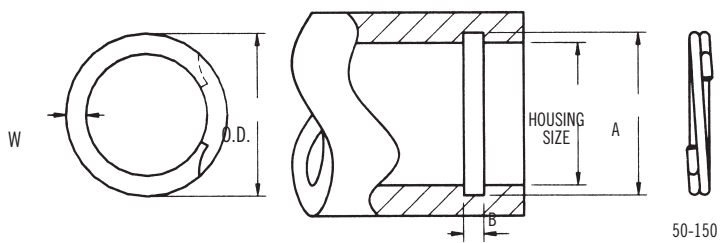
STOCK RETAINING RINGS - INTERNAL LIGHT DUTY

Catalog Number	Housing Size		Groove Size				Maximum Thrust Load Ring		Ring Specifications					
			(A)		(B)				O.D.		Thickness Coils (t)		Material Width (W)	
	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	in	mm
CI 50	0.500	12.70	0.528	13.41	0.022	0.56	1300	5782	0.531	13.49	0.018	0.46	0.045	1.14
CI 62	0.625	15.88	0.653	16.59	0.022	0.56	1630	7250	0.656	16.66	0.018	0.46	0.045	1.14
CI 68	0.687	17.45	0.715	18.16	0.022	0.56	1790	7962	0.719	18.26	0.018	0.46	0.045	1.14
CI 75	0.750	19.05	0.779	19.79	0.022	0.56	1950	8674	0.783	19.89	0.018	0.46	0.045	1.14
CI 81	0.812	20.62	0.854	21.69	0.026	0.66	2460	10942	0.862	21.89	0.021	0.53	0.065	1.65
CI 87	0.875	22.23	0.917	23.29	0.026	0.66	2660	11832	0.926	23.52	0.021	0.53	0.065	1.65
CI 93	0.937	23.80	0.979	24.87	0.026	0.66	2840	12632	0.989	25.12	0.021	0.53	0.065	1.65
CI 100	1.000	25.40	1.042	26.47	0.026	0.66	3030	13477	1.052	26.72	0.021	0.53	0.065	1.65
CI 106	1.062	26.97	1.106	28.09	0.031	0.79	3500	15568	1.117	28.37	0.025	0.64	0.088	2.24
CI 112	1.125	28.58	1.169	29.69	0.031	0.79	3710	16502	1.181	30.00	0.025	0.64	0.088	2.24
CI 118	1.187	30.15	1.231	31.27	0.031	0.79	3910	17392	1.242	31.55	0.025	0.64	0.088	2.24
CI 125	1.250	31.75	1.294	32.87	0.031	0.79	4120	18326	1.317	33.45	0.025	0.64	0.088	2.24
CI 131	1.312	33.32	1.356	34.44	0.031	0.79	4330	19260	1.369	34.77	0.025	0.64	0.088	2.24
CI 137	1.375	34.93	1.419	36.04	0.031	0.79	4530	20149	1.433	36.40	0.025	0.64	0.088	2.24
CI 143	1.437	36.50	1.481	37.62	0.031	0.79	4740	21084	1.496	38.00	0.025	0.64	0.088	2.24
CI 150	1.500	38.10	1.544	39.22	0.031	0.79	4950	22018	1.559	39.60	0.025	0.64	0.088	2.24
CI 156	1.562	39.67	1.619	41.12	0.039	0.99	6390	28423	1.637	41.58	0.031	0.79	0.118	3.00
CI 162	1.625	41.28	1.682	42.72	0.039	0.99	6650	29579	1.701	43.21	0.031	0.79	0.118	3.00
CI 168	1.687	42.85	1.744	44.30	0.039	0.99	6900	30691	1.763	44.78	0.031	0.79	0.118	3.00
CI 175	1.750	44.45	1.807	45.90	0.039	0.99	7160	31848	1.827	46.41	0.031	0.79	0.118	3.00
CI 181	1.812	46.02	1.869	47.47	0.039	0.99	7410	32960	1.890	48.01	0.031	0.79	0.118	3.00
CI 187	1.875	47.63	1.963	49.07	0.039	0.99	7670	34116	1.953	49.61	0.031	0.79	0.118	3.00
CI 193	1.937	49.20	1.994	50.65	0.039	0.99	7920	35228	2.016	51.21	0.031	0.79	0.118	3.00
CI 200	2.000	50.80	2.057	52.25	0.039	0.99	8180	36385	2.079	52.81	0.031	0.79	0.118	3.00
CI 212	2.125	53.98	2.201	55.91	0.039	0.99	8690	38653	2.226	56.54	0.031	0.79	0.158	4.01
CI 225	2.250	57.15	2.326	59.08	0.039	0.99	9200	40922	2.352	59.74	0.031	0.79	0.158	4.01
CI 237	2.375	60.33	2.451	62.26	0.039	0.99	9710	43190	2.478	62.94	0.031	0.79	0.158	4.01
CI 250	2.500	63.50	2.576	65.43	0.039	0.99	10220	45459	2.605	66.17	0.031	0.79	0.158	4.01
CI 262	2.625	66.68	2.701	68.61	0.039	0.99	10740	47772	2.731	69.37	0.031	0.79	0.158	4.01
CI 275	2.750	69.85	2.826	71.78	0.039	0.99	11250	50040	2.857	72.57	0.031	0.79	0.158	4.01
CI 287	2.875	73.03	2.951	74.96	0.039	0.99	11760	52308	2.983	75.77	0.031	0.79	0.158	4.01
CI 300	3.000	76.20	3.076	78.13	0.039	0.99	12270	54577	3.110	78.99	0.031	0.79	0.158	4.01
CI 312	3.125	79.38	3.217	81.71	0.044	1.12	16080	71524	3.251	82.58	0.039	0.99	0.188	4.78
CI 325	3.250	82.55	3.342	84.89	0.044	1.12	16720	74371	3.377	85.78	0.039	0.99	0.188	4.78
CI 337	3.375	85.73	3.467	88.06	0.044	1.12	17370	77262	3.504	89.00	0.039	0.99	0.188	4.78
CI 350	3.500	88.90	3.592	91.24	0.044	1.12	18010	80108	3.630	92.20	0.039	0.99	0.188	4.78
CI 362	3.625	92.08	3.717	94.41	0.044	1.12	18650	82955	3.766	95.66	0.039	0.99	0.188	4.78
CI 375	3.750	95.25	3.842	97.59	0.044	1.12	19300	85846	3.892	98.86	0.039	0.99	0.188	4.78
CI 387	3.875	98.43	3.967	100.76	0.044	1.12	19940	88693	4.009	101.83	0.039	0.99	0.188	4.78
CI 400	4.000	101.60	4.092	103.94	0.044	1.12	20580	91540	4.135	105.03	0.039	0.99	0.188	4.78

Groove Tolerances (Inches)

Ring Tolerances (Inches)

A	B	O.D.	t
CI 50 - CI 75 : ±.002	CI 50 - CI 150: +.002; -.000	CI 50 - CI 100: +.013; -.000	CI 50 - CI 150: ± .0015
CI 81 - CI 100: ±.003	CI 156 - CI 400: +.003; -.000	CI 106 - CI 150: +.015; -.000	CI 156 - CI 400: ± .0020
CI 106 - CI 150: ±.004		CI 156 - CI 200: +.020; -.000	
CI 156 - CI 200: ±.005		CI 212 - CI 300: +.025; -.000	
CI 212 - CI 400: ±.006		CI 312 - CI 400: +.030; -.000	



Material
Carbon Spring Steel

Finish
Plain

Medium duty multiple coil retaining rings are designed to handle medium thrust loads. When specified in advance these rings can meet Aerospace and Military standards.

50-150 over 150

STOCK RETAINING RINGS - INTERNAL MEDIUM DUTY

Catalog Number	Housing Size		Groove Size				Maximum Thrust Load Ring		Ring Specifications					
			(A)		(B)				O.D.		Thickness Coils (t)		Material Width (W)	
	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	in	mm
AI 50	0.500	12.70	0.526	13.36	0.030	0.76	2000	8896	0.532	13.51	0.025	0.64	0.045	1.14
AI 62	0.625	15.88	0.651	16.54	0.030	0.76	2500	11120	0.658	16.71	0.025	0.64	0.045	1.14
AI 68	0.687	17.45	0.713	18.11	0.030	0.76	2750	12232	0.720	18.29	0.025	0.64	0.045	1.14
AI 75	0.750	19.05	0.782	19.86	0.036	0.91	3360	14945	0.790	20.07	0.031	0.79	0.065	1.65
AI 81	0.812	20.62	0.843	21.41	0.036	0.91	3640	16191	0.853	21.67	0.031	0.79	0.065	1.65
AI 87	0.875	22.23	0.912	23.16	0.036	0.91	3920	17436	0.922	23.42	0.031	0.79	0.065	1.65
AI 93	0.938	23.83	0.975	24.77	0.036	0.91	4200	18682	0.986	25.04	0.031	0.79	0.065	1.65
AI 100	1.000	25.40	1.043	26.49	0.042	1.07	4480	19927	1.054	26.77	0.037	0.94	0.075	1.91
AI 106	1.062	26.97	1.104	28.04	0.042	1.07	5680	25265	1.117	28.37	0.037	0.94	0.075	1.91
AI 112	1.125	28.58	1.167	29.64	0.042	1.07	6010	26732	1.180	29.97	0.037	0.94	0.075	1.91
AI 118	1.188	30.18	1.236	31.39	0.048	1.22	7380	32826	1.249	31.72	0.043	1.09	0.085	2.16
AI 125	1.250	31.75	1.298	32.97	0.048	1.22	7770	34561	1.312	33.32	0.043	1.09	0.085	2.16
AI 131	1.312	33.32	1.360	34.54	0.048	1.22	8150	36251	1.374	34.90	0.043	1.09	0.085	2.16
AI 137	1.375	34.93	1.427	36.25	0.048	1.22	8540	37986	1.442	36.63	0.043	1.09	0.095	2.41
AI 143	1.437	36.50	1.489	37.82	0.048	1.22	8930	39721	1.504	38.20	0.043	1.09	0.095	2.41
AI 150	1.500	38.10	1.552	39.42	0.048	1.22	9320	41455	1.567	39.80	0.043	1.09	0.095	2.41
AI 156	1.562	39.67	1.617	41.07	0.056	1.42	10100	44925	1.634	41.50	0.049	1.24	0.108	2.74
AI 162	1.625	41.28	1.684	42.77	0.056	1.42	10510	46748	1.701	43.21	0.049	1.24	0.108	2.74
AI 168	1.687	42.85	1.750	44.45	0.056	1.42	10910	48528	1.768	44.91	0.049	1.24	0.118	3.00
AI 175	1.750	44.45	1.813	46.05	0.056	1.42	11310	50307	1.834	46.58	0.049	1.24	0.118	3.00
AI 181	1.813	46.05	1.875	47.63	0.056	1.42	11720	52131	1.894	48.11	0.049	1.24	0.118	3.00
AI 187	1.875	47.63	1.942	49.33	0.056	1.42	12120	53910	1.960	49.78	0.049	1.24	0.118	3.00
AI 193	1.938	49.23	2.005	50.93	0.056	1.42	12530	55733	2.025	51.44	0.049	1.24	0.118	3.00
AI 200	2.000	50.80	2.071	52.60	0.056	1.42	12930	57513	2.091	53.11	0.049	1.24	0.128	3.25
AI 212	2.125	53.98	2.195	55.75	0.056	1.42	13740	61116	2.217	56.31	0.049	1.24	0.128	3.25
AI 225	2.250	57.15	2.324	59.03	0.056	1.42	14550	64718	2.347	59.61	0.049	1.24	0.138	3.51
AI 237	2.375	60.33	2.453	62.31	0.056	1.42	15350	68277	2.476	62.89	0.049	1.24	0.138	3.51
AI 250	2.500	63.50	2.582	65.58	0.056	1.42	16160	71880	2.606	66.19	0.049	1.24	0.148	3.76
AI 262	2.625	66.68	2.711	68.86	0.056	1.42	16970	75483	2.736	69.49	0.049	1.24	0.148	3.76
AI 275	2.750	69.85	2.841	72.16	0.056	1.42	17780	79085	2.865	72.77	0.049	1.24	0.158	4.01
AI 287	2.875	73.03	2.969	75.41	0.056	1.42	18590	82688	2.995	76.07	0.049	1.24	0.168	4.27
AI 300	3.000	76.20	3.096	78.64	0.068	1.73	24150	107419	3.122	79.30	0.061	1.55	0.168	4.27
AI 312	3.125	79.38	3.223	81.86	0.068	1.73	25150	111867	3.251	82.58	0.061	1.55	0.178	4.52
AI 325	3.250	82.55	3.350	85.09	0.068	1.73	26160	116360	3.379	85.83	0.061	1.55	0.178	4.52
AI 337	3.375	85.73	3.479	88.37	0.068	1.73	27160	120808	3.509	89.13	0.061	1.55	0.188	4.78
AI 350	3.500	88.90	3.606	91.59	0.068	1.73	28170	125300	3.636	92.35	0.061	1.55	0.188	4.78
AI 362	3.625	92.08	3.737	94.92	0.068	1.73	29180	129793	3.769	95.73	0.061	1.55	0.198	5.03
AI 375	3.750	95.25	3.862	98.09	0.068	1.73	30180	134241	3.894	98.91	0.061	1.55	0.198	5.03
AI 387	3.875	98.43	3.993	101.42	0.068	1.73	30680	136465	4.025	102.24	0.061	1.55	0.208	5.28
AI 400	4.000	101.60	4.124	104.75	0.068	1.73	32190	143181	4.157	105.59	0.061	1.55	0.218	5.54

Groove Tolerances (Inches)

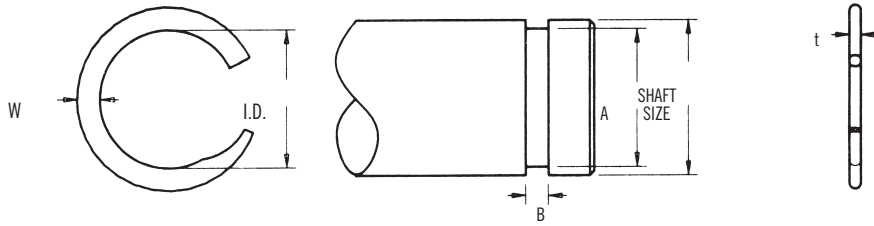
Ring Tolerances (Inches)

A		B		O.D.		t	
AI 50 - AI 75 : ±.002	AI 50 - AI 112: +.003; -.000	AI 50 - AI 100: +.013; -.000	AI 50 - AI 150: ±.002	AI 81 - AI 100: ±.003	AI 118 - AI 287: +.004; -.000	AI 106 - AI 150: +.015; -.000	AI 156 - AI 400: ±.003
AI 106 - AI 150: ±.004	AI 300 - AI 400: +.005; -.000	AI 156 - AI 200: +.020; -.000		AI 156 - AI 200: ±.005	AI 212 - AI 300: +.025; -.000		
AI 212 - AI 400: ±.006		AI 312 - AI 400: +.030; -.000					

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SPEC





Material
Carbon Spring Steel

Finish
Plain

Light duty single coil retaining rings are installed in applications where light axial retainment is required. A single notched end is supplied for removal.

STOCK RETAINING RINGS - EXTERNAL LIGHT DUTY

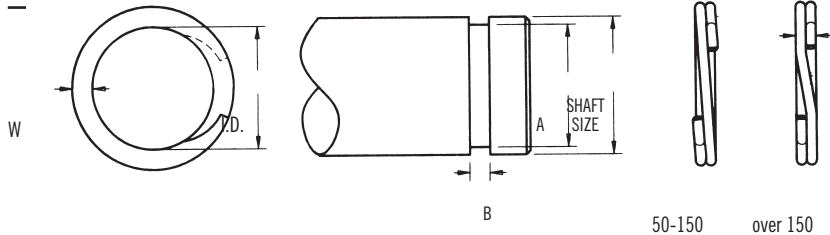
Catalog Number	Shaft Size		Groove Size				Maximum Thrust Load Ring		Ring Specifications					
			(A)		(B)				I.D.		Thickness Coils (t)		Material Width (W)	
	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	in	mm
CE 50	0.500	12.70	0.472	11.99	0.022	0.56	1300	5782	0.467	11.86	0.018	0.46	0.045	1.14
CE 62	0.625	15.88	0.597	15.16	0.022	0.56	1630	7250	0.591	15.01	0.018	0.46	0.045	1.14
CE 68	0.687	17.45	0.659	16.74	0.022	0.56	1790	7962	0.652	16.56	0.018	0.46	0.045	1.14
CE 75	0.750	19.05	0.722	18.34	0.022	0.56	1950	8674	0.715	18.16	0.018	0.46	0.045	1.14
CE 81	0.812	20.62	0.770	19.56	0.026	0.66	2460	10942	0.762	19.35	0.021	0.53	0.065	1.65
CE 87	0.875	22.23	0.833	21.16	0.026	0.66	2660	11832	0.825	20.96	0.021	0.53	0.065	1.65
CE 93	0.937	23.80	0.895	22.73	0.026	0.66	2840	12632	0.886	22.50	0.021	0.53	0.065	1.65
CE 100	1.000	25.40	0.958	24.33	0.026	0.66	3030	13477	0.949	24.10	0.021	0.53	0.065	1.65
CE 106	1.062	26.97	1.018	25.86	0.031	0.79	3500	15568	1.008	25.60	0.025	0.64	0.088	2.24
CE 112	1.125	28.58	1.081	27.46	0.031	0.79	3710	16502	1.071	27.20	0.025	0.64	0.088	2.24
CE 118	1.187	30.15	1.143	29.03	0.031	0.79	3910	17392	1.132	28.75	0.025	0.64	0.088	2.24
CE 125	1.250	31.75	1.206	30.63	0.031	0.79	4120	18326	1.194	30.33	0.025	0.64	0.088	2.24
CE 131	1.312	33.32	1.268	32.21	0.031	0.79	4330	19260	1.255	31.88	0.025	0.64	0.088	2.24
CE 137	1.375	34.93	1.331	33.81	0.031	0.79	4530	20149	1.318	33.48	0.025	0.64	0.088	2.24
CE 143	1.437	36.50	1.393	35.38	0.031	0.79	4740	21084	1.379	35.03	0.025	0.64	0.088	2.24
CE 150	1.500	38.10	1.456	36.98	0.031	0.79	4950	22018	1.442	36.63	0.025	0.64	0.088	2.24
CE 156	1.562	39.67	1.505	38.23	0.039	0.99	6390	28423	1.488	37.80	0.031	0.79	0.118	3.00
CE 162	1.625	41.28	1.568	39.83	0.039	0.99	6650	29579	1.550	39.37	0.031	0.79	0.118	3.00
CE 168	1.687	42.85	1.630	41.40	0.039	0.99	6900	30691	1.612	40.94	0.031	0.79	0.118	3.00
CE 175	1.750	44.45	1.693	43.00	0.039	0.99	7150	31803	1.674	42.52	0.031	0.79	0.118	3.00
CE 181	1.812	46.02	1.755	44.58	0.039	0.99	7410	32960	1.736	44.09	0.031	0.79	0.118	3.00
CE 187	1.875	47.63	1.818	46.18	0.039	0.99	7670	34116	1.798	45.67	0.031	0.79	0.118	3.00
CE 193	1.937	49.20	1.880	47.75	0.039	0.99	7920	35228	1.859	47.22	0.031	0.79	0.118	3.00
CE 200	2.000	50.80	1.943	49.35	0.039	0.99	8180	36385	1.922	48.82	0.031	0.79	0.118	3.00
CE 212	2.125	53.98	2.049	52.04	0.039	0.99	8690	38653	2.026	51.46	0.031	0.79	0.158	4.01
CE 225	2.250	57.15	2.174	55.22	0.039	0.99	9200	40922	2.149	54.58	0.031	0.79	0.158	4.01
CE 237	2.375	60.33	2.299	58.39	0.039	0.99	9710	43190	2.273	57.73	0.031	0.79	0.158	4.01
CE 250	2.500	63.50	2.424	61.57	0.039	0.99	10220	45459	2.397	60.88	0.031	0.79	0.158	4.01
CE 262	2.625	66.68	2.549	64.74	0.039	0.99	10740	47772	2.521	64.03	0.031	0.79	0.158	4.01
CE 275	2.750	69.85	2.674	67.92	0.039	0.99	11250	50040	2.644	67.16	0.031	0.79	0.158	4.01
CE 287	2.875	73.03	2.799	71.09	0.039	0.99	11760	52308	2.768	70.31	0.031	0.79	0.158	4.01
CE 300	3.000	76.20	2.924	74.27	0.039	0.99	12270	54577	2.892	73.46	0.031	0.79	0.158	4.01
CE 312	3.125	79.38	3.033	77.04	0.044	1.12	16080	71524	3.001	76.23	0.039	0.99	0.188	4.78
CE 325	3.250	82.55	3.158	80.21	0.044	1.12	16720	74371	3.125	79.38	0.039	0.99	0.188	4.78
CE 337	3.375	85.73	3.283	83.39	0.044	1.12	17370	77262	3.248	82.50	0.039	0.99	0.188	4.78
CE 350	3.500	88.90	3.408	86.56	0.044	1.12	18010	80108	3.372	85.65	0.039	0.99	0.188	4.78
CE 362	3.625	92.08	3.533	89.74	0.044	1.12	18650	82955	3.496	88.80	0.039	0.99	0.188	4.78
CE 375	3.750	95.25	3.658	92.91	0.044	1.12	19300	85846	3.620	91.95	0.039	0.99	0.188	4.78
CE 387	3.875	98.43	3.783	96.09	0.044	1.12	19940	88693	3.743	95.07	0.039	0.99	0.188	4.78
CE 400	4.000	101.6	3.906	99.26	0.044	1.12	20580	91540	3.867	98.22	0.039	0.99	0.188	4.78

Groove Tolerances (Inches)

Ring Tolerances (Inches)

A	B	I.D.	t
CE 50 - CE 75 : ±.002	CE 50 - CE 150: +.002; -.000	CE 50 - CE 75 : +.000; -.013	CE 50 - CE 150: ±.0015
CE 81 - CE 100: ±.003	CE 156 - CE 400: +.003; -.000	CE 81 - CE 100: +.000; -.015	CE 156 - CE 400: ±.0020
CE 106 - CE 150: ±.004		CE 106 - CE 150: +.000; -.020	
CE 156 - CE 200: ±.005		CE 156 - CE 200: +.000; -.025	
CE 212 - CE 400: ±.006		CE 212 - CE 400: +.000; -.030	





Material
Carbon Spring Steel

Finish
Plain

Medium duty multiple coil retaining rings are designed to handle medium thrust loads. When specified in advance these rings can meet Aerospace and Military standards.

50-150 over 150

STOCK RETAINING RINGS - EXTERNAL MEDIUM DUTY

Catalog Number	Shaft Size		Groove Size				Maximum Thrust Load Ring		Ring Specifications					
			(A)		(B)				I.D.		Thickness Coils (t)		Material Width (W)	
	in	mm	in	mm	in	mm	lb	N	in	mm	in	mm	in	mm
AE 50	0.500	12.70	0.474	12.04	0.030	0.76	2000	8896	0.467	11.86	0.025	0.64	0.045	1.14
AE 62	0.625	15.88	0.594	15.09	0.030	0.76	2500	11120	0.585	14.86	0.025	0.64	0.055	1.40
AE 68	0.687	17.45	0.656	16.66	0.030	0.76	2750	12232	0.647	16.43	0.025	0.64	0.055	1.40
AE 75	0.750	19.05	0.719	18.26	0.036	0.91	3360	14945	0.710	18.03	0.031	0.79	0.065	1.65
AE 81	0.812	20.62	0.781	19.84	0.036	0.91	3640	16191	0.771	19.58	0.031	0.79	0.065	1.65
AE 87	0.875	22.23	0.838	21.29	0.036	0.91	3920	17436	0.828	21.03	0.031	0.79	0.065	1.65
AE 93	0.937	23.80	0.900	22.86	0.036	0.91	4200	18682	0.889	22.58	0.031	0.79	0.065	1.65
AE 98	0.984	24.99	0.941	23.90	0.042	1.07	5260	23396	0.930	23.62	0.037	0.94	0.075	1.91
AE 100	1.000	25.40	0.957	24.31	0.042	1.07	5350	23797	0.946	24.03	0.037	0.94	0.075	1.91
AE 102	1.023	25.98	0.980	24.89	0.042	1.07	5470	24331	0.968	24.59	0.037	0.94	0.075	1.91
AE 106	1.062	26.97	1.020	25.91	0.042	1.07	5680	25265	1.007	25.58	0.037	0.94	0.075	1.91
AE 112	1.125	28.58	1.083	27.51	0.042	1.07	6010	26732	1.070	27.18	0.037	0.94	0.075	1.91
AE 118	1.188	30.18	1.140	28.96	0.048	1.22	7380	32826	1.127	28.63	0.043	1.09	0.085	2.16
AE 125	1.250	31.75	1.202	30.53	0.048	1.22	7770	34561	1.188	30.18	0.043	1.09	0.085	2.16
AE 131	1.312	33.32	1.264	32.11	0.048	1.22	8150	36251	1.251	31.78	0.043	1.09	0.095	2.41
AE 137	1.375	34.93	1.323	33.60	0.048	1.22	8540	37986	1.308	33.22	0.043	1.09	0.095	2.41
AE 143	1.437	36.50	1.385	35.18	0.048	1.22	8930	39721	1.370	34.80	0.043	1.09	0.095	2.41
AE 150	1.500	38.10	1.448	36.78	0.048	1.22	9320	41455	1.433	36.40	0.043	1.09	0.095	2.41
AE 156	1.562	39.67	1.507	38.28	0.056	1.42	10100	44925	1.490	37.85	0.049	1.24	0.108	2.74
AE 162	1.625	41.28	1.566	39.78	0.056	1.42	10510	46748	1.549	39.34	0.049	1.24	0.108	2.74
AE 168	1.687	42.85	1.628	41.35	0.056	1.42	10910	48528	1.610	40.89	0.049	1.24	0.118	3.00
AE 175	1.750	44.45	1.691	42.95	0.056	1.42	11310	50307	1.673	42.49	0.049	1.24	0.118	3.00
AE 181	1.813	46.05	1.749	44.42	0.056	1.42	11720	52131	1.730	43.94	0.049	1.24	0.118	3.00
AE 187	1.875	47.63	1.808	45.92	0.056	1.42	12120	53910	1.789	45.44	0.049	1.24	0.128	3.25
AE 196	1.969	50.01	1.902	48.31	0.056	1.42	12730	56623	1.882	47.80	0.049	1.24	0.128	3.25
AE 200	2.000	50.80	1.929	49.00	0.056	1.42	12930	57513	1.909	48.49	0.049	1.24	0.128	3.25
AE 212	2.125	53.98	2.051	52.10	0.056	1.42	13740	61116	2.029	51.54	0.049	1.24	0.128	3.25
AE 225	2.250	57.15	2.176	55.27	0.056	1.42	14550	64718	2.153	54.69	0.049	1.24	0.138	3.51
AE 231	2.312	58.72	2.234	56.74	0.056	1.42	14950	66498	2.211	56.16	0.049	1.24	0.138	3.51
AE 237	2.375	60.33	2.297	58.34	0.056	1.42	15350	68277	2.273	57.73	0.049	1.24	0.138	3.51
AE 250	2.500	63.50	2.418	61.42	0.056	1.42	16160	71880	2.394	60.81	0.049	1.24	0.148	3.76
AE 262	2.625	66.68	2.539	64.49	0.056	1.42	16970	75483	2.514	63.86	0.049	1.24	0.148	3.76
AE 275	2.750	69.85	2.660	67.56	0.056	1.42	17780	79085	2.635	66.93	0.049	1.24	0.158	4.01
AE 287	2.875	73.03	2.781	70.64	0.056	1.42	18590	82688	2.755	69.98	0.049	1.24	0.168	4.27
AE 300	3.000	76.20	2.904	73.76	0.068	1.73	24150	107419	2.877	73.08	0.061	1.55	0.168	4.27
AE 312	3.125	79.38	3.027	76.89	0.068	1.73	25150	111867	3.000	76.20	0.061	1.55	0.178	4.52
AE 325	3.250	82.55	3.150	80.01	0.068	1.73	26160	116360	3.121	79.27	0.061	1.55	0.178	4.52
AE 337	3.375	85.73	3.271	83.08	0.068	1.73	27160	120808	3.242	82.35	0.061	1.55	0.188	4.78
AE 350	3.500	88.90	3.394	86.21	0.068	1.73	28170	125300	3.363	85.42	0.061	1.55	0.188	4.78
AE 362	3.625	92.08	3.515	89.28	0.068	1.73	29180	129793	3.483	88.47	0.061	1.55	0.198	5.03
AE 375	3.750	95.25	3.638	92.41	0.068	1.73	30180	134241	3.606	91.59	0.061	1.55	0.198	5.03
AE 387	3.875	98.43	3.757	95.43	0.068	1.73	31190	138733	3.724	94.59	0.061	1.55	0.208	5.28
AE 400	4.000	101.6	3.876	98.45	0.068	1.73	32190	143181	3.842	97.59	0.061	1.55	0.218	5.54

Groove Tolerances (Inches)

Ring Tolerances (Inches)

A	B	I.D.	t
AE 50 - AE50: ±.002	AE 50 - AE 112: +.003; -.000	AE 50 - AE 100: +.000; -.013	AE 50 - AE 150: ±.002
AE 62 - AE 102: ±.003	AE 118 - AE 187: +.004; -.000	AE 102 - AE 150: +.000; -.015	AE 156 - AE 400: ±.003
AE 106 - AE 150: ±.004	AE 300 - AE 400: +.005; -.000	AE 156 - AE 212: +.000; -.020	
AE 156 - AE 200: ±.005		AE 225 - AE 262: +.000; -.025	
AE 212 - AE 400: ±.006		AE 275 - AE 337: +.000; -.030	

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SPEC



Internal Retaining Rings (Circlip style)



- Carbon spring steel
- Heat treated
- Black oil finish

INTERNAL RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Housing Diameter (in)	Groove Diameter (in)	Thickness (in)	Packaged Quantity
J5025	1/4	0.268	0.015	50
J5031	5/16	0.330	0.015	50
J5037	3/8	0.397	0.025	50
J5043	7/16	0.461	0.025	50
J5050	1/2	0.530	0.035	50
J5056	9/16	0.596	0.035	50
J5062	5/8	0.665	0.035	50
J5068	11/16	0.732	0.035	50
J5075	3/4	0.796	0.035	50
J5081	13/16	0.862	0.042	50
J5087	7/8	0.931	0.042	50
J5093	15/16	1.000	0.042	50
J50100	1	1.066	0.042	50
J50106	1 1/16	1.130	0.050	50
J50112	1 1/8	1.197	0.050	50
J50125	1 1/4	1.330	0.050	50
J50131	1 5/16	1.396	0.050	50
J50137	1 3/8	1.461	0.050	50
J50143	1 7/16	1.528	0.050	50
J50150	1 1/2	1.594	0.050	50
J50156	1 9/16	1.658	0.062	25
J50162	5/8	1.725	0.062	25
J50175	1 3/4	1.858	0.062	25
J50187	1 7/8	1.989	0.062	25
J50200	2	2.122	0.062	25

External Retaining Rings (Circlip style)



- Carbon spring steel
- Heat treated
- Black oil finish

EXTERNAL RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Shaft Diameter (in)	Groove Diameter (in)	Thickness (in)	Packaged Quantity
A5112	1/8	0.117	0.010	50
A5118	3/16	0.175	0.015	50
A5125	1/4	0.230	0.025	50
A5131	5/16	0.290	0.025	50
A5137	3/8	0.352	0.025	50
A5143	7/16	0.412	0.025	50
A5150	1/2	0.468	0.035	50
A5156	9/16	0.530	0.035	50
A5162	5/8	0.588	0.035	50
A5168	11/16	0.646	0.042	50
A5175	3/4	0.704	0.042	50
A5181	13/16	0.762	0.042	50
A5187	7/8	0.821	0.042	50
A5193	15/16	0.882	0.042	50
A51100	1	0.940	0.042	25
A51106	1 1/16	0.998	0.050	25
A51112	1 1/8	1.059	0.050	25
A51118	1 3/16	1.118	0.050	25
A51125	1 1/4	1.176	0.050	25
A51131	1 5/16	1.232	0.050	25
A51137	1 3/8	1.291	0.050	10
A51143	1 7/16	1.350	0.050	10
A51150	1 1/2	1.406	0.050	10
A51156	1 9/16	1.468	0.050	10
A51163	1 5/8	1.529	0.062	10
A51175	1 3/4	1.650	0.062	10
A51187	1 7/8	1.769	0.062	10
A51200	2	1.886	0.062	10
A51225	2 1/4	2.120	0.078	10
A51250	2 1/2	2.360	0.078	10

Metric Internal Retaining Rings (Circlip style)

- Meets DIN 472 specifications
- Carbon spring steel
- Heat treated
- Black oil finish

METRIC INTERNAL RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Housing Diameter	Groove Diameter (mm)	Thickness (mm)	Packaged Quantity
J10	M10	10.4	1.00	50
J12	M12	12.5	1.00	50
J14	M14	14.6	1.00	50
J15	M15	15.7	1.00	50
J16	M16	16.8	1.00	50
J18	M18	19.0	1.00	50
J19	M19	20.0	1.00	50
J20	M20	21.0	1.00	50
J22	M22	23.0	1.00	50
J24	M24	25.2	1.20	50
J25	M25	26.2	1.20	50

Metric External Retaining Rings (Circlip style)

- Meets DIN 471 specifications
- Carbon spring steel
- Heat treated
- Black oil finish

METRIC INTERNAL RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Housing Diameter	Groove Diameter (mm)	Thickness (mm)	Packaged Quantity
A4*	M4	3.7	0.40	50
A6*	M6	5.6	0.70	50
A8*	M8	7.4	0.80	50
A10	M10	9.3	1.00	50
A12	M12	11.0	1.00	50
A14	M14	12.9	1.00	50
A15	M15	13.8	1.00	50
A16	M16	14.7	1.00	50
A18	M18	16.5	1.20	50
A20	M20	18.5	1.20	50
A22	M22	20.5	1.20	50
A25	M25	23.2	1.20	25

*Lug for sizes 3 to 9

"E" Retaining Rings (Circlip style)



- Carbon spring steel
- Heat treated
- Black oil finish

"E" RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Housing Diameter (in)	Groove Diameter (in)	Thickness (in)	Packaged Quantity
E3309	3/32	0.074	0.015	50
E3312	1/8	0.095	0.015	50
E3314	9/64	0.105	0.025	50
E3315	5/32	0.116	0.025	50
E3318	3/16	0.147	0.025	50
EX3321	7/32	0.188	0.025	50
E3325	1/4	0.210	0.025	50
EX3331	5/16	0.250	0.025	50
E3337	3/8	0.303	0.035	50
E3343	7/16	0.343	0.035	50
E3350	1/2	0.396	0.042	50
E3362	5/8	0.485	0.042	25
E3375	3/4	0.580	0.050	25
E3387	7/8	0.675	0.050	25
EX3398	1	0.835	0.050	25

Metric "E" Retaining Rings (Circlip style)

- Meets DIN 6799 specifications
- Carbon spring steel
- Heat treated
- Black oil finish

METRIC INTERNAL RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Shaft Diameter	Groove Diameter (mm)	Thickness (mm)	Packaged Quantity
RA1.2	M1.70	1.2	0.30	50
RA1.5	M2.25	1.5	0.40	50
RA1.9	M2.75	1.9	0.50	50
RA2.3	M3.50	2.3	0.60	50
RA3.2	M4.50	3.2	0.60	50
RA4	M6.00	4.0	0.70	50
RA5	M7.00	5.0	0.70	50
RA6	M8.00	6.0	0.70	50
RA7	M9.50	7.0	0.90	50
RA8	M10.5	8.0	1.00	50
RA9	M12.0	9.0	1.10	50
RA10	M13.0	10.0	1.20	50
RA12	M15.5	12.0	1.30	50

X-Washers Retaining Rings



- Steel
- 360° closure
- Zinc plated

"E" RETAINING RINGS (CIRCLIP STYLE)				
Part No.	Shaft Diameter (in)	Thickness (in)	Thickness (in)	Packaged Quantity
31490	5/64	1/64	0.025	100
31491	3/32	3/64	0.055	100
31492	1/8	3/64	0.055	100
31493	5/32	1/16	0.065	100
31494	3/16	1/16	0.065	50
31495	7/32	0.075	0.075	50
31496	1/4	0.075	0.075	50
31497	5/32	0.075	0.075	50

Retaining Ring Tools



RETAINING RING TOOLS		
Part No.	Description	Unit
19332	Ring Tool	1.000

- Metal construction
- Unique push-button conversion from internal to external
- Vinyl handles
- Installs internal ring sizes 3/8" through 2" & external ring sizes 1/4" through 2"
- Includes straight tips: .036", .047" & .070"
- Includes 90 degree tips: .036" & .047"



STOCK PACKAGED ASSORTMENTS AND KITS

28 selections of the most-needed stock springs and stock washers.

Belleville Spring Washers
 Curved Spring Washers
 Finger Spring Washers
 Wave Spring Washers
 Compression Springs
 Extension Springs
 Torsion Springs
 Constant-Force Springs
 Metric Compression Springs
 Metric Extension Springs

For experimental, development, prototype and maintenance work

Engineers, designers and specifiers of coiled springs and spring washers find these packaged assortments of ASRaymond items particularly convenient. Repair and maintenance personnel will also find our assortments ideally suited to the upkeep of industrial and production equipment.

All our assortments are designed to combine our most-needed stock springs or washers in easy-to-use, yet economical kits.



The six-drawer metal chest shown above comes at no additional charge when you order any six assortments, listed on pages 224-232, at one time.

SPEC Assortments are packaged in compartmented metal drawers. Catalog part numbers of all included items are individually listed inside the hinged cover for easy identification and re-order.

Stock Packaged Assortments

STOCK BELLEVILLE SPRINGS WASHERS		STANDARD	ASSORTMENT NO. B-402-AS
Includes 75 items (150 pieces) from our line of SPEC stock Belleville spring washers. Designed to carry high loads in limited space, they can be used singly, in series, in parallel or in series-parallel. Offering good fatigue life, they are made of high-quality spring steel (the S suffix denotes stainless steel).			
Includes 2 pieces each of the following part numbers:			
B0187-007	B0375-015	B0562-028	B0875-045
B0187-007-S	B0375-015-S	B0625-022	B0937-045
B0187-010	B0375-018	B0625-022-S	B0937-045-S
B0187-010-S	B0375-019	B0625-032	B0950-047
B0250-009	B0375-020	B0625-032-S	B1000-035
B0250-009-S	B0375-020-S	B0625-047	B1000-035-S
B0250-013	B0437-016	B0625-047-S	B1000-043
B0250-013-S	B0437-020	B0637-032	B1000-050
B0281-010	B0437-022	B0687-034	B1000-050-S
B0281-013	B0437-023	B0750-028	B1000-073
B0281-015	B0499-025	B0750-028-S	B1000-073-S
B0281-015-S	B0500-018	B0750-034	B1125-038
B0312-011	B0500-018-S	B0750-036	B1125-038-S
B0312-011-S	B0500-022	B0750-040	B1125-053
B0312-017	B0500-022-S	B0750-040-S	B1125-053-S
B0312-017-S	B0500-025	B0750-052	B1125-056
B0343-013	B0500-025-S	B0750-056	B1125-056-S
B0343-016	B0500-038	B0750-056-S	B1125-078
B0343-019	B0500-038-S	B0875-031	

STOCK BELLEVILLE SPRINGS WASHERS

HEAVY

ASSORTMENT NO. B-401-AH

Contains 49 different items (98 pieces) of larger size Belleville Spring Washers.

Includes 2 pieces each of the following part numbers:

B1250-040	B1500-060	B1875-086-S	B2500-080
B1250-040-S	B1500-070	B1875-127	B2500-080-S
B1250-051	B1500-070-S	B2000-065	B2500-120
B1250-062	B1500-072	B2000-065-S	B2500-120-S
B1250-062-S	B1500-072-S	B2000-084	B2500-175
B1250-089	B1500-102	B2000-097	B2750-087
B1250-089-S	B1500-107	B2000-097-S	B2750-132
B1262-060	B1500-107-S	B2000-142	B3000-093
B1375-044	B1750-057	B2250-073	B3000-135
B1375-044-S	B1750-057-S	B2250-102	B3000-143
B1375-067	B1750-085	B2250-111	
B1500-045	B1750-085-S	B2250-150	
B1500-045-S	B1875-086	B2250-159	

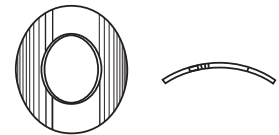
Numbers with suffix "S" are made of stainless steel.

See page 178 for complete information on our Belleville Spring Washers.

STOCK CURVED SPRING WASHERS

ASSORTMENT U-701-A

Combines 65 items (130 pieces). Precision engineered and made of high-quality spring steel (the S suffix denotes stainless steel), our SPEC curved spring washers may be pressed flat without losing free height.



Includes 2 pieces each of the following part numbers:

U093-0045-S	U190-0060-S	U312-0075-S	U437-0180
U093-0056-S	U190-0065-S	U312-0090-S	U437-0210
U125-0040-S	U190-0090-S	U312-0110	U500-0113
U125-0050-S	U190-0113	U312-0130	U500-0140
U125-0060-S	U190-0140	U312-0170	U500-0170
U125-0072-S	U216-0065-S	U312-0210	U500-0180
U125-0075-S	U216-0100-S	U343-0100-S	U500-0210
U125-0088-S	U216-0120	U343-0150	U500-0211
U138-0045-S	U216-0150	U375-0090-S	U562-0120-S
U138-0070-S	U250-0065-S	U375-0100-S	U562-0180
U138-0082-S	U250-0075-S	U375-0110	U625-0140
U138-0100-S	U250-0082-S	U375-0130	U625-0210
U164-0050-S	U250-0110	U375-0150	U750-0160
U164-0075-S	U250-0145	U375-0160	U750-0210
U164-0090-S	U250-0185	U437-0100-S	
U164-0113	U281-0085-S	U437-0120	
U190-0050-S	U281-0120	U437-0150	

Numbers with suffix "S" are made of stainless steel.

See page 197 for complete information on our Curved Spring Washers.

STOCK FINGER SPRING WASHERS

ASSORTMENT F-502-A

Contains 20 items (40 pieces) from our line of SPEC stock finger spring washers. They can be used as take up for large-tolerance variations, anti-rattle applications, end-play eliminators or cushioning devices. Made of high-quality spring steel, all these parts have a finger height of approximately 1/8 inch (3.2 mm).



Includes 2 pieces each of the following part numbers:

F0595-010	F0926-010	F1164-018	F1360-014
F0728-006	F1004-006	F1240-008	F1555-014
F0846-006	F1004-007	F1240-009	F1555-018
F0846-008	F1164-009	F1240-010	F1830-016
F0926-007	F1164-010	F1360-011	F2022-019

See page 203 for complete information on our Finger Spring Washers.

STOCK WAVE SPRING WASHERS

STANDARD

ASSORTMENT W-602-AS

Consists of 35 different items (70 pieces). These parts, made of high-quality spring steel are used where small deflections are needed and axial space is limited, such as ball bearing loading.



Includes 2 pieces each of the following part numbers:

W0183-004-S	W0618-008	W1080-012	W1819-020
W0242-006-S	W0618-008-S	W1102-012	W2028-022
W0305-007-S	W0731-009	W1159-013	W2132-023
W0367-006	W0734-009	W1235-014	W2420-025
W0367-006-S	W0734-009-S	W1351-015	W2645-028
W0484-009	W0855-010	W1543-017	W2816-030
W0492-007	W0855-010-S	W1543-020	W3118-035
W0492-007-S	W0925-010	W1593-018	W3328-036
W0608-008	W1004-011	W1621-019	

STOCK WAVE SPRING WASHERS

HEAVY

ASSORTMENT W-602-AH

Contains 11 different items (22 pieces) for larger applications.

Includes 2 pieces each of the following part numbers:

W3519-038	W4627-047	W5817-055	W6945-063
W3917-042	W4997-050	W6173-058	W7325-065
W4300-045	W5408-053	W6550-061	

Numbers with suffix "S" are made of stainless steel.

See page 199 for complete information on our Wave Spring Washers.

STOCK COMPRESSION SPRINGS

LIGHT

ASSORTMENT C-102-AL

Includes 84 different items (for a total of 168 pieces) of small compression springs, to be used in many light-duty applications. These parts are made of music wire (stainless steel assortments are available on request).



Includes 2 pieces each of the following part numbers:

C0180-016-0380	C0180-032-0500	C0240-029-0500	C0300-026-0750
C0180-016-0500	C0180-032-1000	C0240-029-1000	C0300-026-1250
C0180-016-0750	C0180-032-2000	C0240-029-2000	C0300-026-2000
C0180-018-0500	C0210-022-0500	C0240-032-0500	C0300-030-0750
C0180-018-0100	C0210-022-0880	C0240-032-1000	C0300-030-1250
C0180-018-1500	C0210-022-1500	C0240-032-2000	C0300-030-2000
C0180-020-0500	C0210-026-0500	C0240-035-0620	C0300-032-0750
C0180-020-1000	C0210-026-1000	C0240-035-1250	C0300-032-1250
C0180-020-1500	C0210-026-1500	C0240-035-2000	C0300-032-2000
C0180-022-0500	C0240-020-0500	C0240-038-0750	C0300-038-0750
C0180-022-1000	C0240-020-1000	C0240-038-1250	C0300-038-1500
C0180-022-1500	C0240-020-1750	C0240-038-2000	C0300-038-2000
C0180-024-0500	C0240-022-0500	C0240-040-0750	C0300-040-0750
C0180-024-1000	C0240-022-1000	C0240-040-1250	C0300-040-1500
C0180-024-1500	C0240-022-2000	C0240-040-2000	C0300-040-2000
C0180-026-0500	C0240-024-0500	C0240-042-0750	C0300-042-0750
C0180-026-1000	C0240-024-1000	C0240-042-1500	C0300-042-1500
C0180-026-1500	C0240-024-2000	C0240-042-2500	C0300-042-2250
C0180-029-0500	C0240-026-0500	C0300-022-0750	C0300-045-0750
C0180-029-1000	C0240-026-1000	C0300-022-1250	C0300-045-1500
C0180-029-1500	C0240-026-2000	C0300-022-2000	C0300-045-2250

STOCK COMPRESSION SPRINGS

MEDIUM

ASSORTMENT C-102-AM

Consists of 84 items (for a total of 168 pieces) of compression springs in popular sizes for medium-duty applications. These parts are made of music wire (stainless steel assortments are available on request).

