DIEMAX™ L
DIE SPRINGS

Anchor Lamina

DIEMAX™ L DIE SPRINGS

Die Spring Basics

A die spring is a highly engineered mechanical spring with specific wire designs that stores energy elastically by resisting movement when pressure is applied. The desired wire segment is selected to produce the maximum amount of force within a minimal amount of space.

Altering Die Springs Each die spring is carefully engineered to perform within specific applications. Under no circumstances should you alter a die spring. Altering a die spring will change its designed characteristics and allows additional stresses to occur causing early failure. Grinding on the die spring not only changes the spring's original properties, but the heat from grinding can change the temper of the material and negatively affect the spring's performance.

Compressed Length The sum of the preload travel and operating travel.

Corrosion Frequently, die spring failure can be traced to corrosive elements which affect the surface of the spring's material, causing premature failure. Be aware of conditions that may affect the spring's surface such as rust, lubricants, soaps, and chemicals. Clean, protected die springs provide the best performance.

Cycle Rate The more rapidly a spring is cycled, the greater the need to operate in the recommended long life deflections listed in the catalog.

Die Spring Guidance Make sure that the hole size and/or rod size match the die spring's operating dimensions.

Duty Ranges We offer 4 separate duty ranges to best suit your applications – Medium Duty, Medium Heavy Duty, Heavy Duty, and Extra Heavy Duty. Do not mix springs of different duties.

Free Length The length of the spring without any load or force applied.

Hole Diameter Die springs are designed to be used in a hole dimension as indicated in the catalog. The actual O.D. will be somewhat smaller to prevent interference.

Material In our case, the spring material is High Tensile Strength Chrome Silicon Material. We use an optimal rectangular wire design. The maximum rated service temperature is 425°F (218°C).

Operating Travel Operating travel is the deflection of the spring where it is operating between the preload and the total travel of the spring during operation. This is the area where the actual work is performed.

Preload The initial force which is applied to a die spring. Preload is recommended to compress the first coils at each end where additional stresses are present because of the turn-down of the end coils. Applying a preload will extend the life of the spring.

Quality Our die springs are manufactured in an ISO9001-2000 facility.

Rates Die spring rates are normally listed as *Pounds per Inch of deflection* (i.e. 60 pounds load per inch.) As a die spring is deflected, the loads will increase for the amount of travel it is deflected. That is, a spring with a 60lb/inch rate will produce 60 lbs of resistance at 1" of travel, 120 lbs. at 2" of travel, etc. For purposes of simplification, the loads in our catalog are shown in pounds needed to deflect a spring 1/10th of an inch. Simply multiply the rates given by 10 to determine the actual spring rate.

Rod Diameter Die springs are designed to fit over a rod for guidance and the actual I.D. of the spring is actually somewhat larger to fit over a rod without interference.

Solid Height Solid height is the height of the spring when all of the coils are totally collapsed to solid. You never want to operate a die spring close to this condition.

Inch Die Springs

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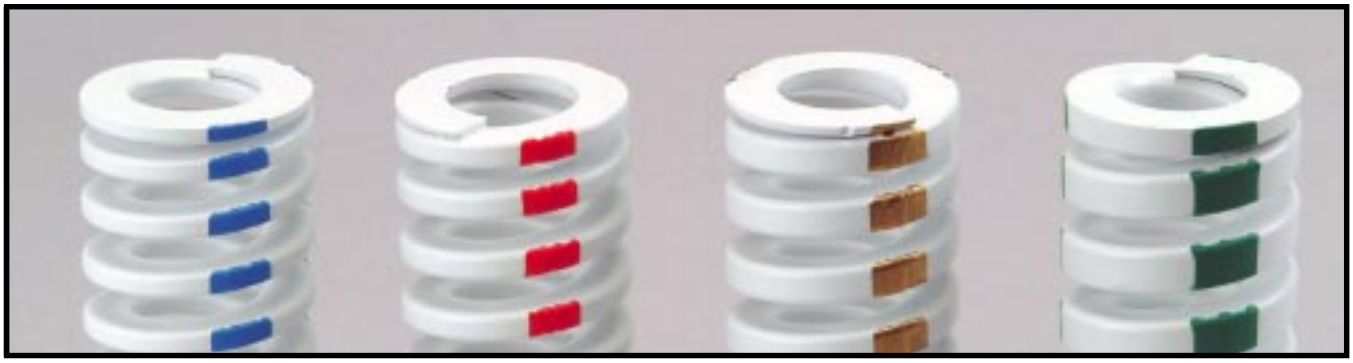
Die Springs Product Features

- For same day shipments, we stock them so you don't have to
- Inch sizes manufactured to industry standard colors
- Yields reliable, trouble-free performance
- Manufactured in an ISO9001-2000 certified facility
- High tensile strength chrome silicon material
- Optimal rectangular wire design