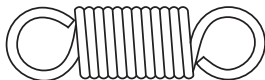
Includes 2 pieces each of the following part numbers:

C0360-026-0750	C0360-032-1500	C0360-038-2000	C0360-045-0750
C0360-026-1500	C0360-032-2000	C0360-040-0750	C0360-045-1250
C0360-026-2000	C0360-035-0750	C0360-040-1500	C0360-045-2000
C0360-029-0500	C0360-035-1250	C0360-040-2000	C0390-043-0750
C0360-029-1250	C0360-035-2000	C0360-042-0750	C0390-043-1000
C0360-029-1750	C0360-038-0750	C0360-042-1250	C0390-043-1750
C0360-032-0750	C0360-038-1250	C0360-042-2000	C0390-047-0750

STOCK COMPRESSION SPRINGS		MEDIUM	ASSORTMENT C-102-AM
C0390-047-1000	C0455-039-0500	C0480-045-2000	C0600-045-1500
C0390-047-1750	C0455-039-1000	C0480-051-0750	C0600-045-2000
C0420-038-0750	C0455-039-1750	C0480-051-1250	C0600-049-1250
C0420-038-1000	C0455-046-0500	C0480-051-2000	C0600-049-2000
C0420-038-1750	C0455-046-1000	C0480-055-0750	C0600-049-2500
C0420-042-0750	C0455-046-1750	C0480-055-1250	C0600-055-1000
C0420-042-1000	C0480-038-0750	C0480-055-2000	C0600-055-1750
C0420-042-2000	C0480-038-1250	C0480-059-0750	C0600-055-2500
C0420-045-0500	C0480-038-2000	C0480-059-1250	C0600-059-1000
C0420-045-1000	C0480-042-0750	C0480-059-2000	C0600-059-2000
C0420-045-1500	C0480-042-1250	C0480-063-1000	C0600-059-2500
C0420-055-0500	C0480-042-2000	C0480-063-1500	C0600-063-1000
C0420-055-1000	C0480-045-0750	C0480-063-2000	C0600-063-2000
C0420-055-2000	C0480-045-1250	C0600-045-1000	C0600-063-2500

STOCK COMPRESSION SPRINGS		HEAVY	ASSORTMENT C-102-AH
Contains 61 different items (122 pieces) of compression springs designed for relatively heavy-duty applications. These parts are made of music wire (stainless steel assortments are available on request).			
Includes 2 pieces each of the following part numbers:			
C0600-067-1000	C0720-067-1500	C0850-085-2000	C1100-105-1500
C0600-067-1500	C0720-067-2000	C0975-074-1000	C1100-105-2000
C0600-067-2000	C0720-072-1000	C0975-074-1500	C1100-112-1000
C0600-072-1000	C0720-072-1500	C0975-074-2000	C1100-112-1500
C0600-072-1500	C0720-072-2000	C0975-085-1000	C1100-112-2000
C0600-072-2000	C0850-068-1000	C0975-085-1500	C1225-096-1000
C0720-055-1000	C0850-068-1500	C0975-085-2000	C1225-096-1500
C0720-055-1500	C0850-068-2000	C0975-092-1000	C1225-105-1000
C0720-055-2000	C0850-074-1000	C0975-092-1500	C1225-105-1500
C0720-063-1000	C0850-074-1500	C0975-092-2000	C1225-112-1000
C0720-063-1500	C0850-074-2000	C0975-096-1500	C1225-112-1500
C0720-063-2000	C0850-081-1000	C0975-096-2000	C1225-125-1000
C0720-065-1000	C0850-081-1500	C1100-085-1500	C1225-125-1500
C0720-065-1500	C0850-081-2000	C1100-085-2000	
C0720-065-2000	C0850-085-1000	C1100-096-1500	
C0720-067-1000	C0850-085-1500	C1100-096-2000	

See page 6 for complete information on our Compression Springs.

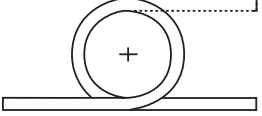
STOCK EXTENSION SPRINGS		LIGHT	ASSORTMENT E-202-AL
Contains 56 items (112 pieces) of small extension springs useful in most light-duty applications. These parts are made of music wire (stainless steel assortments are available on request).			
Includes 2 pieces each of the following part numbers:			
E0180-022-1000	E0240-029-2250	E0300-049-1500	E0360-045-1500
E0180-022-1370	E0240-031-1000	E0300-049-2500	E0360-045-2000
E0180-022-2000	E0240-031-1500	E0360-031-1000	E0360-045-3000
E0180-026-1000	E0240-031-2500	E0360-031-1250	E0360-045-4500
E0180-026-1370	E0240-034-1000	E0360-031-1750	E0360-049-1000
E0180-026-2000	E0240-034-1500	E0360-037-1000	E0360-049-2000
E0180-031-1000	E0240-034-2500	E0360-037-1500	E0360-049-3000
E0180-031-1500	E0240-037-1000	E0360-037-2500	E0360-049-4000
E0180-031-2500	E0240-037-1500	E0360-041-1000	E0360-049-5000
E0240-026-1000	E0240-037-2500	E0360-041-1500	E0360-055-1000
E0240-026-1500	E0300-037-1000	E0360-041-2000	E0360-055-2000
E0240-026-2500	E0300-037-1500	E0360-041-2500	E0360-055-3000
E0240-029-1000	E0300-037-2500	E0360-041-3000	E0360-055-4000
E0240-029-1500	E0300-049-1000	E0360-045-1000	E0360-055-5000

See page 112 for complete information on our Extension Springs.

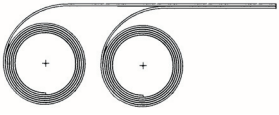
STOCK EXTENSION SPRINGS		MEDIUM		ASSORTMENT E-202-AM	
Includes 43 different items (86 pieces) of extension springs designed for use in medium-duty applications. These parts are made of music wire (stainless steel assortments are available on request).					
Includes 2 pieces each of the following part numbers:					
E0420-037-1000	E0500-041-1250	E0500-063-2000	E0650-069-4000		
E0420-037-1500	E0500-041-1500	E0500-063-3000	E0750-055-2000		
E0420-037-2000	E0500-041-2250	E0500-063-4000	E0750-055-2500		
E0420-037-3000	E0500-045-1500	E0650-055-2000	E0750-055-3500		
E0420-055-1000	E0500-045-2000	E0650-055-3000	E0750-063-2000		
E0420-055-1500	E0500-045-2500	E0650-055-4000	E0750-063-3000		
E0420-055-2000	E0500-055-1500	E0650-063-2000	E0750-063-4000		
E0420-055-3000	E0500-055-2000	E0650-063-3000	E0750-075-2000		
E0500-037-1250	E0500-055-3000	E0650-063-4000	E0750-075-3000		
E0500-037-1500	E0500-055-4000	E0650-069-2000	E0750-075-4000		
E0500-037-2000	E0500-063-1500	E0650-069-3000			

STOCK EXTENSION SPRINGS		HEAVY		ASSORTMENT E-202-AH	
Consists of 28 different item (56 pieces) of extension springs in popular sizes for relatively heavy-duty applications. These parts are made of music wire (stainless steel assortments are available on request).					
Includes 2 pieces each of the following part numbers:					
E0850-055-2000	E0850-075-3000	E1000-063-3250	E1000-095-4000		
E0850-055-2500	E0850-075-4000	E1000-075-2500	E1000-095-4500		
E0850-055-2750	E0850-085-2500	E1000-075-3000	E1000-105-3000		
E0850-063-2250	E0850-085-3000	E1000-075-4000	E1000-105-4000		
E0850-063-2750	E0850-085-4000	E1000-085-3000	E1000-105-4500		
E0850-063-3500	E1000-063-2500	E1000-085-4000	E1000-115-3000		
E0850-075-2500	E1000-063-3000	E1000-095-3000	E1000-115-4000		

See page 112 for complete information on our Extension Springs.

STOCK TORSION SPRINGS		ASSORTMENT T-301-A	
Made up of 41 items (164 pieces), this SPEC assortment contains 2 pieces each of left-hand wound and right-hand wound helix directions. All are made of stainless steel, and are particularly useful for experimental, development and replacement work, or relatively small production use.			
			
Includes 2 pieces each of the following part numbers:			
T012-090-055	T020-180-140	T032-090-172	T048-360-406
T012-180-109	T021-270-109	T032-180-218	T051-090-234
T014-180-078	T021-360-187	T035-180-187	T051-360-406
T014-180-109	T023-270-109	T035-270-281	T054-090-296
T015-270-078	T023-360-172	T038-270-218	T059-360-459
T015-360-109	T025-090-140	T038-360-328	T063-360-516
T017-180-093	T025-180-203	T040-090-187	T070-270-531
T017-270-156	T028-180-140	T040-360-343	T078-360-578
T018-270-109	T028-270-203	T045-090-203	
T018-360-156	T030-270-172	T045-270-359	
T020-090-109	T030-360-250	T048-270-250	

See page 164 for complete information on our Torsion Springs.

STOCK CONSTANT-FORCE SPRINGS		ASSORTMENT CF-1101-A	
Contains 14 items (28 pieces) made of stainless steel.			
			
Includes 2 pieces each of the following part numbers:			
CF015-0050	CF030-0237	CF021-0025	CF042-0112
CF018-0075	CF034-0350	CF025-0037	CF048-0162
CF022-0112	CF038-0500	CF030-0050	
CF026-0162	CF043-0700	CF036-0075	

See page 217 for complete information on our Constant Force Springs.

STOCK CONTINUOUS LENGTH SPRINGS**COMPRESSION SPRINGS****ASSORTMENT A-10-R**

Consists of 41 different, hard drawn wire compression springs in 10 inch (25 cm) lengths.
See page 178 for additional details.

STOCK CONTINUOUS LENGTH SPRINGS**COMPRESSION SPRINGS****ASSORTMENT A-18-R**

Consists of 23 different, hard drawn wire compression springs in 18 inch (45 cm) lengths.
See page 178 for additional details.

STOCK CONTINUOUS LENGTH SPRINGS**EXTENSION SPRINGS**

See page 179 for additional details on the following assortments.

- * E0125-E0250
- * E0375-E0625
- * E0625-E1125
- * E017-E120
- * E023-E105

Stock Metric Packaged Assortments

Stock Metric Compression and Extension Springs

We offer 14 selections of the most popular stock metric compression and extension springs, in either music wire (to DIM 17223C), or stainless steel (to DIN 17224).

Compression spring ends are squared and unground up to a .8mm wire diameter, and squared and ground over a 1.0 mm wire diameter. All dimensions and forces are to DIN 2097 (Grade 2).

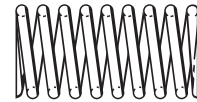
All our springs are coiled right hand, and plain finished with oil.

All these assortments are packaged in compartmented, easy-to-use metal drawers. The following tables indicate the range and number of parts in each drawer.

COMPRESSIONS SPRINGS

ASSORTMENT A58000 (MUSIC WIRE) & ASSORTMENT A68000 (STAINLESS STEEL)

Contains 30 different items (300 pieces)



Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Quantity
0.40	2.00	3.5	9.31	10
0.40	2.00	7.0	3.83	10
0.40	3.20	5.6	2.28	10
0.40	3.20	25.5	0.43	10
0.40	5.00	24.0	0.25	10
0.40	5.00	53.0	0.11	10
0.50	2.50	4.4	11.58	10
0.50	2.50	8.7	4.80	10
0.50	2.50	17.5	2.21	10
0.50	4.00	7.0	2.83	10
0.50	4.00	15.0	1.17	10
0.50	4.00	31.0	0.54	10
0.50	5.00	9.4	1.46	10
0.50	5.00	20.5	0.61	10
0.50	5.00	44.5	0.27	10
0.50	5.00	13.5	0.73	10
0.50	6.30	30.0	0.30	10
0.50	6.30	65.0	0.14	10
0.63	3.20	5.5	14.02	10
0.63	3.20	11.0	5.77	10

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SPEC

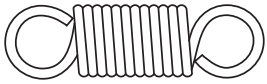
* For stainless steel, multiply by 0.833.

COMPRESSIONS SPRINGS		ASSORTMENT A58000 (MUSIC WIRE) & ASSORTMENT A68000 (STAINLESS STEEL)		
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Quantity
0.63	3.20	22.5	2.65	10
0.63	5.00	8.5	3.69	10
0.63	5.00	18.5	1.55	10
0.63	5.00	38.5	0.70	10
0.63	8.00	16.0	0.89	10
0.63	8.00	37.0	0.37	10
0.80	4.00	14.0	7.67	10
0.80	5.00	12.0	6.07	10
1.00	5.00	8.5	23.24	10
1.00	6.30	10.0	11.57	10

COMPRESSIONS SPRINGS		ASSORTMENT A58020 (MUSIC WIRE) & ASSORTMENT A68020 (STAINLESS STEEL)		
Contains 12 different items (120 pcs.)				
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Quantity
0.63	5.00	38.5	0.70	10
0.63	6.30	54.0	0.34	10
0.63	8.00	55.0	0.25	10
0.80	8.00	47.0	0.65	10
0.80	10.00	45.5	0.49	10
1.00	6.30	43.5	2.20	10
1.00	8.00	59.0	1.08	10
1.00	10.00	56.0	0.81	10
1.25	6.30	51.5	5.39	10
1.25	8.00	47.5	3.96	10
1.25	10.00	44.5	2.92	10
1.60	8.00	45.0	10.40	10

COMPRESSIONS SPRINGS		ASSORTMENT A58040 (MUSIC WIRE) & ASSORTMENT A68040 (STAINLESS STEEL)		
Contains 21 different items (200 pcs.)				
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Quantity
0.50	6.30	65.0	0.14	12
0.63	4.00	29.0	1.35	12
0.80	6.30	48.0	0.90	12
0.80	8.00	68.0	0.44	12
0.80	10.00	96.5	0.23	12
1.00	8.00	59.0	1.08	12
1.00	10.00	39.0	1.20	12
1.00	10.00	81.5	0.55	6
1.00	12.50	115.0	0.28	12
1.25	6.30	51.5	5.39	12
1.25	8.00	69.0	2.69	12
1.25	10.00	93.5	1.34	6
1.25	12.50	62.5	1.40	12
1.60	8.00	65.5	7.05	12
1.60	16.00	34.0	4.64	10
1.60	16.00	165.0	0.88	3
1.60	20.00	240.0	0.45	6
2.00	10.00	38.5	19.22	10
2.00	16.00	145.0	2.16	6
2.00	20.00	200.0	1.10	3
2.00	25.00	290.0	0.50	6

* For stainless steel, multiply by 0.833.

EXTENSION SPRINGS		ASSORTMENT A58010 (MUSIC WIRE) & ASSORTMENT A68010 (STAINLESS STEEL)			
Contains 30 different items (300 pieces)					
					
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
0.50	2.00	15.4	3.19	2.4	10
0.50	3.00	17.0	0.94	1.9	10
0.50	3.00	24.5	0.59	1.8	10
0.50	5.00	15.7	0.31	1.3	10

EXTENSION SPRINGS			ASSORTMENT A58010 (MUSIC WIRE) & ASSORTMENT A68010 (STAINLESS STEEL)		
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
0.50	5.00	27.7	0.13	1.0	10
0.50	5.00	37.7	0.09	0.7	10
0.55	2.25	12.1	5.11	2.8	10
0.55	2.25	17.0	3.27	2.8	10
0.55	2.95	13.2	2.27	2.3	10
0.55	2.95	26.4	0.90	2.5	10
0.55	5.45	17.2	0.36	1.4	10
0.55	5.45	30.4	0.15	1.1	10
0.63	2.37	13.5	7.51	4.0	10
0.63	2.37	19.2	4.81	4.0	10
0.63	3.87	15.9	1.73	2.7	10
0.63	3.87	31.0	0.70	2.5	10
0.63	6.37	25.6	0.25	1.8	10
0.70	4.30	24.0	1.23	6.4	10
0.70	6.80	21.7	0.49	2.2	10
0.70	6.80	38.5	0.20	1.9	10
0.80	3.20	17.4	8.00	5.8	10
0.80	4.70	19.8	2.50	4.7	10
0.80	4.70	27.0	1.60	4.6	10
0.80	4.70	39.0	1.00	4.6	10
0.80	8.20	32.6	0.30	3.0	10
0.80	8.20	60.6	0.13	2.4	10
0.90	3.60	19.6	8.69	7.4	10
0.90	5.40	30.6	1.70	5.5	10
1.00	4.00	21.8	9.90	9.3	10
1.00	6.00	25.0	2.94	6.8	10

EXTENSION SPRINGS ASSORTMENT A58030 (MUSIC WIRE) & ASSORTMENT A68030 (STAINLESS STEEL)

Contains 12 different items (120 pcs.)

Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
0.63	6.37	47.6	0.11	1.2	10
0.70	6.80	52.5	0.13	2.3	10
0.80	4.70	27.0	1.60	4.6	10
0.80	8.20	44.6	0.19	2.7	10
0.80	8.20	60.6	0.13	2.4	10
0.90	9.10	28.4	0.55	3.7	10
1.00	10.00	55.4	0.26	3.9	10
1.20	7.30	59.0	1.35	9.3	10
1.20	11.80	48.2	0.51	6.6	10
1.40	5.60	43.1	8.91	16.9	10
1.40	8.60	35.3	3.83	12.7	10
1.60	6.40	49.3	10.20	21.6	10

EXTENSION SPRINGS ASSORTMENT A58050 (MUSIC WIRE) & ASSORTMENT A68050 (STAINLESS STEEL)

Contains 25 different items (200 pcs.)

Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
0.70	4.30	34.5	0.77	3.9	12
0.80	4.70	39.0	1.00	4.6	12
0.80	4.70	290.0	0.11	5.5	12
0.80	8.20	60.6	0.13	2.4	12
0.90	9.10	68.0	0.15	3.3	3
1.00	6.00	49.0	1.18	6.7	12
1.00	6.00	290.0	0.18	5.7	6
1.00	10.00	75.4	0.17	4.3	12
1.10	10.90	44.3	0.46	5.4	12
1.20	7.30	59.0	1.35	9.3	12
1.20	7.30	290.0	0.24	6.8	3
1.20	11.80	66.2	0.32	6.4	12
1.20	11.80	90.2	0.21	6.9	6
1.40	8.60	68.9	1.54	12.4	12
1.40	8.60	290.0	0.32	13.2	3
1.40	13.60	43.3	0.97	8.6	9
1.60	9.40	54.1	3.22	16.7	3
1.60	9.40	78.1	2.01	17.0	12


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SPEC

* For stainless steel, multiply by 0.833.

EXTENSION SPRINGS		ASSORTMENT A58050 (MUSIC WIRE) & ASSORTMENT A68050 (STAINLESS STEEL)			
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
1.60	15.40	87.7	0.46	11.0	6
1.80	10.20	290.0	0.68	22.0	3
1.80	18.20	56.8	1.11	12.6	2
2.00	12.00	50.0	5.88	25.2	6
2.00	12.00	98.0	2.35	25.4	6
2.50	25.50	139.0	0.60	23.8	6
3.20	18.80	156.0	4.02	57.0	6

* For stainless steel, multiply by 0.833.

COMPRESSION AND EXTENSION SPRINGS		ASSORTMENT A58060 (MUSIC WIRE) & ASSORTMENT A68060 (STAINLESS STEEL)			
Contains 41 different items (200 pieces)					
					
Wire Size (mm)	Mean Coil Diameter (mm)	Spring Length (mm)	Spring Rate N/mm*	Initial Tension Ref. N	Quantity
0.80	8.00	47.0	0.65	Compression	6
0.80	8.00	68.0	0.44	Compression	6
0.80	10.00	45.5	0.49	Compression	3
0.80	10.00	96.5	0.23	Compression	6
1.00	8.00	59.0	1.08	Compression	6
1.00	10.00	81.5	0.55	Compression	3
1.00	12.50	55.5	0.61	Compression	6
1.00	12.50	115.0	0.28	Compression	6
1.25	8.00	69.0	2.69	Compression	6
1.25	12.50	130.0	0.69	Compression	6
1.25	16.00	205.0	0.32	Compression	3
1.60	8.00	65.5	7.05	Compression	6
1.60	10.00	40.5	7.87	Compression	6
1.60	12.50	115.0	1.84	Compression	3
1.60	20.00	240.0	0.45	Compression	3
2.00	10.00	18.0	46.60	Compression	6
2.00	10.00	38.5	19.20	Compression	6
2.00	12.50	49.5	9.81	Compression	6
2.00	20.00	200.0	1.10	Compression	6
0.50	3.00	290.0	0.05	1.5	6
0.70	4.30	34.5	0.77	3.6	6
0.80	4.70	39.0	0.10	4.6	6
0.80	4.70	290.0	0.11	5.5	6
0.80	8.20	60.6	0.13	2.4	6
0.90	9.10	68.0	0.15	3.3	2
1.00	6.00	49.0	1.18	6.7	6
1.00	6.00	290.0	0.18	5.7	6
1.00	10.00	75.4	0.17	4.3	6
1.20	7.30	59.0	1.35	9.3	6
1.20	7.30	290.0	0.24	8.8	3
1.20	11.80	66.2	0.32	6.4	6
1.20	11.80	90.2	0.21	6.9	3
1.40	8.60	68.9	1.54	12.5	6
1.40	13.60	43.3	0.97	8.6	6
1.40	13.60	105.0	0.26	8.5	2
1.60	9.40	78.1	2.01	16.9	6
1.60	15.40	120.0	0.30	12.5	2
1.80	10.20	290.0	0.68	2.2	3
1.80	18.20	56.8	1.11	12.6	2
2.00	12.00	50.0	5.88	25.0	3
2.00	12.00	68.0	3.77	25.0	3

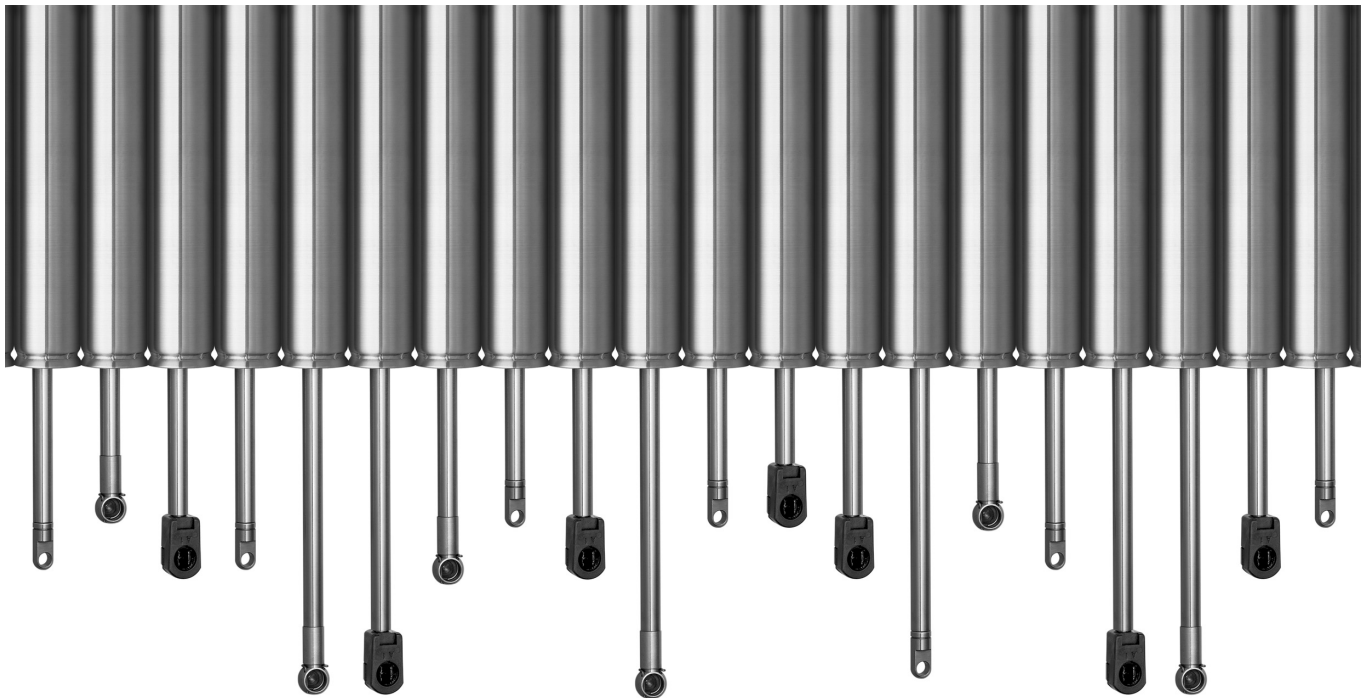
* For stainless steel, multiply by 0.833.

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LOOKING FOR A SPECIAL FINISH FOR YOUR SPRINGS OR WASHERS?
SEE PAGE 312.

MECHANICAL COMPRESSION SPRING STRUTS - m-Struts®

MECHANICAL COMPRESSION
SPRING STRUTS



Designed for a long life while maintaining consistent, repeatable loads, Raymond Mechanical Spring Struts are the ideal choice to replace conventional gas springs. They will withstand harsh environments and wide temperature ranges, and offer a variety of loads, strokes and end configurations. The units utilize advanced coiled spring technology, along with engineered components, to provide a low-friction, highly reliable product.

STRUTS FOR MANY INDUSTRIES

Automotive	Marine
Recreational	Industrial
Medical	Nuclear
Pharmaceutical	Chemical
Defense	Agriculture
Construction	

STRUTS FOR MANY APPLICATIONS

Food Preparation & Processing
Heating, Ventilation & Aeration
Motion Control & Dampening

Raymond Mechanical Spring Struts are offered in a full range of standard struts featuring stainless steel springs, and high load struts with carbon steel springs. In addition, our mechanical spring struts and assembly modules can be custom designed to meet the specific needs of many products within a wide range of industries.

Mechanical Spring Struts Are The Better Choice

- Long life and consistent loads over time
- Corrosion-resistant stainless steel construction
- Design flexibility to meet individual requirements
- No internal gases or seals – no hazardous material concerns
- Proven for FDA applications
- Robust design
- Various end configurations available
- Operating temperatures up to 400°F
- Extension and dampening units offer additional flexibility



MECHANICAL COMPRESSION SPRING STRUTS - m-Struts®

Select From A Wide Range Of Mechanical Spring Struts – Or We'll Design One For You

STANDARD MECHANICAL SPRING STRUTS (Stainless Steel Construction – Stainless Steel Springs – M6 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L) +/-0.060"		Stroke (S) +/-0.060"		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	lbs	N	lbs	N
MSBD-051-0076	0.375	9.53	1.25	31.75	6.95	176.53	2.00	50.80	8	35	17	76
MSBD-051-0116	0.375	9.53	1.25	31.75	8.44	214.38	2.00	50.80	19	85	26	116
MSBD-051-0173	0.375	9.53	1.25	31.75	9.99	253.75	2.00	50.80	30	133	39	173
MSBD-051-0280	0.375	9.53	1.25	31.75	11.61	294.89	2.00	50.80	45	200	63	280
MSBD-076-0102	0.375	9.53	1.25	31.75	9.56	242.82	3.00	76.20	10	44	23	102
MSBD-076-0156	0.375	9.53	1.25	31.75	10.3	261.62	3.00	76.20	15	67	35	156
MSBD-076-0262	0.375	9.53	1.25	31.75	12.26	311.40	3.00	76.20	30	133	59	262
MSBD-127-0133	0.375	9.53	1.25	31.75	17.02	432.31	5.00	127.00	18	80	30	133
MSBD-127-0173	0.375	9.53	1.25	31.75	18.67	474.22	5.00	127.00	25	111	39	173
MSBD-127-0222	0.375	9.53	1.25	31.75	18.96	481.58	5.00	127.00	30	133	50	222
MSBD-127-0271	0.375	9.53	1.25	31.75	19.91	505.71	5.00	127.00	35	156	61	271



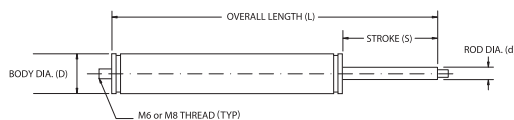
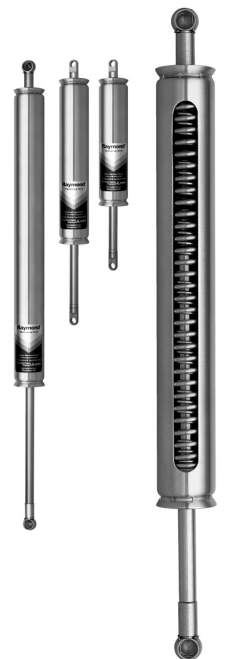
Multiple end configurations, including ball ends, blade or clevis ends are available in various sizes and materials.



Design and assembly or kitting of adjoining hardware (including brackets and mounts) is also offered per customer requirement.

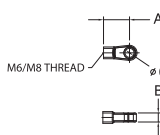
HIGH LOAD MECHANICAL SPRING STRUTS (Stainless Steel Construction – Carbon Steel Springs – M8 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L) +/-0.060"		Stroke (S) +/-0.060"		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	lbs	N	lbs	N
MSCD-026-1057	0.500	12.7	1.25	31.75	7.44	188.98	1.04	26.42	176	782	238	1057
MSCD-026-1240	0.500	12.7	1.25	31.75	5.95	151.13	1.04	26.42	83	369	279	1240
MSCD-033-1069	0.500	12.7	1.25	31.75	6.25	158.75	1.31	33.27	100	446	240	1069
MSCD-039-1072	0.500	12.7	1.25	31.75	6.55	166.37	1.56	39.62	53	236	241	1072
MSCD-039-1111	0.500	12.7	1.25	31.75	7.94	201.68	1.54	39.12	140	622	250	1111
MSCD-041-2354	0.500	12.7	1.25	31.75	13.62	345.95	1.63	41.40	242	1075	529	2354
MSCD-043-2187	0.500	12.7	1.25	31.75	9.69	246.13	1.70	43.18	94	417	492	2187
MSCD-055-1170	0.500	12.7	1.25	31.75	10.19	258.83	2.19	55.63	41	181	263	1170
MSCD-077-1150	0.500	12.7	1.25	31.75	15.12	384.05	3.07	77.98	80	355	259	1150
MSCD-078-1111	0.500	12.7	1.25	31.75	11.09	281.69	3.10	78.74	29	127	250	1111
MSCD-117-1067	0.500	12.7	1.25	31.75	16.62	422.15	4.63	117.60	55	244	240	1067



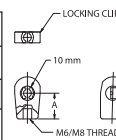
BLADE END (STAINLESS STEEL)

Suffix		A		B	
		in	mm	in	mm
10	M6	0.75	18	0.26	6.70
11	M8	0.81	21.70	0.34	8.70



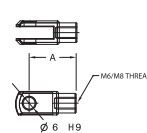
10 MM BALL END (NYLON)

Suffix		Ball Size	A (REF)	
			in	mm
30	M6	10mm	0.709	18.01
31	M8	10mm	0.709	18.01



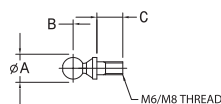
CLEVIS (STAINLESS STEEL)

Suffix		A	
		in	mm
40	M6	0.94	24.00
41	M8	1.25	32.00



BALL STUD (STAINLESS STEEL)

Suffix		A (REF)		B		C	
		in	mm	in	mm	in	mm
50	M6	0.39	10.00	0.43	11.00	0.47	12.00
51	M8	0.51	13.00	0.51	13.00	0.65	16.50



10 MM BALL END (STAINLESS STEEL)

Suffix		Ball Size	A (REF)	
			in	mm
20	M6	10mm	1.00	25.40
21	M8	10mm	1.18	30.00



NOTE: To order a Mechanical Spring Strut with the ends attached, the end suffix must be added to the part number. For example: To order a Mechanical Spring Strut with a blade end on the rod end and a stainless ball end on the strut end, specify MSBD-076-0102-10-20.

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GEN-II MECHANICAL COMPRESSION SPRING STRUTS - m-Struts®

Select From A Wide Range Of Mechanical Spring Struts – Or We'll Design One For You

MECHANICAL EXTENSION
SPRING STRUTS

PART NUMBER	SS Model Suffix	Body Ø (in)	Rod Ø (mm)	Body Ø (in)	Body Ø (mm)	Overall Length (L) (in)	Overall Length (L) (mm)	Stroke (in)	Stroke (mm)	Initial Force (LBF)	Initial Force (N)	Final Force (LBF)	Final Force (N)	Ends
MSE-0200-002-01-15	-S	0.236	6	0.591	15	6.29	160	2	51	2	9	6	27	M6x1.0
MSE-0200-003-01-18	-S	0.315	8	0.709	18	6.69	170	2	51	3	13	9	40	M6x1.0
MSE-0200-008-01-22	-S	0.394	10	0.866	22	6.68	170	2	51	8	36	24	107	M8x1.25
MSE-0200-010-01-28	-S	0.550	14	1.100	28	6.82	173	2	51	10	44	30	133	M10x1.5
MSE-0400-005-01-15	-S	0.236	6	0.591	15	12.29	312	4	101	5	22	15	67	M6x1.0
MSE-0400-007-01-18	-S	0.315	8	0.709	18	12.69	322	4	101	7	31	21	93	M6x1.0
MSE-0400-015-01-22	-S	0.394	10	0.866	22	12.68	322	4	101	15	67	45	200	M8x1.25
MSE-0400-025-01-28	-S	0.550	14	1.100	28	12.82	326	4	101	25	111	75	334	M10x1.5
MSE-0400-030-01-28	-S	0.550	14	1.100	28	12.82	326	4	101	30	133	90	400	M10x1.5
MSE-0600-005-01-15	-S	0.236	6	0.591	15	18.29	465	6	153	5	22	15	67	M6x1.0
MSE-0600-009-01-18	-S	0.315	8	0.709	18	18.69	475	6	153	9	40	27	120	M6x1.0
MSE-0600-017-01-22	-S	0.394	10	0.866	22	18.68	474	6	153	17	76	51	227	M8x1.25
MSE-0600-030-01-28	-S	0.550	14	1.100	28	18.82	478	6	153	30	133	90	400	M10x1.5
MSE-0600-040-02-28	-S	0.550	14	1.100	28	18.82	478	6	153	40	178	119	529	M10x1.5
MSE-0600-060-02-28	-S	0.550	14	1.100	28	18.82	478	6	153	60	267	182	810	M10x1.5
MSE-0600-070-02-28	-S	0.550	14	1.100	28	18.82	478	6	153	70	311	212	943	M10x1.5
MSE-0600-075-02-28	-S	0.550	14	1.100	28	24.82	630	6	153	75	334	338	1503	M10x1.5
MSE-0600-077-02-28	-S	0.550	14	1.100	28	24.82	630	6	153	77	342	372	1655	M10x1.5
MSE-0800-006-01-15	-S	0.236	6	0.591	15	24.29	617	8	203	6	27	18	80	M6x1.0
MSE-0800-009-01-18	-S	0.315	8	0.709	18	24.69	627	8	203	9	40	27	120	M6x1.0
MSE-0800-019-01-22	-S	0.394	10	0.866	22	24.68	627	8	203	19	85	57	254	M8x1.25
MSE-0800-032-01-28	-S	0.550	14	1.100	28	24.82	630	8	203	32	142	96	427	M10x1.5
MSE-0800-028-02-28	-S	0.550	14	1.100	28	30.82	783	8	203	28	125	390	1735	M10x1.5
MSE-1000-007-01-15	-S	0.236	6	0.591	15	30.29	769	10	254	7	31	21	93	M6x1.0
MSE-1000-009-01-18	-S	0.315	8	0.709	18	30.69	780	10	254	9	40	27	120	M6x1.0
MSE-1000-020-01-22	-S	0.394	10	0.866	22	30.68	779	10	254	20	89	60	267	M8x1.25
MSE-1000-035-01-28	-S	0.550	14	1.100	28	30.82	783	10	254	35	156	105	467	M10x1.5
MSE-1000-005-01-28	-S	0.550	14	1.100	28	30.82	783	10	254	5	22	278	1237	M10x1.5
MSE-1200-007-01-15	-S	0.236	6	0.591	15	36.29	922	12	305	7	31	21	93	M6x1.0
MSE-1200-010-01-18	-S	0.315	8	0.709	18	36.69	932	12	305	10	44	30	133	M6x1.0
MSE-1200-021-01-22	-S	0.394	10	0.866	22	36.68	932	12	305	21	93	63	280	M8x1.25
MSE-1200-035-01-28	-S	0.550	14	1.100	28	36.82	935	12	305	35	156	105	467	M10x1.5



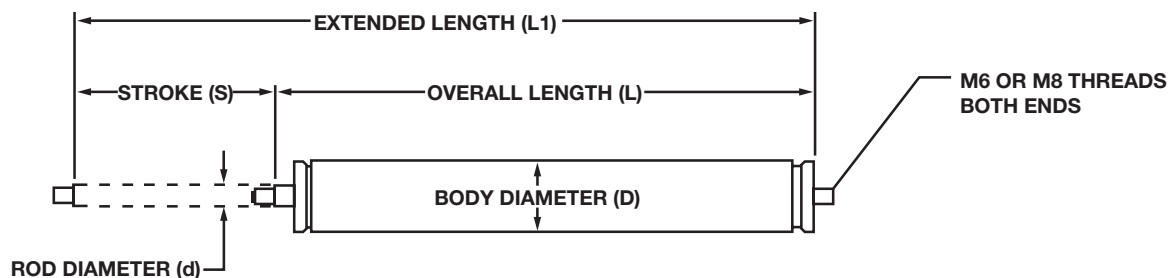
MECHANICAL EXTENSION SPRING STRUTS - m-Struts®

STANDARD MECHANICAL EXTENSION STRUTS (Stainless Steel Construction - Stainless Steel Springs - M6 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L)		Extended Length Ref. (L1)		Stroke (S)		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	in	mm	Lbs	N	Lbs	N
MEBD-051-0076	0.38	9.53	1.25	31.75	4.95	125.73	6.95	176.53	2.0	50.80	8	35	17	76
MEBD-051-0116	0.38	9.53	1.25	31.75	6.44	163.58	8.44	214.38	2.0	50.80	19	85	26	116
MEBD-051-0173	0.38	9.53	1.25	31.75	7.99	202.95	9.99	253.75	2.0	50.80	30	133	39	173
MEBD-051-0280	0.38	9.53	1.25	31.75	9.61	244.09	11.61	294.89	2.0	50.80	45	200	63	280
MEBD-076-0102	0.38	9.53	1.25	31.75	6.56	166.62	9.56	242.82	3.0	76.20	10	44	23	102
MEBD-076-0156	0.38	9.53	1.25	31.75	7.30	185.42	10.30	261.62	3.0	76.20	15	67	35	156
MEBD-076-0262	0.38	9.53	1.25	31.75	9.26	235.20	12.26	311.40	3.0	76.20	30	133	59	262
MEBD-127-0133	0.38	9.53	1.25	31.75	12.02	305.31	17.02	432.31	5.0	127.00	18	80	30	133
MEBD-127-0173	0.38	9.53	1.25	31.75	13.67	347.22	18.67	474.22	5.0	127.00	25	111	39	173
MEBD-127-0222	0.38	9.53	1.25	31.75	13.96	354.58	18.96	481.58	5.0	127.00	30	133	50	222
MEBD-127-0271	0.38	9.53	1.25	31.75	14.91	378.71	19.91	505.71	5.0	127.00	35	156	61	271

HIGH LOAD MECHANICAL EXTENSION STRUTS (Stainless Steel Construction - Carbon Steel Springs - M8 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L)		Extended Length Ref. (L1)		Stroke (S)		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	in	mm	Lbs	N	Lbs	N
MECD-026-1057	0.50	12.70	1.25	31.75	6.44	163.58	7.44	188.98	1.0	25.40	176	782	238	1057
MECD-026-1240	0.50	12.70	1.25	31.75	4.95	125.73	5.95	151.13	1.0	25.40	83	369	279	1240
MECD-033-1069	0.50	12.70	1.25	31.75	4.95	125.73	6.25	158.75	1.3	33.02	100	446	240	1069
MECD-039-1072	0.50	12.70	1.25	31.75	4.95	125.73	6.55	166.37	1.6	40.64	53	236	241	1072
MECD-039-1111	0.50	12.70	1.25	31.75	6.44	163.58	7.94	201.68	1.5	38.10	140	622	250	1111
MECD-041-2354	0.50	12.70	1.25	31.75	12.02	305.31	13.62	345.95	1.6	40.64	242	1075	529	2354
MECD-043-2187	0.50	12.70	1.25	31.75	7.99	202.95	9.69	246.13	1.7	43.18	94	417	492	2187
MECD-055-1170	0.50	12.70	1.25	31.75	7.99	202.95	10.19	258.83	2.2	55.88	41	181	263	1170
MECD-077-1150	0.50	12.70	1.25	31.75	12.02	305.31	15.12	384.05	3.1	78.74	80	355	259	1150
MECD-078-1111	0.50	12.70	1.25	31.75	7.99	202.95	11.09	281.69	3.1	78.74	29	127	250	1111
MECD-117-1067	0.50	12.70	1.25	31.75	12.02	305.31	16.62	422.15	4.6	116.84	55	244	240	1067

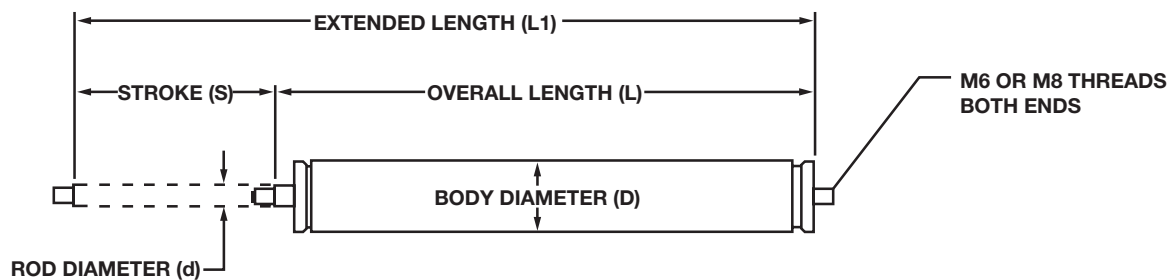


GEN-II MECHANICAL COMPRESSION SPRING STRUTS - m-Struts®

Select From A Wide Range Of Mechanical Spring Struts – Or We'll Design One For You

MECHANICAL EXTENSION
SPRING STRUTS

PART NUMBER	SS Model Suffix	Body ϕ (in)	Rod ϕ (mm)	Body ϕ (in)	Body ϕ (mm)	Overall Length (L) (in)	Overall Length (L) (in)	Extended Length (L1) (in)	Extended Length (L1) (mm)	Stroke (in)	Stroke (mm)	Initial Force (LBF)	Initial Force (N)	Final Force (LBF)	Final Force (N)	Ends
MSC-0200-002-01-15	-S	0.236	6	0.591	15	4.29	109	6.29	160	2	51	2	9	6	27	M6x1.0
MSC-0200-003-01-18	-S	0.315	8	0.709	18	4.69	119	6.69	170	2	51	3	13	9	40	M6x1.0
MSC-0200-008-01-22	-S	0.394	10	0.866	22	4.68	119	6.68	170	2	51	8	36	24	107	M8x1.25
MSC-0200-010-01-28	-S	0.550	14	1.100	28	4.82	122	6.82	173	2	51	10	44	30	133	M10x1.5
MSC-0400-005-01-15	-S	0.236	6	0.591	15	8.29	211	12.29	312	4	101	5	22	15	67	M6x1.0
MSC-0400-007-01-18	-S	0.315	8	0.709	18	8.69	221	12.69	322	4	101	7	31	21	93	M6x1.0
MSC-0400-015-01-22	-S	0.394	10	0.866	22	8.68	220	12.68	322	4	101	15	67	45	200	M8x1.25
MSC-0400-025-01-28	-S	0.550	14	1.100	28	8.82	224	12.82	326	4	101	25	111	75	334	M10x1.5
MSC-0400-030-01-28	-S	0.550	14	1.100	28	8.82	224	12.82	326	4	101	30	133	90	400	M10x1.5
MSC-0600-005-01-15	-S	0.236	6	0.591	15	12.29	312	18.29	465	6	153	5	22	15	67	M6x1.0
MSC-0600-009-01-18	-S	0.315	8	0.709	18	12.69	322	18.69	475	6	153	9	40	27	120	M6x1.0
MSC-0600-017-01-22	-S	0.394	10	0.866	22	12.68	322	18.68	474	6	153	17	76	51	227	M8x1.25
MSC-0600-030-01-28	-S	0.550	14	1.100	28	12.82	326	18.82	478	6	153	30	133	90	400	M10x1.5
MSC-0600-040-02-28	-S	0.550	14	1.100	28	12.82	326	18.82	478	6	153	40	178	119	529	M10x1.5
MSC-0800-006-01-15	-S	0.236	6	0.591	15	16.29	414	24.29	617	8	203	6	27	18	80	M6x1.0
MSC-0800-009-01-18	-S	0.315	8	0.709	18	16.69	424	24.69	627	8	203	9	40	27	120	M6x1.0
MSC-0800-019-01-22	-S	0.394	10	0.866	22	16.68	424	24.68	627	8	203	19	85	57	254	M8x1.25
MSC-0800-032-01-28	-S	0.550	14	1.100	28	16.82	427	24.82	630	8	203	32	142	96	427	M10x1.5
MSC-1000-007-01-15	-S	0.236	6	0.591	15	20.29	515	30.29	769	10	254	7	31	21	93	M6x1.0
MSC-1000-009-01-18	-S	0.315	8	0.709	18	20.69	526	30.69	780	10	254	9	40	27	120	M6x1.0
MSC-1000-020-01-22	-S	0.394	10	0.866	22	20.68	525	30.68	779	10	254	20	89	60	267	M8x1.25
MSC-1000-035-01-28	-S	0.550	14	1.100	28	20.82	529	30.82	783	10	254	35	156	105	467	M10x1.5
MSC-1200-007-01-15	-S	0.236	6	0.591	15	24.29	617	36.29	922	12	305	7	31	21	93	M6x1.0
MSC-1200-010-01-18	-S	0.315	8	0.709	18	24.69	627	36.69	932	12	305	10	44	30	133	M6x1.0
MSC-1200-021-01-22	-S	0.394	10	0.866	22	24.68	627	36.68	932	12	305	21	93	63	280	M8x1.25
MSC-1200-035-01-28	-S	0.550	14	1.100	28	24.82	630	36.82	935	12	305	35	156	105	467	M10x1.5



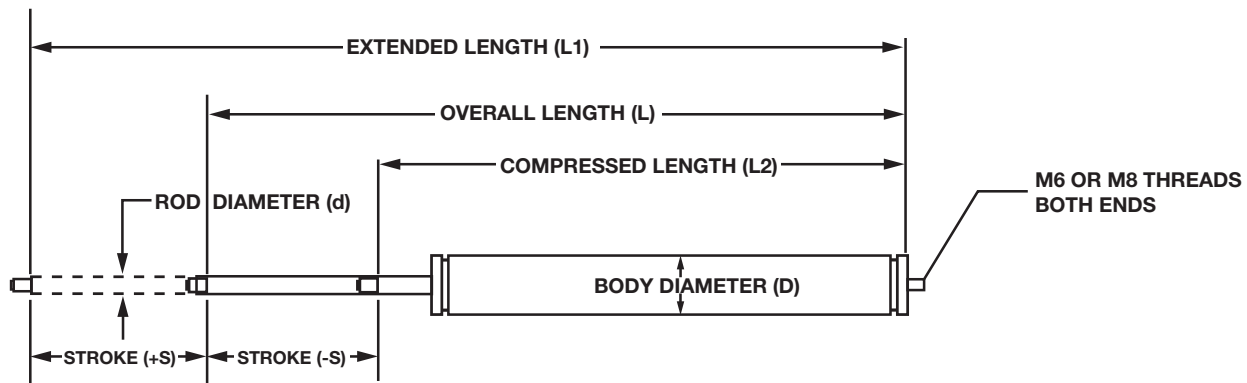
MECHANICAL SELF-CENTERING SPRING STRUTS - m-Struts®

STANDARD MECHANICAL SELF-CENTERING STRUTS (Stainless Steel Construction - Stainless Steel Springs - M6 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L)		Stroke (S)		Extended Length Ref. (L1)		Compressed Length (L2)		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Lbs	N	Lbs	N
MCBD-051-0076	0.38	9.53	1.25	31.75	10.45	265.37	2.0	50.8	12.45	316.2	8.45	214.6	0	0	18	80
MCBD-051-0116	0.38	9.53	1.25	31.75	13.42	340.96	2.0	50.8	15.42	391.8	11.42	290.2	0	0	15	65
MCBD-051-0173	0.38	9.53	1.25	31.75	9.93	252.16	2.0	50.8	11.93	303.0	7.93	201.4	0	0	17	77
MCBD-051-0280	0.38	9.53	1.25	31.75	19.77	502.20	2.0	50.8	21.77	553.0	17.77	451.4	0	0	36	160
MCBD-076-0102	0.38	9.53	1.25	31.75	14.67	372.61	3.0	76.2	17.67	448.8	11.67	296.4	0	0	23	103
MCBD-076-0156	0.38	9.53	1.25	31.75	16.15	410.15	3.0	76.2	19.15	486.3	13.15	333.9	0	0	35	155
MCBD-076-0262	0.38	9.53	1.25	31.75	20.07	509.71	3.0	76.2	23.07	585.9	17.07	433.5	0	0	58	258
MCBD-127-0133	0.38	9.53	1.25	31.75	27.59	700.72	5.0	127.0	32.59	827.7	22.59	573.7	0	0	25	109
MCBD-127-0173	0.38	9.53	1.25	31.75	30.89	784.54	5.0	127.0	35.89	911.5	25.89	657.5	0	0	28	125
MCBD-127-0222	0.38	9.53	1.25	31.75	31.47	799.38	5.0	127.0	36.47	926.4	26.47	672.4	0	0	41	183
MCBD-127-0271	0.38	9.53	1.25	31.75	33.36	847.46	5.0	127.0	38.36	974.5	28.36	720.5	0	0	51	227

HIGH LOAD MECHANICAL SELF-CENTERING STRUTS (Stainless Steel Construction - Carbon Steel Springs - M8 Ends)

CATALOG NUMBER	Rod Dia. (d)		Body Dia. (D)		Overall Length (L)		Stroke (S)		Extended Length Ref. (L1)		Compressed Length (L2)		Initial Force +/-10%		Final Force +/-10%	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Lbs	N	Lbs	N
MCCD-026-1057	0.50	12.70	1.25	31.75	12.42	315.40	1.0	25.4	13.42	340.8	11.42	290.0	0	0	123	547
MCCD-026-1240	0.50	12.70	1.25	31.75	9.45	239.97	1.0	25.4	10.45	265.4	8.45	214.6	0	0	279	1241
MCCD-033-1069	0.50	12.70	1.25	31.75	9.75	247.59	1.3	33.0	11.05	280.6	8.45	214.6	0	0	240	1068
MCCD-039-1072	0.50	12.70	1.25	31.75	10.05	255.21	1.6	40.6	11.65	295.8	8.45	214.6	0	0	241	1072
MCCD-039-1111	0.50	12.70	1.25	31.75	12.92	328.10	1.5	38.1	14.42	366.2	11.42	290.0	0	0	217	965
MCCD-041-2354	0.50	12.70	1.25	31.75	24.19	614.36	1.6	40.6	25.79	655.0	22.59	573.7	0	0	529	2353
MCCD-043-2187	0.50	12.70	1.25	31.75	16.23	412.18	1.7	43.2	17.93	455.4	14.53	369.0	0	0	492	2189
MCCD-055-1170	0.50	12.70	1.25	31.75	16.73	424.88	2.2	55.9	18.93	480.8	14.53	369.0	0	0	263	1170
MCCD-077-1150	0.50	12.70	1.25	31.75	25.69	652.46	3.1	78.7	28.79	731.2	22.59	573.7	0	0	259	1152
MCCD-078-1111	0.50	12.70	1.25	31.75	17.63	447.74	3.1	78.7	20.73	526.5	14.53	369.0	0	0	250	1112
MCCD-117-1067	0.50	12.70	1.25	31.75	27.19	690.56	4.6	116.8	31.79	807.4	22.59	573.7	0	0	240	1068



Additional sizes and configurations available, please contact engineering.