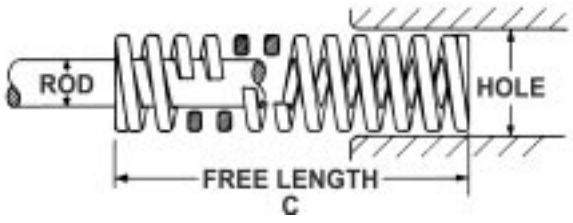
MEDIUM DUTY
Blue Color Coded

MEDIUM HEAVY DUTY
Red Color Coded

HEAVY DUTY
Gold Color Coded

EXTRA HEAVY DUTY
Green Color Coded

Medium Duty Die Springs



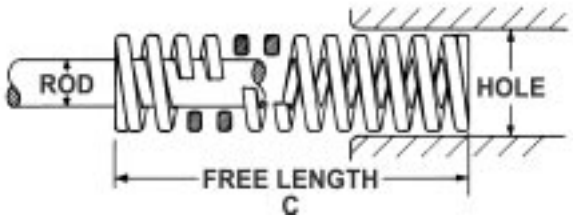
Color coded BLUE

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (25% of C)		Total Deflection Recommended for Avg. Life (30% of C)		Maximum Operating Deflection (40% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
3/8	3/16	1	M100L	6.3	16	0.25	19	0.30	25	0.40	24
		1 1/4	M100AL	5.0	16	0.31	19	0.38	25	0.50	24
		1 1/2	M101L	4.2	16	0.37	19	0.45	25	0.60	24
		1 3/4	M101AL	3.6	16	0.43	19	0.52	25	0.69	24
		2	M102L	3.1	15	0.50	18	0.60	25	0.80	24
		2 1/2	M103L	2.6	16	0.63	19	0.76	26	1.01	24
		3	M104L	2.1	16	0.75	19	0.90	25	1.20	24
		12	M105L	0.5	15	3.00	18	3.60	24	4.80	8
1/2	9/32	1	M110L	10.9	27	0.25	32	0.30	43	0.40	24
		1 1/4	M110AL	9.4	30	0.31	36	0.38	47	0.50	24
		1 1/2	M111L	7.8	29	0.37	35	0.45	47	0.60	24
		1 3/4	M111AL	6.6	29	0.43	34	0.52	46	0.69	24
		2	M112L	5.8	29	0.50	35	0.60	47	0.80	24
		2 1/2	M113L	4.7	29	0.63	35	0.76	47	1.01	24
		3	M114L	3.6	27	0.75	32	0.90	43	1.20	24
		3 1/2	M115L	3.1	27	0.88	32	1.05	43	1.40	24
		4 1/2	M115AL	2.4	27	1.13	32	1.35	43	1.80	24
		5 1/2	M115BL	1.9	26	1.38	31	1.65	42	2.22	24
		6 1/2	M115CL	1.6	26	1.62	31	1.95	42	2.60	24
		7 1/2	M115DL	1.4	26	1.88	31	2.25	42	3.00	24
		12	M116L	0.8	25	3.00	30	3.60	40	4.80	8
5/8	11/32	1	M120L	18.0	44	0.25	53	0.30	71	0.40	24
		1 1/4	M120AL	13.4	42	0.31	51	0.38	68	0.50	24
		1 1/2	M121L	12.0	45	0.37	54	0.45	72	0.60	24
		1 3/4	M121AL	10.0	43	0.43	52	0.52	69	0.69	24
		2	M122L	9.3	47	0.50	56	0.60	75	0.80	24
		2 1/2	M123L	7.2	45	0.63	54	0.76	73	1.01	24
		3	M124L	5.9	44	0.75	53	0.90	71	1.20	24
		3 1/2	M125L	5.3	46	0.88	56	1.05	74	1.40	24
		4	M126L	4.7	47	1.00	57	1.20	75	1.61	24
		12	M127L	1.5	45	3.00	54	3.60	72	4.80	8
3/4	3/8	1	M1L	32.0	79	0.25	94	0.30	126	0.40	24
		1 1/4	M1AL	24.4	77	0.31	92	0.38	123	0.50	24
		1 1/2	M2L	19.3	72	0.37	87	0.45	115	0.60	24
		1 3/4	M2AL	16.2	70	0.43	84	0.52	112	0.69	24
		2	M3L	14.2	71	0.50	86	0.60	114	0.80	24
		2 1/2	M4L	11.0	69	0.63	83	0.76	111	1.01	24
		3	M5L	9.2	69	0.75	83	0.90	110	1.20	24
		3 1/2	M6L	7.7	67	0.88	81	1.05	108	1.40	24
		4	M7L	6.8	68	1.00	82	1.20	109	1.61	24
		4 1/2	M8L	6.0	67	1.12	81	1.35	108	1.80	24
		5	M9L	5.3	66	1.25	80	1.50	106	2.00	24
		5 1/2	M10L	4.9	67	1.38	80	1.65	107	2.20	24
		6	M11L	4.5	67	1.50	81	1.80	108	2.39	24
		6 1/2	M11BL	4.1	66	1.62	80	1.95	107	2.60	24
		7 1/2	M11CL	3.5	66	1.88	79	2.25	105	3.00	24
		12	M11AL	2.2	65	3.00	78	3.60	104	4.80	8

Inch Standard

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (25% of C)		Total Deflection Recommended for Avg. Life (30% of C)		Maximum Operating Deflection (40% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
1	1/2	1	M12L	61.2	151	0.25	181	0.30	241	0.40	24
		1 1/4	M12AL	46.2	146	0.31	175	0.38	233	0.50	24
		1 1/2	M13L	37.0	138	0.37	166	0.45	221	0.60	24
		1 3/4	M13AL	30.6	133	0.43	159	0.52	212	0.69	24
		2	M14L	26.5	133	0.50	160	0.60	213	0.80	24
		2 1/2	M15L	20.4	129	0.63	154	0.76	206	1.01	24
		3	M16L	16.8	126	0.75	151	0.90	201	1.20	24
		3 1/2	M17L	14.1	124	0.88	148	1.05	198	1.40	24
		4	M18L	12.1	121	1.00	146	1.20	194	1.61	24
		4 1/2	M19L	10.7	120	1.12	144	1.35	192	1.80	24
		5	M20L	9.6	120	1.25	144	1.50	192	2.00	24
		5 1/2	M21L	8.7	120	1.38	144	1.65	192	2.20	24
		6	M22L	8.0	120	1.50	144	1.80	191	2.39	24
		7	M23L	6.9	121	1.75	145	2.10	193	2.80	16
		8	M24L	6.0	120	2.00	144	2.40	192	3.20	16
		12	M24AL	4.0	120	3.00	144	3.60	192	4.80	8
1 1/4	5/8	1 1/2	M36L	57.9	217	0.37	260	0.45	346	0.60	16
		1 3/4	M36AL	47.5	206	0.43	247	0.52	329	0.69	16
		2	M37L	40.7	204	0.50	245	0.60	327	0.80	16
		2 1/2	M38L	31.4	198	0.63	237	0.76	316	1.01	16
		3	M39L	26.3	197	0.75	236	0.90	315	1.20	16
		3 1/2	M40L	22.2	194	0.88	233	1.05	311	1.40	16
		4	M41L	19.2	193	1.00	231	1.20	308	1.61	16
		4 1/2	M42L	16.9	190	1.12	228	1.35	303	1.80	16
		5	M43L	15.0	188	1.25	225	1.50	300	2.00	16
		5 1/2	M44L	13.5	186	1.38	223	1.65	298	2.20	16
		6	M45L	12.3	184	1.50	221	1.80	294	2.39	16
		7	M46L	10.4	182	1.75	219	2.10	292	2.80	16
		8	M47L	9.1	182	2.00	218	2.40	291	3.20	16
		10	M48L	7.2	180	2.50	216	3.00	288	4.00	8
		12	M48AL	5.9	177	3.00	213	3.60	283	4.80	8
1 1/2	3/4	2	M49L	60.3	303	0.50	363	0.60	484	0.80	16
		2 1/2	M50L	45.8	289	0.63	346	0.76	462	1.01	16
		3	M51L	37.5	281	0.75	337	0.90	449	1.20	16
		3 1/2	M52L	31.8	279	0.88	334	1.05	446	1.40	16
		4	M53L	27.3	274	1.00	329	1.20	439	1.61	16
		4 1/2	M54L	24.1	270	1.12	324	1.35	433	1.80	16
		5	M55L	21.6	270	1.25	324	1.50	432	2.00	16
		5 1/2	M55AL	19.4	267	1.38	321	1.65	428	2.20	16
		6	M56L	17.6	263	1.50	316	1.80	421	2.39	16
		7	M56AL	15.0	263	1.75	315	2.10	420	2.80	16
		8	M57L	12.9	258	2.00	309	2.40	412	3.20	16
		10	M58L	10.3	258	2.50	309	3.00	412	4.00	8
		12	M58AL	8.4	252	3.00	303	3.60	403	4.80	8
2	1	2 1/2	M70L	89.9	566	0.63	680	0.76	906	1.01	16
		3	M71L	72.0	539	0.75	646	0.90	862	1.20	16
		3 1/2	M72L	60.2	527	0.88	633	1.05	844	1.40	16
		4	M73L	51.2	514	1.00	617	1.20	822	1.61	16
		4 1/2	M74L	44.9	504	1.12	605	1.35	806	1.80	16
		5	M75L	40.0	500	1.25	600	1.50	800	2.00	16
		5 1/2	M76L	36.0	496	1.38	595	1.65	794	2.20	16
		6	M77L	32.8	491	1.50	589	1.80	785	2.39	16
		7	M79L	27.8	487	1.75	584	2.10	779	2.80	8
		8	M80L	23.8	476	2.00	571	2.40	761	3.20	8
		10	M82L	18.8	470	2.50	564	3.00	752	4.00	8
		12	M83L	15.5	465	3.00	558	3.60	744	4.80	8