NITROGEN GAS SPRINGS

Stock sizes in nitrogen gas springs with multiple or fixed end fittings

Now you can purchase your gas springs from the same reliable source that supplies your stock mechanical springs – SPEC®. Our stock gas springs use the latest sealing technology for a longer service life.

Our stock selection consists of various pressure, stroke and end fitting lengths. This flexibility allows the use of a stock gas spring in almost any application. Typical functions include counter-balancing, lifting, lowering, extending and retracting.

Construction Features

- Durable rod construction with anti-corrosive surface.
- Exclusive seal construction allows for mounting in various positions.
- Self-contained lubrication for long life and smooth operation.
- Selection of various end fittings for universal applications.

Application Considerations

The preferred mounting orientation is rod down. Location of attachment points will alter the load carrying characteristics of the gas spring. For counter balancing applications, the center of gravity and its respective load or force is essential to proper gas spring selection. In all cases, geometry plays a critical role in the application and life of the gas spring.

End Configurations

All of our gas springs are supplied with standard ends as indicated in the End Fitting column of this catalog. Additional end configurations available upon request.

Mounting Options

- **Blade Ends** are generally mounted over a shoulder bolt or a similar fixed shaft.
- **Clevis Ends** are designed to slide over a bracket.

Align blade and clevis end mountings parallel to each other. Proper alignment throughout the operating range is essential to obtain maximum life cycle.

- **Ball Ends** are specifically designed to allow for a slight misalignment (up to 12 degrees) over the operating range of the spring.

The preferred mounting orientation is rod down.

Spring Force

The force listed is for the fully extended spring. The force will increase as the spring is compressed.

For information on fully compressed loads, please contact our Engineering Department.

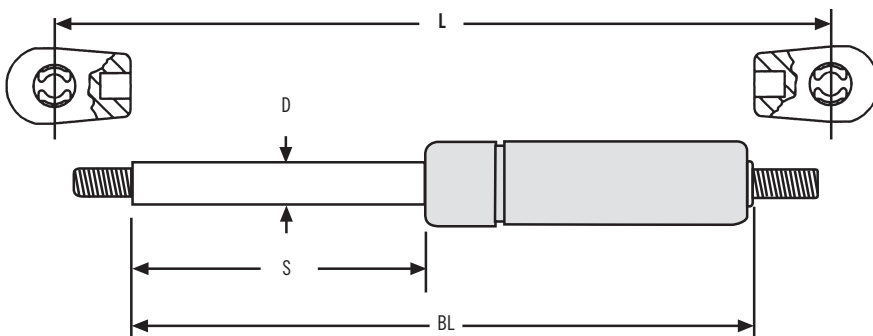
Dampening

Springs dampen on extension only.



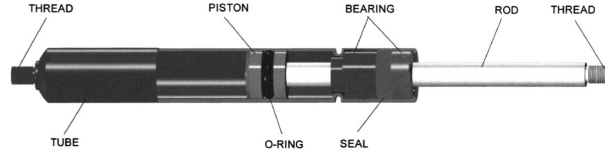
10 Series of Gas Springs are available from ASRaymond and are described in the following pages.

GSNI	Steel Construction & Black Nitride Shaft – The Nitrider™ (Pages 241-247)
GSSX	Stainless Steel (Pages 248-254)
GSEL	Steel Construction, Black Nitride Shaft and Locking Shroud – The Shock Lock™ (Page 255)
GS6T	Steel Construction, Black Nitride Shaft but with multiples stops (Page 256)
GSVL	Steel Construction, Black Nitride Shaft with a Bleeder Valve – The Varilift (Page 256)
GSBL	A Fully Adjustable Gas Strut Controlled Externally (Page 257)
Standard Dampers	Extension, Compression or Dual Dampening (Pages 258-260)
GSWB	Welded Blade End Gas Springs for Tight Spacing (Pages 261-266)
GSHL	Multi-position Holding with EZ Release for Counterbalance Applications (Page 266)
TSNI	Similar to GSNI Gas Spring but Operate in Traction Mode (Pages 267-268)



The **GSNI Black Nitride Shaft Gas Spring**. This gas spring the Nitrider™, combines all the proven reliability you've come to expect from an SPD Gas Spring along with the added feature of a nitride shaft. The GSNI Gas Spring incorporates a strong annealed steel rod with a Nitride coating for added corrosion resistance, especially when used with the PS30B1 composite end fitting with nitrided clip. The Nitrider™, surpasses a 144 hour salt spray test! This gas spring is an ideal choice where exceptional quality, corrosion resistance and an overall black appearance are important to your application.

The GSNI series gas spring comes standard with the PS30B1 end fitting except for the GSNI-3100 series which come standard with the PS100 end fitting.



GAS SPRINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-4900-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-4900-20											20	90	EF-PS30B1	M6 x 1.0
GSNI-4900-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-4900-40	0.236	6.0	0.591	15.0	2.00	50	6.08	154	7.50	190	40	178	EF-PS30B1	M6 x 1.0
GSNI-4900-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-4900-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-4900-70											70	311	EF-PS30B1	M6 x 1.0
GSNI-4900-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2900-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2900-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2900-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2900-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2900-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2900-70	0.315	8.0	0.709	18.0	2.00	50	6.08	154	7.50	190	70	311	EF-PS30B1	M6 x 1.0
GSNI-2900-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2900-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2900-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2900-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2900-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-4160-11											11.2	45	EF-PS30B1	M6 x 1.0
GSNI-4160-22											22.5	100	EF-PS30B1	M6 x 1.0
GSNI-4160-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-4160-45											45.0	200	EF-PS30B1	M6 x 1.0
GSNI-4160-56	0.236	6.0	0.591	15.0	2.36	60	6.30	160	7.72	196	56.2	250	EF-PS30B1	M6 x 1.0
GSNI-4160-67											67.4	300	EF-PS30B1	M6 x 1.0
GSNI-4160-78											78.7	350	EF-PS30B1	M6 x 1.0
GSNI-4160-89											89.9	400	EF-PS30B1	M6 x 1.0
N08BAC0095	0.315	8.0	0.709	18.0	2.36	60	6.65	169			20	95	NONE	M6 x 1.0
N06VBN0150	0.236	6.0	0.591	15.0	2.87	73	7.21	183			34	150	NONE	M6 x 1.0
GANI-0615-0315-010	0.236	6.0	0.591	15.0	3.15	80	7.87	200	9.29	236	10	45	EF-PS30B1	M6 x 1.0
N08DAE0095	0.315	8.0	0.709	18.0	3.15	80	8.23	209			20	95	NONE	M6 x 1.0
GANI-0818-0315-085	0.315	8.0	0.709	18.0	3.35	80	8.23	209	9.63	245	85	380	EFPS91BP	M6 x 1.0
GSNI-5000-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5000-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-5000-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-5000-40	0.236	6.0	0.591	15.0	3.00	75	8.58	218	10.00	254	40	178	EF-PS30B1	M6 x 1.0
GSNI-5000-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-5000-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-5000-70											70	311	EF-PS30B1	M6 x 1.0
GSNI-5000-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2000-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2000-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2000-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2000-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2000-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2000-70	0.315	8.0	0.709	18.0	3.00	75	8.58	218	10.00	254	70	311	EF-PS30B1	M6 x 1.0
GSNI-2000-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2000-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2000-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2000-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2000-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2000-150											150	667	EF-PS30B1	M6 x 1.0

TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER



Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-2050-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2050-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2050-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2050-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2050-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2050-70	0.315	8.0	0.709	18.0	3.00	75	9.08	231	10.50	267	70	311	EF-PS30B1	M6 x 1.0
GSNI-2050-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2050-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2050-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2050-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2050-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-4240-11											11.2	45	EF-PS30B1	M6 x 1.0
GSNI-4240-22											22.5	100	EF-PS30B1	M6 x 1.0
GSNI-4240-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-4240-45	0.236	6.0	0.591	15.0	3.94	100	9.45	240	10.87	276	45.0	200	EF-PS30B1	M6 x 1.0
GSNI-4240-56											56.2	250	EF-PS30B1	M6 x 1.0
GSNI-4240-67											67.4	300	EF-PS30B1	M6 x 1.0
GSNI-4240-78											78.7	350	EF-PS30B1	M6 x 1.0
GSNI-4240-89											89.9	400	EF-PS30B1	M6 x 1.0
GSNI-2249-22											22.5	100	EF-PS30B1	M6 x 1.0
GSNI-2249-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-2249-56	0.315	8.0	0.709	18.0	3.94	100	9.80	249	11.22	285	56.2	250	EF-PS30B1	M6 x 1.0
GSNI-2249-89											89.9	400	EF-PS30B1	M6 x 1.0
GSNI-2249-118											118.0	525	EF-PS30B1	M6 x 1.0
GSNI-2249-146											146.0	650	EF-PS30B1	M6 x 1.0
GSNI-3249-22											22.5	95	EF-PS100BP	M8 x 1.25
GSNI-3249-33											33.7	150	EF-PS100BP	M8 x 1.25
GSNI-3249-56											56.2	250	EF-PS100BP	M8 x 1.25
GSNI-3249-101	0.394	10.0	0.866	22.0	3.94	100	9.80	249	12.16	309	101.0	450	EF-PS100BP	M8 x 1.25
GSNI-3249-157											157.4	700	EF-PS100BP	M8 x 1.25
GSNI-3249-202											202.3	900	EF-PS100BP	M8 x 1.25
GSNI-3249-270											270.0	1200	EF-PS100BP	M8 x 1.25
GSNI-2100-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2100-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2100-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2100-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2100-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2100-70	0.315	8.0	0.709	18.0	3.50	89	10.48	264	11.90	300	70	311	EF-PS30B1	M6 x 1.0
GSNI-2100-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2100-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2100-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2100-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2100-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2100-150											150	667	EF-PS30B1	M6 x 1.0
GSNI-5100-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5100-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-5100-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-5100-40	0.236	6.0	0.591	15.0	3.50	89	10.58	269	12.00	305	40	178	EF-PS30B1	M6 x 1.0
GSNI-5100-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-5100-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-5100-90	0.315	8.0	0.709	18.0	3.50	89	10.58	269	12.00	305	90	400	EF-PS30B1	M6 x 1.0
GSNI-2112-20	0.315	8.0	0.709	18.0	4.00	102	10.78	274	12.20	310	20	95	EF-PS91BP	M6 x 1.0
N06GAM0045	0.236	6.0	0.591	15.0	4.72	120	11.02	280			10	45	NONE	M6 x 1.0
N08GAN0095	0.315	8.0	0.709	18.0	4.72	120	11.38	289			20	95	NONE	M6 x 1.0
N14FAK0200	0.551	14.0	1.102	28.0	3.94	100	10.47	266			45	200	NONE	M10 x 1.5
N08HA00095	0.315	8.0	0.709	18.0	5.51	140	12.95	329			20	95	NONE	M6 x 1.0
GSNI-4340-11											11	45	EF-PS30B1	M6 x 1.0
GSNI-4340-22	0.236	6.0	0.591	15.0	6.00	153	13.39	340	14.80	376	22.5	100	EF-PS30B1	M6 x 1.0
GSNI-4340-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-4340-45											45.0	200	EF-PS30B1	M6 x 1.0

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-4340-56											56.2	250	EF-PS30B1	M6 x 1.0
GSNI-4340-67	0.236	6.0	0.591	15.0	6.00	153	13.39	340	14.80	376	67.4	300	EF-PS30B1	M6 x 1.0
GSNI-4340-78											78.7	350	EF-PS30B1	M6 x 1.0
GSNI-5150-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5150-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-5150-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-5150-40	0.236	6.0	0.591	15.0	6.00	153	13.58	345	15.00	380	40	178	EF-PS30B1	M6 x 1.0
GSNI-5150-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-5150-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-5150-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2125-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2125-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2125-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2125-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2125-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2125-70	0.315	8.0	0.709	18.0	6.00	153	13.58	345	15.00	380	70	311	EF-PS30B1	M6 x 1.0
GSNI-2125-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2125-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2125-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2125-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2125-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2349-22											22.5	95	EF-PS30B1	M6 x 1.0
GSNI-2349-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-2349-56	0.315	8.0	0.709	18.0	6.00	153	13.74	349	15.16	385	56.2	250	EF-PS30B1	M6 x 1.0
GSNI-2349-89											89.9	400	EF-PS30B1	M6 x 1.0
GSNI-2349-118											118	525	EF-PS30B1	M6 x 1.0
GSNI-2349-146											146	650	EF-PS30B1	M6 x 1.0
GSNI-2150-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2150-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2150-60	0.315	8.0	0.709	18.0	6.00	153	13.83	351	15.25	385	60	267	EF-PS30B1	M6 x 1.0
GSNI-2150-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2150-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2150-150											150	667	EF-PS30B1	M6 x 1.0
GANI-0818-0630-020	0.315	8.0	0.709	18.0	6.30	160	14.53	369	15.95	405	20	95	EF-PS30B1	M6 x 1.0
N10JAR0095	0.394	10.0	0.866	22.0	5.91	150	13.74	349			21	95	NONE	M8 x 1.25
GSNI-5200-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5200-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-5200-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-5200-40	0.236	6.0	0.591	15.0	7.00	178	15.58	396	17.00	432	40	178	EF-PS30B1	M6 x 1.0
GSNI-5200-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-5200-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-5200-75											75	334	EF-PS30B1	M6 x 1.0
GSNI-2200-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2200-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2200-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2200-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2200-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2200-70	0.315	8.0	0.709	18.0	7.00	178	15.58	396	17.00	430	70	311	EF-PS30B1	M6 x 1.0
GSNI-2200-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2200-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2200-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2200-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2200-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2200-150											150	667	EF-PS30B1	M6 x 1.0
N14JAS0200	0.551	14.0	1.102	28.0	5.91	150	14.41	366			45	200	NONE	M10 x 1.5
N08MAV0095	0.315	8.0	0.709	18.0	7.09	180	16.10	409			20	95	NONE	M6 x 1.0
GSNI-5250-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5250-20	0.236	6.0	0.591	15.0	7.50	197	17.08	434	18.50	470	20	95	EF-PS30B1	M6 x 1.0
GSNI-5250-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-5250-45											45	200	EF-PS30B1	M6 x 1.0



GAS SPRINGS

NITROGEN GAS SPRINGS - MULTIPLE END FITTINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-5250-60	.0236	6.0	.0591	15.0	7.50	197	17.08	434	18.50	470	60	267	EF-PS30B1	M6 x 1.0
GSNI-5250-75											75	334	EF-PS30B1	M6 x 1.0
GSNI-2250-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2250-120	0.315	8.0	0.709	18.0	7.50	197	17.08	434	18.50	470	120	534	EF-PS30B1	M6 x 1.0
GSNI-2250-150											150	667	EF-PS30B1	M6 x 1.0
GSNI-4440-11											10	50	EF-PS30B1	M6 x 1.0
GSNI-4440-22											22.5	100	EF-PS30B1	M6 x 1.0
GSNI-4440-33	0.236	6.0	0.591	15.0	7.87	200	17.32	440	18.74	476	33.7	150	EF-PS30B1	M6 x 1.0
GSNI-4440-56											56.2	250	EF-PS30B1	M6 x 1.0
GSNI-4440-89											89.9	400	EF-PS30B1	M6 x 1.0
GSNI-2449-22											22.5	95	EF-PS30B1	M6 x 1.0
GSNI-2449-33											33.7	150	EF-PS30B1	M6 x 1.0
GSNI-2449-56	0.315	8.0	0.709	18.0	7.87	200	17.68	449	19.10	485	56.2	250	EF-PS30B1	M6 x 1.0
GSNI-2449-89											89.9	400	EF-PS30B1	M6 x 1.0
GSNI-2449-118											118.0	525	EF-PS30B1	M6 x 1.0
GSNI-2449-135											135.0	650	EF-PS30B1	M6 x 1.0
GSNI-1466-45											45.0	200	EF-PS140BP	M10 x 1.5
GSNI-1466-112											112.4	500	EF-PS140BP	M10 x 1.5
GSNI-1466-179											179.9	800	EF-PS140BP	M10 x 1.5
GSNI-1466-269	0.551	14.0	1.102	28.0	7.87	200	18.35	466	21.11	536	269.8	1200	EF-PS140BP	M10 x 1.5
GSNI-1466-359											359.7	1600	EF-PS140BP	M10 x 1.5
GSNI-1466-449											449.6	2000	EF-PS140BP	M10 x 1.5
GSNI-1466-562											562.1	2500	EF-PS140BP	M10 x 1.5
GSNI-5300-10											10	45	EF-PS30B1	M6 x 1.0
GSNI-5300-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-5300-30	0.236	6.0	0.591	15.0	8.00	203	18.58	469	20.00	508	30	133	EF-PS30B1	M6 x 1.0
GSNI-5300-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-5300-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-5300-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2300-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2300-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2300-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2300-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2300-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2300-70											70	311	EF-PS30B1	M6 x 1.0
GSNI-2300-75											75	334	EF-PS30B1	M6 x 1.0
GSNI-2300-80	0.315	8.0	0.709	18.0	8.00	203	18.58	469	20.00	508	80	356	EF-PS30B1	M6 x 1.0
GSNI-2300-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2300-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2300-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2300-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2300-130											130	578	EF-PS30B1	M6 x 1.0
GSNI-2300-150											150	667	EF-PS30B1	M6 x 1.0
GSNI-3020-20											21	95	EF-PS100BP	M8 x 1.25
GSNI-3020-30											30	133	EF-PS100BP	M8 x 1.25
GSNI-3020-40											40	178	EF-PS100BP	M8 x 1.25
GSNI-3020-50											50	224	EF-PS100BP	M8 x 1.25
GSNI-3020-60											60	267	EF-PS100BP	M8 x 1.25
GSNI-3020-70											70	311	EF-PS100BP	M8 x 1.25
GSNI-3020-80											80	356	EF-PS100BP	M8 x 1.25
GSNI-3020-90											90	400	EF-PS100BP	M8 x 1.25
GSNI-3020-100	0.394	10.0	0.866	22.0	7.87	200	17.84	453	20.20	513	100	445	EF-PS100BP	M8 x 1.25
GSNI-3020-110											110	489	EF-PS100BP	M8 x 1.25
GSNI-3020-120											120	534	EF-PS100BP	M8 x 1.25
GSNI-3020-130											130	578	EF-PS100BP	M8 x 1.25
GSNI-3020-140											140	623	EF-PS100BP	M8 x 1.25
GSNI-3020-150											150	667	EF-PS100BP	M8 x 1.25
GSNI-3020-160											160	712	EF-PS100BP	M8 x 1.25
GSNI-3020-170											170	756	EF-PS100BP	M8 x 1.25
GSNI-3020-180											180	801	EF-PS100BP	M8 x 1.25



NITROGEN GAS SPRINGS - MULTIPLE END FITTINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
N080BB0095	0.315	8.0	0.709	18.0	8.66	220	19.25	489			20	95	NONE	M6 x 1.0
GSNI-2400-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2400-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2400-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2400-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2400-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2400-70	0.315	8.0	0.709	18.0	9.84	250	21.61	549	23.03	585	70	311	EF-PS30B1	M6 x 1.0
GSNI-2400-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2400-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-2400-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2400-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2400-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-3549-22											22.5	95	EF-PS100BP	M8 x 1.25
GSNI-3549-33											33.7	150	EF-PS100BP	M8 x 1.25
GSNI-3549-56											56.2	250	EF-PS100BP	M8 x 1.25
GSNI-3549-101	0.394	10.0	0.866	22.0	9.84	250	21.61	549	23.97	610	101.2	450	EF-PS100BP	M8 x 1.25
GSNI-3549-157											157.4	700	EF-PS100BP	M8 x 1.25
GSNI-3549-202											202.3	900	EF-PS100BP	M8 x 1.25
GSNI-3549-269											269.8	1200	EF-PS100BP	M8 x 1.25
N14PBD0200	0.551	14.0	1.102	28.0	9.84	250	22.28	566			45	200	NONE	M10 x 1.5
GSNI-2600-20											20	95	EF-PS90M1BP	M6 x 1.0
GSNI-2600-30											30	133	EF-PS90M1BP	M6 x 1.0
GSNI-2600-40											40	178	EF-PS90M1BP	M6 x 1.0
GSNI-2600-50											50	224	EF-PS90M1BP	M6 x 1.0
GSNI-2600-60											60	267	EF-PS90M1BP	M6 x 1.0
GSNI-2600-70	0.315	8.0	0.709	18.0	11.00	279	24.88	632	26.30	668	70	311	EF-PS90M1BP	M6 x 1.0
GSNI-2600-80											80	356	EF-PS90M1BP	M6 x 1.0
GSNI-2600-90											90	400	EF-PS90M1BP	M6 x 1.0
GSNI-2600-100											100	445	EF-PS90M1BP	M6 x 1.0
GSNI-2600-110											110	489	EF-PS90M1BP	M6 x 1.0
GSNI-2600-120											120	534	EF-PS90M1BP	M6 x 1.0
GSNI-2600-150											150	667	EF-PS90M1BP	M6 x 1.0
GSNI-3000-30											30	133	EF-PS90M1BP	M6 x 1.0
GSNI-3000-40											40	178	EF-PS90M1BP	M6 x 1.0
GSNI-3000-50											50	224	EF-PS90M1BP	M6 x 1.0
GSNI-3000-60											60	267	EF-PS90M1BP	M6 x 1.0
GSNI-3000-70											70	311	EF-PS90M1BP	M6 x 1.0
GSNI-3000-80											80	356	EF-PS90M1BP	M6 x 1.0
GSNI-3000-90											90	400	EF-PS90M1BP	M6 x 1.0
GSNI-3000-100											100	445	EF-PS90M1BP	M6 x 1.0
GSNI-3000-110	0.394	10.0	0.866	22.0	11.00	279	24.88	632	26.30	668	110	489	EF-PS90M1BP	M6 x 1.0
GSNI-3000-120											120	534	EF-PS90M1BP	M6 x 1.0
GSNI-3000-130											130	578	EF-PS90M1BP	M6 x 1.0
GSNI-3000-140											140	623	EF-PS90M1BP	M6 x 1.0
GSNI-3000-150											150	667	EF-PS90M1BP	M6 x 1.0
GSNI-3000-160											160	712	EF-PS90M1BP	M6 x 1.0
GSNI-3000-170											170	756	EF-PS90M1BP	M6 x 1.0
GSNI-3000-180											180	801	EF-PS90M1BP	M6 x 1.0
GSNI-3050-20											21	95	EF-PS30B1	M6 x 1.0
GSNI-3050-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-3050-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-3050-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-3050-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-3050-70	0.394	10.0	0.866	22.0	11.81	300	25.55	649	26.97	685	70	311	EF-PS30B1	M6 x 1.0
GSNI-3050-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-3050-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-3050-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-3050-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-3050-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-3050-130											130	578	EF-PS30B1	M6 x 1.0



GAS SPRINGS

NITROGEN GAS SPRINGS - MULTIPLE END FITTINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-3050-140											140	623	EF-PS30B1	M6 x 1.0
GSNI-3050-150											150	667	EF-PS30B1	M6 x 1.0
GSNI-3050-160	0.394	10.0	0.866	22.0	11.81	300	25.55	649	26.97	685	160	712	EF-PS30B1	M6 x 1.0
GSNI-3050-170											170	756	EF-PS30B1	M6 x 1.0
GSNI-3050-180											180	801	EF-PS30B1	M6 x 1.0
GSNI-1666-45											45	200	EF-PS140BP	M10 x 1.5
GSNI-1666-111											111.6	500	EF-PS140BP	M10 x 1.5
GSNI-1666-179											179.9	800	EF-PS140BP	M10 x 1.5
GSNI-1666-269	0.551	14.0	1.102	28.0	11.81	300	26.22	666	28.96	735	269.8	1200	EF-PS140BP	M10 x 1.5
GSNI-1666-359											359.7	1600	EF-PS140BP	M10 x 1.5
GSNI-1666-449											449.6	2000	EF-PS140BP	M10 x 1.5
GSNI-1666-562											562.1	2500	EF-PS140BP	M10 x 1.5
GSNI-2800-20											20	95	EF-PS30B1	M6 x 1.0
GSNI-2800-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-2800-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-2800-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-2800-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-2800-70											70	311	EF-PS30B1	M6 x 1.0
GSNI-2800-80											80	356	EF-PS30B1	M6 x 1.0
GSNI-2800-90	0.315	8.0	0.709	18.0	11.50	292	26.58	666	28.00	711	90	400	EF-PS30B1	M6 x 1.0
GSNI-2800-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-2800-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-2800-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-2800-130											130	578	EF-PS30B1	M6 x 1.0
GSNI-2800-140											140	623	EF-PS30B1	M6 x 1.0
GSNI-2800-150											150	667	EF-PS30B1	M6 x 1.0
GSNI-3100-20											20	95	EF-PS100BP	M8 x 1.25
GSNI-3100-30											30	133	EF-PS100BP	M8 x 1.25
GSNI-3100-40											40	178	EF-PS100BP	M8 x 1.25
GSNI-3100-50											50	224	EF-PS100BP	M8 x 1.25
GSNI-3100-60											60	267	EF-PS100BP	M8 x 1.25
GSNI-3100-70											70	311	EF-PS100BP	M8 x 1.25
GSNI-3100-80											80	356	EF-PS100BP	M8 x 1.25
GSNI-3100-90											90	400	EF-PS100BP	M8 x 1.25
GSNI-3100-100											100	445	EF-PS100BP	M8 x 1.25
GSNI-3100-110											110	489	EF-PS100BP	M8 x 1.25
GSNI-3100-120	0.394	10.0	0.866	22.0	11.50	292.0	25.64	650	28.00	711	120	534	EF-PS100BP	M8 x 1.25
GSNI-3100-130											130	578	EF-PS100BP	M8 x 1.25
GSNI-3100-140											140	623	EF-PS100BP	M8 x 1.25
GSNI-3100-150											150	667	EF-PS100BP	M8 x 1.25
GSNI-3100-160											160	712	EF-PS100BP	M8 x 1.25
GSNI-3100-170											170	756	EF-PS100BP	M8 x 1.25
GSNI-3100-175											175	778	EF-PS100BP	M8 x 1.25
GSNI-3100-180											180	801	EF-PS100BP	M8 x 1.25
GSNI-3100-200											200	890	EF-PS100BP	M8 x 1.25
GSNI-3100-250											250	1112	EF-PS100BP	M8 x 1.25
GSNI-3200-20											22	95	EF-PS30B1	M6 x 1.0
GSNI-3200-30											30	133	EF-PS30B1	M6 x 1.0
GSNI-3200-40											40	178	EF-PS30B1	M6 x 1.0
GSNI-3200-50											50	224	EF-PS30B1	M6 x 1.0
GSNI-3200-60											60	267	EF-PS30B1	M6 x 1.0
GSNI-3200-70											70	311	EF-PS30B1	M6 x 1.0
GSNI-3200-80	0.394	10.0	0.866	22.0	13.78	350	29.49	749	30.91	785	80	356	EF-PS30B1	M6 x 1.0
GSNI-3200-90											90	400	EF-PS30B1	M6 x 1.0
GSNI-3200-100											100	445	EF-PS30B1	M6 x 1.0
GSNI-3200-110											110	489	EF-PS30B1	M6 x 1.0
GSNI-3200-120											120	534	EF-PS30B1	M6 x 1.0
GSNI-3200-130											130	578	EF-PS30B1	M6 x 1.0
GSNI-3200-140											140	623	EF-PS30B1	M6 x 1.0
GSNI-3200-150											150	667	EF-PS30B1	M6 x 1.0



NITROGEN GAS SPRINGS - MULTIPLE END FITTINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSNI-3200-160											160	712	EF-PS30B1	M6 x 1.0
GSNI-3200-170	0.394	10.0	0.866	22.0	13.78	350	29.49	749	30.91	785	170	756	EF-PS30B1	M6 x 1.0
GSNI-3200-180											180	801	EF-PS30B1	M6 x 1.0
N14SBJ0200	0.551	14.0	1.102	28.0	13.78	350	30.16	766			45	200	NONE	M10 x 1.5
GSNI-3849-22											22	95	EF-PS100BP	M8 x 1.25
GSNI-3849-33											33.7	150	EF-PS100BP	M8 x 1.25
GSNI-3849-56											56.2	250	EF-PS100BP	M8 x 1.25
GSNI-3849-101	0.394	10.0	0.866	22.0	15.75	400	33.43	849	35.79	910	101.2	450	EF-PS100BP	M8 x 1.25
GSNI-3849-157											157.4	700	EF-PS100BP	M8 x 1.25
GSNI-3849-202											202.3	900	EF-PS100BP	M8 x 1.25
GSNI-3849-269											269.8	1200	EF-PS100BP	M8 x 1.25
GSNI-3610-30											30	133	EF-PS90M1BP	M6 x 1.0
GSNI-3610-40											40	178	EF-PS90M1BP	M6 x 1.0
GSNI-3610-50											50	224	EF-PS90M1BP	M6 x 1.0
GSNI-3610-60											60	267	EF-PS90M1BP	M6 x 1.0
GSNI-3610-70											70	311	EF-PS90M1BP	M6 x 1.0
GSNI-3610-80											80	356	EF-PS90M1BP	M6 x 1.0
GSNI-3610-90											90	400	EF-PS90M1BP	M6 x 1.0
GSNI-3610-100											100	445	EF-PS90M1BP	M6 x 1.0
GSNI-3610-110	0.394	10.0	0.866	22.0	15.2	386	34.88	886	36.3	668	110	489	EF-PS90M1BP	M6 x 1.0
GSNI-3610-120											120	534	EF-PS90M1BP	M6 x 1.0
GSNI-3610-130											130	578	EF-PS90M1BP	M6 x 1.0
GSNI-3610-140											140	623	EF-PS90M1BP	M6 x 1.0
GSNI-3610-150											150	667	EF-PS90M1BP	M6 x 1.0
GSNI-3610-160											160	712	EF-PS90M1BP	M6 x 1.0
GSNI-3610-170											170	756	EF-PS90M1BP	M6 x 1.0
GSNI-3610-180											180	801	EF-PS90M1BP	M6 x 1.0
GSNI-3600-30											30	133	EF-PS100BP	M8 x 1.25
GSNI-3600-40											40	178	EF-PS100BP	M8 x 1.25
GSNI-3600-50											50	224	EF-PS100BP	M8 x 1.25
GSNI-3600-60											60	267	EF-PS100BP	M8 x 1.25
GSNI-3600-70											70	311	EF-PS100BP	M8 x 1.25
GSNI-3600-80											80	356	EF-PS100BP	M8 x 1.25
GSNI-3600-90											90	400	EF-PS100BP	M8 x 1.25
GSNI-3600-100											100	445	EF-PS100BP	M8 x 1.25
GSNI-3600-110	0.394	10.0	0.866	22.0	15.2	386	33.94	862	36.3	668	110	489	EF-PS100BP	M8 x 1.25
GSNI-3600-120											120	534	EF-PS100BP	M8 x 1.25
GSNI-3600-130											130	578	EF-PS100BP	M8 x 1.25
GSNI-3600-140											140	623	EF-PS100BP	M8 x 1.25
GSNI-3600-150											150	667	EF-PS100BP	M8 x 1.25
GSNI-3600-160											160	712	EF-PS100BP	M8 x 1.25
GSNI-3600-170											170	756	EF-PS100BP	M8 x 1.25
GSNI-3600-180											180	801	EF-PS100BP	M8 x 1.25
GSNI-1866-45											45	200	EF-PS140BP	M10 x 1.5
GSNI-1866-112											112.4	500	EF-PS140BP	M10 x 1.5
GSNI-1866-179											179.9	800	EF-PS140BP	M10 x 1.5
GSNI-1866-269	0.551	14.0	1.102	28.0	15.75	400	34.88	866	37.64	956	269.8	1200	EF-PS140BP	M10 x 1.5
GSNI-1866-359											359.7	1600	EF-PS140BP	M10 x 1.5
GSNI-1866-449											449.6	2000	EF-PS140BP	M10 x 1.5
GSNI-1866-562											562.1	2500	EF-PS140BP	M10 x 1.5
GSNI-1066-45											45	200	EF-PS140BP	M10 x 1.5
GSNI-1066-112											112.4	500	EF-PS140BP	M10 x 1.5
GSNI-1066-179											179.9	800	EF-PS140BP	M10 x 1.5
GSNI-1066-269	0.551	14.0	1.102	28.0	19.69	500	41.97	1066	44.73	1136	269.8	1200	EF-PS140BP	M10 x 1.5
GSNI-1066-359											359.7	1600	EF-PS140BP	M10 x 1.5
GSNI-1066-449											449.6	2000	EF-PS140BP	M10 x 1.5
GSNI-1066-562											562.1	2500	EF-PS140BP	M10 x 1.5



GAS SPRINGS

See End Fitting charts on pages 271-272 for additional available ends as special build. ** N-3100 series parts come with type Q ball ends and safety clip SC-1008 is included. See Part Specification instructions on page 259 on how to order. Additional sizes available by calling 1-800-872-7732.

GSSX

GSSX Stainless Steel gas springs! These gas springs are made of corrosion-resistant 316 Stainless Steel which make them an ideal choice wherever harsh conditions or environment are a concern. All stainless steel parts also have a specially prepared surface to give additional hardness and corrosion resistance. Add our exclusive all composite PS130 end fitting and you will have a gas spring that will not rust or corrode even in marine environments.

The GSSX Gas Springs are an excellent choice for all marine applications as well as medical or food service applications where a high degree of cleanliness is a must.

GSSX

GAS SPRINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-4900-10											10	45	EF-PS130	M6 x 1.0
GSSX-4900-20											20	90	EF-PS130	M6 x 1.0
GSSX-4900-30											30	133	EF-PS130	M6 x 1.0
GSSX-4900-40	0.236	6.0	0.591	15.0	2.00	50	6.08	154	7.50	190	40	178	EF-PS130	M6 x 1.0
GSSX-4900-50											50	224	EF-PS130	M6 x 1.0
GSSX-4900-60											60	267	EF-PS130	M6 x 1.0
GSSX-4900-70											70	311	EF-PS130	M6 x 1.0
GSSX-4900-80											80	356	EF-PS130	M6 x 1.0
GSSX-2900-20											20	95	EF-PS130	M6 x 1.0
GSSX-2900-30											30	133	EF-PS130	M6 x 1.0
GSSX-2900-40											40	178	EF-PS130	M6 x 1.0
GSSX-2900-50											50	224	EF-PS130	M6 x 1.0
GSSX-2900-60											60	267	EF-PS130	M6 x 1.0
GSSX-2900-70	0.315	8.0	0.709	18.0	2.00	50	6.08	154	7.50	190	70	311	EF-PS130	M6 x 1.0
GSSX-2900-80											80	356	EF-PS130	M6 x 1.0
GSSX-2900-90											90	400	EF-PS130	M6 x 1.0
GSSX-2900-100											100	445	EF-PS130	M6 x 1.0
GSSX-2900-110											110	489	EF-PS130	M6 x 1.0
GSSX-2900-120											120	534	EF-PS130	M6 x 1.0
GSSX-4160-11											11.2	45	EF-PS130	M6 x 1.0
GSSX-4160-22											22.5	100	EF-PS130	M6 x 1.0
GSSX-4160-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-4160-45											45.0	200	EF-PS130	M6 x 1.0
GSSX-4160-56	0.236	6.0	0.591	15.0	2.36	60	6.30	160	7.72	196	56.2	250	EF-PS130	M6 x 1.0
GSSX-4160-67											67.4	300	EF-PS130	M6 x 1.0
GSSX-4160-78											78.7	350	EF-PS130	M6 x 1.0
GSSX-4160-89											89.9	400	EF-PS130	M6 x 1.0
S08BAC0095	0.315	8.0	0.709	18.0	2.36	60	6.65	169			20	95	NONE	M6 x 1.0
S06DAD0045	0.236	6.0	0.591	15.0	3.15	80	7.87	200			10	45	NONE	M6 x 1.0
S08DAE0095	0.315	8.0	0.709	18.0	3.15	80	8.23	209			20	95	NONE	M6 x 1.0
GSSX-5000-10											10	45	EF-PS130	M6 x 1.0
GSSX-5000-20											20	95	EF-PS130	M6 x 1.0
GSSX-5000-30											30	133	EF-PS130	M6 x 1.0
GSSX-5000-40	0.236	6.0	0.591	15.0	3.00	75	8.58	218	10.00	254	40	178	EF-PS130	M6 x 1.0
GSSX-5000-50											50	224	EF-PS130	M6 x 1.0
GSSX-5000-60											60	267	EF-PS130	M6 x 1.0
GSSX-5000-70											70	311	EF-PS130	M6 x 1.0
GSSX-5000-80											80	356	EF-PS130	M6 x 1.0
GSSX-2000-20											20	95	EF-PS130	M6 x 1.0
GSSX-2000-30											30	133	EF-PS130	M6 x 1.0
GSSX-2000-40											40	178	EF-PS130	M6 x 1.0
GSSX-2000-50											50	224	EF-PS130	M6 x 1.0
GSSX-2000-60											60	267	EF-PS130	M6 x 1.0
GSSX-2000-70	0.315	8.0	0.709	18.0	3.00	75	8.58	218	10.00	254	70	311	EF-PS130	M6 x 1.0
GSSX-2000-80											80	356	EF-PS130	M6 x 1.0
GSSX-2000-90											90	400	EF-PS130	M6 x 1.0
GSSX-2000-100											100	445	EF-PS130	M6 x 1.0
GSSX-2000-110											110	489	EF-PS130	M6 x 1.0
GSSX-2000-120											120	534	EF-PS130	M6 x 1.0
GSSX-2000-150											150	667	EF-PS130	M6 x 1.0
GSSX-2050-20	0.315	8.0	0.709	18.0	3.00	75	9.08	231	10.50	267	20	95	EF-PS130	M6 x 1.0
GSSX-2050-30											30	133	EF-PS130	M6 x 1.0

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-2050-40											40	178	EF-PS130	M6 x 1.0
GSSX-2050-50											50	224	EF-PS130	M6 x 1.0
GSSX-2050-60											60	267	EF-PS130	M6 x 1.0
GSSX-2050-70											70	311	EF-PS130	M6 x 1.0
GSSX-2050-80	0.315	8.0	0.709	18.0	3.00	75	9.08	231	10.50	267	80	356	EF-PS130	M6 x 1.0
GSSX-2050-90											90	400	EF-PS130	M6 x 1.0
GSSX-2050-100											100	445	EF-PS130	M6 x 1.0
GSSX-2050-110											110	489	EF-PS130	M6 x 1.0
GSSX-2050-120											120	534	EF-PS130	M6 x 1.0
GSSX-4240-11											11.2	45	EF-PS130	M6 x 1.0
GSSX-4240-22											22.5	100	EF-PS130	M6 x 1.0
GSSX-4240-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-4240-45	0.236	6.0	0.591	15.0	3.94	100	9.45	240	10.87	276	45.0	200	EF-PS130	M6 x 1.0
GSSX-4240-56											56.2	250	EF-PS130	M6 x 1.0
GSSX-4240-67											67.4	300	EF-PS130	M6 x 1.0
GSSX-4240-78											78.7	350	EF-PS130	M6 x 1.0
GSSX-4240-89											89.9	400	EF-PS130	M6 x 1.0
GSSX-2249-22											22.5	100	EF-PS130	M6 x 1.0
GSSX-2249-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-2249-56	0.315	8.0	0.709	18.0	3.94	100	9.80	249	11.22	285	56.2	250	EF-PS130	M6 x 1.0
GSSX-2249-89											89.9	400	EF-PS130	M6 x 1.0
GSSX-2249-118											118.0	525	EF-PS130	M6 x 1.0
GSSX-2249-146											146.0	650	EF-PS130	M6 x 1.0
GSSX-3249-22											22.5	95	EF-PS100SS	M8 x 1.25
GSSX-3249-33											33.7	150	EF-PS100SS	M8 x 1.25
GSSX-3249-56											56.2	250	EF-PS100SS	M8 x 1.25
GSSX-3249-101	0.394	10.0	0.866	22.0	3.94	100	9.80	249	12.16	309	101.0	450	EF-PS100SS	M8 x 1.25
GSSX-3249-157											157.4	700	EF-PS100SS	M8 x 1.25
GSSX-3249-202											202.3	900	EF-PS100SS	M8 x 1.25
GSSX-3249-270											270.0	1200	EF-PS100SS	M8 x 1.25
GSSX-2100-20											20	95	EF-PS130	M6 x 1.0
GSSX-2100-30											30	133	EF-PS130	M6 x 1.0
GSSX-2100-40											40	178	EF-PS130	M6 x 1.0
GSSX-2100-50											50	224	EF-PS130	M6 x 1.0
GSSX-2100-60											60	267	EF-PS130	M6 x 1.0
GSSX-2100-70	0.315	8.0	0.709	18.0	3.50	89	10.48	266	11.90	300	70	311	EF-PS130	M6 x 1.0
GSSX-2100-80											80	356	EF-PS130	M6 x 1.0
GSSX-2100-90											90	400	EF-PS130	M6 x 1.0
GSSX-2100-100											100	445	EF-PS130	M6 x 1.0
GSSX-2100-110											110	489	EF-PS130	M6 x 1.0
GSSX-2100-120											120	534	EF-PS130	M6 x 1.0
GSSX-2100-150											150	667	EF-PS130	M6 x 1.0
GSSX-5100-10											10	45	EF-PS130	M6 x 1.0
GSSX-5100-20											20	95	EF-PS130	M6 x 1.0
GSSX-5100-30	0.236	6.0	0.591	15.0	3.50	89	10.58	269	12.00	305	30	133	EF-PS130	M6 x 1.0
GSSX-5100-40											40	178	EF-PS130	M6 x 1.0
GSSX-5100-50											50	224	EF-PS130	M6 x 1.0
GSSX-5100-60											60	267	EF-PS130	M6 x 1.0
GSSX-5100-90	0.315	8.0	0.709	18.0	3.50	89	10.58	269	12.00	305	90	400	EF-PS130	M6 x 1.0
S06GAM0045	0.236	6.0	0.591	15.0	4.72	120	11.02	280			10	45	NONE	M6 x 1.0
S08GAN0095	0.315	8.0	0.709	18.0	4.72	120	11.38	289			20	95	NONE	M6 x 1.0
S14FAK0200	0.551	14.0	1.102	28.0	3.94	100	10.47	266			45	200	NONE	M10 x 1.5
S08HA00095	0.315	8.0	0.709	18.0	5.51	140	12.95	329			20	95	NONE	M6 x 1.0
GSSX-4340-11											10	45	EF-PS130	M6 x 1.0
GSSX-4340-22											22.5	100	EF-PS130	M6 x 1.0
GSSX-4340-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-4340-45	0.236	6.0	0.591	15.0	6.00	153	13.39	340	14.80	376	45.0	200	EF-PS130	M6 x 1.0
GSSX-4340-56											56.2	250	EF-PS130	M6 x 1.0
GSSX-4340-67											67.4	300	EF-PS130	M6 x 1.0
GSSX-4340-78											78.7	350	EF-PS130	M6 x 1.0





Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-5150-10											10	45	EF-PS130	M6 x 1.0
GSSX-5150-20											20	95	EF-PS130	M6 x 1.0
GSSX-5150-30											30	133	EF-PS130	M6 x 1.0
GSSX-5150-40	0.236	6.0	0.591	15.0	6.00	153	13.58	345	15.00	380	40	178	EF-PS130	M6 x 1.0
GSSX-5150-50											50	224	EF-PS130	M6 x 1.0
GSSX-5150-60											60	267	EF-PS130	M6 x 1.0
GSSX-5150-80											80	356	EF-PS130	M6 x 1.0
GSSX-2125-20											20	95	EF-PS130	M6 x 1.0
GSSX-2125-30											30	133	EF-PS130	M6 x 1.0
GSSX-2125-40											40	178	EF-PS130	M6 x 1.0
GSSX-2125-50											50	224	EF-PS130	M6 x 1.0
GSSX-2125-60											60	267	EF-PS130	M6 x 1.0
GSSX-2125-70	0.315	8.0	0.709	18.0	6.00	153	13.58	345	15.00	380	70	311	EF-PS130	M6 x 1.0
GSSX-2125-80											80	356	EF-PS130	M6 x 1.0
GSSX-2125-90											90	400	EF-PS130	M6 x 1.0
GSSX-2125-100											100	445	EF-PS130	M6 x 1.0
GSSX-2125-110											110	489	EF-PS130	M6 x 1.0
GSSX-2125-120											120	534	EF-PS130	M6 x 1.0
GSSX-2349-22											22.5	95	EF-PS130	M6 x 1.0
GSSX-2349-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-2349-56	0.315	8.0	0.709	18.0	6.00	153	13.74	349	15.16	385	56.2	250	EF-PS130	M6 x 1.0
GSSX-2349-89											89.9	400	EF-PS130	M6 x 1.0
GSSX-2349-118											118	525	EF-PS130	M6 x 1.0
GSSX-2349-146											146	650	EF-PS130	M6 x 1.0
GSSX-2150-20											20	95	EF-PS130	M6 x 1.0
GSSX-2150-30											30	133	EF-PS130	M6 x 1.0
GSSX-2150-60	0.315	8.0	0.709	18.0	6.00	153	13.83	351	15.25	385	60	267	EF-PS130	M6 x 1.0
GSSX-2150-90											90	400	EF-PS130	M6 x 1.0
GSSX-2150-120											120	534	EF-PS130	M6 x 1.0
GSSX-2150-150											150	667	EF-PS130	M6 x 1.0
GASX-0818-0630-020	0.315	8.0	0.709	18.0	6.30	160	14.53	369	15.95	405	20	95	EF-PS130	M6 x 1.0
S10JAR0095	0.394	10.0	0.866	23.0	5.91	150	13.74	349			21	95	NONE	M8 x 1.25
GSSX-5200-10											10	45	EF-PS130	M6 x 1.0
GSSX-5200-20											20	95	EF-PS130	M6 x 1.0
GSSX-5200-30											30	133	EF-PS130	M6 x 1.0
GSSX-5200-40	0.236	6.0	0.591	15.0	7.00	178	15.58	396	17.00	432	40	178	EF-PS130	M6 x 1.0
GSSX-5200-50											50	224	EF-PS130	M6 x 1.0
GSSX-5200-60											60	267	EF-PS130	M6 x 1.0
GSSX-5200-75											75	334	EF-PS130	M6 x 1.0
GSSX-2200-20											20	95	EF-PS130	M6 x 1.0
GSSX-2200-30											30	133	EF-PS130	M6 x 1.0
GSSX-2200-40											40	178	EF-PS130	M6 x 1.0
GSSX-2200-50											50	224	EF-PS130	M6 x 1.0
GSSX-2200-60											60	267	EF-PS130	M6 x 1.0
GSSX-2200-70											70	311	EF-PS130	M6 x 1.0
GSSX-2200-80	0.315	8.0	0.709	18.0	7.00	178	15.58	394	17.00	430	80	356	EF-PS130	M6 x 1.0
GSSX-2200-90											90	400	EF-PS130	M6 x 1.0
GSSX-2200-100											100	445	EF-PS130	M6 x 1.0
GSSX-2200-110											110	489	EF-PS130	M6 x 1.0
GSSX-2200-120											120	534	EF-PS130	M6 x 1.0
GSSX-2200-150											150	667	EF-PS130	M6 x 1.0
S14JAS0200	0.551	14.0	1.102	28.0	5.91	150	14.41	366			45	200	NONE	M10 x 1.5
S08MAV0095	0.315	8.0	0.709	18.0	7.09	180	16.10	409			20	95	NONE	M6 x 1.0
GSSX-5250-10											10	45	EF-PS130	M6 x 1.0
GSSX-5250-20											20	95	EF-PS130	M6 x 1.0
GSSX-5250-30	0.236	6.0	0.591	15.0	7.50	197	17.08	434	18.50	470	30	133	EF-PS130	M6 x 1.0
GSSX-5250-45											45	200	EF-PS130	M6 x 1.0
GSSX-5250-60											60	267	EF-PS130	M6 x 1.0
GSSX-5250-75											75	334	EF-PS130	M6 x 1.0
GSSX-2250-20	0.315	8.0	0.709	18.0	7.25	184	17.08	434	18.50	470	20	334	EF-PS130	M6 x 1.0

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-2250-90											90	400	EF-PS130	M6 x 1.0
GSSX-2250-120	.315	8.0	0.709	18.0	7.25	184	17.08	434	18.50	470	120	534	EF-PS130	M6 x 1.0
GSSX-2250-150											150	667	EF-PS130	M6 x 1.0
GSSX-4440-11											10	50	EF-PS130	M6 x 1.0
GSSX-4440-22											22.5	100	EF-PS130	M6 x 1.0
GSSX-4440-33	0.236	6.0	0.591	15.0	7.87	200	17.32	440	18.74	476	33.7	150	EF-PS130	M6 x 1.0
GSSX-4440-56											56.2	250	EF-PS130	M6 x 1.0
GSSX-4440-89											89.9	400	EF-PS130	M6 x 1.0
GSSX-2449-22											22.5	95	EF-PS130	M6 x 1.0
GSSX-2449-33											33.7	150	EF-PS130	M6 x 1.0
GSSX-2449-56	0.315	8.0	0.709	18.0	7.87	200	17.68	449	19.10	485	56.2	250	EF-PS130	M6 x 1.0
GSSX-2449-89											89.9	400	EF-PS130	M6 x 1.0
GSSX-2449-118											118.0	525	EF-PS130	M6 x 1.0
GSSX-2449-135											135.0	650	EF-PS130	M6 x 1.0
GSSX-1466-45											45.0	200	EF-PS140SS	M10 x 1.5
GSSX-1466-112											112.4	500	EF-PS140SS	M10 x 1.5
GSSX-1466-179											179.9	800	EF-PS140SS	M10 x 1.5
GSSX-1466-269	0.551	14.0	1.102	28.0	7.87	200	18.35	466	21.11	536	269.8	1200	EF-PS140SS	M10 x 1.5
GSSX-1466-359											359.7	1600	EF-PS140SS	M10 x 1.5
GSSX-1466-449											449.6	2000	EF-PS140SS	M10 x 1.5
GSSX-1466-562											562.1	2500	EF-PS140SS	M10 x 1.5
GSSX-5300-10											10	45	EF-PS130	M6 x 1.0
GSSX-5300-20											20	95	EF-PS130	M6 x 1.0
GSSX-5300-30	0.236	6.0	0.591	15.0	8.00	203	18.58	472	20.00	508	30	133	EF-PS130	M6 x 1.0
GSSX-5300-40											40	178	EF-PS130	M6 x 1.0
GSSX-5300-50											50	224	EF-PS130	M6 x 1.0
GSSX-5300-60											60	267	EF-PS130	M6 x 1.0
GSSX-2300-20											20	95	EF-PS130	M6 x 1.0
GSSX-2300-30											30	133	EF-PS130	M6 x 1.0
GSSX-2300-40											40	178	EF-PS130	M6 x 1.0
GSSX-2300-50											50	224	EF-PS130	M6 x 1.0
GSSX-2300-60											60	267	EF-PS130	M6 x 1.0
GSSX-2300-70											70	311	EF-PS130	M6 x 1.0
GSSX-2300-75	0.315	8.0	0.709	18.0	8.00	203	18.58	472	20.00	508	75	334	EF-PS130	M6 x 1.0
GSSX-2300-80											80	356	EF-PS130	M6 x 1.0
GSSX-2300-90											90	400	EF-PS130	M6 x 1.0
GSSX-2300-100											100	445	EF-PS130	M6 x 1.0
GSSX-2300-110											110	489	EF-PS130	M6 x 1.0
GSSX-2300-120											120	534	EF-PS130	M6 x 1.0
GSSX-2300-130											130	578	EF-PS130	M6 x 1.0
GSSX-2300-150											150	667	EF-PS130	M6 x 1.0
GSSX-3020-20											21	95	EF-PS100SS	M8 x 1.25
GSSX-3020-30											30	133	EF-PS100SS	M8 x 1.25
GSSX-3020-40											40	178	EF-PS100SS	M8 x 1.25
GSSX-3020-50											50	224	EF-PS100SS	M8 x 1.25
GSSX-3020-60											60	267	EF-PS100SS	M8 x 1.25
GSSX-3020-70											70	311	EF-PS100SS	M8 x 1.25
GSSX-3020-80											80	356	EF-PS100SS	M8 x 1.25
GSSX-3020-90											90	400	EF-PS100SS	M8 x 1.25
GSSX-3020-100	0.394	10.0	0.866	23.0	7.87	200	17.84	453	20.20	513	100	445	EF-PS100SS	M8 x 1.25
GSSX-3020-110											110	489	EF-PS100SS	M8 x 1.25
GSSX-3020-120											120	534	EF-PS100SS	M8 x 1.25
GSSX-3020-130											130	578	EF-PS100SS	M8 x 1.25
GSSX-3020-140											140	623	EF-PS100SS	M8 x 1.25
GSSX-3020-150											150	667	EF-PS100SS	M8 x 1.25
GSSX-3020-160											160	712	EF-PS100SS	M8 x 1.25
GSSX-3020-170											170	756	EF-PS100SS	M8 x 1.25
GSSX-3020-180											180	801	EF-PS100SS	M8 x 1.25
S080BB0095	0.315	8.0	0.709	18.0	8.66	220	19.25	489			20	95	NONE	M6 x 1.0
GSSX-2400-20	0.315	8.0	0.709	18.0	9.84	250	21.61	549	23.03	585	20	95	EF-PS130	M6 x 1.0





Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-2400-30											30	133	EF-PS130	M6 x 1.0
GSSX-2400-40											40	178	EF-PS130	M6 x 1.0
GSSX-2400-50											50	224	EF-PS130	M6 x 1.0
GSSX-2400-60											60	267	EF-PS130	M6 x 1.0
GSSX-2400-70	0.315	8.0	0.709	18.0	9.84	250	21.61	549	23.03	585	70	311	EF-PS130	M6 x 1.0
GSSX-2400-80											80	356	EF-PS130	M6 x 1.0
GSSX-2400-90											90	400	EF-PS130	M6 x 1.0
GSSX-2400-100											100	445	EF-PS130	M6 x 1.0
GSSX-2400-110											110	489	EF-PS130	M6 x 1.0
GSSX-2400-120											120	534	EF-PS130	M6 x 1.0
GSSX-3549-22											22.5	95	EF-PS100SS	M8 x 1.25
GSSX-3549-33											33.7	150	EF-PS100SS	M8 x 1.25
GSSX-3549-56											56.2	250	EF-PS100SS	M8 x 1.25
GSSX-3549-101	0.394	10.0	0.866	23.0	9.84	250	21.61	549	23.97	610	101.2	450	EF-PS100SS	M8 x 1.25
GSSX-3549-157											157.4	700	EF-PS100SS	M8 x 1.25
GSSX-3549-202											202.3	900	EF-PS100SS	M8 x 1.25
GSSX-3549-269											269.8	1200	EF-PS100SS	M8 x 1.25
S14PBD0200	0.551	14.0	1.102	28.0	9.84	250	22.28	566			45	200	NONE	M10 x 1.5
GSSX-2600-20											20	95	EF-PS90M1SS	M6 x 1.0
GSSX-2600-30											30	133	EF-PS90M1SS	M6 x 1.0
GSSX-2600-40											40	178	EF-PS90M1SS	M6 x 1.0
GSSX-2600-50											50	224	EF-PS90M1SS	M6 x 1.0
GSSX-2600-60											60	267	EF-PS90M1SS	M6 x 1.0
GSSX-2600-70	0.315	8.0	0.709	18.0	11.00	279	24.88	632	26.30	668	70	311	EF-PS90M1SS	M6 x 1.0
GSSX-2600-80											80	356	EF-PS90M1SS	M6 x 1.0
GSSX-2600-90											90	400	EF-PS90M1SS	M6 x 1.0
GSSX-2600-100											100	445	EF-PS90M1SS	M6 x 1.0
GSSX-2600-110											110	489	EF-PS90M1SS	M6 x 1.0
GSSX-2600-120											120	534	EF-PS90M1SS	M6 x 1.0
GSSX-2600-150											150	667	EF-PS90M1SS	M6 x 1.0
GSSX-3000-30											30	133	EF-PS90M1SS	M6 x 1.0
GSSX-3000-40											40	178	EF-PS90M1SS	M6 x 1.0
GSSX-3000-50											50	224	EF-PS90M1SS	M6 x 1.0
GSSX-3000-60											60	267	EF-PS90M1SS	M6 x 1.0
GSSX-3000-70											70	311	EF-PS90M1SS	M6 x 1.0
GSSX-3000-80											80	356	EF-PS90M1SS	M6 x 1.0
GSSX-3000-90											90	400	EF-PS90M1SS	M6 x 1.0
GSSX-3000-100	0.394	10.0	0.866	22.0	11.81	300	25.55	649	26.97	685	100	445	EF-PS90M1SS	M6 x 1.0
GSSX-3000-110											110	489	EF-PS90M1SS	M6 x 1.0
GSSX-3000-120											120	534	EF-PS90M1SS	M6 x 1.0
GSSX-3000-130											130	578	EF-PS90M1SS	M6 x 1.0
GSSX-3000-140											140	623	EF-PS90M1SS	M6 x 1.0
GSSX-3000-150											150	667	EF-PS90M1SS	M6 x 1.0
GSSX-3000-160											160	712	EF-PS90M1SS	M6 x 1.0
GSSX-3000-170											170	756	EF-PS90M1SS	M6 x 1.0
GSSX-3000-180											180	801	EF-PS90M1SS	M6 x 1.0
GSSX-3050-20											21	95	EF-PS90M1SS	M6 x 1.0
GSSX-3050-30											30	133	EF-PS90M1SS	M6 x 1.0
GSSX-3050-40											40	178	EF-PS90M1SS	M6 x 1.0
GSSX-3050-50											50	224	EF-PS90M1SS	M6 x 1.0
GSSX-3050-60											60	267	EF-PS90M1SS	M6 x 1.0
GSSX-3050-70											70	311	EF-PS90M1SS	M6 x 1.0
GSSX-3050-80											80	356	EF-PS90M1SS	M6 x 1.0
GSSX-3050-90	0.394	10.0	0.866	22.0	11.81	300	25.55	649	26.97	685	90	400	EF-PS90M1SS	M6 x 1.0
GSSX-3050-100											100	445	EF-PS90M1SS	M6 x 1.0
GSSX-3050-110											110	489	EF-PS90M1SS	M6 x 1.0
GSSX-3050-120											120	534	EF-PS90M1SS	M6 x 1.0
GSSX-3050-130											130	578	EF-PS90M1SS	M6 x 1.0
GSSX-3050-140											140	623	EF-PS90M1SS	M6 x 1.0
GSSX-3050-150											150	667	EF-PS90M1SS	M6 x 1.0

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-3050-160											160	712	EF-PS90MISS	M6 x 1.0
GSSX-3050-170	0.394	10.0	0.866	22.0	11.81	300	25.55	649	26.97	685	170	756	EF-PS90MISS	M6 x 1.0
GSSX-3050-180											180	801	EF-PS90MISS	M6 x 1.0
GSSX-1666-45											45	200	EF-PS140SS	M10 x 1.5
GSSX-1666-111											111.6	500	EF-PS140SS	M10 x 1.5
GSSX-1666-179											179.9	800	EF-PS140SS	M10 x 1.5
GSSX-1666-269	0.551	14.0	1.102	28.0	11.81	300	26.22	666	28.96	735	269.8	1200	EF-PS140SS	M10 x 1.5
GSSX-1666-359											359.7	1600	EF-PS140SS	M10 x 1.5
GSSX-1666-449											449.6	2000	EF-PS140SS	M10 x 1.5
GSSX-1666-562											562.1	2500	EF-PS140SS	M10 x 1.5
GSSX-2800-20											20	95	EF-PS130	M6 x 1.0
GSSX-2800-30											30	133	EF-PS130	M6 x 1.0
GSSX-2800-40											40	178	EF-PS130	M6 x 1.0
GSSX-2800-50											50	224	EF-PS130	M6 x 1.0
GSSX-2800-60											60	267	EF-PS130	M6 x 1.0
GSSX-2800-70											70	311	EF-PS130	M6 x 1.0
GSSX-2800-80	0.315	8.0	0.709	18.0	11.50	292	26.58	675	28.00	711	80	356	EF-PS130	M6 x 1.0
GSSX-2800-90											90	400	EF-PS130	M6 x 1.0
GSSX-2800-100											100	445	EF-PS130	M6 x 1.0
GSSX-2800-110											110	489	EF-PS130	M6 x 1.0
GSSX-2800-120											120	534	EF-PS130	M6 x 1.0
GSSX-2800-130											130	578	EF-PS130	M6 x 1.0
GSSX-2800-140											140	623	EF-PS130	M6 x 1.0
GSSX-2800-150											150	667	EF-PS130	M6 x 1.0
GSSX-3100-20											20	95	EF-PS100SS	M8 x 1.25
GSSX-3100-30											30	133	EF-PS100SS	M8 x 1.25
GSSX-3100-40											40	178	EF-PS100SS	M8 x 1.25
GSSX-3100-50											50	224	EF-PS100SS	M8 x 1.25
GSSX-3100-60											60	267	EF-PS100SS	M8 x 1.25
GSSX-3100-70											70	311	EF-PS100SS	M8 x 1.25
GSSX-3100-80											80	356	EF-PS100SS	M8 x 1.25
GSSX-3100-90											90	400	EF-PS100SS	M8 x 1.25
GSSX-3100-100											100	445	EF-PS100SS	M8 x 1.25
GSSX-3100-110	0.394	10.0	0.866	22.0	11.50	292	25.64	651	28.00	711	110	489	EF-PS100SS	M8 x 1.25
GSSX-3100-120											120	534	EF-PS100SS	M8 x 1.25
GSSX-3100-130											130	578	EF-PS100SS	M8 x 1.25
GSSX-3100-140											140	623	EF-PS100SS	M8 x 1.25
GSSX-3100-150											150	667	EF-PS100SS	M8 x 1.25
GSSX-3100-160											160	712	EF-PS100SS	M8 x 1.25
GSSX-3100-170											170	756	EF-PS100SS	M8 x 1.25
GSSX-3100-175											175	778	EF-PS100SS	M8 x 1.25
GSSX-3100-180											180	801	EF-PS100SS	M8 x 1.25
GSSX-3100-200											200	890	EF-PS100SS	M8 x 1.25
GSSX-3100-250											250	1112	EF-PS100SS	M8 x 1.25
GSSX-3200-20											21	95	EF-PS90MISS	M6 x 1.0
GSSX-3200-30											30	133	EF-PS90MISS	M6 x 1.0
GSSX-3200-40											40	178	EF-PS90MISS	M6 x 1.0
GSSX-3200-50											50	224	EF-PS90MISS	M6 x 1.0
GSSX-3200-60											60	267	EF-PS90MISS	M6 x 1.0
GSSX-3200-70											70	311	EF-PS90MISS	M6 x 1.0
GSSX-3200-80											80	356	EF-PS90MISS	M6 x 1.0
GSSX-3200-90	0.394	10.0	0.866	22.0	13.78	350	29.49	749	30.91	785	90	400	EF-PS90MISS	M6 x 1.0
GSSX-3200-100											100	445	EF-PS90MISS	M6 x 1.0
GSSX-3200-110											110	489	EF-PS90MISS	M6 x 1.0
GSSX-3200-120											120	534	EF-PS90MISS	M6 x 1.0
GSSX-3200-130											130	578	EF-PS90MISS	M6 x 1.0
GSSX-3200-140											140	623	EF-PS90MISS	M6 x 1.0
GSSX-3200-150											150	667	EF-PS90MISS	M6 x 1.0
GSSX-3200-160											160	712	EF-PS90MISS	M6 x 1.0
GSSX-3200-170											170	756	EF-PS90MISS	M6 x 1.0





Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSSX-3200-180	0.394	10.0	0.866	22.0	13.78	350	29.49	749	30.91	785	180	801	EF-PS90MISS	M6 x 1.0
S14SBJ0200	0.551	14.0	1.102	28.0	13.78	350	30.16	766			45	200	NONE	M10 x 1.5
GSSX-3849-22											21	95	EF-PS100SS	M8 x 1.25
GSSX-3849-33											33.7	150	EF-PS100SS	M8 x 1.25
GSSX-3849-56											56.2	250	EF-PS100SS	M8 x 1.25
GSSX-3849-101	0.394	10.0	0.866	23.0	15.75	400	33.43	849	35.79	910	101.2	450	EF-PS100SS	M8 x 1.25
GSSX-3849-157											157.4	700	EF-PS100SS	M8 x 1.25
GSSX-3849-202											202.3	900	EF-PS100SS	M8 x 1.25
GSSX-3849-269											269.8	1200	EF-PS100SS	M8 x 1.25
GSSX-3610-30											30	133	EF-PS90MISS	M6 x 1.0
GSSX-3610-40											40	178	EF-PS90MISS	M6 x 1.0
GSSX-3610-50											50	224	EF-PS90MISS	M6 x 1.0
GSSX-3610-60											60	267	EF-PS90MISS	M6 x 1.0
GSSX-3610-70											70	311	EF-PS90MISS	M6 x 1.0
GSSX-3610-80											80	356	EF-PS90MISS	M6 x 1.0
GSSX-3610-90											90	400	EF-PS90MISS	M6 x 1.0
GSSX-3610-100											100	445	EF-PS90MISS	M6 x 1.0
GSSX-3610-110	0.394	10.0	0.866	22.0	15.2	386	34.88	886	36.3	668	110	489	EF-PS90MISS	M6 x 1.0
GSSX-3610-120											120	534	EF-PS90MISS	M6 x 1.0
GSSX-3610-130											130	578	EF-PS90MISS	M6 x 1.0
GSSX-3610-140											140	623	EF-PS90MISS	M6 x 1.0
GSSX-3610-150											150	667	EF-PS90MISS	M6 x 1.0
GSSX-3610-160											160	712	EF-PS90MISS	M6 x 1.0
GSSX-3610-170											170	756	EF-PS90MISS	M6 x 1.0
GSSX-3610-180											180	801	EF-PS90MISS	M6 x 1.0
GSSX-3600-30											30	133	EF-PS100SS	M8 x 1.25
GSSX-3600-40											40	178	EF-PS100SS	M8 x 1.25
GSSX-3600-50											50	224	EF-PS100SS	M8 x 1.25
GSSX-3600-60											60	267	EF-PS100SS	M8 x 1.25
GSSX-3600-70											70	311	EF-PS100SS	M8 x 1.25
GSSX-3600-80											80	356	EF-PS100SS	M8 x 1.25
GSSX-3600-90											90	400	EF-PS100SS	M8 x 1.25
GSSX-3600-100	0.394	10.0	0.866	22.0	15.2	386	33.94	862	36.3	668	100	445	EF-PS100SS	M8 x 1.25
GSSX-3600-110											110	489	EF-PS100SS	M8 x 1.25
GSSX-3600-120											120	534	EF-PS100SS	M8 x 1.25
GSSX-3600-130											130	578	EF-PS100SS	M8 x 1.25
GSSX-3600-140											140	623	EF-PS100SS	M8 x 1.25
GSSX-3600-150											150	667	EF-PS100SS	M8 x 1.25
GSSX-3600-160											160	712	EF-PS100SS	M8 x 1.25
GSSX-3600-170											170	756	EF-PS100SS	M8 x 1.25
GSSX-3600-180											180	801	EF-PS100SS	M8 x 1.25
GSSX-1866-45											45	200	EF-PS140SS	M10 x 1.5
GSSX-1866-112											112.4	500	EF-PS140SS	M10 x 1.5
GSSX-1866-179											179.9	800	EF-PS140SS	M10 x 1.5
GSSX-1866-269	0.551	14.0	1.102	28.0	15.75	400	34.88	866	37.64	956	269.8	1200	EF-PS140SS	M10 x 1.5
GSSX-1866-359											359.7	1600	EF-PS140SS	M10 x 1.5
GSSX-1866-449											449.6	2000	EF-PS140SS	M10 x 1.5
GSSX-1866-562											562.1	2500	EF-PS140SS	M10 x 1.5
GSSX-1066-45											45	200	EF-PS140SS	M10 x 1.5
GSSX-1066-112											112.4	500	EF-PS140SS	M10 x 1.5
GSSX-1066-179											179.9	800	EF-PS140SS	M10 x 1.5
GSSX-1066-269	0.551	14.0	1.102	28.0	19.69	500	41.97	1066	44.73	1136	269.8	1200	EF-PS140SS	M10 x 1.5
GSSX-1066-359											359.7	1600	EF-PS140SS	M10 x 1.5
GSSX-1066-449											449.6	2000	EF-PS140SS	M10 x 1.5
GSSX-1066-562											562.1	2500	EF-PS140SS	M10 x 1.5

GSEL

The **GSEL Gas Spring** eliminates the need for a separate safety rod or support in critical lift-assist applications. The shroud positively locks when the gas spring is fully extended protecting people and critical equipment from injury or harm in the event of catastrophic gas spring failure due to excessive overload or misuse. The GSEL Gas Spring is simple to use, when the gas spring is fully extended a spring loaded locking shroud moves into place on the lip of the tube to prevent the gas spring from compressing. The shroud is released by applying thumb pressure to move shroud out of the way so the gas spring may compress.

The locking shroud on the Shock-Lock™ Gas Spring is finished with the same baked on epoxy finish as the gas spring tube. The gas spring has a black nitride shaft providing excellent corrosion resistance as well as an attractive appearance.



Other end fittings are available (see pages 269-270).

GSEL

GAS SPRINGS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSEL-4900-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-4900-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-4900-40	0.236	6.0	0.591	15.0	2.00	51	6.08	154	7.50	191	40	178	EF-PS30B1	M6 x 1.0
GSEL-4900-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-4900-80											80	356	EF-PS30B1	M6 x 1.0
GSEL-5000-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5000-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-5000-40	0.236	6.0	0.591	15.0	3.00	76	8.58	218	10.00	254	40	178	EF-PS30B1	M6 x 1.0
GSEL-5000-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5000-80											80	356	EF-PS30B1	M6 x 1.0
GSEL-2100-120	0.315	8.0	0.708	18.0	3.50	89	10.48	266	11.90	302	120	534	EF-PS30B1	M6 x 1.0
GSEL-2100-150											150	667	EF-PS30B1	M6 x 1.0
GSEL-5100-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5100-30	0.236	6.0	0.591	15.0	3.50	89	10.58	269	12.00	305	30	133	EF-PS30B1	M6 x 1.0
GSEL-5100-40											40	178	EF-PS30B1	M6 x 1.0
GSEL-5100-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5150-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5150-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-5150-40	0.236	6.0	0.591	15.0	5.50	140	13.58	345	15.00	381	40	178	EF-PS30B1	M6 x 1.0
GSEL-5150-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5150-80											80	356	EF-PS30B1	M6 x 1.0
GSEL-2150-90											90	400	EF-PS30B1	M6 x 1.0
GSEL-2150-120	0.315	8.0	0.708	18.0	5.50	140	13.83	351	15.25	387	120	534	EF-PS30B1	M6 x 1.0
GSEL-2150-150											150	667	EF-PS30B1	M6 x 1.0
GSEL-5200-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5200-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-5200-40	0.236	6.0	0.591	15.0	6.75	171	15.58	396	17.00	432	40	178	EF-PS30B1	M6 x 1.0
GSEL-5200-50											50	222	EF-PS30B1	M6 x 1.0
GSEL-5200-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5200-75											75	334	EF-PS30B1	M6 x 1.0
GSEL-2200-90											90	400	EF-PS30B1	M6 x 1.0
GSEL-2200-120	0.315	8.0	0.708	18.0	6.00	152	15.58	396	17.00	432	120	534	EF-PS30B1	M6 x 1.0
GSEL-2200-150											150	667	EF-PS30B1	M6 x 1.0
GSEL-5250-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5250-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-5250-45	0.236	6.0	0.591	15.0	7.25	184	17.08	434	18.50	470	45	200	EF-PS30B1	M6 x 1.0
GSEL-5250-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5250-75											75	334	EF-PS30B1	M6 x 1.0
GSEL-2250-120	0.315	8.0	0.708	18.0	7.25	184	17.08	434	18.50	470	120	534	EF-PS30B1	M6 x 1.0
GSEL-2250-150											150	667	EF-PS30B1	M6 x 1.0
GSEL-5300-20											20	89	EF-PS30B1	M6 x 1.0
GSEL-5300-30											30	133	EF-PS30B1	M6 x 1.0
GSEL-5300-40											40	178	EF-PS30B1	M6 x 1.0
GSEL-5300-50	0.236	6.0	0.591	15.0	8.00	203	18.58	472	20.00	508	50	222	EF-PS30B1	M6 x 1.0
GSEL-5300-60											60	267	EF-PS30B1	M6 x 1.0
GSEL-5300-70											70	311	EF-PS30B1	M6 x 1.0
GSEL-5300-80											80	356	EF-PS30B1	M6 x 1.0
GSEL-2300-90											90	400	EF-PS30B1	M6 x 1.0
GSEL-2300-120	0.315	8.0	0.708	18.0	8.00	203	18.58	472	20.00	508	120	534	EF-PS30B1	M6 x 1.0
GSEL-2300-150											150	667	EF-PS30B1	M6 x 1.0
GSEL-3100-100											100	445	EF-PS100	M8 x 1.25
GSEL-3100-120											120	534	EF-PS100	M8 x 1.25
GSEL-3100-150	0.394	10.0	0.866	22.0	11.50	292	26.34	669	28.00	711	150	667	EF-PS100	M8 x 1.25
GSEL-3100-200											200	890	EF-PS100	M8 x 1.25
GSEL-3100-250											250	1112	EF-PS100	M8 x 1.25

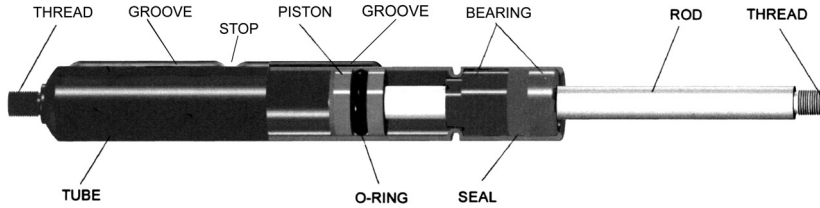
TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

GSGT

The **GSGT Multi-Range Gas Spring**. This gas spring operates much like the standard Nitrider™ in that it allows a lid or door to open to 90° and lock internally. By applying an additional opening force the gas spring “breaks away” and continues to extend to the desired fully opening angle (typically 170°- 180°). The gas spring will work the same way when compressing or closing the lid. Grooves in the tube allow the Multi Stop™ gas spring to stop at various angles depending on how many grooves are on the tube.

The GSGT Multi Stop™ is a special order item only and can be custom designed to fit your particular application. SPD can design the gas spring to your desired length, stroke, force and number of stops by varying the number of grooves formed into the tube.

The GSGT Multi Stop™ gas spring is an excellent choice for RV luggage door on pop-outs. Allow our engineering staff to assist you in designing the Multi Stop™ into your design.

GSGT**GSQL**

Introducing the new **GSQL Varilift Gas Spring!** This unique gas spring comes with a bleeder valve so the end user can adjust the P1 force of the gas spring to fit the application. Each size gas springs comes with the maximum P1 force available for that series gas spring. Once the Varilift is installed the nitrogen gas can gradually be released until a suitable force has been achieved. Once established the Varilift can be returned to SPD to determine the new force and a suitable less expensive fixed force gas spring can be provided for your precise application. The Varilift Gas Spring also has the added features of a black nitride shaft and the ability to be adjusted while in position saving both the time and effort of removing the gas spring from the application and bleeding the valve over and over again until the proper force is reached.

The **GSQL Gas Spring** is an excellent choice for prototyping new applications and for use where the gas spring size is the same but the weights of the lids vary.

GSQL

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSQL-4900-100	0.236		0.591	15.0		51	6.06		7.50	190	100	445	EF-PS30B1	M6 x 1.0
GSQL-5000-100	0.236		0.591	15.0		76	8.58		10.00	254	100	445	EF-PS30B1	M6 x 1.0
GSQL-2100-150	0.315		0.709	18.0		90	10.48		11.90	300	150	667	EF-PS30B1	M6 x 1.0
GSQL-5150-100	0.236		0.591	15.0		140	13.58		15.00	380	100	445	EF-PS30B1	M6 x 1.0
GSQL-2150-150	0.315		0.709	18.0		140	13.83		15.25	385	150	667	EF-PS30B1	M6 x 1.0
GSQL-2200-150	0.315		0.709	18.0		150	15.58		17.00	430	150	667	EF-PS30B1	M6 x 1.0
GSQL-2250-150	0.315		0.709	18.0		180	17.08		18.50	470	150	667	EF-PS30B1	M6 x 1.0
GSQL-2300-150	0.315		0.709	18.0		200	18.58		20.00	508	150	667	EF-PS30B1	M6 x 1.0
GSQL-3100-250	0.394		0.866	22.0		292	25.64		28.00	711	250	1110	EF-PS100BP	M8 x 1.25

Other end fittings are available (see pages 269-270).

How to Specify End Fittings

Specifying Optional Gas Spring End Fittings

To select end fittings other than those specified as standard and listed in the gas spring part number tables, use the following designation:
(see sample part number example below)



Example: To order a GSNI-2100-90 with an EF-PS91 Rod End Fitting and an EF-PS122 Tube End Fitting, the new part number would be: **GSNI-2100-90-KET.**

End Fitting Code List

End Fitting	Designation Code
EF-PS30B1	A
EF-PS30G1	B
EF-PS130	C
EF-PS30B2	D
EF-PS91	E
EF-PS91BP	F
EF-12788	G
EF-PS90	H

End Fitting	Designation Code
EF-PS90SS	I
EF-PS90BP	J
EF-PS90M1	L
EF-PS90M1-SS	M
EF-PS90M1BP	N
EF-PS100	O
EF-PS100SS	P
EF-PS100BP	Q

End Fitting	Designation Code
EF-PS120	R
EF-PS121	S
EF-PS122	T
EF-PS123	U
EF-PS124	V
EF-PS30B3	W
EF-13857	X
No fitting	Z

Note: When specifying alternative end fittings, ensure that the gas spring threads match the end fitting thread.

6mm X 15mm gas springs, and 8mm X 18mm gas springs have M6 X 1 Threads.

10mm X 22mm gas springs have M8 X 1.25 Threads.

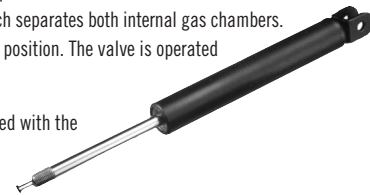


GSBL

The new **GSBL Adjusta-Lock** is a stepped variably fixed gas spring which allows the spring to be fixed at any position in both the extended and compressed directions depending on the design. This is made possible by a valve integrated into the piston which separates both internal gas chambers. If the valve is closed interrupting the flow of gas between chambers the Adjusta-Lock spring is locked in that position. The valve is operated externally via a cable, handle or pulley, which are sold separately.

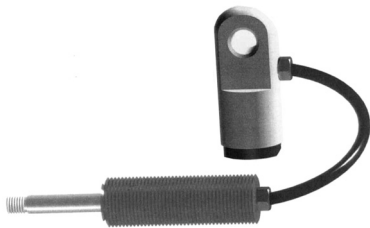
Below are accessories for the **Adjusta-Lock** Gas Spring. The BL-300 Hydraulic Release Assembly can be ordered with the cable length needed for your particular application.

Adjusta-Lock Gas Springs can be used for office chair, hospital bed and stretchers.



GSBL

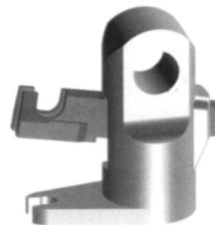
NITROGEN GAS SPRINGS - MULTIPLE END FITTINGS



BL-300
Hydraulic
Release
Assembly



BL-400
Handle
Release
Assembly



BL-100
Cable
Release
Head



BL-200
Cable
Release
Head

The **GSBL Adjusta-Lock Gas Springs** are a special order item designed to your specifications. Let our experienced **Gas Spring Engineering Department** help you design in the perfect spring for your product application!

Standard Dampers

SPD Dampers can be used anywhere a lid or weight must be lowered or moved in a controlled motion at a constant speed. There are three types of dampers, extension, compression, and dual. Extension Dampers provide controlled speed while the rod is being extended out of the tube. Compression Dampers provide a controlled speed while the rod is being compressed back into the tube. Dual dampers provide controlled speed in both directions.



STANDARD DAMPERS

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Thread	Dampening Rate
	in	mm	in	mm	in	mm	in	mm	PS006 end fitting	in/sec 40lbs Applied Load
DA-200A-CC									M6 x 1.0	1.40
DA-200A-CJ									M6 x 1.0	1.70
DA-200A-CD									M6 x 1.0	2.30
DA-200A-CN									M6 x 1.0	3.20
DA-200A-CE									M6 x 1.0	3.80
DA-200A-DC									M6 x 1.0	1.40
DA-200A-DJ									M6 x 1.0	1.70
DA-200A-DD					2.0	50.8	6.47	164	M6 x 1.0	2.30
DA-200A-DN									M6 x 1.0	3.20
DA-200A-DE									M6 x 1.0	3.80
DA-200A-EC									M6 x 1.0	2.30
DA-200A-EJ									M6 x 1.0	2.70
DA-200A-ED									M6 x 1.0	3.70
DA-200A-EN									M6 x 1.0	4.90
DA-200A-EE									M6 x 1.0	6.00
DA-300A-CC									M6 x 1.0	1.40
DA-300A-CJ									M6 x 1.0	1.70
DA-300A-CD									M6 x 1.0	2.30
DA-300A-CN									M6 x 1.0	3.20
DA-300A-CE									M6 x 1.0	3.80
DA-300A-DC									M6 x 1.0	1.40
DA-300A-DJ									M6 x 1.0	1.70
DA-300A-DD					3.0	76.2	8.60	218	M6 x 1.0	2.30
DA-300A-DN									M6 x 1.0	3.20
DA-300A-DE	0.236	6.0	0.591	15.0					M6 x 1.0	3.80
DA-300A-EC									M6 x 1.0	2.30
DA-300A-EJ									M6 x 1.0	2.70
DA-300A-ED									M6 x 1.0	3.70
DA-300A-EN									M6 x 1.0	4.90
DA-300A-EE									M6 x 1.0	6.00
DA-400A-CC									M6 x 1.0	1.40
DA-400A-CJ									M6 x 1.0	1.70
DA-400A-CD									M6 x 1.0	2.30
DA-400A-CN									M6 x 1.0	3.20
DA-400A-CE									M6 x 1.0	3.80
DA-400A-DC									M6 x 1.0	1.40
DA-400A-DJ									M6 x 1.0	1.70
DA-400A-DD					4.0	101.6	11.08	281	M6 x 1.0	2.30
DA-400A-DN									M6 x 1.0	3.20
DA-400A-DE									M6 x 1.0	3.80
DA-400A-EC									M6 x 1.0	2.30
DA-400A-EJ									M6 x 1.0	2.70
DA-400A-ED									M6 x 1.0	3.70
DA-400A-EN									M6 x 1.0	4.90
DA-400A-EE									M6 x 1.0	6.00
DA-500A-CC									M6 x 1.0	1.40
DA-500A-CJ									M6 x 1.0	1.70
DA-500A-CD					5.0	127	13.60	345	M6 x 1.0	2.30
DA-500A-CN									M6 x 1.0	3.20
DA-500A-CE									M6 x 1.0	3.80

STANDARD DAMPERS

Standard Dampers

Extension, compression or dual damping.

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Thread	Dampening Rate
	in	mm	in	mm	in	mm	in	mm	PS006 end fitting	in/sec 40lbs Applied Load
DA-500A-DC									M6 x 1.0	1.40
DA-500A-DJ									M6 x 1.0	1.70
DA-500A-DD									M6 x 1.0	2.30
DA-500A-DN									M6 x 1.0	3.20
DA-500A-DE	0.236	6.0	0.591	15.0	5.0	127	13.60	345	M6 x 1.0	3.80
DA-500A-EC									M6 x 1.0	2.30
DA-500A-EJ									M6 x 1.0	2.70
DA-500A-ED									M6 x 1.0	3.70
DA-500A-EN									M6 x 1.0	4.90
DA-500A-EE									M6 x 1.0	6.00
DA-400V-CJ									M6 x 1.0	0.40
DA-400V-CD									M6 x 1.0	0.60
DA-400V-CE									M6 x 1.0	0.80
DA-400V-CF									M6 x 1.0	1.00
DA-400V-CS									M6 x 1.0	1.40
DA-400V-DJ									M6 x 1.0	0.40
DA-400V-DD									M6 x 1.0	0.60
DA-400V-DE					4.0	101.6	10.83	275	M6 x 1.0	0.80
DA-400V-DF									M6 x 1.0	1.00
DA-400V-DS									M6 x 1.0	1.40
DA-400V-EJ									M6 x 1.0	0.50
DA-400V-ED									M6 x 1.0	0.70
DA-400V-EE									M6 x 1.0	1.00
DA-400V-EF									M6 x 1.0	1.30
DA-400V-ES									M6 x 1.0	1.60
DA-500V-CJ									M6 x 1.0	0.40
DA-500V-CD									M6 x 1.0	0.60
DA-500V-CE									M6 x 1.0	0.80
DA-500V-CF									M6 x 1.0	1.00
DA-500V-CS									M6 x 1.0	1.40
DA-500V-DJ									M6 x 1.0	0.40
DA-500V-DD	0.315	8.0	0.709	18.0					M6 x 1.0	0.60
DA-500V-DE					5.0	127	13.07	332	M6 x 1.0	0.80
DA-500V-DF									M6 x 1.0	1.00
DA-500V-DS									M6 x 1.0	1.40
DA-500V-EJ									M6 x 1.0	0.50
DA-500V-ED									M6 x 1.0	0.70
DA-500V-EE									M6 x 1.0	1.00
DA-500V-EF									M6 x 1.0	1.30
DA-500V-ES									M6 x 1.0	1.60
DA-600V-CJ									M6 x 1.0	0.40
DA-600V-CD									M6 x 1.0	0.60
DA-600V-CE									M6 x 1.0	0.80
DA-600V-CF									M6 x 1.0	1.00
DA-600V-CS									M6 x 1.0	1.40
DA-600V-DJ									M6 x 1.0	0.40
DA-600V-DD									M6 x 1.0	0.60
DA-600V-DE					6.0	152.4	15.59	396	M6 x 1.0	0.80
DA-600V-DF									M6 x 1.0	1.00
DA-600V-DS									M6 x 1.0	1.40
DA-600V-EJ									M6 x 1.0	0.50
DA-600V-ED									M6 x 1.0	0.70
DA-600V-EE									M6 x 1.0	1.00
DA-600V-EF									M6 x 1.0	1.30
DA-600V-ES									M6 x 1.0	1.60
DA-700V-CJ									M6 x 1.0	0.40
DA-700V-CD					7.0	127	13.07	332	M6 x 1.0	0.60
DA-700V-CE									M6 x 1.0	0.80



STANDARD DAMPERS

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Standard Dampers

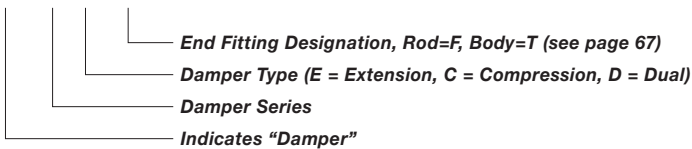
Extension, compression or dual damping.



Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Thread	Dampening Rate
	in	mm	in	mm	in	mm	in	mm		
DA-700V-CF									M6 x 1.0	1.00
DA-700V-CS									M6 x 1.0	1.40
DA-700V-DJ									M6 x 1.0	0.40
DA-700V-DD									M6 x 1.0	0.60
DA-700V-DE									M6 x 1.0	0.80
DA-700V-DF	0.315	8.0	0.709	18.0	7.0	177.8	18.23	436	M6 x 1.0	1.00
DA-700V-DS									M6 x 1.0	1.40
DA-700V-EJ									M6 x 1.0	0.50
DA-700V-ED									M6 x 1.0	0.70
DA-700V-EE									M6 x 1.0	1.00
DA-700V-EF									M6 x 1.0	1.30
DA-700V-ES									M6 x 1.0	1.60

Designation of the Part Numbering System: (example: DA-200A-CJ-KFT)

DA-200A-CJ-KFT



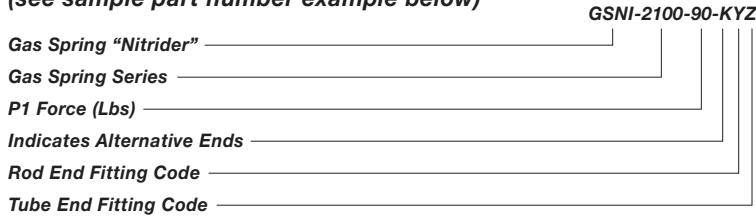
Please Note: Not all dampers listed are in stock. Lead times may apply. Dampers come standard with PS006 threaded ends, adding end fittings will change the part number!

Please see below and page 80-81 for instructions and complete details.

Specifying Optional Gas Spring End Fittings

To select end fittings other than those specified as standard and listed in the gas spring part number tables, use the following designation:

(see sample part number example below)



Example: To order a GSNI-2100-90 with an EF-PS91 Rod End Fitting and an EF-PS122 Tube End Fitting the new part number would be: GSNI-2100-90-KET.

End Fitting Code List

End Fitting	Designation Code
EF-PS30B1	A
EF-PS30G1	B
EF-PS130	C
EF-PS30B2	D
EF-PS91	E
EF-PS91BP	F
EF-12788	G
EF-PS90	H

End Fitting	Designation Code
EF-PS90SS	I
EF-PS90BP	J
EF-PS90M1	L
EF-PS90M1-SS	M
EF-PS90M1BP	N
EF-PS100	O
EF-PS100SS	P
EF-PS100BP	Q

End Fitting	Designation Code
EF-PS120	R
EF-PS121	S
EF-PS122	T
EF-PS123	U
EF-PS124	V
EF-PS30B3	W
EF-13857	X
No fitting	Z

Note: When specifying alternative end fittings, ensure that the gas spring threads match the end fitting thread.

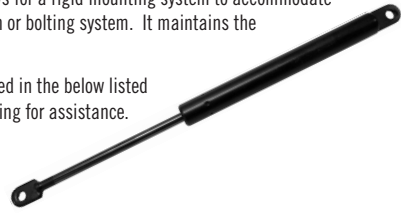
6mm X 15mm gas springs, and 8mm X 18mm gas springs have M6 X 1 Threads.

10mm X 22mm gas springs have M8 X 1.25 Threads.

GSWB

The **GSWB Welded Blade End Gas Spring** is a new addition to the SPD SPEC gas spring line that allows for a rigid mounting system to accommodate tight spacing. The welded blade is constructed of steel that includes a thru hole to be used with a pin or bolting system. It maintains the same nitrided shaft feature as the GSNI line to protect against possible corrosion in the application.

The GSWB series gas spring comes standard with the welded blade and thru hole diameter as identified in the below listed table. If an alternative end configuration is required please look at the GSNI series or contact engineering for assistance.