Medium Heavy Duty Die Springs



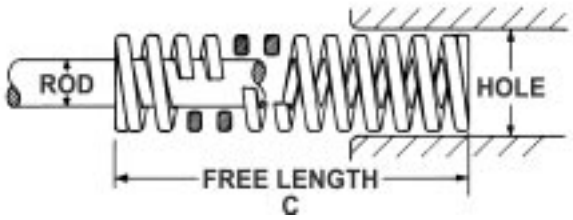
Color coded RED

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (25% of C)		Total Deflection Recommended for Avg. Life (30% of C)		Maximum Operating Deflection (37.5% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
3/8	3/16	1	MHC100L	9.3	23	0.25	27	0.30	34	0.37	24
		1 1/4	MHC100AL	8.0	25	0.31	30	0.38	38	0.47	24
		1 1/2	MHC101L	6.7	25	0.37	30	0.45	38	0.56	24
		1 3/4	MHC101AL	5.6	24	0.43	29	0.52	36	0.65	24
		2	MHC102L	4.9	25	0.50	30	0.60	37	0.75	24
		2 1/2	MHC103L	3.9	24	0.63	29	0.76	37	0.94	24
		3	MHC104L	3.3	24	0.75	29	0.90	36	1.12	24
		12	MHC106L	0.8	23	3.00	27	3.60	34	4.50	8
1/2	9/32	1	MHC110L	16.5	41	0.25	49	0.30	61	0.37	24
		1 1/4	MHC110AL	12.9	41	0.31	49	0.38	61	0.47	24
		1 1/2	MHC111L	10.9	41	0.37	49	0.45	61	0.56	24
		1 3/4	MHC111AL	9.2	40	0.43	48	0.52	60	0.65	24
		2	MHC112L	8.0	40	0.50	48	0.60	60	0.75	24
		2 1/2	MHC113L	6.3	40	0.63	48	0.76	60	0.94	24
		3	MHC114L	5.0	37	0.75	45	0.90	56	1.12	24
		3 1/2	MHC115L	4.3	37	0.88	45	1.05	56	1.31	24
		12	MHC117L	1.2	37	3.00	45	3.60	56	4.50	8
5/8	11/32	1	MHC120L	31.8	78	0.25	94	0.30	117	0.37	24
		1 1/4	MHC120AL	23.0	72	0.31	87	0.38	109	0.47	24
		1 1/2	MHC121L	20.1	75	0.37	90	0.45	113	0.56	24
		1 3/4	MHC121AL	17.4	75	0.43	90	0.52	113	0.65	24
		2	MHC122L	15.4	77	0.50	93	0.60	116	0.75	24
		2 1/2	MHC123L	12.0	76	0.63	91	0.76	113	0.94	24
		3	MHC124L	10.1	76	0.75	91	0.90	113	1.12	24
		3 1/2	MHC125L	8.7	76	0.88	91	1.05	114	1.31	24
		4	MHC126L	7.6	76	1.00	92	1.20	114	1.51	24
		12	MHC127L	2.4	71	3.00	85	3.60	106	4.50	8
3/4	3/8	1	MHC1L	51.5	127	0.25	152	0.30	190	0.37	24
		1 1/4	MHC1AL	38.9	123	0.31	147	0.38	184	0.47	24
		1 1/2	MHC2L	31.3	117	0.37	140	0.45	176	0.56	24
		1 3/4	MHC2AL	25.8	112	0.43	134	0.52	168	0.65	24
		2	MHC3L	22.2	111	0.50	134	0.60	167	0.75	24
		2 1/2	MHC4L	17.3	109	0.63	131	0.76	163	0.94	24
		3	MHC5L	14.1	105	0.75	127	0.90	158	1.12	24
		3 1/2	MHC6L	12.2	107	0.88	128	1.05	160	1.31	24
		4	MHC7L	10.6	106	1.00	128	1.20	160	1.51	24
		4 1/2	MHC8L	9.3	105	1.13	126	1.36	158	1.70	24
		5	MHC9L	8.3	104	1.25	125	1.50	156	1.88	24
		5 1/2	MHC10L	7.5	103	1.37	123	1.64	154	2.05	24
		6	MHC11L	6.9	103	1.50	124	1.80	155	2.24	24
		12	MHC11AL	3.5	104	3.00	125	3.60	156	4.50	8