**GSWB**

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-4106-11											11.2	50		
GSWB-4106-22											22.5	100		
GSWB-4106-33											33.7	150		
GSWB-4106-45	0.236	6	0.591	15	0.79	20	3.15	80	4.17	106	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4106-56											56.2	250		
GSWB-4106-67											67.4	300		
GSWB-4106-78											78.7	350		
GSWB-4146-11											11.2	50		
GSWB-4146-22											22.5	100		
GSWB-4146-33											33.7	150		
GSWB-4146-45	0.236	6	0.591	15	1.57	40	4.72	120	5.75	146	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4146-56											56.2	250		
GSWB-4146-67											67.4	300		
GSWB-4146-78											78.7	350		
GSWB-4165-11											11.2	50		
GSWB-4165-22											22.5	100		
GSWB-4165-33											33.7	150		
GSWB-4165-45	0.236	6	0.591	15	1.60	41	5.48	139	6.50	165	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4165-56											56.2	250		
GSWB-4165-67											67.4	300		
GSWB-4165-78											78.7	350		
GSWB-4186-11											11.2	50		
GSWB-4186-22											22.5	100		
GSWB-4186-33											33.7	150		
GSWB-4186-45	0.236	6	0.591	15	2.36	60	6.30	160	7.32	186	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4186-56											56.2	250		
GSWB-4186-67											67.4	300		
GSWB-4186-78											78.7	350		
GSWB-2206-22											22.5	100		
GSWB-2206-33											33.7	150		
GSWB-2206-45											45	200		
GSWB-2206-56											56.2	250		
GSWB-2206-67											67.4	300		
GSWB-2206-78	0.315	8	0.709	18	2.36	60	6.93	176	8.11	206	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2206-89											89.9	400		
GSWB-2206-101											101.2	450		
GSWB-2206-112											112.4	500		
GSWB-2206-123											123.7	550		
GSWB-2206-134											134.9	600		
GSWB-2206-146											146.1	650		
GSWB-4226-11											11.2	50		
GSWB-4226-22											22.5	100		
GSWB-4226-33											33.7	150		
GSWB-4226-45	0.236	6	0.591	15	3.15	80	7.87	200	8.90	226	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4226-56											56.2	250		
GSWB-4226-67											67.4	300		
GSWB-4226-78											78.7	350		
GSWB-2246-22											22.5	100		
GSWB-2246-33											33.7	150		
GSWB-2246-45	0.315	8	0.709	18	3.15	80	8.51	216	9.69	246	45	200	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2246-56											56.2	250		
GSWB-2246-67											67.4	300		
GSWB-2246-78											78.7	350		

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SPEC



Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-2246-89											89.9	400		
GSWB-2246-101											101.2	450		
GSWB-2246-112	0.315	8	0.709	18	3.15	80	8.51	216	9.69	246	112.4	500	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2246-123											123.7	550		
GSWB-2246-134											134.9	600		
GSWB-2246-146											146.1	650		
GSWB-2254-22											22.5	100		
GSWB-2254-33											33.7	150		
GSWB-2254-45											45	200		
GSWB-2254-56											56.2	250		
GSWB-2254-67											67.4	300		
GSWB-2254-78	0.315	8	0.709	18	3.15	80	8.82	224	10.0	254	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2254-89											89.9	400		
GSWB-2254-101											101.2	450		
GSWB-2254-112											112.4	500		
GSWB-2254-123											123.7	550		
GSWB-2254-134											134.9	600		
GSWB-2254-146											146.1	650		
GSWB-4264-11											11.2	50		
GSWB-4264-22											22.5	100		
GSWB-4264-33											33.7	150		
GSWB-4264-45	0.236	6	0.591	15	3.94	100	9.37	238	10.39	264	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4264-56											56.2	250		
GSWB-4264-67											67.4	300		
GSWB-4264-78											78.7	350		
GSWB-2286-22											22.5	100		
GSWB-2286-33											33.7	150		
GSWB-2286-45											45	200		
GSWB-2286-56											56.2	250		
GSWB-2286-67											67.4	300		
GSWB-2286-78											78.7	350		
GSWB-2286-89	0.315	8	0.709	18	3.94	100	10.08	256	11.26	286	89.9	400	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2286-101											101.2	450		
GSWB-2286-112											112.4	500		
GSWB-2286-123											123.7	550		
GSWB-2286-134											134.9	600		
GSWB-2286-146											146.1	650		
GSWB-3286-33											33.7	150		
GSWB-3286-45											45	200		
GSWB-3286-56											56.2	250		
GSWB-3286-67											67.4	300		
GSWB-3286-78											78.7	350		
GSWB-3286-89											89.9	400		
GSWB-3286-101	0.394	10	0.866	22/23	3.74	95	10.08	256	11.26	286	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3286-112											112.4	500		
GSWB-3286-123											123.7	550		
GSWB-3286-134											134.9	600		
GSWB-3286-146											146.1	650		
GSWB-3286-157											157.4	700		
GSWB-3286-168											168.6	750		
GSWB-3286-179											179.8	800		
GSWB-4305-11											11.2	50		
GSWB-4305-22											22.5	100		
GSWB-4305-33											33.7	150		
GSWB-4305-45	0.236	6	0.591	15	4.72	120	10.99	279	12.01	305	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4305-56											56.2	250		
GSWB-4305-67											67.4	300		
GSWB-4305-78											78.7	350		

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-2326-22											22.5	100		
GSWB-2326-33											33.7	150		
GSWB-2326-45											45	200		
GSWB-2326-56											56.2	250		
GSWB-2326-67											67.4	300		
GSWB-2326-78	0.315	8	0.709	18	4.72	120	11.68	296	12.83	326	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2326-89											89.9	400		
GSWB-2326-101											101.2	450		
GSWB-2326-112											112.4	500		
GSWB-2326-123											123.7	550		
GSWB-2326-134											134.9	600		
GSWB-2326-146											146.1	650		
GSWB-4366-11											11.2	50		
GSWB-4366-22											22.5	100		
GSWB-4366-33											33.7	150		
GSWB-4366-45	0.236	6	0.591	15	5.91	150	13.39	340	14.41	366	45	200	Dia 6.1 mm Eye	Dia 6.1 mm Eye
GSWB-4366-56											56.2	250		
GSWB-4366-67											67.4	300		
GSWB-4366-78											78.7	350		
GSWB-2366-22											22.5	100		
GSWB-2366-33											33.7	150		
GSWB-2366-45											45	200		
GSWB-2366-56											56.2	250		
GSWB-2366-67											67.4	300		
GSWB-2366-78	0.315	8	0.709	18	5.51	140	13.39	340	14.41	366	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2366-89											89.9	400		
GSWB-2366-101											101.2	450		
GSWB-2366-112											112.4	500		
GSWB-2366-123											123.7	550		
GSWB-2366-134											134.9	600		
GSWB-2366-146											146.1	650		
GSWB-2380-22											22.5	100		
GSWB-2380-33											33.7	150		
GSWB-2380-45											45	200		
GSWB-2380-56											56.2	250		
GSWB-2380-67											67.4	300		
GSWB-2380-78	0.315	8	0.709	18	5.89	150	13.78	350	15.0	380	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2380-89											89.9	400		
GSWB-2380-101											101.2	450		
GSWB-2380-112											112.4	500		
GSWB-2380-123											123.7	550		
GSWB-2380-134											134.9	600		
GSWB-2380-146											146.1	650		
GSWB-3385-33											33.7	150		
GSWB-3385-45											45	200		
GSWB-3385-56											56.2	250		
GSWB-3385-67											67.4	300		
GSWB-3385-78											78.7	350		
GSWB-3385-89											89.9	400		
GSWB-3385-101	0.394	10	0.866	22/23	5.91	150	13.98	355	15.16	385	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3385-112											112.4	500		
GSWB-3385-123											123.7	550		
GSWB-3385-134											134.9	600		
GSWB-3385-146											146.1	650		
GSWB-3385-157											157.4	700		
GSWB-3385-168											168.6	750		
GSWB-3385-179											179.8	800		



GAS SPRINGS



Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-2409-22											22.5	100		
GSWB-2409-33											33.7	150		
GSWB-2409-45											45	200		
GSWB-2409-56											56.2	250		
GSWB-2409-67											67.4	300		
GSWB-2409-78	0.315	8	0.709	18	6.3	160	14.92	379	16.1	409	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2409-89											89.9	400		
GSWB-2409-101											101.2	450		
GSWB-2409-112											112.4	500		
GSWB-2409-123											123.7	550		
GSWB-2409-134											134.9	600		
GSWB-2409-146											146.1	650		
GSWB-2447-22											22.5	100		
GSWB-2447-33											33.7	150		
GSWB-2447-45											45	200		
GSWB-2447-56											56.2	250		
GSWB-2447-67											67.4	300		
GSWB-2447-78	0.315	8	0.709	18	7.09	180	16.42	417	17.6	447	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2447-89											89.9	400		
GSWB-2447-101											101.2	450		
GSWB-2447-112											112.4	500		
GSWB-2447-123											123.7	550		
GSWB-2447-134											134.9	600		
GSWB-2447-146											146.1	650		
GSWB-2486-22											22.5	100		
GSWB-2486-33											33.7	150		
GSWB-2486-45											45	200		
GSWB-2486-56											56.2	250		
GSWB-2486-67											67.4	300		
GSWB-2486-78	0.315	8	0.709	18	7.87	200	18.01	456	19.13	486	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2486-89											89.9	400		
GSWB-2486-101											101.2	450		
GSWB-2486-112											112.4	500		
GSWB-2486-123											123.7	550		
GSWB-2486-134											134.9	600		
GSWB-2486-146											146.1	650		
GSWB-3486-33											33.7	150		
GSWB-3486-45											45	200		
GSWB-3486-56											56.2	250		
GSWB-3486-67											67.4	300		
GSWB-3486-78											78.7	350		
GSWB-3486-89											89.9	400		
GSWB-3486-101	0.394	10	0.866	22/23	7.87	200	18.01	456	19.13	486	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3486-112											112.4	500		
GSWB-3486-123											123.7	550		
GSWB-3486-134											134.9	600		
GSWB-3486-146											146.1	650		
GSWB-3486-157											157.4	700		
GSWB-3486-168											168.6	750		
GSWB-3486-179											179.8	800		

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-2508-22											22.5	100		
GSWB-2508-33											33.7	150		
GSWB-2508-45											45	200		
GSWB-2508-56											56.2	250		
GSWB-2508-67											67.4	300		
GSWB-2508-78	0.315	8	0.709	18	8.39	213	18.82	478	20.0	508	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2508-89											89.9	400		
GSWB-2508-101											101.2	450		
GSWB-2508-112											112.4	500		
GSWB-2508-123											123.7	550		
GSWB-2508-134											134.9	600		
GSWB-2508-146											146.1	650		
GSWB-2526-22											22.5	100		
GSWB-2526-33											33.7	150		
GSWB-2526-45											45	200		
GSWB-2526-56											56.2	250		
GSWB-2526-67											67.4	300		
GSWB-2526-78	0.315	8	0.709	18	8.66	220	19.53	496	20.71	526	78.7	350		
GSWB-2526-89											89.9	400	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2526-101											101.2	450		
GSWB-2526-112											112.4	500		
GSWB-2526-123											123.7	550		
GSWB-2526-134											134.9	600		
GSWB-2526-146											146.1	650		
GSWB-2586-22											22.5	100		
GSWB-2586-33											33.7	150		
GSWB-2586-45											45	200		
GSWB-2586-56											56.2	250		
GSWB-2586-67											67.4	300		
GSWB-2586-78	0.315	8	0.709	18	9.84	250	21.89	556	23.07	586	78.7	350	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-2586-89											89.9	400		
GSWB-2586-101											101.2	450		
GSWB-2586-112											112.4	500		
GSWB-2586-123											123.7	550		
GSWB-2586-134											134.9	600		
GSWB-2586-146											146.1	650		
GSWB-3586-33											33.7	150		
GSWB-3586-45											45	200		
GSWB-3586-56											56.2	250		
GSWB-3586-67											67.4	300		
GSWB-3586-78											78.7	350		
GSWB-3586-89											89.9	400		
GSWB-3586-101	0.394	10	0.866	22/23	9.84	250	21.89	556	23.07	586	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3586-112											112.4	500		
GSWB-3586-123											123.7	550		
GSWB-3586-134											134.9	600		
GSWB-3586-146											146.1	650		
GSWB-3586-157											157.4	700		
GSWB-3586-168											168.6	750		
GSWB-3586-179											179.8	800		





Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)				Force		End Fitting	Thread
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N		
GSWB-3685-33											33.7	150		
GSWB-3685-45											45	200		
GSWB-3685-56											56.2	250		
GSWB-3685-67											67.4	300		
GSWB-3685-78											78.7	350		
GSWB-3685-89											89.9	400		
GSWB-3685-101	0.394	10	0.866	22/23	11.81	300	25.79	655	26.97	685	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3685-112											112.4	500		
GSWB-3685-123											123.7	550		
GSWB-3685-134											134.9	600		
GSWB-3685-146											146.1	650		
GSWB-3685-157											157.4	700		
GSWB-3685-168											168.6	750		
GSWB-3685-179											179.8	800		
GSWB-3785-33											33.7	150		
GSWB-3785-45											45	200		
GSWB-3785-56											56.2	250		
GSWB-3785-67											67.4	300		
GSWB-3785-78											78.7	350		
GSWB-3785-89											89.9	400		
GSWB-3785-101	0.394	10	0.866	22/23	13.78	350	29.72	755	30.91	785	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3785-112											112.4	500		
GSWB-3785-123											123.7	550		
GSWB-3785-134											134.9	600		
GSWB-3785-146											146.1	650		
GSWB-3785-157											157.4	700		
GSWB-3785-168											168.6	750		
GSWB-3785-179											179.8	800		
GSWB-3885-33											33.7	150		
GSWB-3885-45											45	200		
GSWB-3885-56											56.2	250		
GSWB-3885-67											67.4	300		
GSWB-3885-78											78.7	350		
GSWB-3885-89											89.9	400		
GSWB-3885-101	0.394	10	0.866	22/23	15.75	400	33.66	855	34.84	885	101.2	450	Dia 8.1mm Eye	Dia 8.1mm Eye
GSWB-3885-112											112.4	500		
GSWB-3885-123											123.7	550		
GSWB-3885-134											134.9	600		
GSWB-3885-146											146.1	650		
GSWB-3885-157											157.4	700		
GSWB-3885-168											168.6	750		
GSWB-3885-179											179.8	800		

GSHL

The **GSHL E-Z Release Gas Spring** enables multi-position holding of a counter balanced lid or weight over the entire stroke of the gas spring. Properly designed and engineered into your application the E-Z Release Gas Spring allows virtual fingertip control and easy movement of the lid to any desired position between open and closed.



The GSHL E-Z Release Gas Spring ideally suited for a wide variety of applications where a lid must be able to be raised and held at any angle without an outside stop or support such as tanning beds, monitor arms, printer covers, delicatessen cases and acoustic hoods.

The GSHL E-Z Release Gas Springs are available as a special order item. Allow our experienced engineering staff to design in the perfect gas spring.



GSHL

TSNI

The **TSNI Traction Gas Spring** complements the existing offering from SPD by giving its customers the ability to operate in traction rather than in compression. Traction springs are great for systems where a tensional load, similar to an extension spring, needs to be applied to hold a system open or hold a lid closed. The rod maintains a nitrided surface that complements the black painted body similar to the standard GSNI series of springs.

The TSNI series gas spring comes standard with 13mm ball sockets, part number EF-PS100BP.

coordination with a stand alone 13mm stud or with a pre-assembled 13mm stud bracket combination.
Please contact engineering for any assistance with these systems.

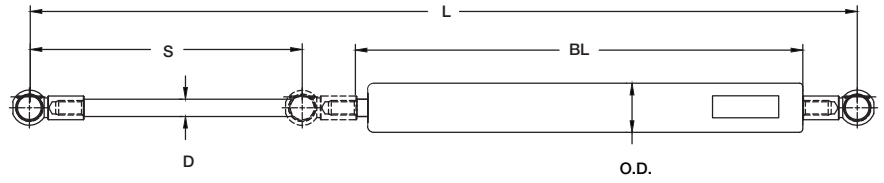
**TSNI**

Catalog Number	Rod Diameter (D)		Tube O.D.		Stroke (S)		Base Cylinder Length (BL)		Extended Length (L)		Force		End Fitting	Thread	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	N			
TSNI-0050-0100												22.5	100		
TSNI-0050-0150												33.7	150		
TSNI-0050-200												44.9	200		
TSNI-0050-0100												22.5	100		
TSNI-0050-0150	0.394	10.0	1.060	27.0	1.97	50	5.90	150	10.24	260		33.7	150	EF-PS100BP	M8 x 1.25
TSNI-0050-200												44.9	200		
TSNI-0050-0250												56.2	250		
TSNI-0050-0300												67.4	300		
TSNI-0050-0350												78.7	350		
TSNI-0050-0400												89.9	400		
TSNI-0100-0100												22.5	100		
TSNI-0100-0150												33.7	150		
TSNI-0100-0200												44.9	200		
TSNI-0100-0250	0.394	10.0	1.060	27.0	3.94	100	7.87	200	14.17	360		56.2	250	EF-PS100BP	M8 x 1.25
TSNI-0100-0300												67.4	300		
TSNI-0100-0350												78.7	350		
TSNI-0100-0400												89.9	400		
TSNI-0150-0100												22.5	100		
TSNI-0150-0150												33.7	150		
TSNI-0150-0200												44.9	200		
TSNI-0150-0250	0.394	10.0	1.060	27.0	5.91	150	9.84	249	18.11	460		56.2	250	EF-PS100BP	M8 x 1.25
TSNI-0150-0300												67.4	300		
TSNI-0150-0350												78.7	350		
TSNI-0150-0400												89.9	400		
TSNI-0200-0100												22.5	100		
TSNI-0200-0150												33.7	150		
TSNI-0200-0200												44.9	200		
TSNI-0200-0250	0.394	10.0	1.060	27.0	7.87	200	11.81	300	22.05	560		56.2	250	EF-PS100BP	M8 x 1.25
TSNI-0200-0300												67.4	300		
TSNI-0200-0350												78.7	350		
TSNI-0200-0400												89.9	400		
TSNI-0250-0100												22.5	100		
TSNI-0250-0150												33.7	150		
TSNI-0250-0200												44.9	200		
TSNI-0250-0250												56.2	250		
TSNI-0250-0300												67.4	300		
TSNI-0250-0350	0.394	10.0	1.060	27.0	9.84	250	13.78	349	25.98	660		78.7	350	EF-PS100BP	M8 x 1.25
TSNI-0250-0400												89.9	400		
TSNI-0250-0450												101.2	450		
TSNI-0250-0500												112.4	500		
TSNI-0250-0550												123.7	550		
TSNI-0250-0600												134.9	600		
TSNI-0250-0650												146.1	650		
TSNI-0300-0100												22.5	100		
TSNI-0300-0150												33.7	150		
TSNI-0300-0200												44.9	200		
TSNI-0300-0250	0.394	10.0	1.060	27.0	11.81	300	15.75	400	29.92	760		56.2	250	EF-PS100BP	M8 x 1.25
TSNI-0300-0300												67.4	300		
TSNI-0300-0350												78.7	350		
TSNI-0300-0400												89.9	400		

Other end fittings are available (see pages 269-270).

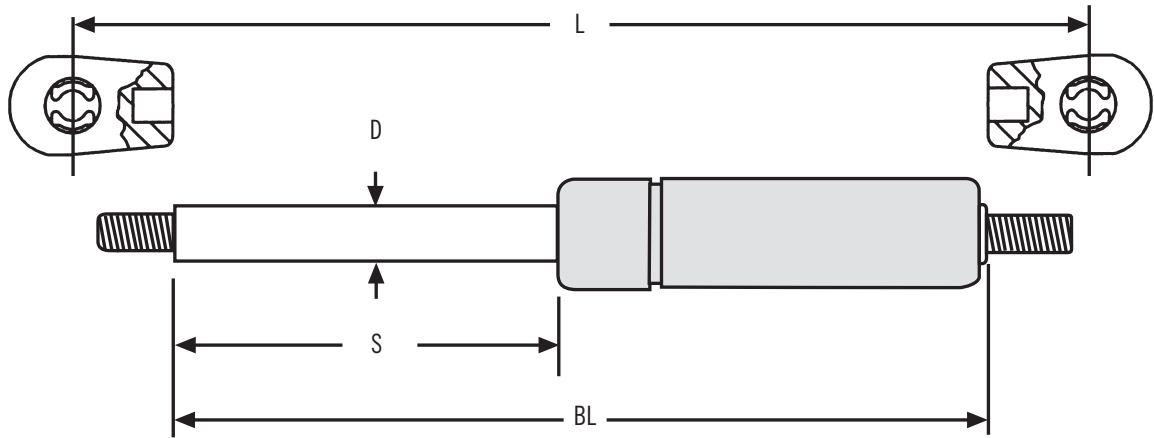
TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC 267



All Other Gas Springs

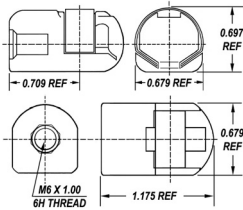
For our GSNI, GSSX, GSEL, GSVL, Dampers and GSWB Series



Gas Spring End Fittings

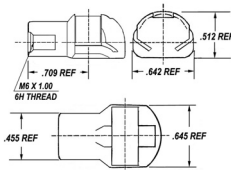
PART NUMBER	MATERIAL
EF-PS30B1	Composite, Nitrided Retainer
EF-PS30G1	Gray Composite, Chrome Retainer

* For use with 10mm ball stud



PART NUMBER	MATERIAL
EF-PS30B2	Composite With Black Steel Clip
EF-PS91	Steel Zinc Plate
EF-PS91-BP	Steel Black Nitrided Finish

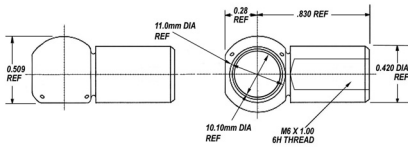
* For use with 10mm ball stud



PART NUMBER	MATERIAL
EF-PS90	Steel Zinc Plate
EF-PS90-SS	Stainless Steel
EF-PS90-BP	Steel Black Nitrided Finish

* For use with 10mm ball stud

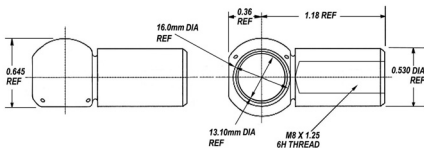
* Must be used with SC-1006 safety clip



PART NUMBER	MATERIAL
EF-PS100	Steel Zinc Plate
EF-PS100-SS	Stainless Steel
EF-PS100-BP	Steel Black Nitrided Finish

* For use with 13mm ball stud

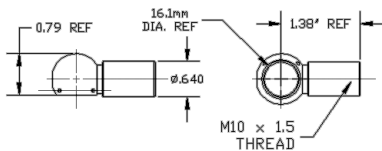
* Must be used with SC-1008 safety clip



PART NUMBER	MATERIAL
EF-PS140	Steel Zinc Plated
EF-PS140-SS	Stainless Steel
EF-PS140-BP	Steel Black Nitrided Finish

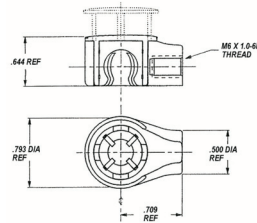
* For use with 16mm ball stud

* Must be used with SC-1010 safety clip



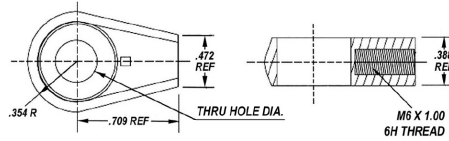
PART NUMBER	MATERIAL
EF-PS130	Composite with Snap On Cap

* For use with 10mm ball stud



PART NUMBER	THRU HOLE DIA.	MATERIAL
EF-PS120	.513"	Zinc Alloy
EF-PS121	.408"	Zinc Alloy
EF-PS122	.328"	Zinc Alloy
EF-PS123	.263"	Zinc Alloy
EF-PS124	.208"	Zinc Alloy

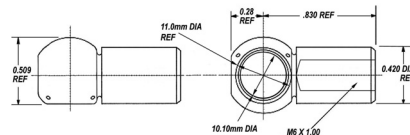
* For use with stud or thru-bolt mounting



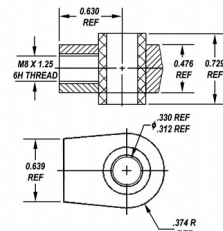
PART NUMBER	MATERIAL
EF-PS90M1	Steel Zinc Plate
EF-PS90M1-SS	Stainless Steel
EF-PS90M1-BP	Steel Black Nitrided Finish

* For use with 10mm ball stud

* Must be used with SC-1006 safety clip

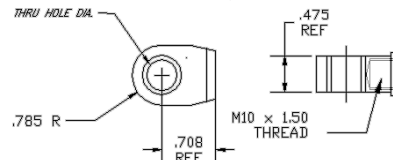


PART NUMBER	MATERIAL
EF-12778	Steel Zinc Plate



PART NUMBER	THRU HOLE DIA.	MATERIAL
EF-PS220	13mm	Steel Zinc Plated
EF-PS220-SS	13mm	Stainless Steel
EF-PS220-BP	13mm	Steel Black Nitrided Finish
EF-PS221	10mm	Steel Zinc Plated
EF-PS221-SS	10mm	Stainless Steel
EF-PS221-BP	10mm	Steel Black Nitrided Finish
EF-PS222	8mm	Steel Zinc Plated
EF-PS222-SS	8mm	Stainless Steel
EF-PS222-BP	8mm	Steel Black Nitrided Finish

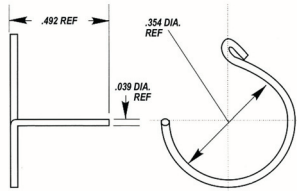
* For use with thru-bolt or stud mounting



Gas Spring End Fittings

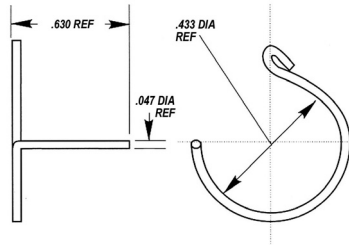
PART NUMBER	MATERIAL
SC-1006	Stainless Steel

* Must be used with EF-PS90 and EF-PS90M1 10mm end fitting



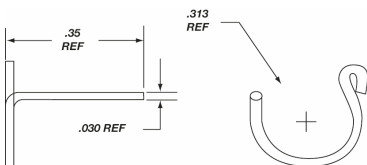
PART NUMBER	MATERIAL
SC-1008	Stainless Steel

* Must be used with EF-PS100 13mm end fitting



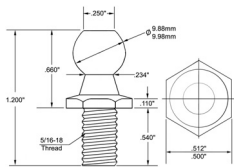
PART NUMBER	MATERIAL
SC-1010	Stainless Steel

* Must be used with EF-PS140 end fitting



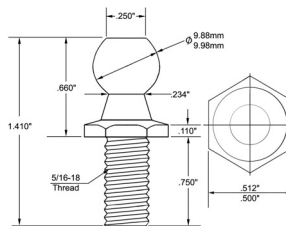
GAS SPRING MOUNTING HARDWARE

PART NUMBER	MATERIAL
BS-1005	Steel Zinc Plate
BS-1005-SS	Stainless Steel
BS-1005-BP	Steel Black Powder Coat

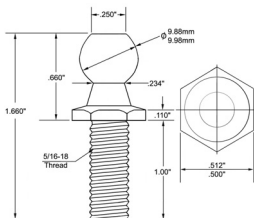


* Most Popular Ball Stud!

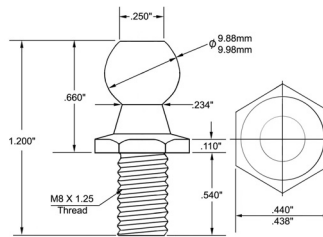
PART NUMBER	MATERIAL
BS-1003	Steel Zinc Plate



PART NUMBER	MATERIAL
BS-1009	Steel Zinc Plate
BS-1009-SS	Stainless Steel

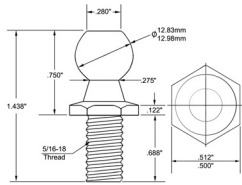


PART NUMBER	MATERIAL
BS-1002	Steel Zinc Yellow Plate

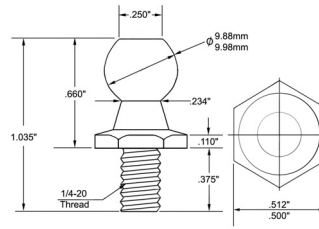


Gas Spring Mounting Hardware

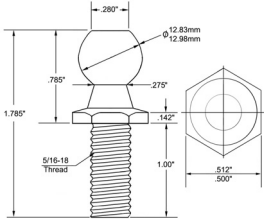
PART NUMBER	MATERIAL
BS-1007	Steel Zinc Plate
BS-1007-SS	Stainless Steel
BS-1007-BP	Steel Black Powder Coat



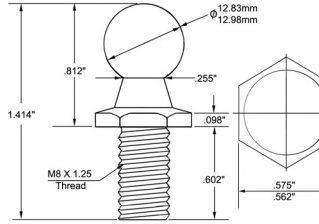
PART NUMBER	MATERIAL
BS-111208	Steel Zinc Plate



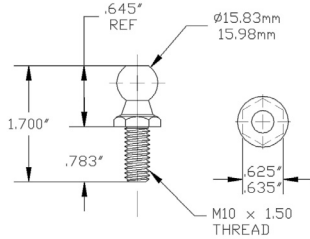
PART NUMBER	MATERIAL
BS-1007L	Steel Zinc Plate



PART NUMBER	MATERIAL
BS-1007MET	Steel Zinc Dichromate

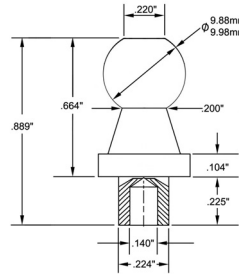


PART NUMBER	MATERIAL
BS-1016	Steel Zinc Plate
BS-1016-SS	Stainless Steel



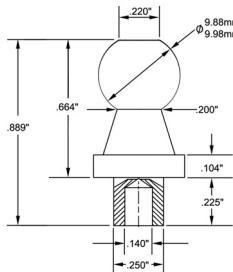
PART NUMBER	MATERIAL
BS-1001W	Raw Steel

* Semi-tubular rivetable or weldable ball stud



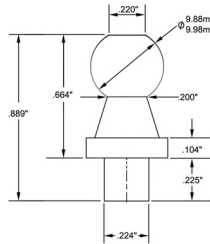
PART NUMBER	MATERIAL
BS-1001	Steel Zinc Plate

* Semi-tubular rivetable ball stud



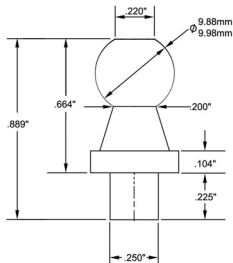
PART NUMBER	MATERIAL
BS-1004W	Raw Steel

* Solid rivetable or weldable ball stud



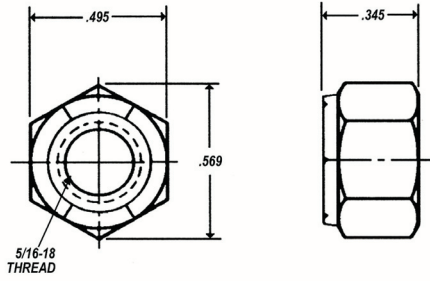
PART NUMBER	MATERIAL
BS-1004	Steel Zinc Plate

* Solid rivetable ball stud



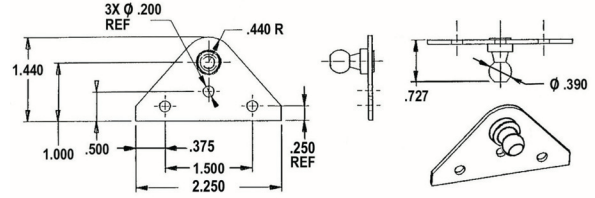
Gas Spring Mounting Hardware

PART NUMBER	MATERIAL
NU-1200	Steel Zinc Plate
NU-1200-SS	Stainless Steel



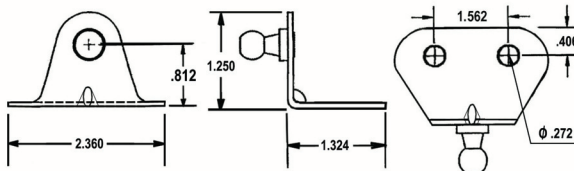
PART NUMBER	MATERIAL
BR-1020	Steel Zinc Plate
BR-1020-BP	Black Powder Coat
BRX-1020	All Stainless Steel
BRX-1020-P	Electro Polished Stainless Steel

* 2mm thick material * .200 Dia. mounting holes
* 10mm ball stud



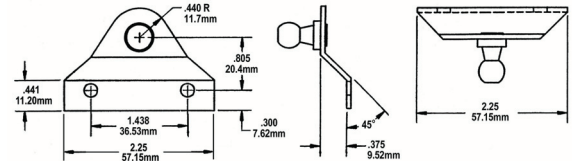
PART NUMBER	MATERIAL
BR-1055	Steel Zinc Plate

* 3mm thick material * .272 Dia. mounting holes
* 10mm ball stud



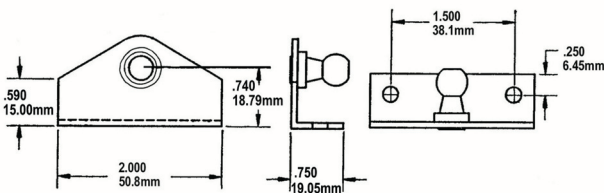
PART NUMBER	MATERIAL
BR-1025	Steel Zinc Plate
BR-1025-BP	Black Powder Coat
BRX-1025	All Stainless Steel
BRX-1025-P	Electro Polished Stainless Steel

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



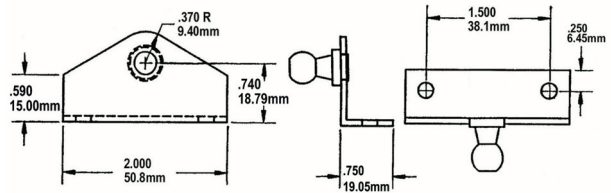
PART NUMBER	MATERIAL
BR-1010	Steel Zinc Plate
BR-1010-BP	Black Powder Coat
BRX-1010	All Stainless Steel
BRX-1015-P	Electro Polished Stainless Steel

* 2mm thick material * .200 Dia. mounting holes
* 10mm ball stud



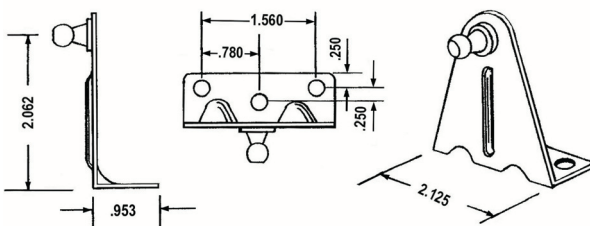
PART NUMBER	MATERIAL
BR-1015	Steel Zinc Plate
BR-1015-BP	Black Powder Coat
BRX-1015	All Stainless Steel
BRX-1015-P	Electro Polished Stainless Steel

* 2mm thick material * .200 Dia. mounting holes
* 10mm ball stud



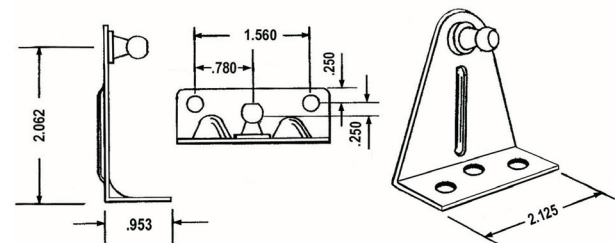
PART NUMBER	MATERIAL
BR-1045	Steel Zinc Plate
BR-1045-BP	Black Powder Coat
BRX-1045	All Stainless Steel
BRX-13137	All Stainless Steel (13mm Ball Stud)
BRX-1045-P	Electro Polished Stainless Steel

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



PART NUMBER	MATERIAL
BR-1050	Steel Zinc Plate
BR-1050-BP	Black Powder Coat
BRX-1050	All Stainless Steel
BRX-1050-P	Electro Polished Stainless Steel

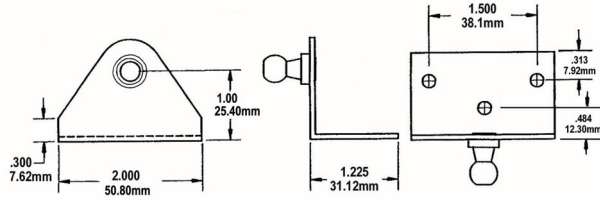
* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



Gas Spring Mounting Hardware

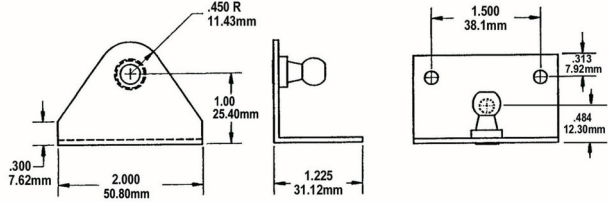
PART NUMBER	MATERIAL
BR-1060	Steel Zinc Plate
BR-1060-BP	Black Powder Coat
BRX-1060	All Stainless Steel
BR-1060A	Aluminum
BRX-1060-P	Electro Polished Stainless Steel

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



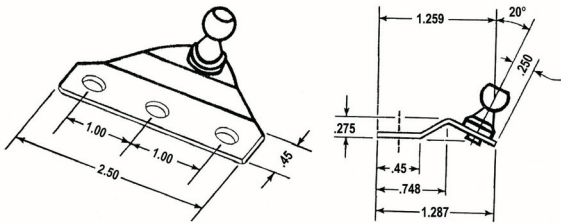
PART NUMBER	MATERIAL
BR-1080	Steel Zinc Plate
BR-1080-BP	Black Powder Coat
BRX-1080	All Stainless Steel
BRX-1080-P	Electro Polished Stainless Steel
BR-13442	Steel Zinc Plate (0.29 ϕ Mounting Holes)

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



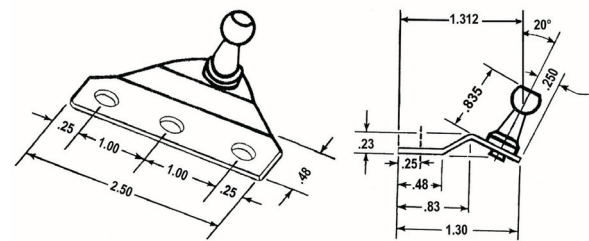
PART NUMBER	MATERIAL
BR-1024	Steel Zinc Plate
BRX-1024	Stainless Steel Bracket
BRX-1024-P	Electro Polished Stainless Steel

* 2mm thick material * .272 Dia. mounting holes
* 10mm ball stud



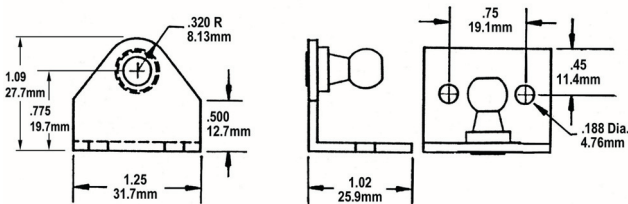
PART NUMBER	MATERIAL
BR-12600	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm long ball stud



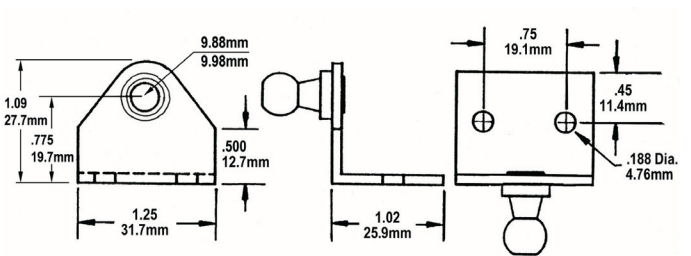
PART NUMBER	MATERIAL
BR-1091	Steel Zinc Plate
BR-1091-BP	Black Powder Coat

* 2.5mm thick material * .188 Dia. mounting holes
* 10mm ball stud



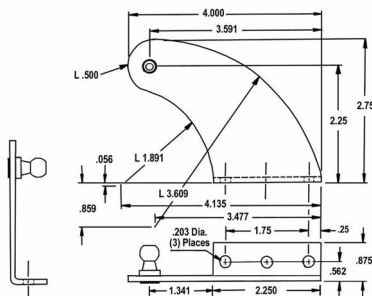
PART NUMBER	MATERIAL
BR-1092	Steel Zinc Plate
BR-1092-BP	Stainless Steel Bracket

* 2.5mm thick material * .188 Dia. mounting holes
* 10mm ball stud



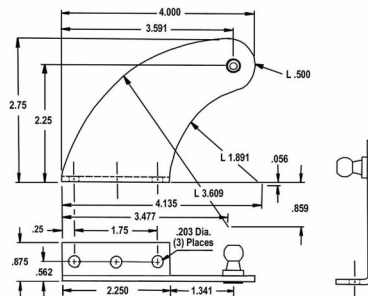
PART NUMBER	MATERIAL
BR-1125	Steel Zinc Plate

* 3mm thick material * .203 Dia. mounting holes
* 10mm ball stud



PART NUMBER	MATERIAL
BR-1120	Steel Zinc Plate

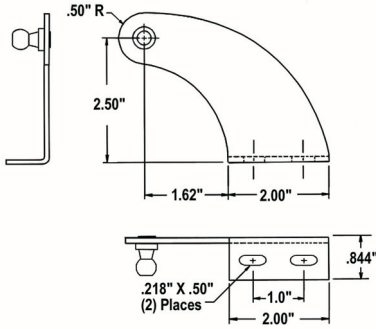
* 3mm thick material * .203 Dia. mounting holes
* 10mm ball stud



Gas Spring Mounting Hardware

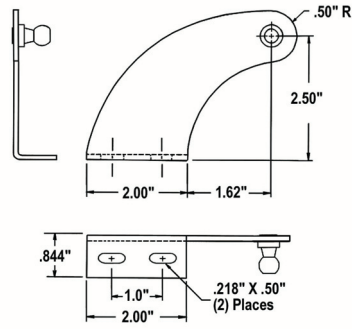
PART NUMBER	MATERIAL
BR-1124-BP	Steel Black Powder Coat

* 3mm thick material * 10mm ball stud



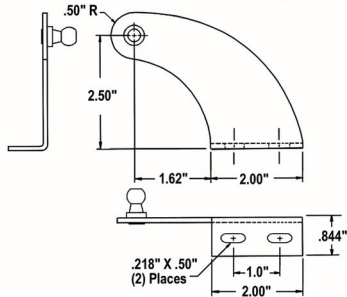
PART NUMBER	MATERIAL
BR-1119-BP	Steel Black Powder Coat

* 3mm thick material * 10mm ball stud



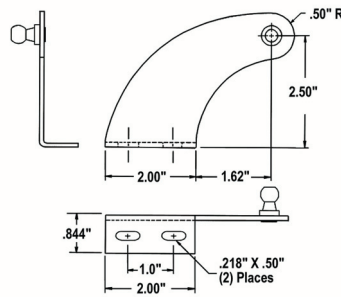
PART NUMBER	MATERIAL
BR-1125-BP	Steel Black Powder Coat

* 3mm thick material * 10mm ball stud



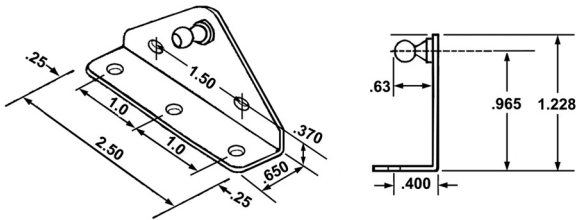
PART NUMBER	MATERIAL
BR-1120-BP	Steel Black Powder Coat

* 10mm ball stud



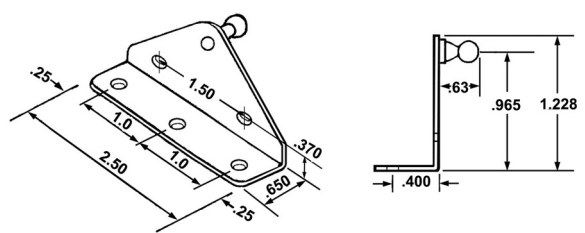
PART NUMBER	MATERIAL
BR-12553	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



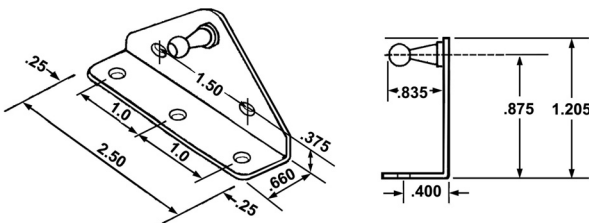
PART NUMBER	MATERIAL
BR-10684	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



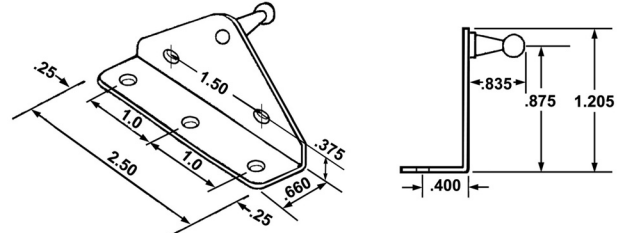
PART NUMBER	MATERIAL
BR-12551	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



PART NUMBER	MATERIAL
BR-12552	Steel Zinc Plate

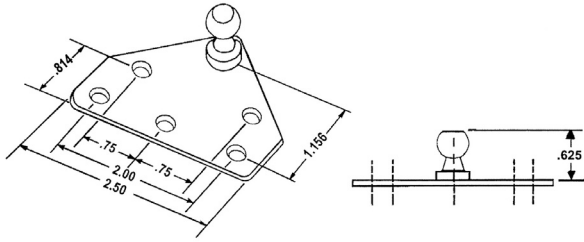
* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



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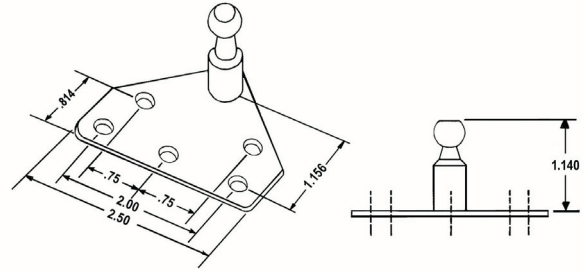
PART NUMBER	MATERIAL
BR-10683	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



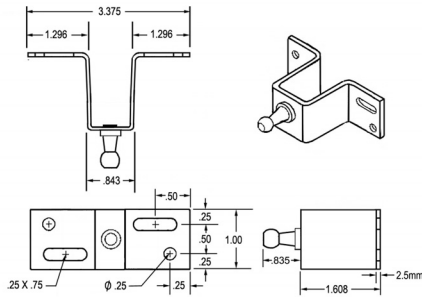
PART NUMBER	MATERIAL
BR-10336	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



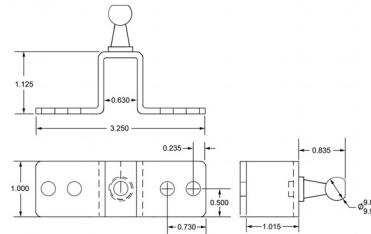
PART NUMBER	MATERIAL
BR-12695	Steel Zinc Plate

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



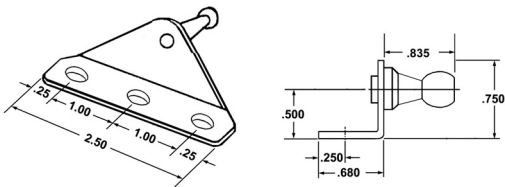
PART NUMBER	MATERIAL
BR-12938	Steel Zinc Plate

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



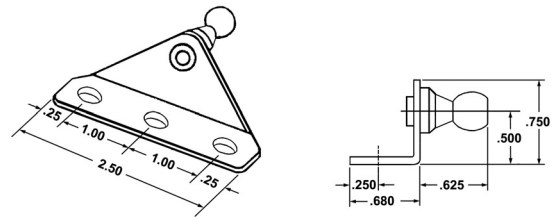
PART NUMBER	MATERIAL
BR-1012	Steel Zinc Plate

* 2mm thick material * .200Dia. mounting holes
* 10mm ball stud



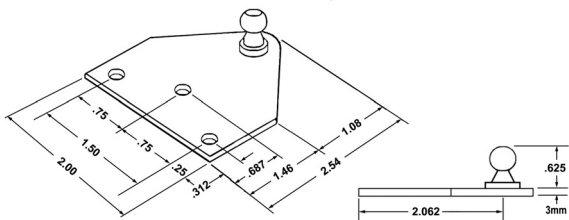
PART NUMBER	MATERIAL
BR-12601	Steel Zinc Plate

* 2mm thick material * .200 Dia. mounting holes
* 10mm ball stud



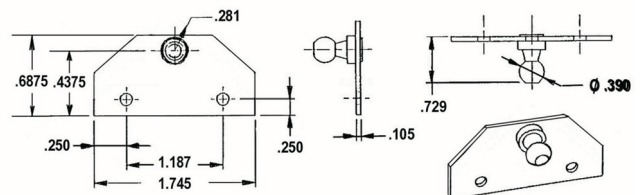
PART NUMBER	MATERIAL
BR-12602	Steel Zinc Plate

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



PART NUMBER	MATERIAL
BR-1065	Steel Zinc Plate

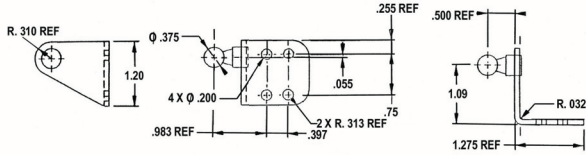
* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



Gas Spring Mounting Hardware

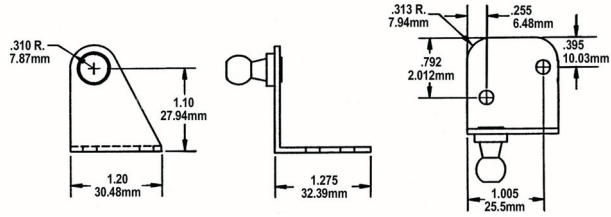
PART NUMBER	MATERIAL
BR-1095	Steel Zinc Plate
BR-1095-BP	Black Powder Coat
BRX-1095	All Stainless Steel

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



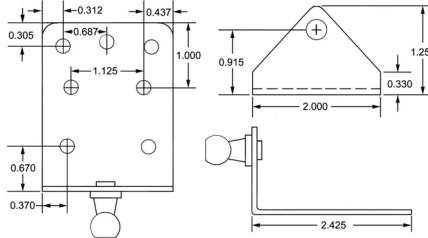
PART NUMBER	MATERIAL
BR-1096	Steel Zinc Plate
BR-1096-BP	Black Powder Coat
BRX-1096	All Stainless Steel

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



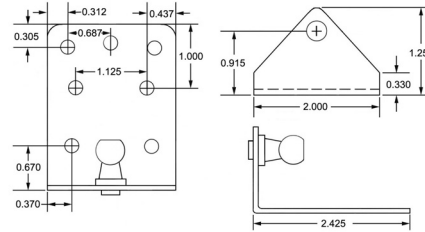
PART NUMBER	MATERIAL
BR-1075	Steel Zinc Plate
BR-1095-BP	Black Powder Coat

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



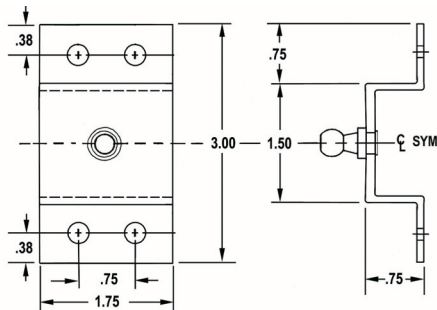
PART NUMBER	MATERIAL
BR-12904	Steel Zinc Plate
BR-12904-BP	Black Powder Coat

* 2.5mm thick material * .200 Dia. mounting holes
* 10mm ball stud



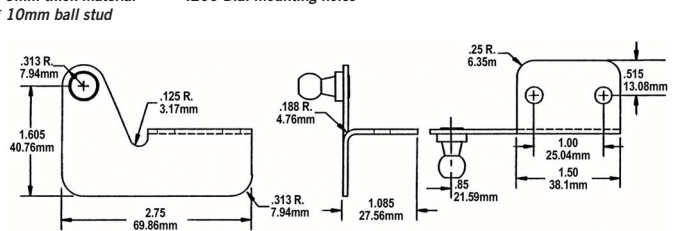
PART NUMBER	MATERIAL
BR-1030	Steel Zinc Plate
BR-1130A	Aluminum

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



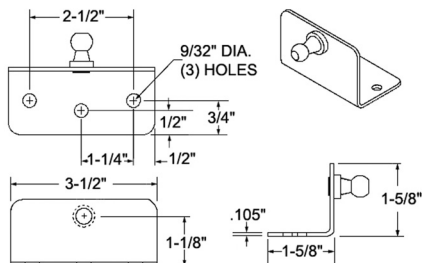
PART NUMBER	MATERIAL
BR-1100	Steel Zinc Plate
BR-1100-BP	Black Powder Coat
BRX-1100	All Stainless Steel

* 3mm thick material * .200 Dia. mounting holes
* 10mm ball stud



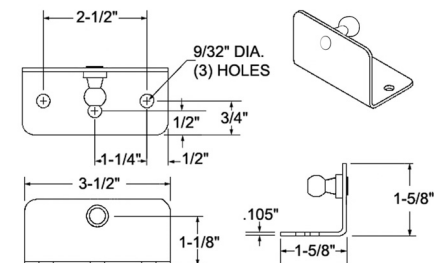
PART NUMBER	MATERIAL
BR-11552	Steel Zinc Plate
BRX-11552	All Stainless Steel

* 3mm thick material * .281 Dia. mounting holes
* 13mm ball stud



PART NUMBER	MATERIAL
BR-11554	Steel Zinc Plate
BRX-11554	All Stainless Steel

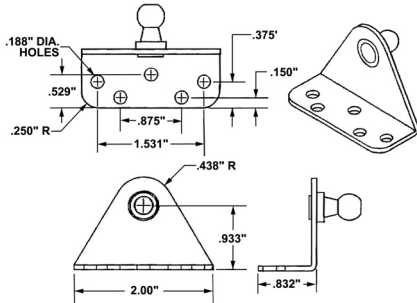
* 3mm thick material * .281 Dia. mounting holes
* 13mm ball stud



Gas Spring Mounting Hardware

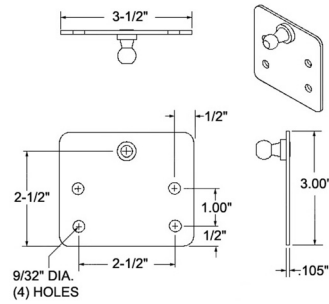
PART NUMBER	MATERIAL
BR-1085	Steel Zinc Plate
BRX-1085	All Stainless Steel

* 2mm thick material * .188 Dia. mounting holes



PART NUMBER	MATERIAL
BR-11553	Steel Zinc Plate
BRX-11553	All Stainless Steel

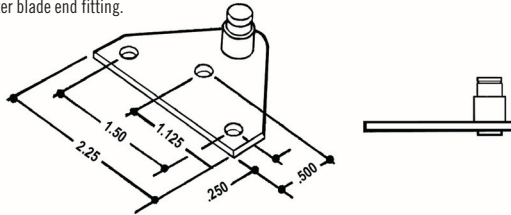
* 3mm thick material * .281 Dia. mounting holes
* 13mm ball stud



PART NUMBER	MATERIAL
BR-1520	Steel Zinc Plate

* 2mm thick material * .200 Dia. mounting holes

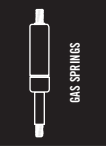
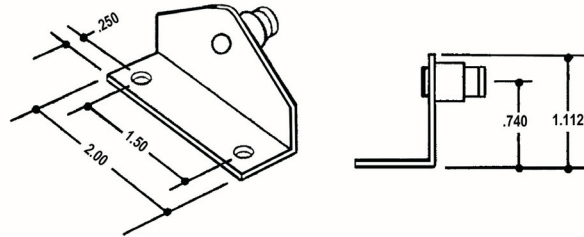
Post diameter is 0.235 for 0.250 diameter blade end fitting.



PART NUMBER	MATERIAL
BR-1515	Steel Zinc Plate

* 2mm thick material * .200 Dia. mounting holes

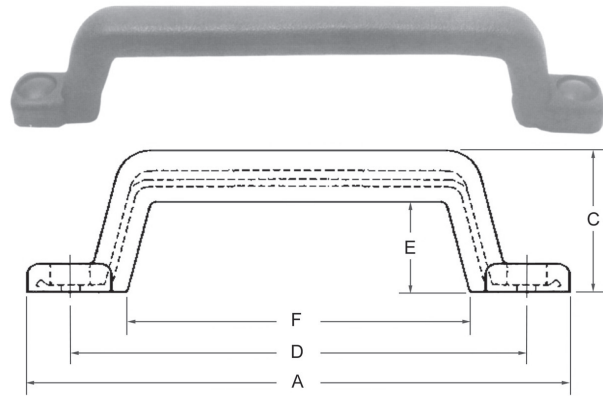
Post diameter is 0.235 for 0.250 diameter blade end fitting.



HANDLES

STEEL CORE MOLDED GRAB HANDLE

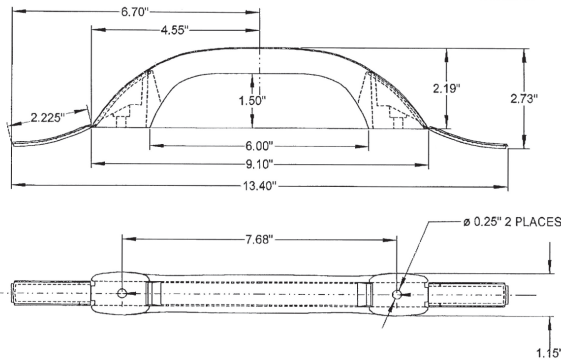
- Molded thermoplastic elastomer surrounding a steel core
- Semi-rigid surface with no hard edges
- Black textured finish
- Mounts with countersunk screw through steel core
- Comes with plugs to conceal mounting holes



Part Number	A	B	C	D	E	F	H
HA900404	7.27"	1.12"	1.97"	6.20"	1.25"	4.48"	.316"
HA900405	10.90"	1.12"	2.17"	9.80"	1.37"	7.62"	.330"

SNAP COVER MOLDED GRAB HANDLE

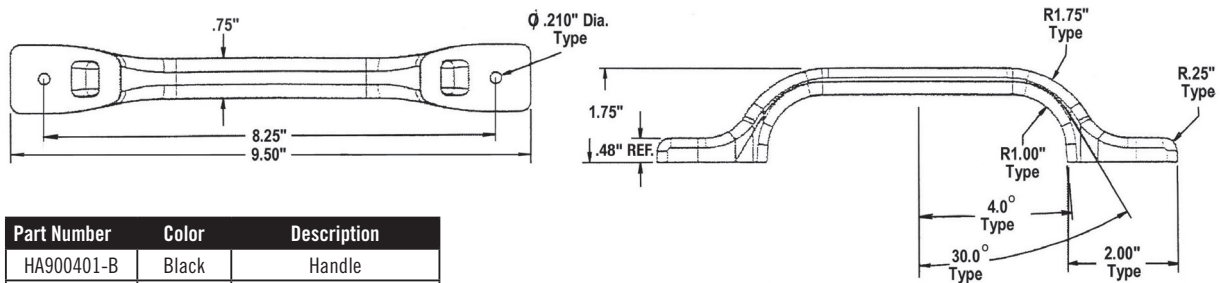
- Made of high strength plastic
- Hard grip handle with integrated hinged snap cover to conceal mounting holes
- Available in white or black



Part Number	Color
HA11722-B	Black
HA11722-W	White

PLASTIC GRAB HANDLE

- Hard grip handle with thru-hole mounting
- Plastic fastener cover caps available (sold separately)
- Available in black or white



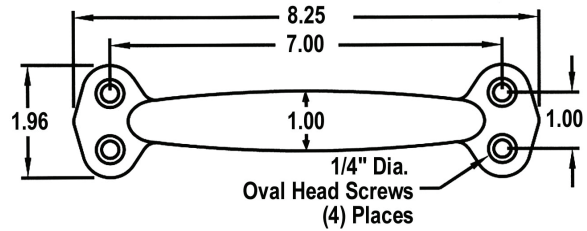
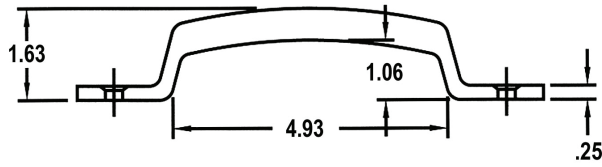
Part Number	Color	Description
HA900401-B	Black	Handle
HA900401-W	White	Handle
HA900401C-B	Black	Screw Cap
HA900401C-W	White	Screw Cap

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

HANDLES

HEAVY DUTY GRAB HANDLE

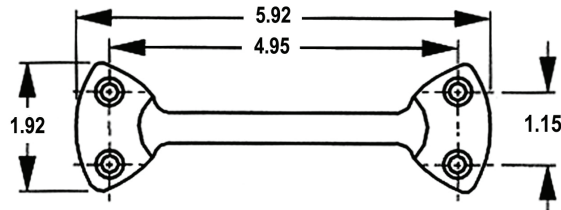
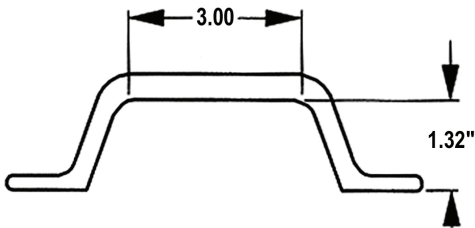
- Available in solid zinc die-cast or formed steel versions
- Die-cast handle has bright chrome finish
- Formed steel handle has zinc plated finish
- Mounting screws not included



Part Number	Material	Finish
HA2399E-C	Zinc Die Cast	Chrome
HA11391	Formed Steel	Zinc

MARINE GRAB HANDLE

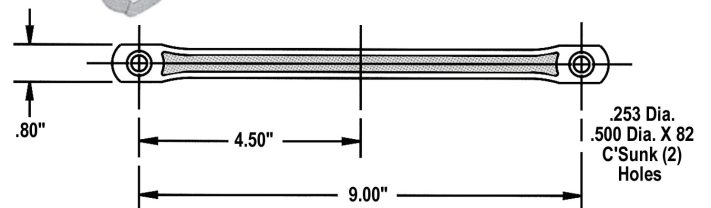
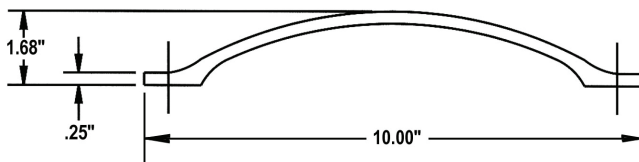
- Bright chrome finish
- Four mounting holes
- Mounting screws not included
- Holes countersunk .290" (4 places)



Part Number	Material	Finish
HA11385	Zinc Diecast	Chrome
HA-12473	Zinc Diecast	Black Powder Coat

RV GRAB HANDLE

- Zinc die-cast construction
- Bright chrome plating
- Can be used on interior or exterior applications such as emergency or recreational vehicles



Part Number	Finish
HA11392	Chrome

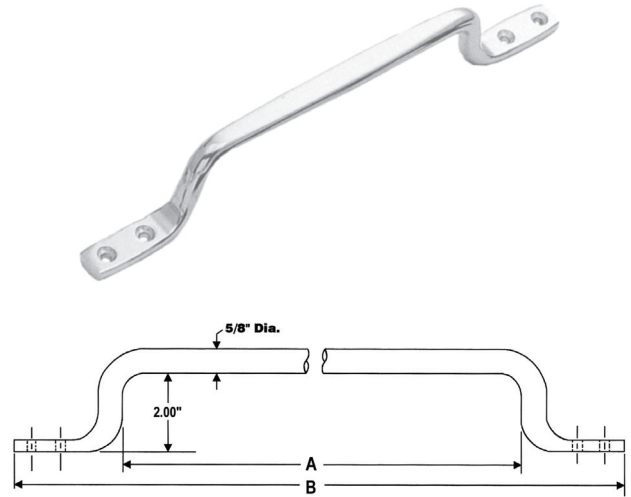
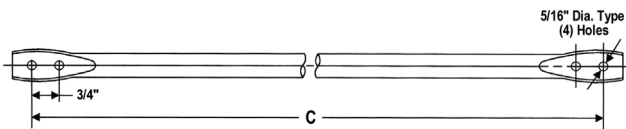
Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

HANDLES

ASSIST HANDLE

- 5/8" diameter rod
- 5/16" diameter drilled holes
- Available in steel or aluminum

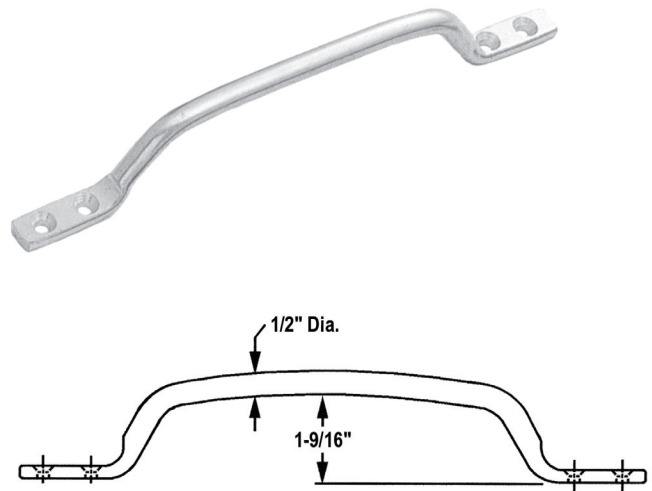
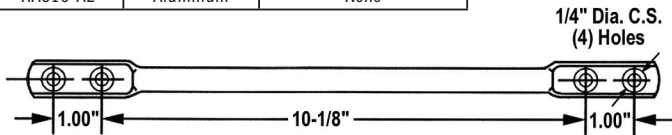
Part Number		A	B	C
Chrome	Aluminum			
HA612-C	HA612-AL	12.00"	17.75"	16.25"
HA618-C	HA618-AL	18.00"	23.68"	22.75"
HA624-C	HA624-AL	24.00"	29.75"	28.75"
HA636-C	-	36.50"	41.68"	40.75"



ASSIST HANDLE

- 1/2" diameter rod
- 1/4" drilled countersunk holes
- Available in steel and aluminum

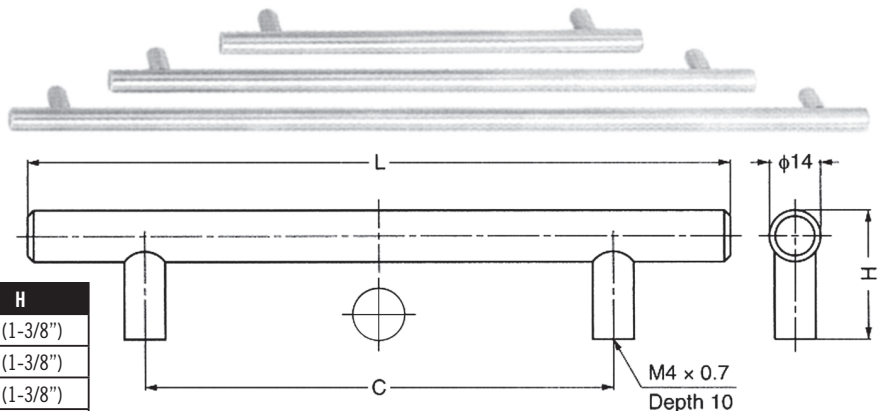
Part Number	Material	Finish
HA817-C	Steel	Chrome
HA817-DN	Steel	Duplex Nickel
HA817-ZP	Steel	Zinc
HA817-P	Steel	None
HA817-SS	Stainless Steel	Polished
HA816-AL	Aluminum	None



PULL HANDLE

- 304 stainless steel
- Satin finish
- NSF approved
- Supplied with M4 X 25 screws

Part Number	L	C	H
HA-2647	192 (7-9/16")	128 (5-1/32")	35 (1-3/8")
HA-2650	256 (10-5/64")	192 (7-9/16")	35 (1-3/8")
HA-2653	406 (15-63/64")	342 (13-15/32")	35 (1-3/8")
HA-2655	556 (21-57/64")	492 (19-3/8")	35 (1-3/8")
HA-2656	656 (25-53/64")	592 (23-5/16")	35 (1-3/8")
HA-2658	1220 (48-1/32")	1156 (45-33/64")	35 (1-3/8")
HA-2659	1456 (57-21/64")	1392 (54-13/16")	35 (1-3/8")

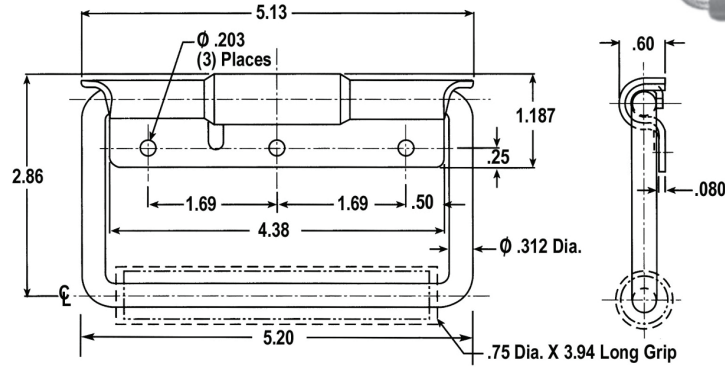
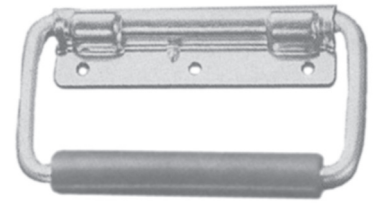


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HANDLES

WIDE GRIP CHEST HANDLE

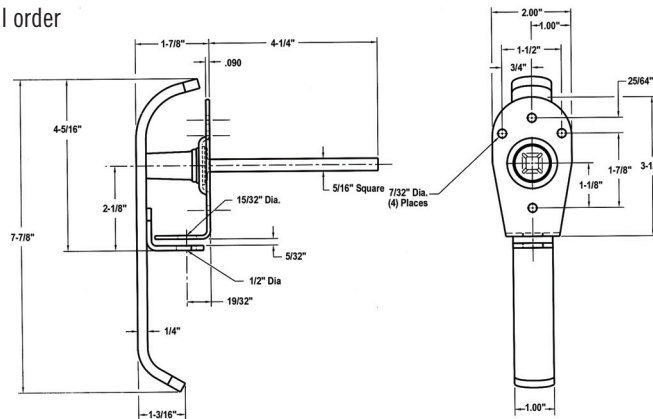
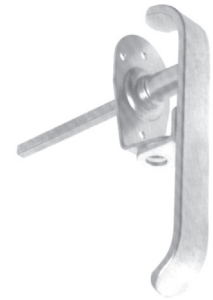
- 90° stop with return spring
- Neoprene grip on bail
- Small plate takes up less mounting surface
- Zinc plating standard, other finishes available as a special order



Part Number	Material
HA11944-ZE	Steel Zinc Plate
HA11944-SS	Stainless Steel

PADLOCKING HANDLE

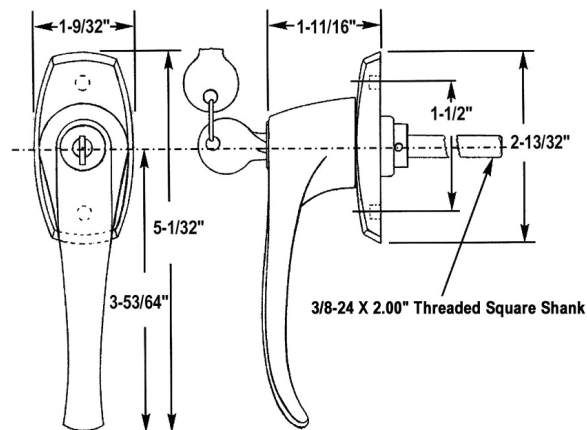
- Polished stainless steel handle & escutcheon plate
- 5/16" steel square shank
- Available with mounting studs as a special order
- GA11983 neoprene gasket available



Part Number	Material
HA12130	Stainless Steel

ACTIVATING HANDLE

- Zinc die-cast handle with satin chrome finish. (Other finishes also available)
- 3/8-24" X 2.00" long square threaded steel shank
- Shank will accept any 5/16" square cam
- Supplied with 2 keys
- Blind mounting holes tapped for 8-32 threads
- GA10174 neoprene gasket available for escutcheon plate



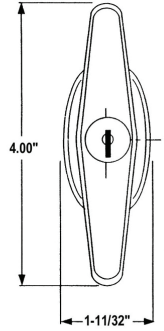
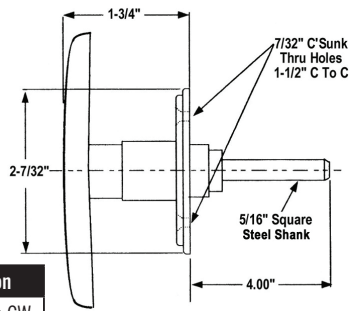
Part Number	Rotation
AHL1006	90 Degree CW
AHL1007	90 Degree CCW

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HANDLES

ACTIVATING HANDLE

- Zinc die-cast construction
- 5/16" X 4" steel square shank
- Available in two finishes
- Supplied with 2 keys

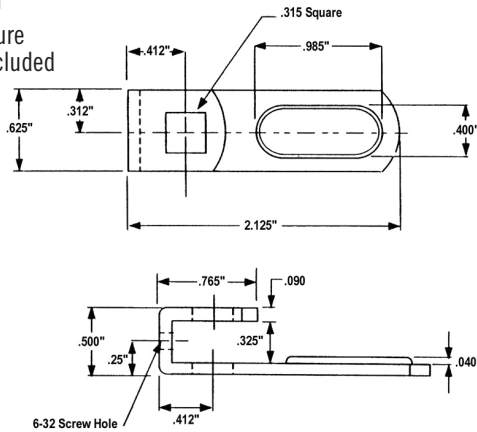


Part Number	Finish	Rotation
AHT1001	Black	90 Degree CW
AHT1002	Bright Chrome	90 Degree CW

CAMS FOR ACTIVATING HANDLES

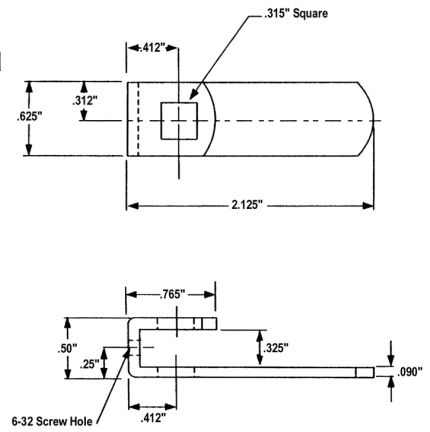
- Single point cam
- Set screw to secure cam to shank included

Part Number
CM-13



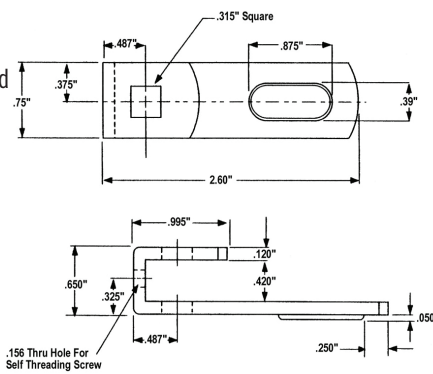
- Single point cam
- Set screw to secure cam to shank included

Part Number
CM-14



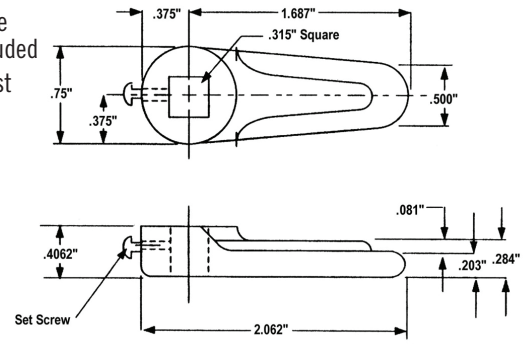
- Single point cam
- Set screw to secure cam to shank included

Part Number
CM11879



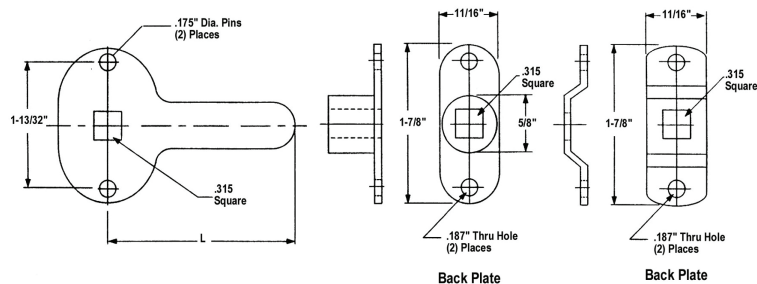
- Single point cam
- Set screw to secure cam to shank included
- Heavy duty die-cast construction

Part Number
CM-15



- Three point cam
- Use with RD-6011 rods to create simple & inexpensive multi-point lock systems (see page 234)

Part Number	L
CM-1000-1.63	1-5/8"
CM-1000-2.13	2-1/8"
CM-1000-2.50	2-1/2"

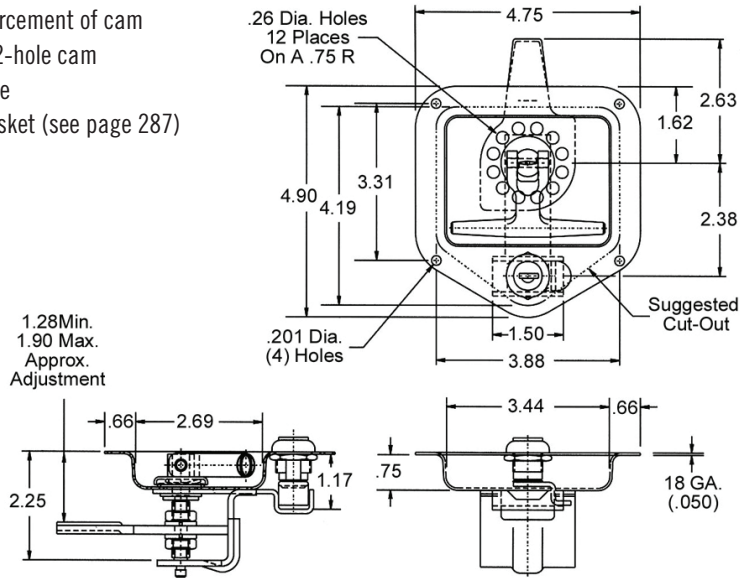


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HANDLES

SINGLE POINT KEY-LOCKING STEEL RECESSED T-HANDLE

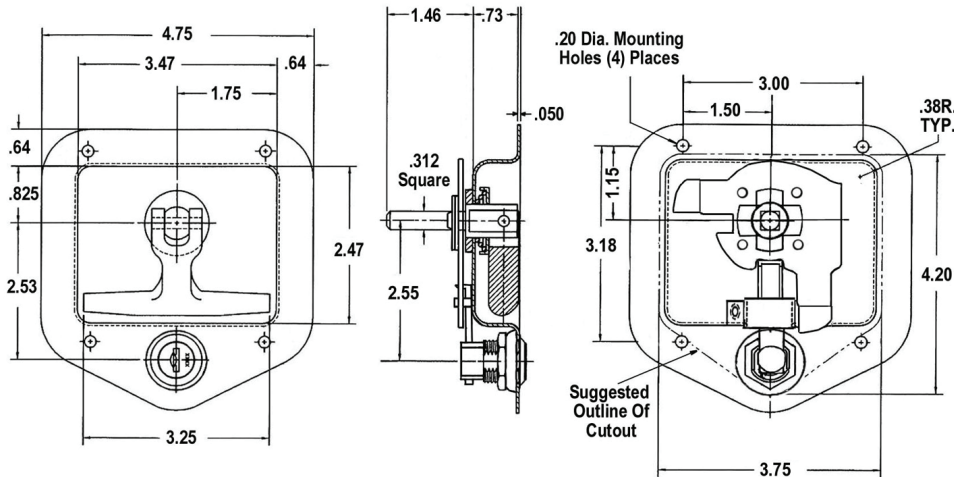
- Galvanized steel or polished stainless steel pan
- 4 mounting holes or mounting studs available
- Riveted Z-bracket for reinforcement of cam
- Supplied with adjustable 12-hole cam
- Different key codes available
- Uses GA10163 neoprene gasket (see page 287)



Part Number	Material	Finish	Mounting
RT11439	Stainless Steel	Polished	Holes
RT12755	Stainless Steel	Polished	1/4-20 Studs

SINGLE POINT LOCKING RECESSED T-HANDLE

- Galvanized steel or polished stainless steel pan
- 5/16" square shank will accept any standard cam (see page 282)
- Different key codes available
- Uses GA10163 neoprene gasket (see page 287)



Part Number	Material	Finish	Mounting Holes
RT11880	Steel	Galvanized	Yes
RT12060	Stainless Steel	Polished	Yes

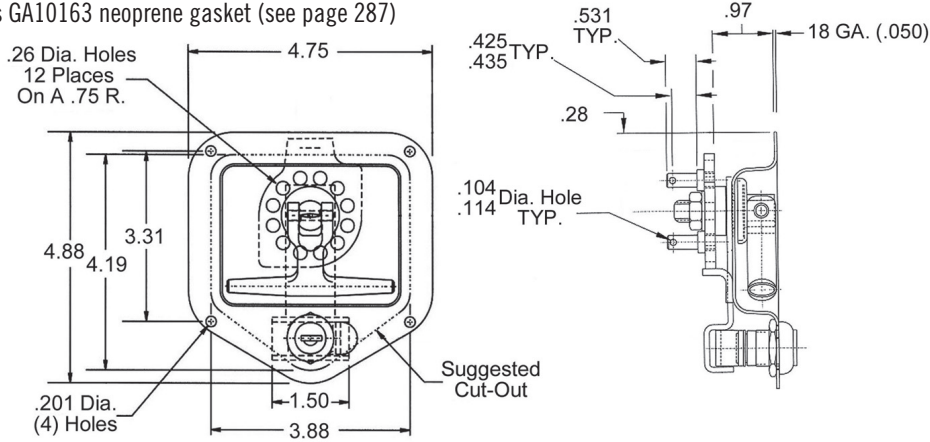
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HANDLES

TWO POINT KEY-LOCKING STEEL RECESSED T-HANDLE

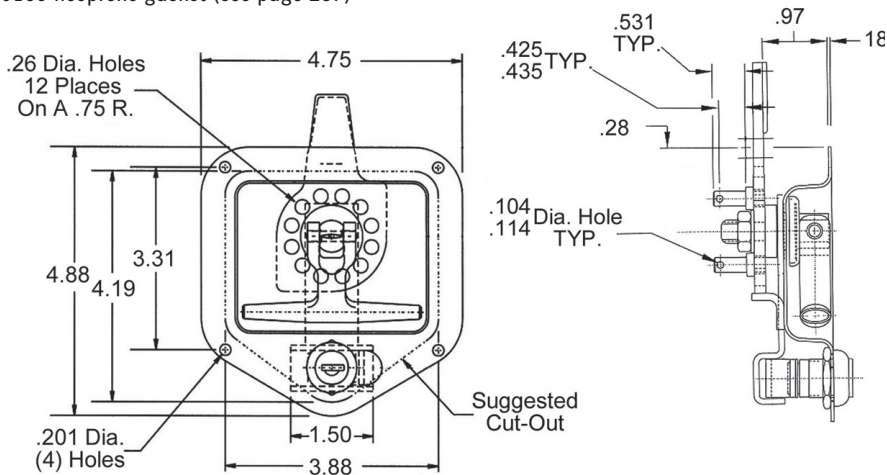
- Polished stainless steel pan
- Four mounting holes
- Cam supplied with two pins for attaching rods
- Use (2) RD-11680 rod guides and (2) RD-6011 series rods to make up a 2-point lock kit (see page 288)
- Different key codes available
- Uses GA10163 neoprene gasket (see page 287)



Part Number	Material
RT10181-2	Stainless Steel

THREE POINT KEY-LOCKING STEEL RECESSED T-HANDLE

- Polished stainless steel pan
- Four mounting holes
- Cam supplied with two pins for attaching rods
- Use (2) RD-11680 rod guides and (2) RD-6011 series rods to make up a 3-point lock kit (see page 288)
- Different key codes available
- Uses GA10163 neoprene gasket (see page 287)



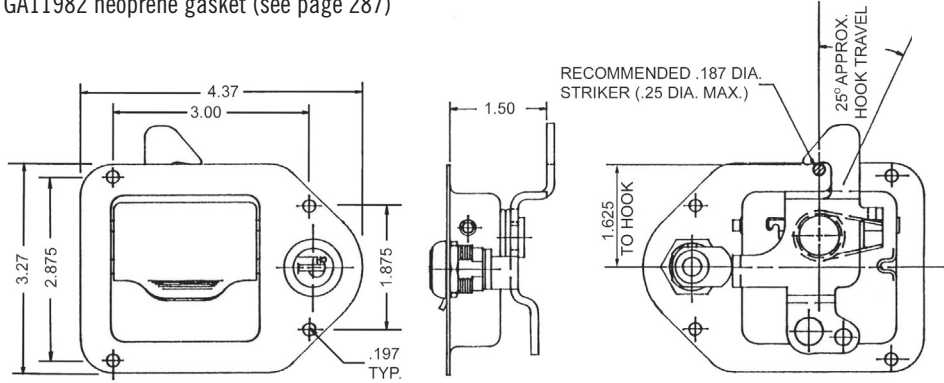
Part Number	Material
RT10182-3	Stainless Steel

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

LATCHES & CATCHES

LOCKING TOOLBOX PADDLE LATCH

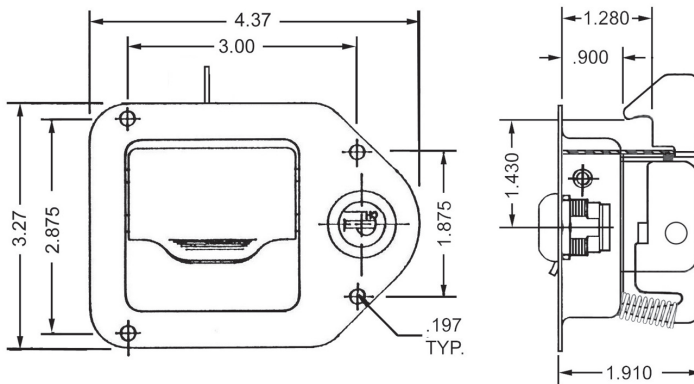
- Polished stainless steel pan
- 4 mounting holes
- Available with steel galvanized pan
- Use RD-11798 rod guide & RD-11860 rod to make 2-point lock system (see page 288)
- Different key codes available
- Uses GA11982 neoprene gasket (see page 287)



Part Number	Material	Finish
PL11437	Stainless Steel	Polished with Lock & Key
PL11435	Steel	Galvanized without Lock & Key
PL11436	Stainless Steel	Polished without Lock & Key
PL11434	Steel	Galvanized with Lock & Key

LOCKING TOOLBOX PADDLE LATCH

- Polished stainless steel pan
- 4 mounting holes
- Different key codes available
- Uses GA11982 neoprene gasket (see page 287)



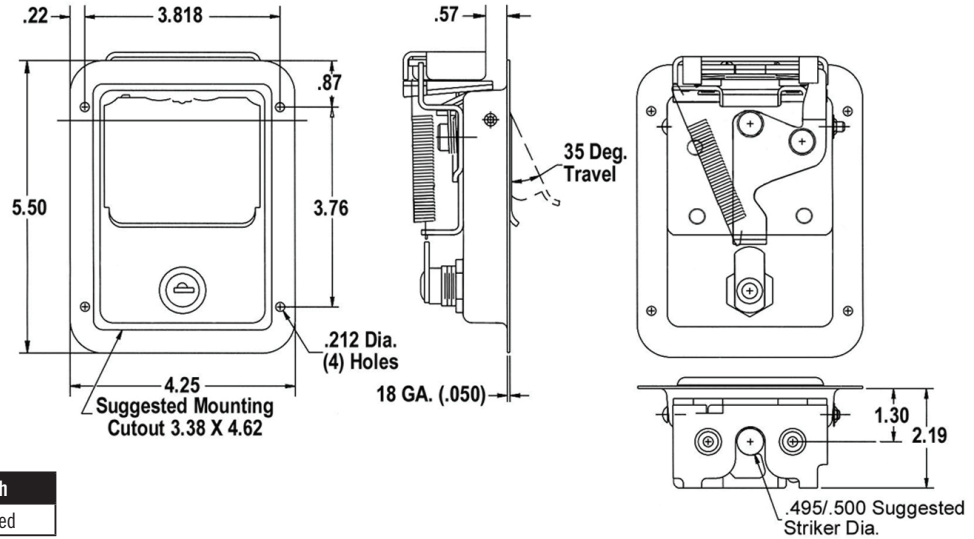
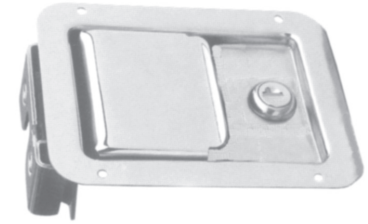
Part Number	Material	Finish
PL13273	Stainless Steel	Polished with Lock & Key
PL13272	Stainless Steel	Polished without Lock & Key

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LATCHES & CATCHES

ROTARY PADDLE LATCH

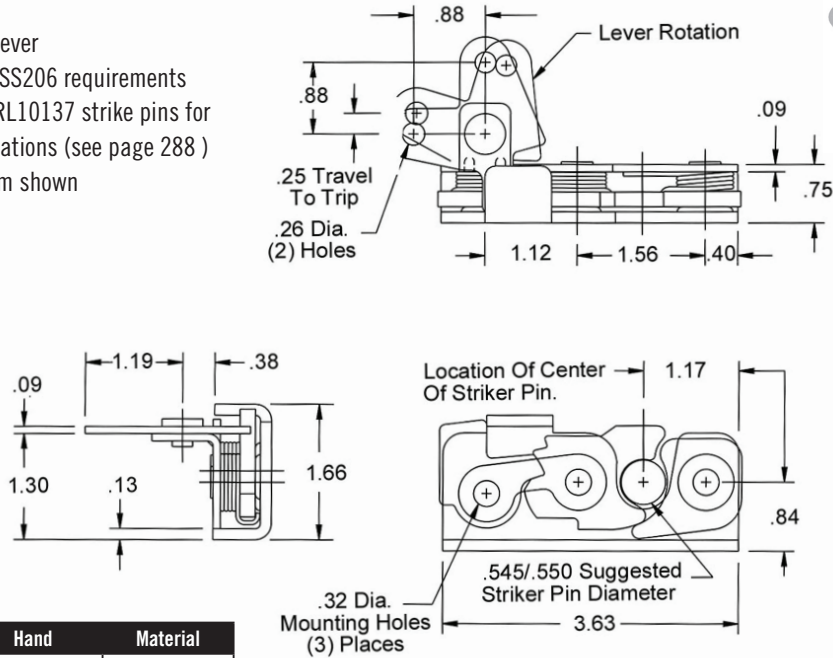
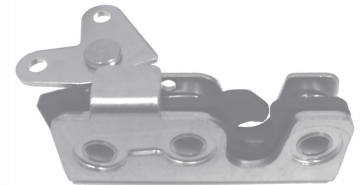
- Polished stainless steel pan
- 4 mounting holes
- Two stage rotary latch
- Non-handed for right or left hand applications
- Tested at 900 lbs. max. load rating
- Different key codes available
- Uses GA11958 or GA-12254 gasket (see page 287)



Part Number	Material	Finish
PL12262	Stainless Steel	Polished

SAFETY ROTARY LATCH

- Two stage latching positions (primary and secondary)
- Double actuator lever
- Latch meets FMVSS206 requirements
- Use RL10136 or RL10137 strike pins for FMVSS206 applications (see page 288)
- Left hand diagram shown

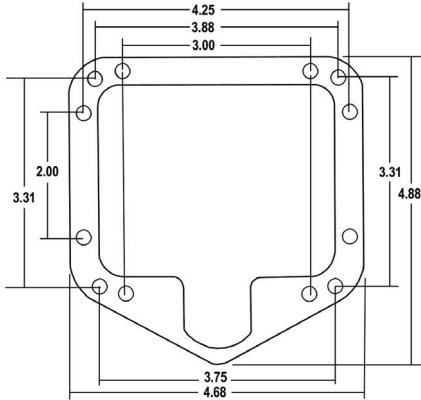


Part Number	Hand	Material
RL13400-L	Left	Steel Zinc Plate
RL13400-R	Right	Steel Zinc Plate

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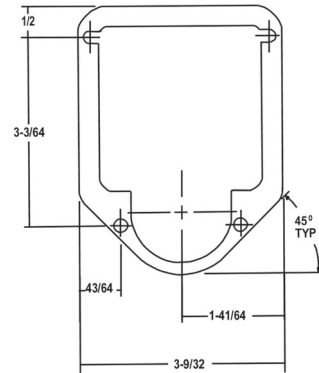
LATCHES & CATCHES - GASKETS

- Closed cell neoprene gasket
- .060 Thick



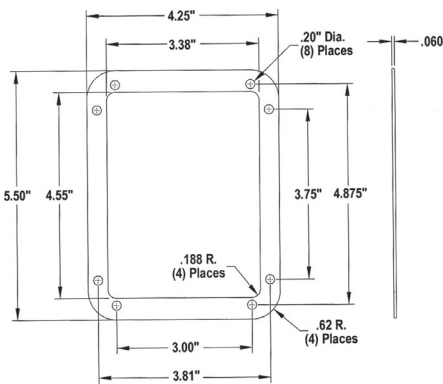
Part Number GA10163

- Closed cell neoprene gasket
- .060 Thick



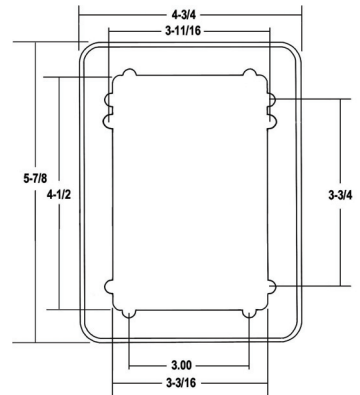
Part Number GA11982

- Cellulose fiber
- .060 thick



Part Number GA12254

- Black molded rubber
- .060 thick with .11" thick flange

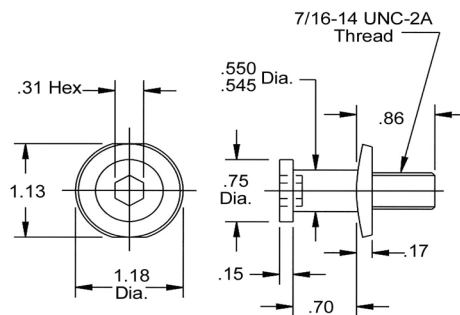


Part Number GA11958

ROTARY STRIKE PIN

- For FMVSS206 applications

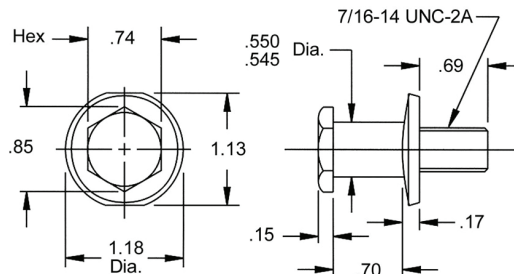
Part Number	Description
RL10136	Grade 8 Steel