Inch Standard

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (25% of C)		Total Deflection Recommended for Avg. Life (30% of C)		Maximum Operating Deflection (37.5% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
1	1/2	1	MHC12L	94.9	234	0.25	280	0.30	350	0.37	24
		1 1/4	MHC12AL	71.2	224	0.31	269	0.38	336	0.47	24
		1 1/2	MHC13L	56.3	211	0.37	253	0.45	316	0.56	24
		1 3/4	MHC13AL	47.5	206	0.43	247	0.52	309	0.65	24
		2	MHC14L	41.0	206	0.50	247	0.60	309	0.75	24
		2 1/2	MHC15L	31.4	198	0.63	237	0.76	297	0.94	24
		3	MHC16L	25.8	193	0.75	232	0.90	289	1.12	24
		3 1/2	MHC17L	21.6	189	0.88	227	1.05	284	1.31	24
		4	MHC18L	18.8	189	1.00	226	1.20	283	1.51	24
		4 1/2	MHC19L	16.7	189	1.13	227	1.36	284	1.70	24
		5	MHC20L	15.0	188	1.25	225	1.50	281	1.88	24
		5 1/2	MHC21L	13.5	185	1.37	222	1.64	277	2.05	24
		6	MHC22L	12.4	186	1.50	223	1.80	278	2.24	24
		7	MHC23L	10.5	184	1.75	221	2.10	276	2.63	16
		8	MHC24L	9.1	182	2.00	218	2.40	273	3.00	16
		12	MHC24AL	6.0	180	3.00	216	3.60	270	4.50	8
1 1/4	5/8	1 1/2	MHC36L	94.8	355	0.37	425	0.45	532	0.56	16
		1 3/4	MHC36AL	77.9	337	0.43	405	0.52	506	0.65	16
		2	MHC37L	66.3	333	0.50	399	0.60	499	0.75	16
		2 1/2	MHC38L	50.1	316	0.63	379	0.76	473	0.94	16
		3	MHC39L	40.5	303	0.75	364	0.90	454	1.12	16
		3 1/2	MHC40L	34.2	300	0.88	360	1.05	449	1.31	16
		4	MHC41L	29.6	297	1.00	357	1.20	446	1.51	16
		4 1/2	MHC42L	26.3	298	1.13	357	1.36	447	1.70	16
		5	MHC43L	23.7	296	1.25	356	1.50	444	1.88	16
		5 1/2	MHC44L	21.4	293	1.37	351	1.64	439	2.05	16
		6	MHC45L	19.5	292	1.50	350	1.80	438	2.24	16
		7	MHC46L	16.6	291	1.75	349	2.10	436	2.63	16
		8	MHC47L	14.4	288	2.00	345	2.40	432	3.00	16
		10	MHC48L	11.4	285	2.50	342	3.00	428	3.75	8
		12	MHC48AL	9.5	285	3.00	342	3.60	428	4.50	8
1 1/2	3/4	2	MHC49L	97.4	489	0.50	587	0.60	733	0.75	16
		2 1/2	MHC50L	73.5	463	0.63	556	0.76	694	0.94	16
		3	MHC51L	60.1	450	0.75	539	0.90	674	1.12	16
		3 1/2	MHC52L	50.1	439	0.88	527	1.05	658	1.31	16
		4	MHC53L	43.4	436	1.00	523	1.20	654	1.51	16
		4 1/2	MHC54L	37.9	429	1.13	515	1.36	643	1.70	16
		5	MHC55L	34.0	425	1.25	510	1.50	638	1.88	16
		5 1/2	MHC55AL	30.6	419	1.37	502	1.64	628	2.05	16
		6	MHC56L	27.9	417	1.50	501	1.80	626	2.24	16
		7	MHC56AL	23.7	415	1.75	498	2.10	623	2.63	16
		8	MHC57L	20.6	412	2.00	494	2.40	617	3.00	16
		10	MHC58L	16.5	413	2.50	495	3.00	619	3.75	8
		12	MHC58AL	13.6	408	3.00	490	3.60	612	4.50	8
2	1	2 1/2	MHC70L	121.0	762	0.63	915	0.76	1143	0.94	16
		3	MHC71L	95.6	715	0.75	858	0.90	1073	1.12	16
		3 1/2	MHC72L	79.8	699	0.88	839	1.05	1049	1.31	16
		4	MHC73L	69.6	699	1.00	838	1.20	1048	1.51	16
		4 1/2	MHC74L	61.2	693	1.13	831	1.36	1039	1.70	16
		5	MHC75L	54.0	675	1.25	810	1.50	1013	1.88	16
		5 1/2	MHC76L	48.8	668	1.37	801	1.64	1001	2.05	16
		6	MHC77L	44.5	666	1.50	799	1.80	999	2.24	16
		7	MHC79L	37.9	664	1.75	797	2.10	996	2.63	8
		8	MHC80L	32.8	655	2.00	786	2.40	983	3.00	8
		10	MHC82L	26.1	653	2.50	783	3.00	979	3.75	8
		12	MHC83L	21.5	645	3.00	775	3.60	968	4.50	8