ROTARY STRIKE PIN

- For FMVSS206 applications

Part Number	Description
RL10137	Grade 8 Steel



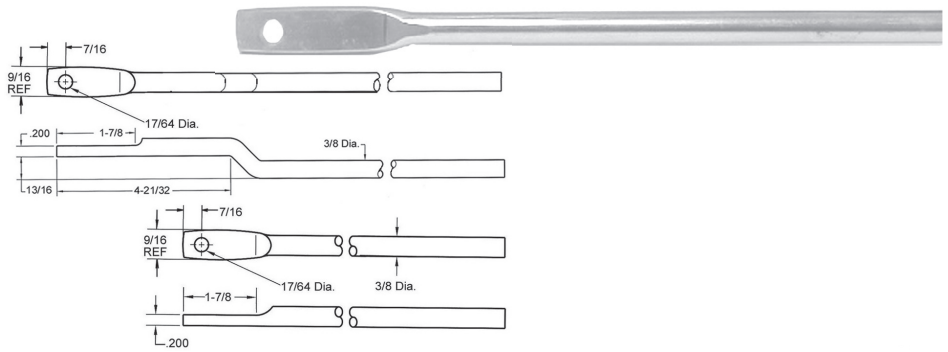
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LATCHES & CATCHES – RODS & ROD GUIDES

ROD

- Steel zinc plate with round holes
- For use with deadbolt lock kits

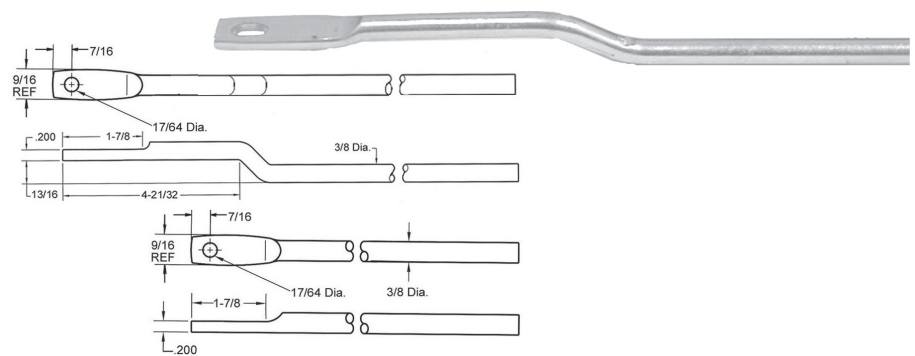
Part Number	Rod Style	Length
RD-6011-210-36	Flat	36.00"
RD-6011-230-48	Flat	48.00"
RD-6011-223-36	Offset	36.00"
RD-6011-233-48	Offset	48.00"



ROD

- Steel zinc plate with slotted holes
- Used on MP-6011 2 point slam lock kits

Part Number	Rod Style	Length
RD-6011-211-36	Flat	36.00"
RD-6011-231-48	Flat	48.00"
RD-6011-224-36	Offset	36.00"
RD-6011-234-48	Offset	48.00"



ROD

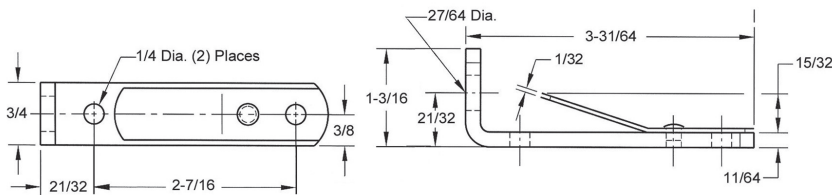
- Steel zinc plate
- Used with RD-11798 to make 2-point toolbox paddle latch system
- 1/4" diameter rod

Part Number	Rod Style	Length
RD-11860	Flat	36.00"
RD-11861	Flat	48.00"



ROD GUIDE

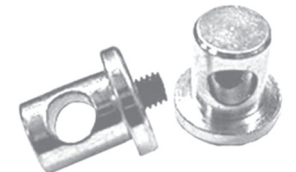
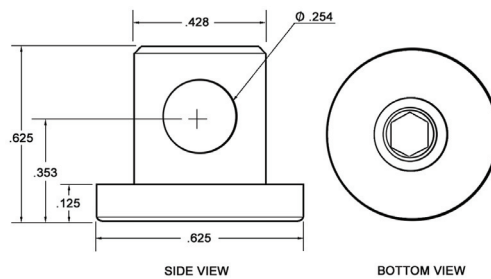
- Anti-rattle spring
- For 3/8" dia. rod
- Steel zinc plate



Part Number	RD-11680
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ROD GUIDE

- For use with PL11437 toolbox paddle latches
- Includes set screw to secure 1/4" dia. rod
- Steel zinc plate



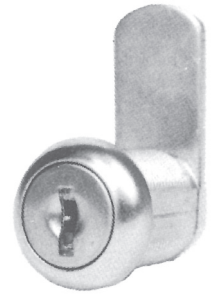
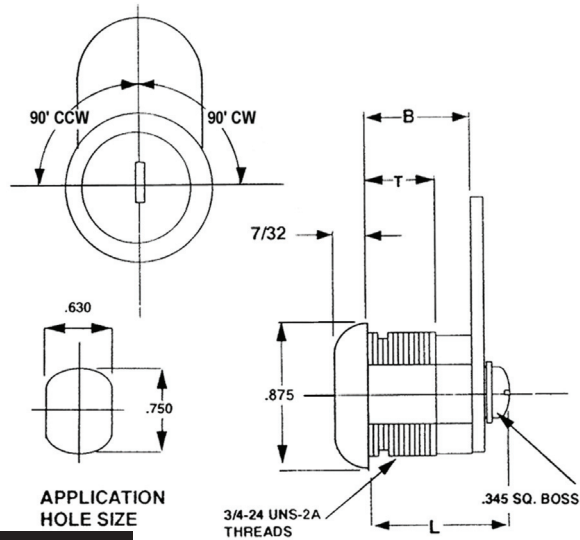
Part Number	RD-11798
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LATCHES & CATCHES

STAINLESS STEEL CAPPED CAM LOCKS

- 90° clockwise rotation standard
- 5-disc tumbler mechanism
- Die cast plug and shell
- Stainless steel cap bezel
- Supplied with two keys
- CH751, AH01, ES202, & ES203 standard key codes
- Other key codes available as a special order
- Comes with mounting nut standard (may be mounted with optional speed clip #L0126)
- Cams sold separately (see page 290)



How To Order

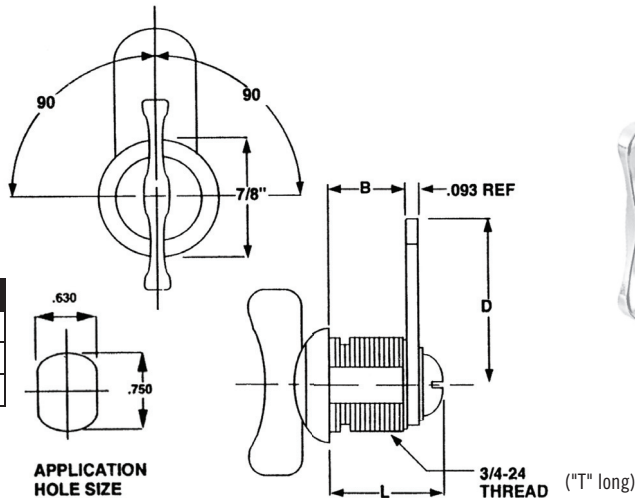
Basic Part Number → L084N-CH751

Mounting Nut → Key Code

Part Number	L083N	L084N	L085N	L086N	L087N
Dimension "B"	7/16"	5/8"	7/8"	1-1/8"	1-3/8"
Dimension "T"	1/4"	1/2"	3/4"	1"	1-1/4"
Dimension "L"	-	15/16"	1-3/16"	1-7/16"	1-11/16"

WING TURN THUMB LATCH

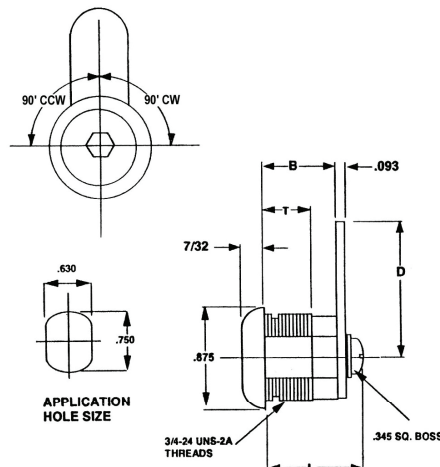
- 90° clockwise rotation
- Zinc diecast housing & cylinder
- Bright chrome finish
- Ball spring & detent
- Mounting nut included
- Comes standard with 1" straight cam



Part Number	LOTL616-04	LOTL622-04	LOTL628-04
Dimension "B"	5/8"	7/8"	1-1/8"
Dimension "T"	7/16"	21/32"	29/32"
Dimension "L"	29/32"	1-1/8"	1-13/32"

SLOTTED QUARTER TURN LATCH

- 90° clockwise rotation
- Zinc diecast housing & cylinder
- Bright chrome finish
- Ball spring & detent
- Mounting nut included
- Comes standard with 1" straight cam



Part Number	LOSL116-04	LOSL122-04	LOSL128-04
Dimension "B"	5/8"	7/8"	1-1/8"
Dimension "T"	7/16"	21/32"	29/32"
Dimension "L"	29/32"	1-1/8"	1-13/32"

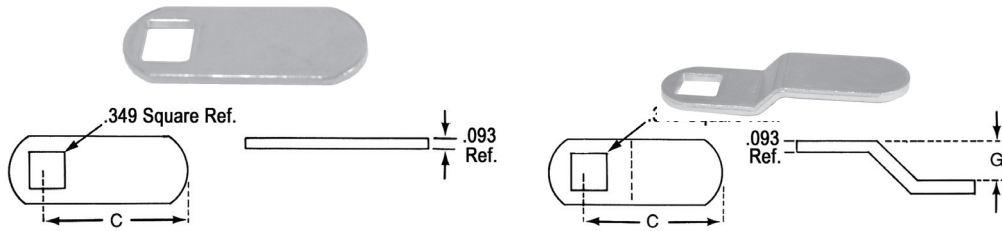
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LATCHES & CATCHES

STANDARD CAMS

- Steel zinc plate
- For use with L063N, L074N, L084N, L094N, & L0657N series locks
- Can be used with LOTL, LOSL, & LOHL series quarter turn latches also

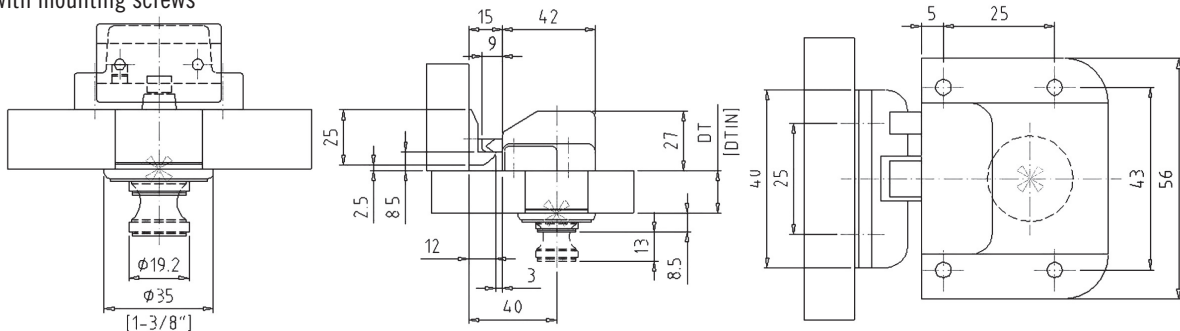


Part Number	Dimension "C"
LOSC-01	5/8"
LOSC-02	3/4"
LOSC-03	7/8"
LOSC-04	1"
LOSC-05	1-1/8"
LOSC-06	1-1/4"
LOSC-07	1-3/8"
LOSC-08	1-1/2"
LOSC-10	1-3/4"
LOSC-12	2"
LOSC-14	2-1/2"

Part Number	Dimension "C"	Dimension "G"	Part Number	Dimension "C"	Dimension "G"
L00C-100	7/8"	3/8"	L00C-160	1-1/2"	1/4"
L00C-105	1"	1/16"	L00C-165	1-1/2"	3/16"
L00C-110	1"	1/8"	L00C-170	1-5/8"	1/4"
L00C-115	1"	1/4"	L00C-175	1-5/8"	3/16"
L00C-120	1-1/8"	1/8"	L00C-180	1-3/4"	1/8"
L00C-125	1-1/8"	1/4"	L00C-185	1-3/4"	3/16"
L00C-130	1-1/8"	5/16"	L00C-190	1-3/4"	3/8"
L00C-135	1-1/8"	3/8"	L00C-195	1-7/8"	1/2"
L00C-140	1-1/4"	1/4"	L00C-200	1-7/8"	3/4"
L00C-145	1-1/4"	3/16"	L00C-205	2"	1/8"
L00C-150	1-3/8"	3/8"	L00C-210	2"	3/16"
L00C-155	1-1/2"	1/8"	L00C-215	2"	1/2"

PUSH KNOB LATCH

- Non-Locking
- White polyamide latch body
- Brass push knob
- Zinc die cast push button base
- 44 lb holding force
- Push knob and latch body sold separately
- For door thicknesses 3/4" ~ 1-3/16"
- Supplied with mounting screws



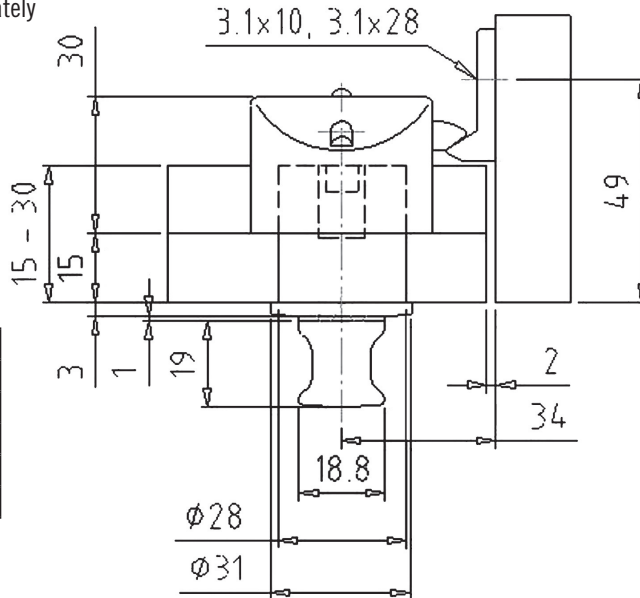
Component	Part Number	Finish
Push Knob	LATLP-BB-SB	Satin Brass
	LATLP-BB-PB	Polished Brass
	LATLP-BB-SN	Satin Nickel
	LATLP-BB-CR	Chrome
Latch Body	LATLP-LBM-WHT	White

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com
 Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

LATCHES & CATCHES

PUSH KNOB LATCH

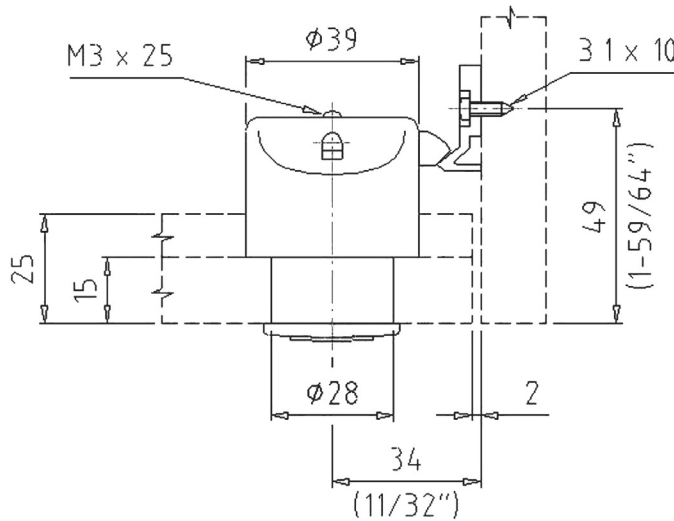
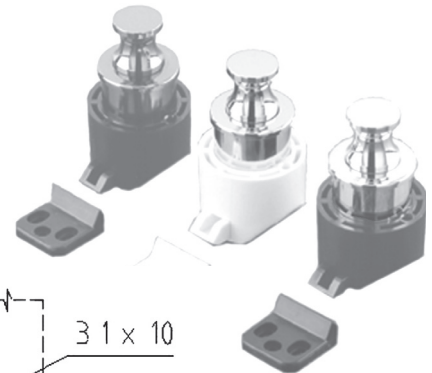
- Non-Locking
- Available in matte black & matte white ABS plastic
- Non-handed
- 22 lb holding force
- Push knob and latch body sold separately
- For door thicknesses 19/32"~1-3/16"
- Supplied with mounting screws



Component	Part Number	Color
Push Knob	LAPKL07-W	White
	LAPKL07-B	Black
Latch Body	LAPKL-S/WHT	White
	LAPKL-S/BLK	Black
Spacer	LAPKL-W	White

PUSH KNOB LATCH

- Non-Locking
- Available in matte black & matte white ABS plastic latch body
- Zinc die cast push knob
- Non-handed
- 22 lb holding force
- Push knob and latch body sold separately
- For door thicknesses 19/32"~1-3/16"
- Supplied with mounting screws



Component	Part Number	Color
Push Knob	LAPKL08-GA	Gold
	LAPKL08-CR	Chrome
	LAPKL08-BN	Black Nickel
Latch Body	LAPKL-S/WHT	White
	LAPKL-S/BLK	Black
Spacer	LAPKL-W	White

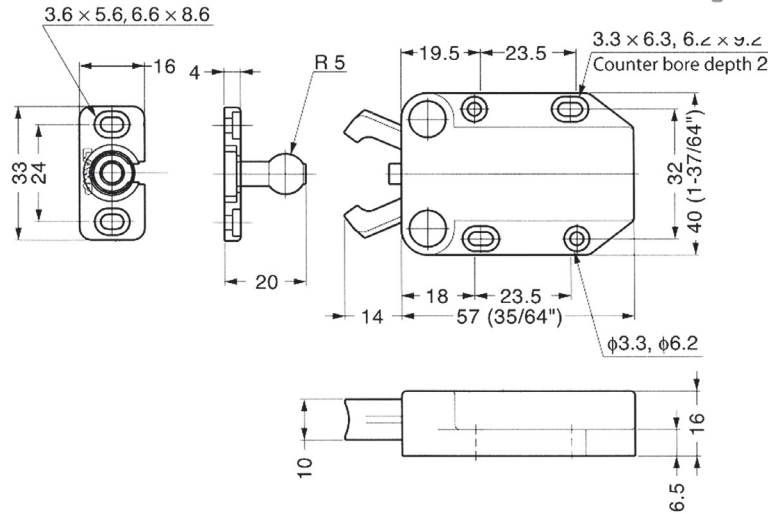
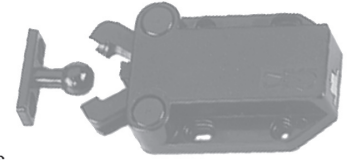
* Spacer is .08" thick. Available in white only

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LATCHES & CATCHES

TOUCH LATCH

- Non-magnetic for greater range of use
- ABS plastic construction available in three colors
- Supplied with mounting screws
- 8.8 lb retaining force

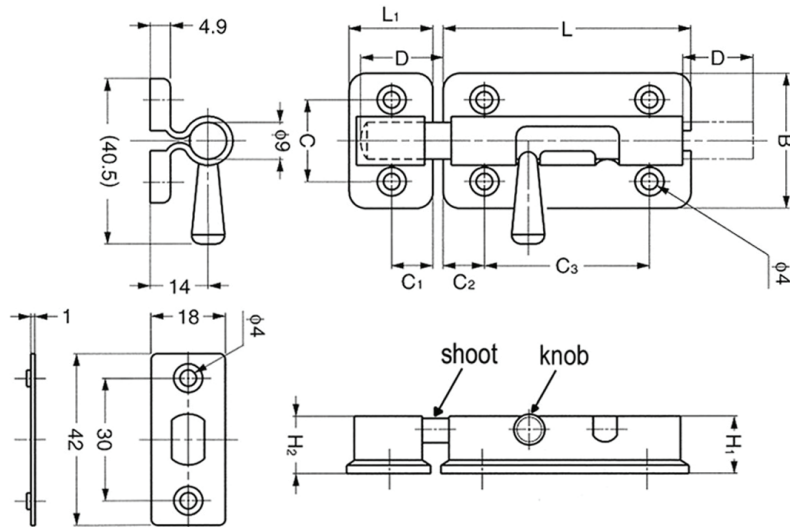
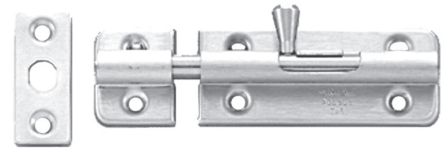


Part Number	Color
LAMC-37B	Black
LAMC-37BR	Brown
LAMC-37W	White

* For overlay doors allow 1/8" gap between door & cabinet frame for pushing space

BARREL BOLT

- 304 stainless steel
- Satin finish
- Spring loaded bolt
- Supplied with mounting screws



Part Number	L	L1	H1	H2	B	C	C1	C2	C3	D
LABLS-60	60 (2-23/64")	25.4 (1.00")	20	20.4	33 (1-19/64")	20	12.7	10	40	17
LABLS-90	90 (3-35/64")	25.4 (1.00")	20	20.4	33 (1-19/64")	20	12.7	12.5	65	24

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LATCHES & CATCHES

SPRING BOLT LATCH

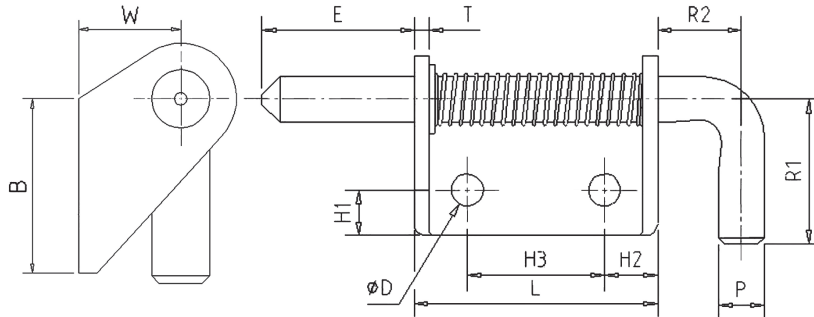
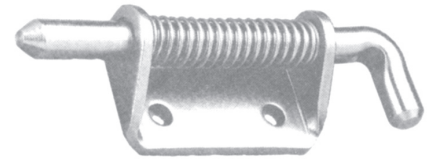
- Available in steel & stainless steel
- Right hand or left hand configurations available
- Catch and strike plate sold separately
- For complete part numbers, add the following:

Left hand steel zinc plate: -LS-Z

Right hand steel zinc plate: -RS-Z

Left hand stainless steel: -L-X

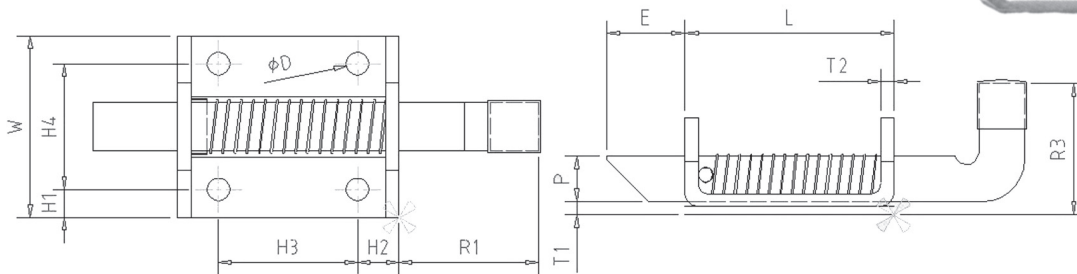
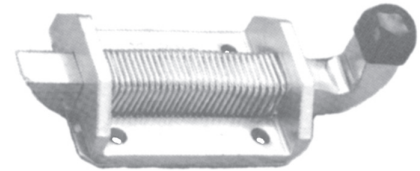
Right hand stainless steel: -R-X



Part Number	P	E	R1	R2	L	W	B	T	H1	H2	H3	D
LA719	.375	1.25	1.187	.687	2.00	.656	1.12	.120	.375	.437	1.125	.265
LA720	.500	1.50	1.218	1.00	3.00	.750	1.25	.194	.500	.625	1.750	.328

SPRING BOLT LATCH

- Available in steel & stainless steel
- Includes cover plate for spring
- Non-handed, can be used for right hand or left hand applications



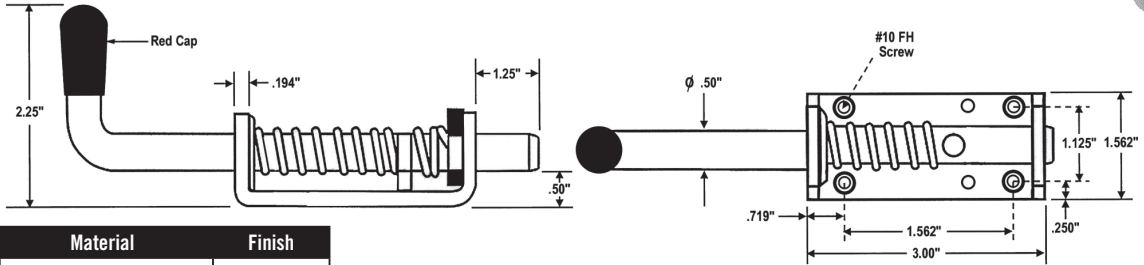
Part Number	P	E	R1	R3	L	W	T1	T2	H1	H2	H3	H4	D
LA11307-ZN	.375	.562	.812	1.00	1.50	1.25	.115	.090	.187	.375	.750	.875	.171
LA11307-SS	.375	.562	.812	1.00	1.50	1.25	.115	.090	.187	.375	.750	.875	.171
LA708-ZN	.437	.750	1.00	1.25	2.00	1.625	.125	.120	.250	.375	1.25	1.125	.203
LA708-SS	.437	.750	1.00	1.25	2.00	1.625	.125	.120	.250	.375	1.25	1.125	.203
LA709-ZN	.500	.750	1.25	1.375	2.875	2.00	.150	.194	.312	.468	1.93	1.375	.265
LA709-SS	.500	.750	1.25	1.375	2.875	2.00	.150	.194	.312	.468	1.93	1.375	.265

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LATCHES & CATCHES

SPRING BOLT LATCH

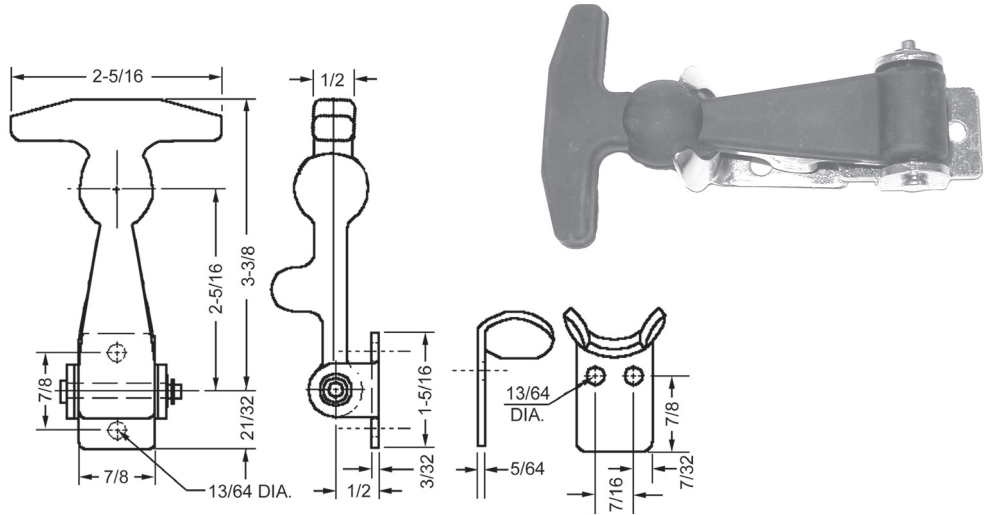
- Available in steel, stainless steel, & aluminum configurations
- Includes red cap on handle
- Non-handed, can be used for right hand or left hand applications



Part Number	Material	Finish
LA-11627	Steel	Zinc Plated
LA-11627-SS	Stainless Steel	Polished
LA-13220	Stainless Steel/Aluminum	Polished Bolt

FLEXIBLE RUBBER

- Black rubber (EPDM)
- Zinc plated steel bracket and keeper
- Rubber latch will not mar finishes

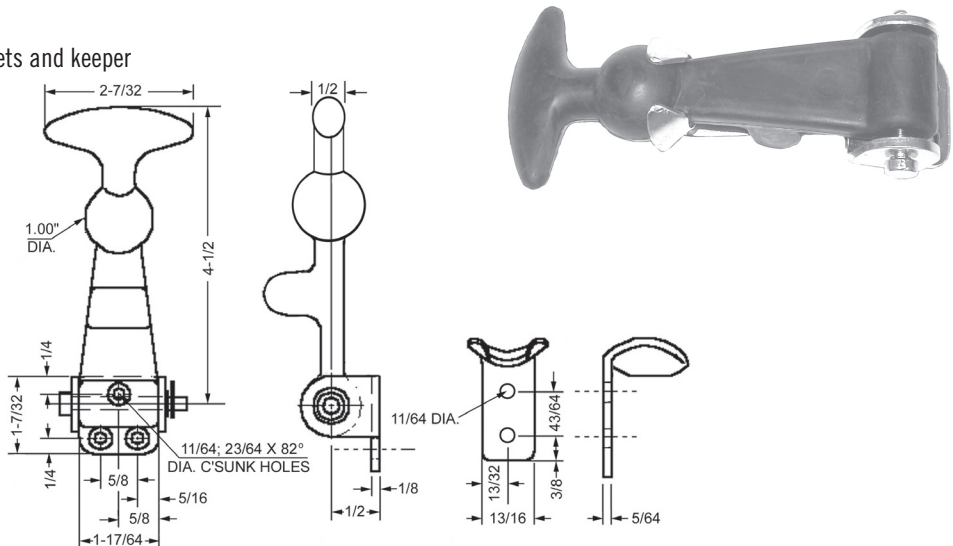


Part Number	Material
DH-11417	Steel

All dimensions shown are nominal

FLEXIBLE RUBBER

- Black rubber (EPDM)
- Zinc plated steel or stainless steel brackets and keeper
- Rubber latch will not mar finishes



Part Number	Material
DH-11418	Steel
DH-11418-SS	Stainless Steel

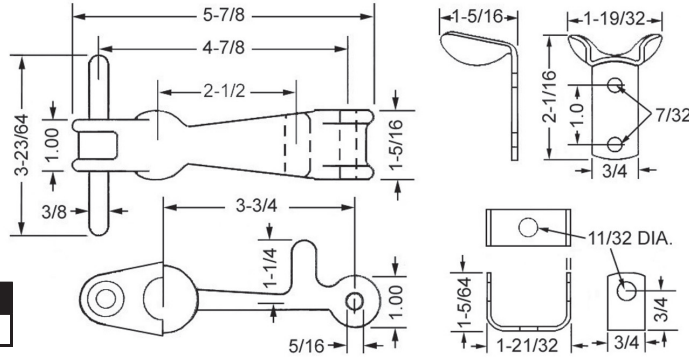
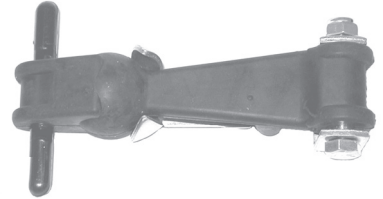
All dimensions shown are nominal

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LATCHES & CATCHES

FLEXIBLE RUBBER

- Black rubber
- Zinc plated steel bracket and keeper
- Assembles with 1/4 bolt & lock nut
- Rubber latch will not mar finishes

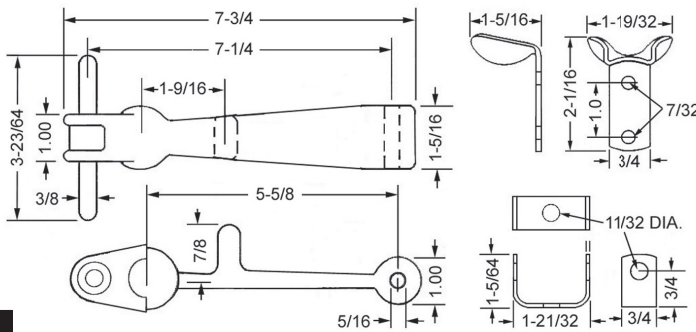
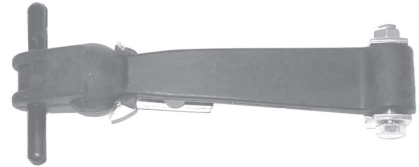


Part Number	Material
DH-11420	Steel

All dimensions shown are nominal

FLEXIBLE RUBBER

- Black rubber
- Zinc plated steel bracket and keeper
- Assembles with 1/4 bolt & lock nut
- Rubber latch will not mar finishes

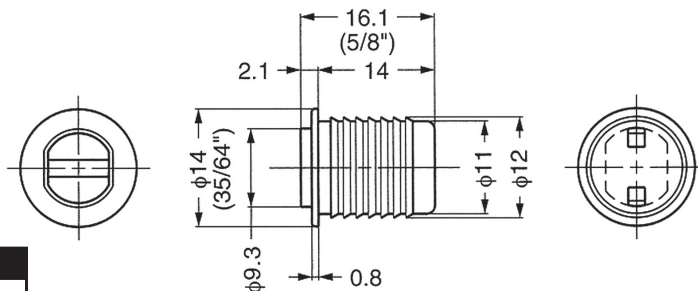


Part Number	Material
DH-11421	Steel

All dimensions shown are nominal

MAGNETIC CATCH

- Polypropylene body available in black or white
- Strike sold separately (see page 296)
- 5.5 lb magnetic force
- For mortise applications



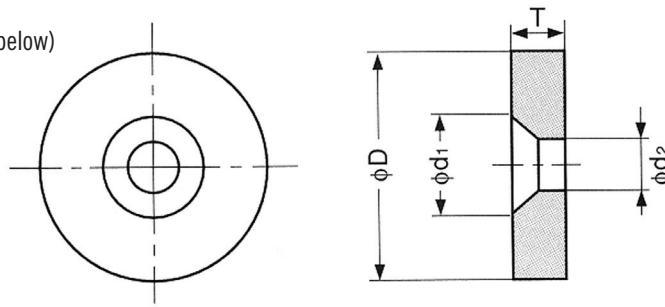
Part Number	Color
CAIS-4B	Black
CAIS-4W	White

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LATCHES & CATCHES

STRIKE

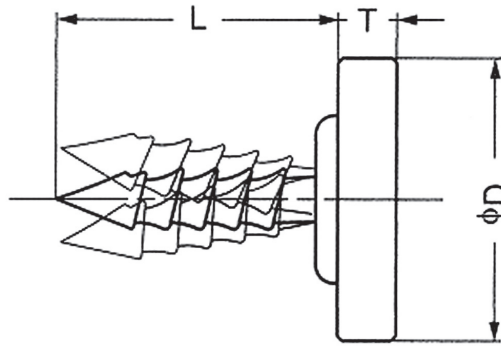
- Chrome or nickel plated steel
- Mounting screw not included (see below)



Part Number	Finish	T	D	d1	d2
CAW4	Gold Chromate	2.5 (3/32")	12 (15/32")	6	3
CAW12	Nickel	3.0 (1/8")	15 (19/32")	8	4

MOUNTING SCREW

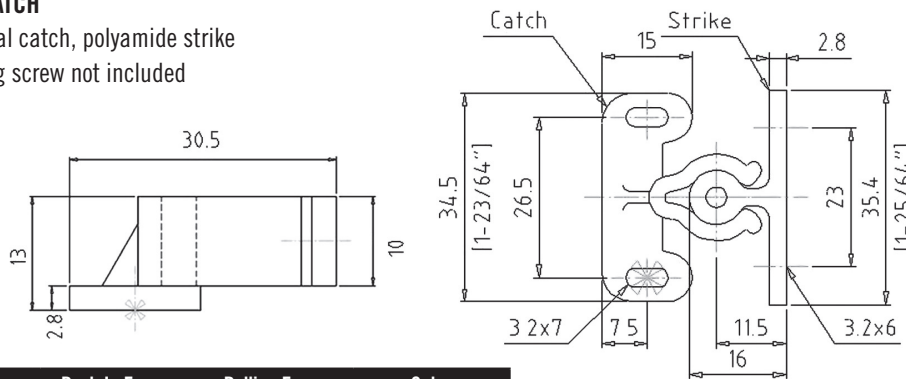
- Nickel plated steel



Part Number	Finish	T	D	L
CAZ4	Nickel	2.5 (3/32")	12 (15/32")	12 (15/32")

KNUCKLE CATCH

- Polyacetal catch, polyamide strike
- Mounting screw not included



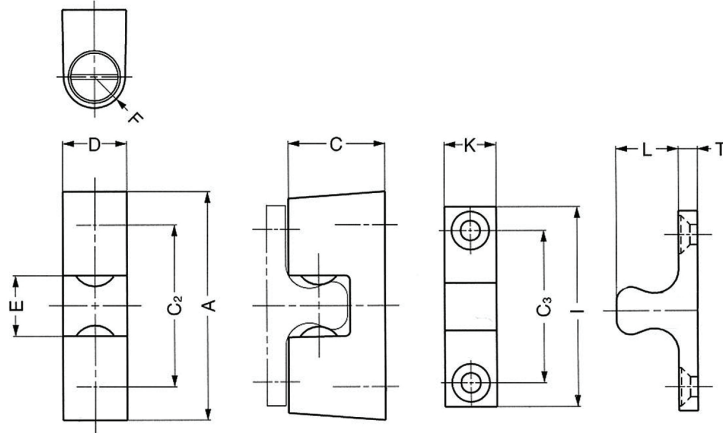
Part Number	Push In Force	Pulling Force	Color
CAK-CATCHW	11.4 lbs	15.4 lbs	White

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LATCHES & CATCHES

DOUBLE BALL CATCH

- Zinc alloy with chrome plating
- 2 spring loaded ball bearings
- Blind mount for cleaner appearance
- Adjust tension by turning set screws
- Mounting screws not included
- Uses M3 X 5 flat head screws



Part Number	A	C2	C	D	E	F	G	H	I	C3	K	L	N	C1	T	X	Y	Q
CABCU-40	28.5 (1-1/8")	20	12.5	8.3 (21/64")	6.5	R4	M3	5	24	16	8	9	5	3	3	3.2	6.2	15.7
CABCU-70	48 (1-57/64")	34	20.5	13.5 (17/32")	12.7	R6.5	M5	6	42	32	11	13	10	7.3	4	8.2	8.2	24.9

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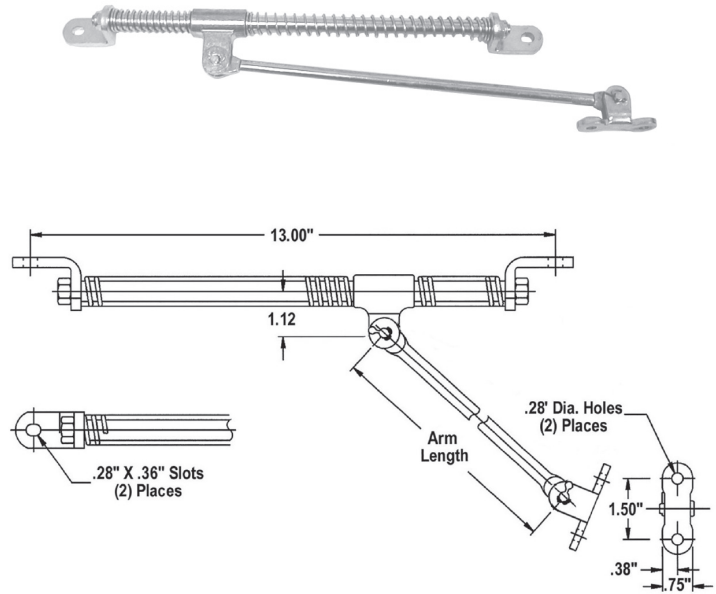
CHECKS, HOLDERS & PROPS

STANDARD DOOR CHECKS

Large holdback spring permits the pivot on the door bracket to pass over the center and holds the door open at 90°.

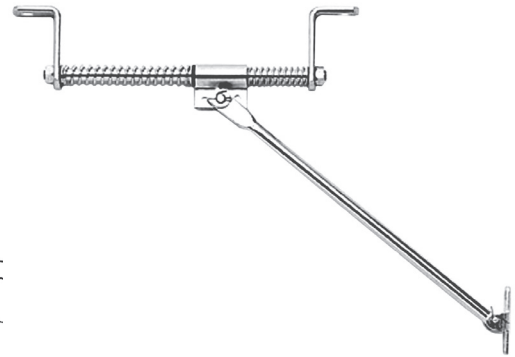
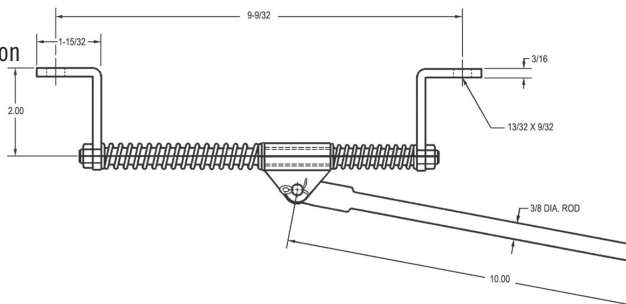
A slight push releases the door to close it automatically.

Part Number	Material	Arm Length	Spring Tension
DC-L2395AA7	Steel Zinc Plate	7"	12 lb.
DC-L2395AA7SS	Stainless Steel		
DC-L2395AA8	Steel Zinc Plate	8"	
DC-L2395AA8SS	Stainless Steel		
DC-L2395AA11	Steel Zinc Plate	11"	
DC-L2395AA11SS	Stainless Steel		
DC-M2395AA7	Steel Zinc Plate	7"	30 lb.
DC-M2395AA7SS	Stainless Steel		
DC-M2395AA8	Steel Zinc Plate	8"	
DC-M2395AA8SS	Stainless Steel		
DC-M2395AA11	Steel Zinc Plate	11"	
DC-M2395AA11SS	Stainless Steel		
DC-H2395AA7	Steel Zinc Plate	7"	50 lb.
DC-H2395AA7SS	Stainless Steel		
DC-H2395AA8	Steel Zinc Plate	8"	
DC-H2395AA8SS	Stainless Steel		
DC-H2395AA11	Steel Zinc Plate	11"	
DC-H2395AA11SS	Stainless Steel		



DOOR CHECK WITH LONG BRACKETS

- Steel zinc plate
- 15 lb. Spring tension



Part Number DC-12653

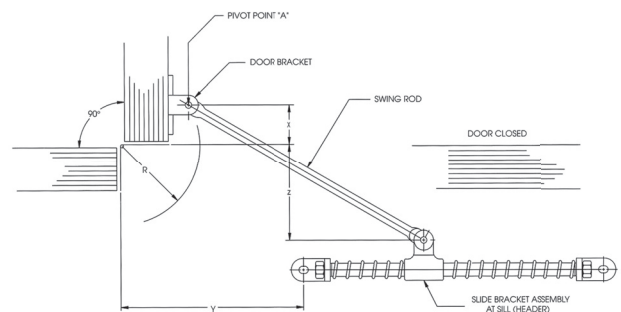
DOOR CHECK INSTALLATION INSTRUCTIONS

With compartment door held at 90° position, mount door bracket as close to hinge centerline (X) as possible so that radius (R) swung about hinge center through pivot (A) is as short as possible. (Increasing (R) will increase slide travel causing an increase in spring pressure. Reducing (R) will have the inverse effect.)

Keeping door at 90°, mount slide rod assembly as far away from horizontal hinge center point (Y) as possible maintaining spring in at rest position. Slide rod assembly should be mounted as close as possible to vertical hinge centerline (Z) still allowing clearance for swing rod & door bracket when door is closed.

After mounting, open & close door to check clearance and spring pressure. When mounted properly, door should open with some resistance through approximately 30°~45° of travel, then travel on its own until the slide rod assembly contacts the bumper spring stopping the door in the fully open position. The same spring pressure should be present when closing the door.

To increase spring tension, place door in 90° position (spring at rest). Move bracket (A) away from centerline, increase (R). To decrease spring tension move door bracket (A) toward hinge centerline, decrease (R). Please note that maintaining (Z) dimension and adjusting (R) dimension will change (Y) dimension maintaining the door at a 90° open position.