Heavy Duty Die Springs



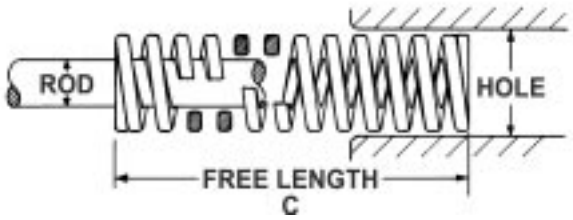
Color coded GOLD

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (20% of C)		Total Deflection Recommended for Avg. Life (25% of C)		Maximum Operating Deflection (30% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
3/8	3/16	1	H100L	12.6	25	0.20	31	0.25	37	0.30	24
		1 1/4	H100AL	10.0	25	0.25	31	0.31	38	0.38	24
		1 1/2	H101L	9.3	28	0.30	35	0.37	42	0.45	24
		1 3/4	H101AL	8.0	28	0.35	35	0.43	42	0.52	24
		2	H102L	6.8	27	0.40	34	0.50	41	0.60	24
		2 1/2	H103L	5.5	28	0.50	35	0.63	42	0.76	24
		3	H104L	4.3	26	0.60	32	0.75	39	0.90	24
		12	H105L	1.1	26	2.40	32	3.00	39	3.60	8
1/2	9/32	1	H110L	23.6	46	0.20	58	0.25	70	0.30	24
		1 1/4	H110AL	18.8	47	0.25	59	0.31	71	0.38	24
		1 1/2	H111L	15.5	46	0.30	58	0.37	70	0.45	24
		1 3/4	H111AL	13.3	46	0.35	58	0.43	69	0.52	24
		2	H112L	11.4	46	0.40	57	0.50	69	0.60	24
		2 1/2	H113L	8.7	44	0.50	55	0.63	66	0.76	24
		3	H114L	7.7	46	0.60	58	0.75	69	0.90	24
		3 1/2	H115L	6.2	43	0.70	54	0.88	65	1.05	24
		12	H117L	1.8	43	2.40	53	3.00	64	3.60	8
5/8	11/32	1	H120L	43.1	85	0.20	106	0.25	127	0.30	24
		1 1/4	H120AL	34.8	88	0.25	110	0.31	132	0.38	24
		1 1/2	H121L	27.8	83	0.30	104	0.37	125	0.45	24
		1 3/4	H121AL	24.7	86	0.35	107	0.43	128	0.52	24
		2	H122L	20.5	82	0.40	103	0.50	123	0.60	24
		2 1/2	H123L	16.5	83	0.50	104	0.63	125	0.76	24
		3	H124L	14.0	84	0.60	105	0.75	126	0.90	24
		3 1/2	H125L	11.9	83	0.70	104	0.88	125	1.05	24
		4	H126L	10.4	84	0.80	104	1.00	125	1.20	24
		12	H127L	3.3	80	2.40	100	3.00	120	3.60	8
3/4	3/8	1	H1L	137.0	270	0.20	337	0.25	405	0.30	24
		1 1/4	H1AL	103.0	260	0.25	324	0.31	389	0.38	24
		1 1/2	H2L	82.2	246	0.30	307	0.37	369	0.45	24
		1 3/4	H2AL	68.5	237	0.35	297	0.43	356	0.52	24
		2	H3L	57.8	232	0.40	290	0.50	348	0.60	24
		2 1/2	H4L	44.0	222	0.50	277	0.63	333	0.76	24
		3	H5L	36.2	217	0.60	271	0.75	325	0.90	24
		3 1/2	H6L	30.8	216	0.70	270	0.88	324	1.05	24
		4	H7L	26.8	215	0.80	269	1.00	323	1.20	24
		4 1/2	H8L	23.7	213	0.90	266	1.12	319	1.35	24
		5	H9L	21.2	212	1.00	265	1.25	318	1.50	24
		5 1/2	H10L	19.3	213	1.10	266	1.38	319	1.65	24
		6	H11L	17.6	211	1.20	263	1.50	316	1.80	24
		12	H11AL	8.6	207	2.40	258	3.00	310	3.60	8