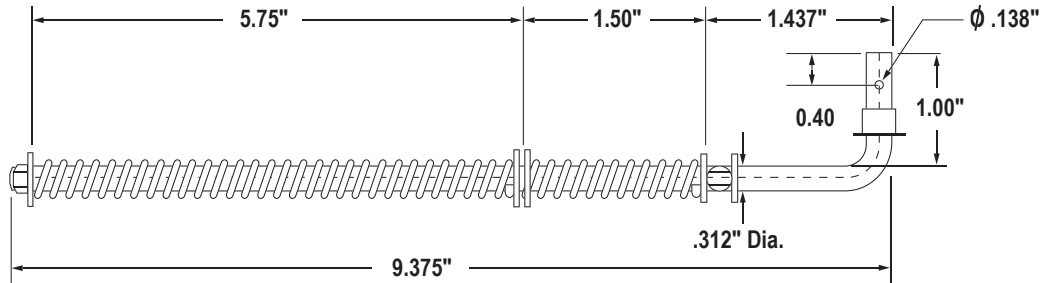


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CHECKS, HOLDERS & PROPS

ECONOMY DOOR CHECK

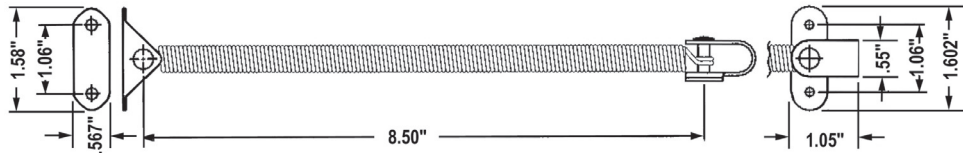
- Steel zinc plate
- 37 lb. spring tension



Part Number DC-12426

HATCH HOLDER

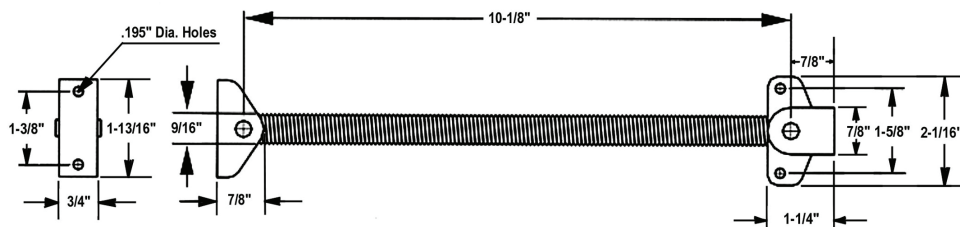
- Stainless steel brackets & spring
- Inside safety cable prevents over extending spring
- Spring pops into place to hold lid open
- 10 lb. Load capacity



Part Number DH-11720

HATCH HOLDER

- Stainless steel brackets & spring
- Inside safety cable prevents over extending spring
- Spring pops into place to hold lid open
- 45 lb. Load capacity



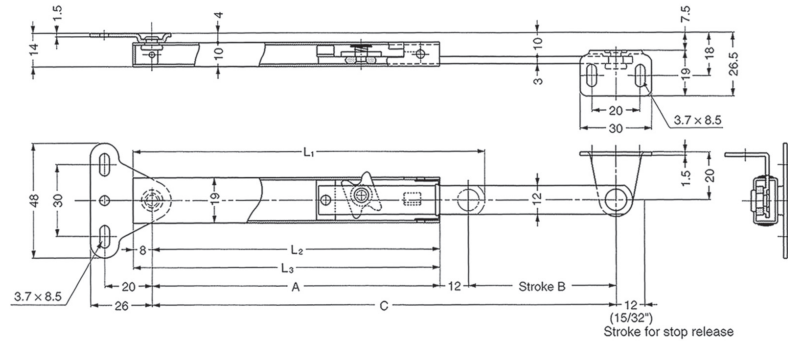
Part Number DH-12026

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CHECKS, HOLDERS & PROPS

TELESCOPIC PROP

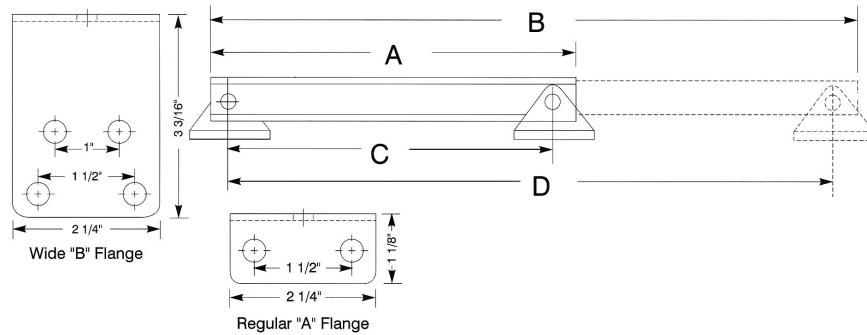
- For upward opening lid or flap
- Positive stop to keep lid open
- Non-handed for right or left hand applications
- 304 stainless steel
- Satin finish
- 33 lb. load capacity



Part Number	L1	L2	L3	A	B	C	Door Height
STL-195	148 (5-53/64")	121	129	133 (5-15/64")	62	195 (7-43/64")	250~350 (9-27/32" ~ 13-25/32")
STL-270	185 (7-9/32")	158	166	170 (6-11/16")	100	270 (10-5/8")	320~500 (12-19/32" ~ 19-11/16")

TELESCOPIC PROP

- Constructed of 16 gauge zinc plated steel
- Latches open automatically
- Releases with a slight lift of the lid
- Rated up to 500 lbs. depending upon application
- Available with wide flange (B) as a special order
- Other bracket attachments available



Part Number	Closed (A)	Open (B)	Closed (C)	Open (D)
DH-706AA	6.00"	8-1/2"	4-3/4"	7-1/4"
DH-708AA	8.00"	12-1/2"	6-3/4"	11-1/4"
DH-710AA	10.00"	16-1/2"	8-3/4"	15-1/4"
DH-712AA	12.00"	20-1/2"	10-3/4"	19-1/4"
DH-716AA	16.00"	28-1/2"	14-3/4"	27-1/4"

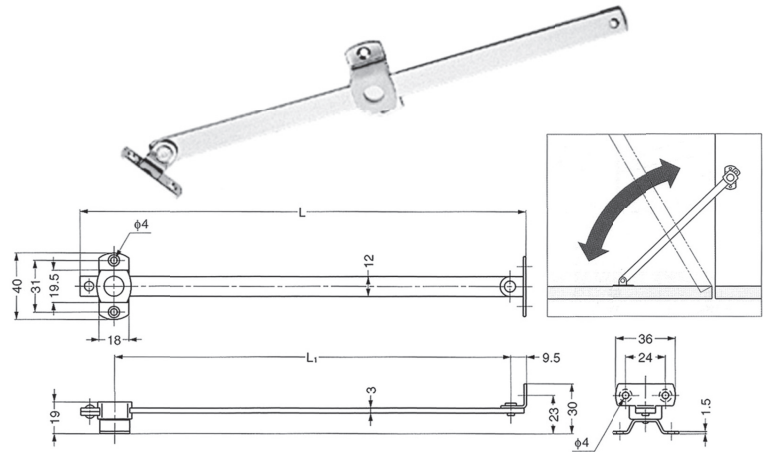
Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com
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CHECKS, HOLDERS & PROPS

DROP DOWN STAY

- For drop down lid applications
- Non-handed for right or left handed applications
- 304 stainless steel & polyamide

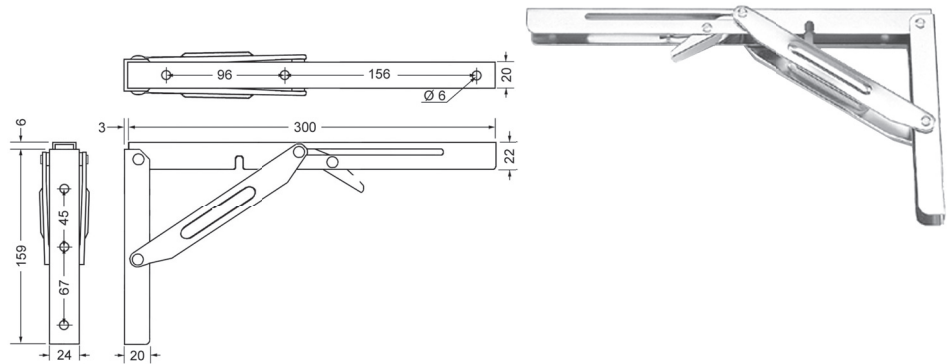
Part Number	L	L1
STHS-180	210 (8-17/64")	180 (7-3/32")
STHS-210	240 (9-29/64")	210 (8-17/64")
STHS-240	270 (10-5/8")	240 (9-29/64")



FOLDING BRACKET

- 304 stainless steel
- Electro-polished finish
- NSF approved
- Can be mounted vertically or horizontally
- 330 lb. load capacity horizontal mounting
- 880 lb. Load capacity vertical mounting
- Horizontal view shown

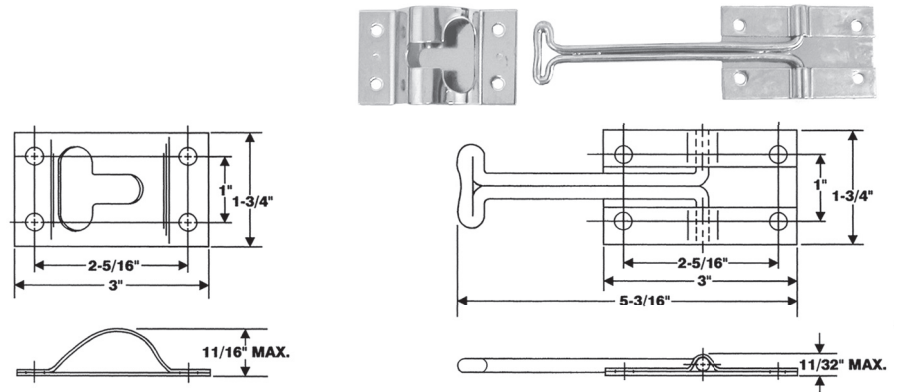
Part Number	STEB-303EP
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HOLD TITE DOOR HOLDERS

- Steel zinc plate
- Polished stainless steel

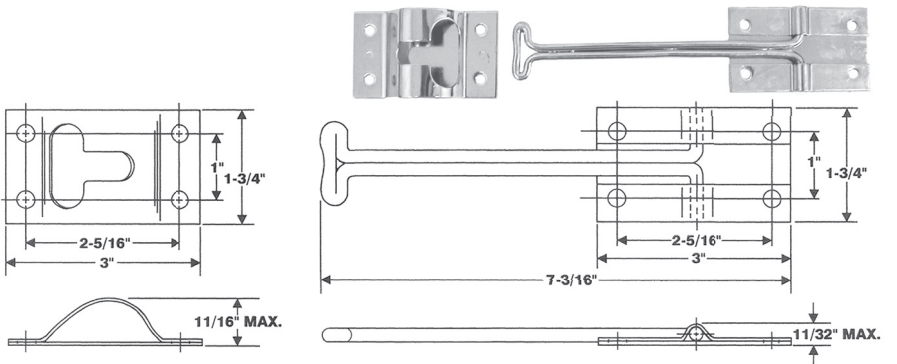
Part Number	Description	Material
DH-9-ZP	Hook & Keeper	Steel Zinc Plate
DH-9-SSP	Hook & Keeper	Stainless Steel
DH-9-M	Hook Only	Steel Zinc Plate
DH-9-F	Keeper Only	Steel Zinc Plate
DH-9-M-SSP	Hook Only	Stainless Steel
DH-9-F-SSP	Keeper Only	Stainless Steel



HOLD TITE DOOR HOLDERS

- Steel zinc plate
- Polished stainless steel

Part Number	Description	Material
DH-8-ZP	Hook & Keeper	Steel Zinc Plate
DH-8-SSP	Hook & Keeper	Stainless Steel
DH-8-M	Hook Only	Steel Zinc Plate
DH-8-F	Keeper Only	Steel Zinc Plate
DH-8-M-SSP	Hook Only	Stainless Steel
DH-8-F-SSP	Keeper Only	Stainless Steel

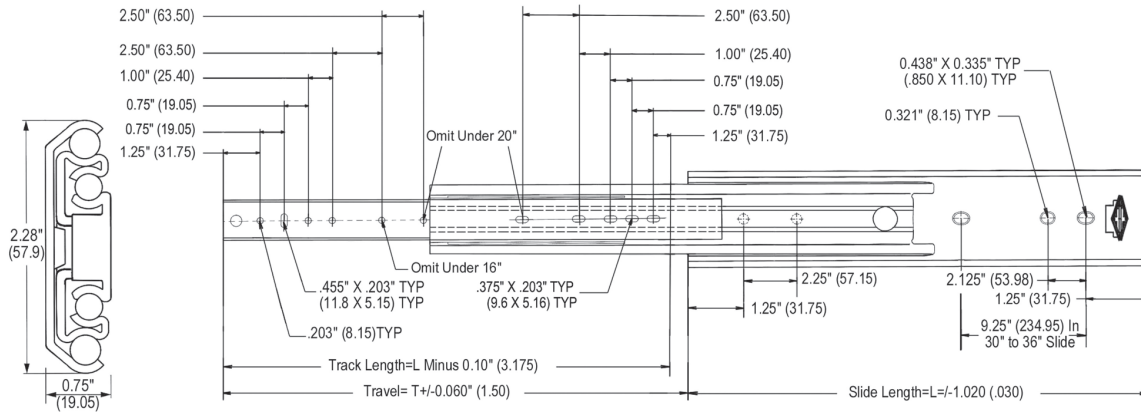


Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com
 Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

DRAWER SLIDES

DS-300 SERIES

- Zinc plated steel with plastic bearing cage
- Three member, full extension slide
- 3/4" of over-travel
- 300 lb load rating (at 10,000 cycles), 280 lbs (at 20,000 cycles)
- Trigger disconnect
- Hold in detent & positive stop
- Mounting screws not included



Part Number	Slide Length	Travel Length	Load Rating kg/lbs (Pair)
DS-300-10	254.0 (10")	273.05 (10.75")	149 (328 lbs)
DS-300-12	304.8 (12")	323.85 (12.75")	146 (321 lbs)
DS-300-14	355.6 (14")	374.65 (14.75")	142 (314 lbs)
DS-300-16	406.4 (16")	425.45 (16.75")	139 (307 lbs)
DS-300-18	457.2 (18")	476.25 (18.75")	136 (300 lbs)
DS-300-20	508.0 (20")	527.05 (20.75")	133 (293 lbs)
DS-300-22	558.8 (22")	577.85 (22.75")	130 (286 lbs)

Part Number	Slide Length	Travel Length	Load Rating kg/lbs (Pair)
DS-300-24	609.6 (24")	628.65 (24.75")	127 (279 lbs)
DS-300-26	660.4 (26")	679.45 (26.75")	123 (272 lbs)
DS-300-28	711.2 (28")	730.25 (28.75")	120 (265 lbs)
DS-300-30	762.0 (30")	761.05 (30.75")	117 (258 lbs)
DS-300-32	812.8 (32")	831.85 (32.75")	114 (251 lbs)
DS-300-34	863.6 (34")	882.65 (34.75")	111 (244 lbs)
DS-300-36	914.4 (36")	933.45 (36.75")	107 (237 lbs)

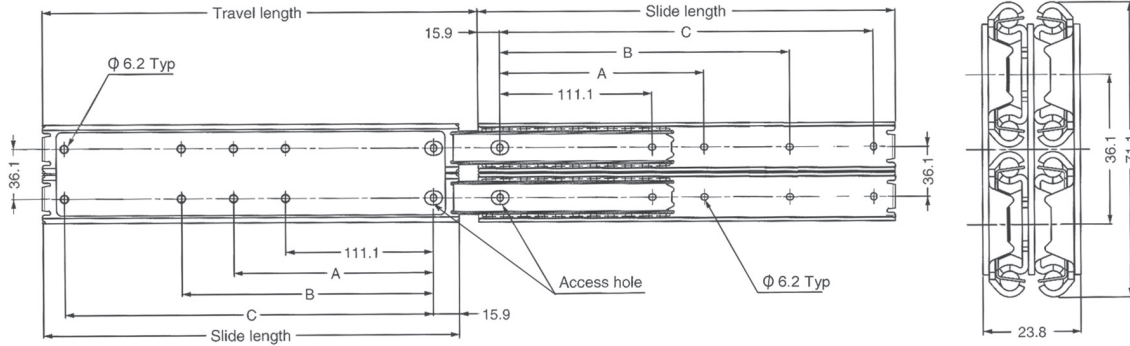
* Load ratings listed are approximate, weights will vary depending on application.

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

DRAWER SLIDES

DS-700 SERIES

- All components made of zinc plated steel
- Three member, full extension slide
- 500 lb load rating (based on 18" slide)
- Non-Handed
- Mounting screws not included



Part Number	Slide Length	Travel Length	A	B	C	Load Rating kg/lbs (Pair)
DS-700-12	304.8 (12")	327.0 (12.87")	-	149.2	273.0	245 (540 lbs)
DS-700-14	355.6 (14")	377.8 (14.87")	-	200.0	323.8	241 (531 lbs)
DS-700-16	406.4 (16")	428.6 (16.87")	-	250.8	374.6	233 (513 lbs)
DS-700-18	457.2 (18")	479.4 (18.87")	212.7	301.6	425.4	225 (496 lbs)
DS-700-20	508.0 (20")	530.2 (20.87")	238.1	352.4	476.2	217 (478 lbs)
DS-700-22	558.8 (22")	581.0 (22.87")	263.5	403.2	527.0	206 (454 lbs)
DS-700-24	609.6 (24")	631.8 (24.87")	288.9	454.0	577.8	194 (428 lbs)
DS-700-26	660.4 (26")	682.6 (26.87")	314.3	504.8	628.6	180 (397 lbs)
DS-700-28	711.2 (28")	733.4 (28.87")	339.7	555.6	679.4	164 (361 lbs)

* Load ratings listed are approximate, weights will vary depending on application.

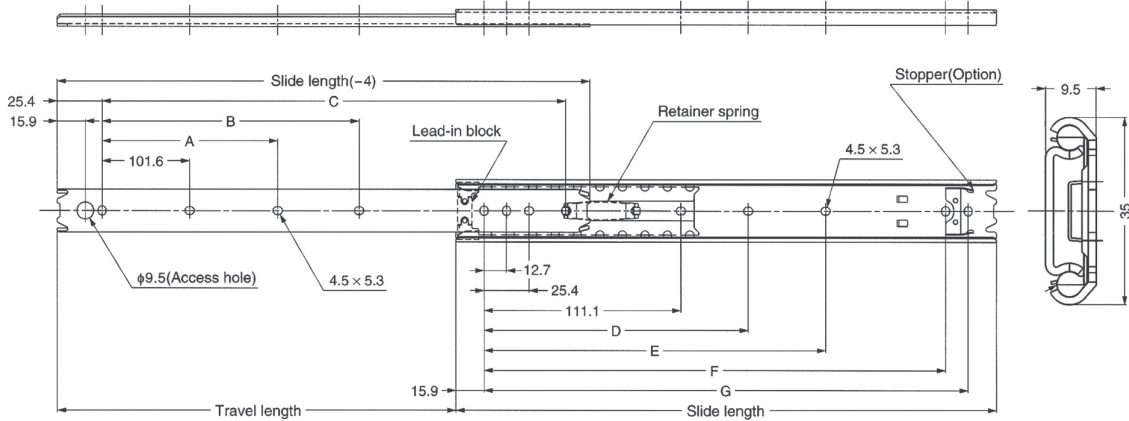
Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

TO ORDER: WWW.SPDHARDWARE.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

DRAWER SLIDES

DS-SSR1 SERIES

- 304 stainless steel
- Two member, 3/4 extension slide
- Features front disconnect
- Friction brake stop (slide extends, then another tug on the drawer releases slides)
- Non-Handed
- Use M4 bind or truss head screws (not included)



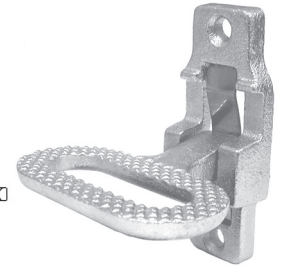
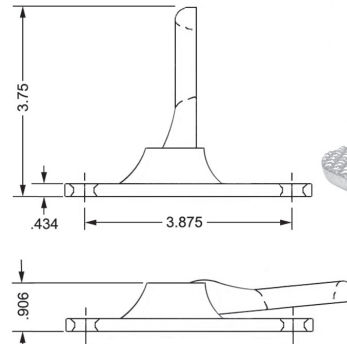
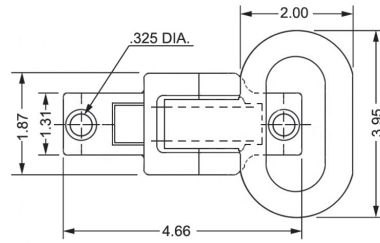
Part Number	Slide Length	Travel Length	A	B	C	D	E	F	G	Load Rating kg/lbs (Pair)
DS-SSR1-12	304.8 (12")	228.6 (9")	-	152.4	254.0	-	149.2	260.3	273.0	49 (107 lbs)
DS-SSR1-14	355.6 (14")	279.4 (11)	-	203.2	304.8	-	200.0	311.1	323.8	47 (103 lbs)
DS-SSR1-16	406.4 (16")	304.8 (12")	-	254.0	355.6	-	250.8	361.9	374.6	43 (94 lbs)
DS-SSR1-18	457.2 (18")	330.2 (13")	203.2	304.8	406.4	212.7	301.6	412.7	425.4	41 (90 lbs)
DS-SSR1-20	508.0 (20")	381.0 (15")	228.6	355.6	457.2	238.1	352.4	463.5	476.2	37 (81 lbs)
DS-SSR1-22	558.8 (22")	406.4 (16")	254.0	406.4	508.0	263.5	403.2	514.3	527.0	34 (74 lbs)
DS-SSR1-24	609.6 (24")	431.8 (17")	279.4	257.2	558.8	288.9	454.0	565.1	577.8	30 (66 lbs)
DS-SSR1-26	660.4 (26")	482.6 (19")	304.8	508.0	609.6	314.3	504.8	615.9	628.6	27 (59 lbs)
DS-SSR1-28	711.2 (28")	508.0 (20")	330.2	558.8	660.4	339.7	555.6	666.7	679.4	25 (55 lbs)

* Load ratings listed are approximate, weights will vary depending on application.

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

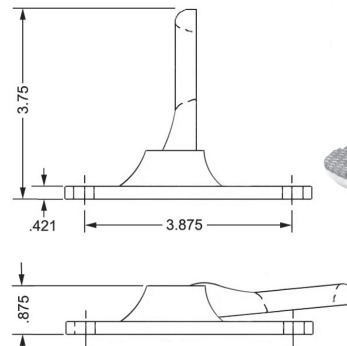
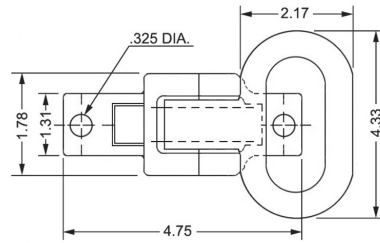
FOLDING ASSISTS

- Designed for use on trucks, truck bodies, buses, and trailers
- Spring holds assist in open or closed position without rattling



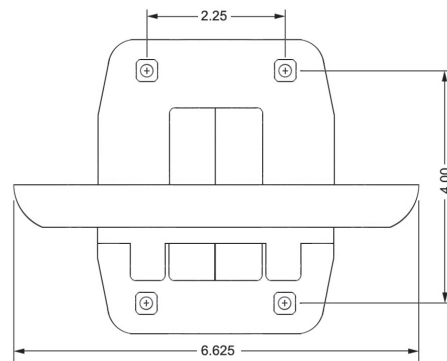
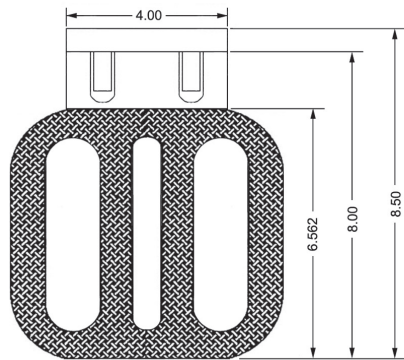
Part Number	Material	Finish
FS900	Malleable Iron	Zinc Plate
FS900BZ	Malleable Iron	Black Zinc

- Designed for use on trucks, truck bodies, buses, and trailers
- Spring holds assist in open or closed position without rattling



Part Number	Material	Finish
FS900X	Stainless Steel	Polished

- Conforms to NFPA 1901 and FHA, 49CFR specifications
- Tested to withstand over 2000 lbs. static load
- 42 square inches of step pad area
- Supplied with molded rubber mounting gasket
- Springs hold assist firmly in open or closed position without rattling
- Assist will not rust or corrode



Part Number	Material	Finish
FS11931	Die-Cast Aluminum	Chrome Plate

Additional products and product lines are available. For a complete range of designs and options, please check www.spdhardware.com. Parts are designed for fit and functional requirements. Dimensions shown are for reference, actual part data and form may vary from that shown. For custom sizes, finish, bolt pattern, or other technical requirements, please contact us.

ROLL-UP DOOR HARDWARE

ASRaymond, a Division of Barnes Group now offers genuine roll-up door hardware and accessories. Whether you are looking for a replacement hinge or a complete operator assembly, we have the parts you need and the quality you demand. Our extensive inventory includes drop-in hardware replacements for many of the door systems in the market.

We can supply as little as one piece of hardware or custom tailor a stocking program to meet your needs, whether you are a small repair shop or a large retail supplier of replacement hardware. Contact your ASRaymond representative today for more details. In addition to the hardware shown, we can also supply custom engineered solutions to meet your design needs. We have a large inventory of truck hardware that includes seals, locks, handles and other miscellaneous items.



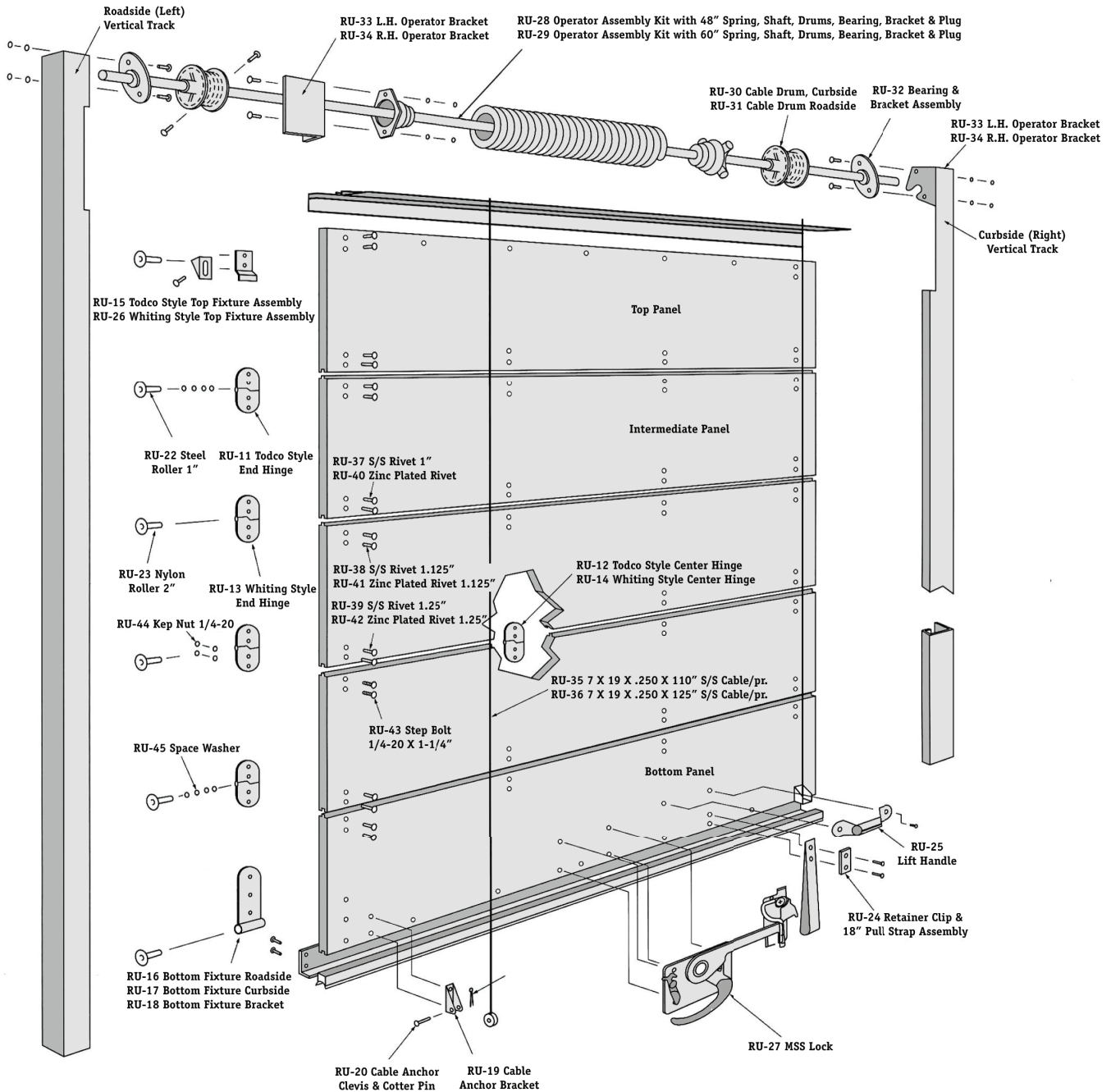
Roll-Up Door Cross Reference Chart

Cross reference chart available with other manufacturers' descriptions and part numbers. Please contact ASRaymond's engineering team.

PART NUMBER	DESCRIPTION
RU-11	End Hinge
RU-12	Todco Style Center Hinge
RU-13	End Hinge
RU-14	W Style Center Hinge
RU-15	Top Fixture Assembly
RU-16	Bottom Fixture - Roadside
RU-17	Bottom Fixture - Curbside
RU-18	Bottom Fixture - Bracket
RU-19	Cable Anchor Bracket
RU-20	Cable Anchor Cotter & Clevis Pin
RU-22	1.00" Steel Roller
RU-23	2.00" Nylon Roller
RU-24	18" Pull Strap Assembly
RU-25	Lift Handle
RU-26	Top Fixture Assembly
RU-27	MSS Lock Assembly
RU-28	Operator Assembly With 48" Spring
RU-29	Operator Assembly With 60" Spring
RU-30	Cable Drum - Curbside
RU-31	Cable Drum - Roadside
RU-32	Bearing & Bracket Assembly
RU-33	Left Hand Operator Bracket
RU-34	Right hand Operator Bracket
*RU-35	7 X 19 X .250 X 110" SS Cable Pair
*RU-36	7 X 19 X .250 X 125" SS Cable Pair
RU-37	1.00" SS Tubular Rivet
RU-38	1.125" SS Tubular Rivet
RU-39	1.25" SS Tubular Rivet
RU-40	1.00" Steel Zinc Plate Tubular Rivet
RU-41	1.125" Steel Zinc Plate Tubular Rivet
RU-42	1.25" Steel Zinc Plate Tubular Rivet
RU-43	1/4-20 X 1-1/4" Step Bolt
RU-44	1/4-20 Self Locking "Kep" Nut
RU-45	Space Washer

* Please note that RU-35 and RU-36 stainless steel cables are sold by the pair and not each.*

ROLL-UP DOOR HARDWARE



*Door panels are available in various sizes, materials and finishes. Please contact our Engineering Team for further information.

ALMEN STRIPS FROM ASRAYMOND

Supply Your Peening Operation

For the past 25 years, ASRaymond has been the world's leading supplier of Almen strips. Now you can get Almen strips, gauges and holders direct from ASRaymond, along with the proven quality, service and reliability that has made us the supplier of choice for large and small industrial users.

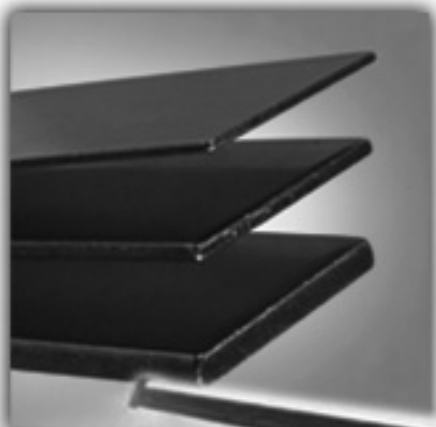
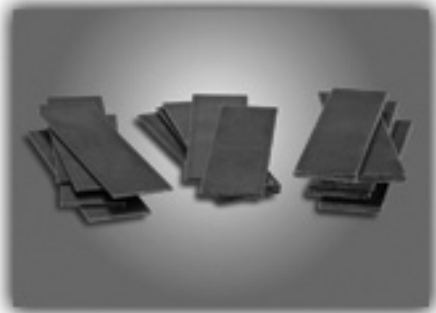
ASRaymond offers a full range of Almen products:

- Almen strips in three size - A, N & C -, packaged in convenient quantities for any job
- Almen strip holders and ultra hardened fasteners that offer an extra long operating life
- Almen strip test gauge, including either a curved or flat calibration block

Our Almen strips are designed to meet the stringent demands of the automotive and aerospace industries, and are certified to either SAE J442 or AMS 2432 standards. In fact, choose ASRaymond Almen strips for any shot peening job, no matter how large or small.

Raymond **SPEC**
Stock Precision Engineered Components

ASRaymondTM



Proven Performance from ASRaymond

ASRaymond's Almen strips and supplies are built for high quality and long service. All of our Almen strips are certified to SAE J442 or AMS 2432 standards for use in the automotive or aerospace industries, as well as in any shot peening process.

Immediate delivery is available for N and A type strips in 50-count packaging and C type Almen strips in 25-count packages. Bulk packaging is also available.

Premium Grade Almen Strips (per SAE J442)

Part Number	Strip Type	Thickness (in/mm)	Flatness*	Hardness
AS-N-PREM	N	.031 (.79) ± .001 (.025)	± 0.0010 (0.025)	HRA 72.5-76
AS-A-PREM	A	.051 (1.30) ± .001 (.025)	± 0.0010 (0.025)	HRC 44-50
AS-C-PREM	C	.094 (2.39) ± .001 (.025)	± 0.0010 (0.025)	HRC 44-50

Aerospace Grade Almen Strips (per AMS-2432)

Part Number	Strip Type	Thickness (in/mm)	Flatness*	Hardness
AS-N-AERO	N	.031 (.79) ± .0005 (.013)	± 0.0005 (0.013)	HRA 73-74.5
AS-A-AERO	A	.051 (1.30) ± .0005 (.013)	± 0.0005 (0.013)	HRC 45-48
AS-C-AERO	C	.094 (2.39) ± .0005 (.013)	± 0.0005 (0.013)	HRC 45-48

*as measured with Almen #2 gauge

- Material: SAE/AISI 1070 cold rolled steel
- Length: 3.00" ± 0.015" (76.2 ± 0.38mm)
- Width: 0.745"-0.750" (18.92-19.05mm)

Almen Strip Holders and Socket Head Cap Screws

Part Number	Product
AS-HOLD-14	Almen strip holder per SAE J442
495029	Socket head cap screws for holder

Our socket head cap screws are 15 percent stronger than the industry standard. In addition, they offer

- 213 ksi (1470 Mpa) minimum tensile strength
- 191 ksi (1317 Mpa) minimum yield strength
- 40 HRC minimum hardness

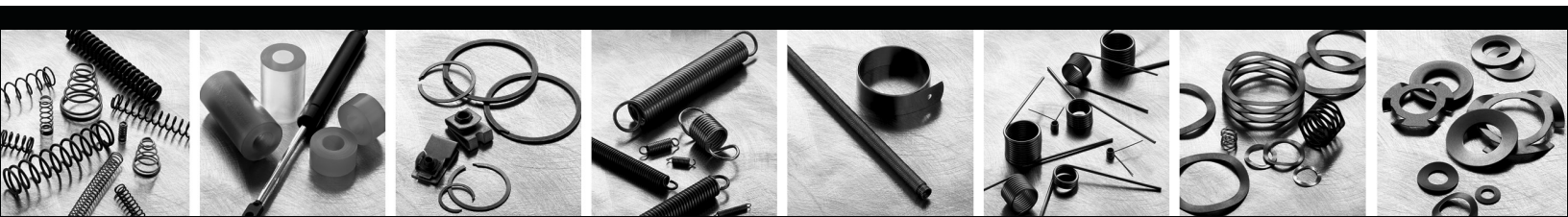
Almen Strip Test Gauges

Part Number	Product
AS-GAUGE-1	Almen strip gauge – standard
AS-CALIB-F	Test gauge calibration block – flat
AS-CALIB-C	Test gauge calibration block – curved



Raymond **SPEC**
Stock Precision Engineered Components

ASRaymond™



TO ORDER: WWW.ASRAYMOND.COM OR SEE PHONE & FAX NUMBERS ON BACK COVER

SPEC 309

CUSTOM-ENGINEERED PARTS AND SPECIAL ORDERS

If you are looking for a special spring, spring washer, assembly or engineered component and cannot find it in this catalog, let us know, and we will design it for you, to your specifications. Our unique technical capabilities and resources allow us to provide custom-engineered parts and components to a multitude of industries and applications, ranging from aerospace to medical devices to food service.

Your Special Order is very important to us: when you deal with ASRaymond, you can be certain that we will assist you with high quality custom-engineered parts, from design right into production – at the right price and to your delivery requirements.

Give us a call at (800) 872-7732, and let our Expertise work for you.

Below is a snapshot of our various capabilities:

Compression Springs

- Resists applied push forces
- Cylindrical, Conical, and Barrel shaped
- Wire diameter: .004" to 3"
- Typical applications include transpiration and medical equipment

Extension Springs

- Resists applied pull forces
- Various end types available
- Wire diameter: .004" to .625"
- Typical applications include dental furniture, attic door hatches, and playground equipment

Torsion Springs

- Resists applied torque
- Single or double wound
- Open or closed wound
- Various end types available
- Wire diameter: .005" to .625"
- Typical applications include truck doors, ATM machines and printers

Die Springs

- Resists applied compression forces
- Hole diameter: .375" to 4"
- Wire shapes: D, Square, Round, Rectangular
- Typical applications include stamping and molding dies

Constant Force Springs

- Used as counterbalance
- Inside diameter mounted on drum – self contained outer diameter
- Typical applications include window shades and display racks

Power Springs

- Resists applied torque
- Contained by arbor and case
- Coils contact each other
- Typical applications include motors and retractor mechanisms

Spiral Torsion Springs

- Resists applied torque
- Self contained
- Coils do not contact each other
- Typical applications include motors and timing mechanisms

Garter Springs

- Garter springs are extension spring with ends connected
- Exerts Radial Forces
- Outside coil diameter: .039" to .250"
- Wire diameter: .006" to .034"
- Primary application is oil seals

Belleville Washers

- High forces in small deflections
- Also known as conical or disc washers
- OD up to 24"
- Linear and non-linear force/deflection curves
- Made to fit specified rod and/or hole fit
- Assembled in parallel or series to modify force and deflection
- Typical applications include stamping dies and clutches

Curved Washers

- Exert light thrust loads
- Made to fit specified rod and/or hole fit
- Often used to absorb axial end play

Wave Washers

- Exert moderate thrust loads
- Made to fit specified rod and/or hole fit
- Often used for bearing preload

Wire Forms

- Non-traditional force applications
- Wire diameter: .004" to .625"
- Typical applications include nozzles and clamps

Stampings

- Per customer specification
- Material thickness: .010" to .375"

Materials:

- Carbon steels: Music wire, hard drawn, oil tempered
- Pre plated music wire: Tin and Zinc
- Alloy steels: Chrome silicon – commercial and valve quality
- Stainless Steels: 302, 316, 17-7
- Exotic: Inconel® 600, 718, and X750, Hastelloy®, Beryllium Copper, titanium, etc.....
- Round, rectangular, and square wire available

Special Processing (see more information on page 312):

- Passivation
- Zinc, cadmium, nickel, tin plating and black oxide
- Dacromet®, Dacroseal, Geomet®, Dip and Spin.
- Enamel, epoxy and temperature-indicator paint
- Shot peening
- Liquid penetrant and magnetic particle inspection
- Special packaging available (including tacky board)
- Mechanical Zinc Plate*

* Standard finish for high carbon steel is plain finish. Stainless steel is supplied in plain finish. On special order, high carbon steel washers may be mechanically plated, a process which substantially reduces the possibility of hydrogen embrittlement. Recommendations for specific applications will be made on request. See page 312 for alternative finishes.

Special Springs

Company: _____
 Address: _____
 City: _____
 State: _____
 Attn: _____
 Phone: _____ Fax: _____
 Email: _____

In Office Use Only

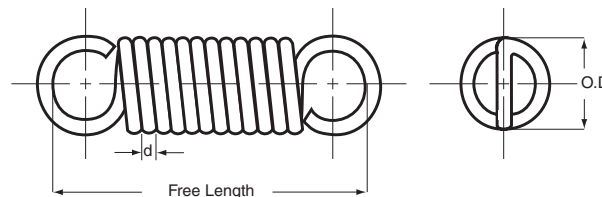
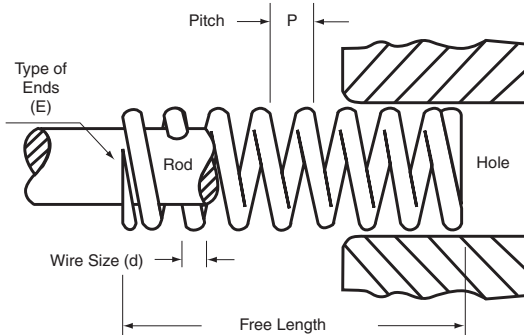
Date Received: _____
 Date Quoted: _____
 Quoted By: _____

Compression

Quantity Required
Wire Size
Type of Wire
Outside Diameter
Inside Diameter
Free Length
Hole Size
Rod Size
No. of Coils
Pitch
Rate
Solid Height
Direction of Coils
Type of Ends
Test Loads
Print Available?
Finish
Comments

Extension

Quantity Required
Wire Size
Type of Wire
Outside Diameter
Inside Diameter
Free Length
Initial Tension
No. of Coils
Pitch
Rate
Maximum Extension
Direction of Coils
Type of Loops
Test Loads
Print Available?
Finish
Comments



CALL OUR SPECIAL ORDER DEPARTMENT FOR DESIGN ASSISTANCE AND QUOTES: 1-800-872-7732

ASRaymond - SPEC has the largest line of high-quality, precision-engineered stock springs and washers on the market today. They are all immediately available per the specifications indicated in these catalog pages. But our commitment to you does not stop here. We recognize that your application

might include a special plating or even a secondary color coating – all available from ASRaymond SPEC as well. We offer a variety of specific processes and treatments, that we have summarized in the following tables.

Finish	Sub-Finish	Code	Notes	
Electrodeposited Zinc	As Plated	01	Not recommended for: Heavy Duty Compression Springs, Belleville Spring Washers, Metric Disc Springs, Curved Spring Washers, Larger Wave Spring Washers (W3118-035 & up), MultiWave Washers, and Finger Washers	
	w/ Clear Chromate	02		
	w/ Yellow Chromate	03		
Electrodeposited Cad	As Plated	04		
	w/ Clear Chromate	05		
	w/ Yellow Chromate	06		
Electrodeposited Nickel	As Plated	07		
Electroless Nickel	As Plated	08		
Electrodeposited Tin	As Plated	09		
Electrodeposited Zinc-Nickel	w/ Clear Chromate	10		
	w/ Yellow Chromate	11		
Mechanical Zinc	As Plated	12	Not recommended for: MultiWave Washers or Finger Washers	
	w/ Clear Chromate	13		
	w/ Yellow Chromate	14		
Mechanical Tin	As Plated	15		
	w/ Yellow Chromate	16		
Mechanical Zinc-Nickel	As Plated	17		
Vacuum Cad	As Plated	18		
	w/ Yellow Chromate	19		
Zinc Phosphate and Oil	As Plated	20		Not recommended for: Belleville Spring Washers, Metric Disc Springs, Curved Spring Washers, and Stainless MultiWave Washers
Black Oxide and Oil	As Plated	21		
Dacromet 320®	As Plated	22	Not recommended for: MultiWave Washers	
Passivation		23	Not recommended for: Steel Parts (of all types), and MultiWave Washers	
Dacromet 320® with Plus Coating		25	Not recommended for: Continuous length extension springs, Fasteners, MultiWave Washers	
Thermadep® Paint		26	Not recommended for: Continuous length extension springs, Fasteners	
Painted Finish for Color Coating		27		
Electrodeposited Cadmium Plate	(QQ-P-416)	28	Not recommended for: Heavy Duty Compression Springs, Belleville Spring Washers, Metric Disc Springs, Curved Spring Washers, Larger Wave Spring Washers (W3118-035 & up), MultiWave Washers, and Finger Washers	
	With Yellow Chromate, supplementary Coating (QQ-P-416)	29		
Tacky Board		30	Not recommended for: Heavy Duty Compression Springs, Continuous Springs, and Fasteners	
RoHs Electrodeposited Zinc Plate	As Plated	31	Not recommended for: Heavy Duty Compression Springs, Belleville Spring Washers, Metric Disc Springs, Curved Spring Washers, Larger Wave Spring Washers (W3118-035 & up), MultiWave Washers, and Finger Washers	
	With Clear Chromate Supplementary Coating	32		
	With Yellow Chromate Supplementary Coating	33		
RoHs Electrodeposited Nickel	As Plated	34		
RoHs Passivation		35	Not recommended for: Steel Parts (of all types)	
Dip and Spin Painting		36		
Passivation	ASTM A967-Citric	37	Not recommended for: Steel Parts (of all types)	
RoHs Mechanical Zinc Plate	With Yellow Chromate Supplementary Coating	38	Not recommended for: Heavy Duty Compression Springs, MultiWave Washers, and Finger Washers	
Geomet® Coating		39	Not recommended for: MultiWave Washers	
RoHs Mechanical Zinc Plate	With Clear Chromate Supplementary Coating	40	Not recommended for: Heavy Duty Compression Springs, MultiWave Washers, and Finger Washers	
Temperature Indicating Coating		41	Not recommended for: MultiWave Washers, and Retaining Rings	
High Performance Teflon Coating		42	Not recommended for: Fasteners	

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**WE NOW HAVE A FULL LINE OF 316 STAINLESS STEEL
COMPRESSION SPRINGS, SEE PAGE 48.**

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CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area for handwritten notes, consisting of multiple horizontal lines.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area for handwritten notes, consisting of multiple horizontal lines.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area for handwritten notes, consisting of multiple horizontal lines.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area with horizontal lines for notes.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area containing horizontal lines for notes.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Area for handwritten notes, consisting of multiple horizontal lines.

CHECK OUR WEB SITE. WE ARE ON-LINE AT WWW.ASRAYMOND.COM.

Blank lined area for notes.

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TERMS OF SALE

1. With respect to goods purchased by Buyer from Seller ("Goods"), no contract exists until Buyer places order for delivery and such order is accepted by Seller's acknowledging receipt of the order, by Seller's commencement of work on the Goods ordered, or by Seller's shipment of the Goods, whichever occurs first. Any acceptance will be limited to the express terms contained on the face hereof. Additional or different terms in Buyer's form or any attempt by Buyer to vary in any degree any of the terms of this of this quotation shall be deemed material and are objected to and rejected, but this shall not prevent the formation of a contract between Buyer and Seller unless such variances are in the terms of the description, quantity, price or delivery schedule of the goods, and the order shall be deemed accepted by Seller without said additional or different terms.

2. All agreements are contingent upon strikes, accidents and other reasons for delay beyond Seller's control.

3. Where a separate charge is made for specially designed tools and dies, Seller will maintain such tools and dies without further cost to Buyer for the life of such tool or die so long as the part remains active and the design is not changed and Seller will not use such tools and dies for others without Buyer's permission, but Buyer acquires no right to remove any such tools or dies from Seller's factory.

4. Seller warrants to Buyer that the Goods purchased by Buyer from Seller shall be free from defects in material and workmanship. This warranty is the only warranty applicable to the Goods. THERE ARE NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE HEREBY DISCLAIMED.

5. All Goods shall be inspected by Buyer when received and Seller shall not be liable for any defect unless notified in writing within 60 days after delivery.

6. Seller's liability for breach of warranty shall be limited solely and exclusively to repairing or replacing, at Seller's option, the defective Goods. In no event shall the liability of Seller for breach of any contractual provision relating to the Goods exceed the purchase price of the Goods quoted herein. In no event shall Seller be liable for any special, incidental or consequential damages arising out of Buyer's use or sale of the Goods or Seller's breach of any contractual provisions relating to the Goods, including but not limited to any loss of profits or production by Buyer. Any action resulting from any breach by Seller must be commenced within one year after the cause of action accrued.

7. Except to the extent caused by Seller's breach of warranty, Buyer shall indemnify and hold harmless Seller, its employees, officers and directors, and their respective successors and assigns, (collectively, "Indemnities") from and against any and all liability, damages, claims, causes of action, losses, costs and expenses (including attorneys' fees) of any kind (collectively,

"Damages") arising out of injuries to any person (including death) or damage to any property caused by or related to the Goods or any negligent act or omission of Buyer, its employees or agents. Buyer shall indemnify and hold harmless each of the Indemnities from and against any and all Damages, royalties and license fees arising from or for infringement of any patent by reason of any sale or use of the Goods or the manufacture of the Goods to Buyer's specifications or sample. Upon the tendering of any of the foregoing suits or claims to Buyer, Buyer shall defend the same at Buyer's expense. The foregoing obligations of Buyer shall apply whether Seller or Buyer defends such suits or claim.

8. Seller reserves the right to over and under ship by not more than 10% of specified quantity.




9. Small quantities are considered prototype quantities and cannot be returned since the cost of re-inspecting and handling them is generally higher than the value of the parts. Larger quantities may not be returnable depending on the ability to re-sell these parts within a reasonable time period. Special runs are not returnable. All returns must be authorized and an Authorization Number is required. Please contact our Customer Service at springsales@asraymond.com or by phone at 419-891-9292. Unauthorized returns will be returned at customer's expense. All authorized returns must be in their original packaging and labeling to insure lot control integrity. Parts cannot be altered or used in any fashion. Parts from separate lots cannot be mixed. A restocking fee will be charged to authorized returns. Additional charges may be required for re-inspection, cleaning and repackaging. Credit for damaged parts will not be issued. All returns will be shipped to the authorized return center pre-paid by sender. Actual credit issued will be for the quantity of acceptable parts at the original piece price, less the restocking charge, less the original freight and any other charges that are necessary to return the parts to a saleable condition.

10. Please note that all indicated prices on our web site are in US\$, and are for standard product shipped within the continental USA, including Alaska. For Canada orders, please call 1-800-263-4256 - Fax (419) 891-5979. For all other countries, please contact our Customer Service Department as indicated above or our International Distributors listed on page 319.

The product data reported in this catalog represents typical values and is not intended to duplicate any specific customers test results. For product-specific AQL's, contact your ASR sales representative, as indicated tolerances may not apply. The catalog data presented is intended to be used as a guide only. It is not intended to be used to determine the suitability of the product for any specific customer application. AS Raymond strongly suggests that each customer thoroughly test the AS Raymond product to determine the actual suitability of the AS Raymond product in their specific application. The customer is responsible for determining the suitability of AS Raymond products in their applications. For more detailed information about these catalog products please contact your AS Raymond sales representative.

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