Inch Standard

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (20% of C)		Total Deflection Recommended for Avg. Life (25% of C)		Maximum Operating Deflection (30% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
1	1/2	1	H12L	215.0	423	0.20	529	0.25	635	0.30	24
		1 1/4	H12AL	163.0	411	0.25	513	0.31	616	0.38	24
		1 1/2	H13L	127.0	380	0.30	475	0.37	570	0.45	24
		1 3/4	H13AL	109.0	378	0.35	472	0.43	566	0.52	24
		2	H14L	89.4	359	0.40	449	0.50	539	0.60	24
		2 1/2	H15L	69.1	348	0.50	435	0.63	522	0.76	24
		3	H16L	57.0	341	0.60	426	0.75	512	0.90	24
		3 1/2	H17L	48.0	336	0.70	420	0.88	505	1.05	24
		4	H18L	41.8	336	0.80	420	1.00	504	1.20	24
		4 1/2	H19L	37.1	333	0.90	416	1.12	500	1.35	24
		5	H20L	33.1	331	1.00	414	1.25	497	1.50	24
		5 1/2	H20AL	30.0	331	1.10	413	1.38	496	1.65	24
		6	H21L	27.5	329	1.20	411	1.50	494	1.80	24
		7	H21AL	23.5	329	1.40	412	1.75	494	2.10	16
		8	H22L	20.5	328	1.60	410	2.00	492	2.40	16
		12	H22AL	13.8	331	2.40	414	3.00	497	3.60	8
1 1/4	5/8	1 1/2	H36L	223.0	667	0.30	834	0.37	1001	0.45	16
		1 3/4	H36AL	182.0	631	0.35	788	0.43	946	0.52	16
		2	H37L	154.0	618	0.40	773	0.50	928	0.60	16
		2 1/2	H38L	117.0	590	0.50	737	0.63	884	0.76	16
		3	H39L	94.7	567	0.60	708	0.75	850	0.90	16
		3 1/2	H40L	80.1	561	0.70	702	0.88	842	1.05	16
		4	H41L	69.1	555	0.80	694	1.00	832	1.20	16
		4 1/2	H42L	60.7	545	0.90	681	1.12	681	1.35	16
		5	H43L	54.7	547	1.00	684	1.25	821	1.50	16
		5 1/2	H44L	49.3	543	1.10	679	1.38	815	1.65	16
		6	H45L	44.9	537	1.20	672	1.50	806	1.80	16
		7	H46L	38.1	534	1.40	668	1.75	801	2.10	16
		8	H47L	33.0	527	1.60	659	2.00	791	2.40	16
		10	H48L	26.4	528	2.00	660	2.50	792	3.00	8
		12	H48AL	21.8	524	2.40	654	3.00	785	3.60	8
1 1/2	3/4	2	H49L	208.0	835	0.40	1044	0.50	1253	0.60	16
		2 1/2	H50L	153.0	771	0.50	964	0.63	1157	0.76	16
		3	H51L	125.0	748	0.60	935	0.75	1122	0.90	16
		3 1/2	H52L	105.0	736	0.70	920	0.88	1104	1.05	16
		4	H53L	90.6	728	0.80	910	1.00	1091	1.20	16
		4 1/2	H54L	80.4	722	0.90	902	1.12	1083	1.35	16
		5	H55L	71.5	715	1.00	894	1.25	1073	1.50	16
		5 1/2	H55AL	64.3	709	1.10	886	1.38	1063	1.65	16
		6	H56L	59.0	706	1.20	883	1.50	1059	1.80	16
		7	H56AL	50.3	705	1.40	881	1.75	1057	2.10	16
		8	H57L	43.8	700	1.60	875	2.00	1050	2.40	16
		10	H58L	34.6	692	2.00	865	2.50	1038	3.00	8
		12	H58AL	28.7	689	2.40	862	3.00	1034	3.60	8
2	1	2 1/2	H70L	242.0	1220	0.50	1524	0.63	1829	0.76	16
		3	H71L	193.0	1155	0.60	1444	0.75	1732	0.90	16
		3 1/2	H72L	160.0	1121	0.70	1402	0.88	1682	1.05	16
		4	H73L	140.0	1124	0.80	1406	1.00	1687	1.20	16
		4 1/2	H74L	123.0	1104	0.90	1380	1.12	1656	1.35	16
		5	H75L	108.0	1080	1.00	1350	1.25	1620	1.50	16
		5 1/2	H76L	96.4	1063	1.10	1328	1.38	1594	1.65	16
		6	H77L	88.0	1053	1.20	1317	1.50	1580	1.80	16
		7	H79L	75.0	1051	1.40	1314	1.75	1577	2.10	8
		8	H80L	65.3	1044	1.60	1305	2.00	1566	2.40	8
		10	H82L	51.3	1026	2.00	1283	2.50	1539	3.00	8
		12	H83L	42.6	1023	2.40	1279	3.00	1535	3.60	8

Extra Heavy Duty Die Springs



Color coded GREEN

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (17% of C)		Total Deflection Recommended for Avg. Life (20% of C)		Maximum Operating Deflection (25% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
3/8	3/16	1	XH100L	18.7	31	0.17	37	0.20	46	0.25	24
		1 1/4	XH100AL	14.6	31	0.21	37	0.25	46	0.31	24
		1 1/2	XH101L	12.1	31	0.25	36	0.30	45	0.37	24
		1 3/4	XH101AL	10.1	30	0.29	35	0.35	44	0.43	24
		2	XH102L	8.8	30	0.34	35	0.40	44	0.50	24
		2 1/2	XH103L	7.0	30	0.43	35	0.50	44	0.63	24
		3	XH104L	5.8	30	0.51	35	0.60	43	0.75	24
		12	XH105L	1.4	29	2.04	34	2.40	42	3.00	8
1/2	9/32	1	XH110L	33.5	56	0.17	66	0.20	82	0.25	24
		1 1/4	XH110AL	25.2	54	0.21	63	0.25	79	0.31	24
		1 1/2	XH111L	20.7	53	0.25	62	0.30	77	0.37	24
		1 3/4	XH111AL	17.5	52	0.29	61	0.35	76	0.43	24
		2	XH112L	15.4	53	0.34	62	0.40	77	0.50	24
		2 1/2	XH113L	12.4	53	0.43	62	0.50	78	0.63	24
		3	XH114L	10.1	51	0.51	60	0.60	76	0.75	24
		3 1/2	XH115L	8.6	51	0.60	60	0.70	75	0.88	24
		12	XH116L	2.4	49	2.04	58	2.40	72	3.00	8
5/8	11/32	1	XH120L	72.7	122	0.17	143	0.20	179	0.25	24
		1 1/4	XH120AL	53.7	115	0.21	135	0.25	169	0.31	24
		1 1/2	XH121L	43.3	110	0.25	130	0.30	162	0.37	24
		1 3/4	XH121AL	36.3	107	0.29	126	0.35	157	0.43	24
		2	XH122L	31.7	108	0.34	127	0.40	159	0.50	24
		2 1/2	XH123L	24.7	106	0.43	124	0.50	156	0.63	24
		3	XH124L	22.2	103	0.51	121	0.60	152	0.75	24
		3 1/2	XH125L	17.3	103	0.60	121	0.70	152	0.88	24
		4	XH126L	15.1	103	0.68	121	0.80	152	1.00	24
		12	XH127L	4.9	100	2.04	117	2.40	146	3.00	8
3/4	3/8	1	XH1L	183.0	306	0.17	360	0.20	450	0.25	24
		1 1/4	XH1AL	137.0	293	0.21	345	0.25	431	0.31	24
		1 1/2	XH2L	111.0	282	0.25	332	0.30	415	0.37	24
		1 3/4	XH2AL	92.4	272	0.29	320	0.35	400	0.43	24
		2	XH3L	79.7	272	0.34	320	0.40	400	0.50	24
		2 1/2	XH4L	62.1	266	0.43	313	0.50	391	0.63	24
		3	XH5L	51.2	260	0.51	306	0.60	383	0.75	24
		3 1/2	XH6L	43.2	257	0.60	303	0.70	378	0.88	24
		4	XH7L	37.3	255	0.68	300	0.80	374	1.00	24
		4 1/2	XH8L	32.8	250	0.76	294	0.90	368	1.12	24
		5	XH9L	29.5	251	0.85	295	1.00	369	1.25	24
		5 1/2	XH10L	26.6	249	0.94	293	1.10	367	1.38	24
		6	XH11L	24.3	247	1.02	291	1.20	364	1.50	24
		12	XH12L	12.0	245	2.04	288	2.40	360	3.00	8

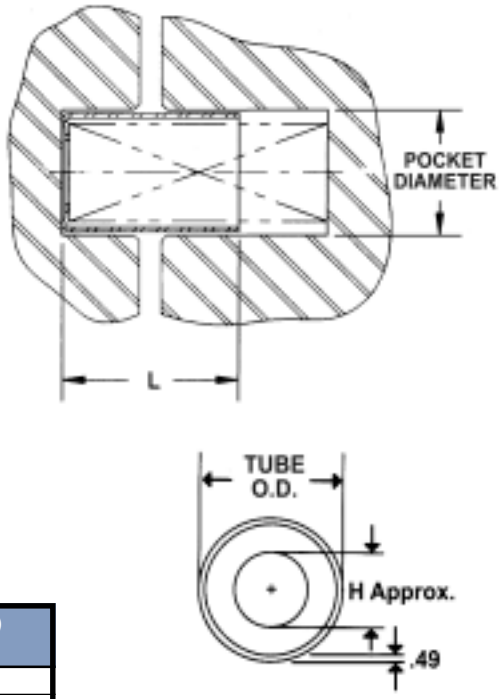
Inch Standard

Hole Diam. (in)	Rod Diam. (in)	Free Length (in)	CATALOG NUMBER	Pounds at 1/10 in. deflection	Total Deflection Recommended for Long Life (17% of C)		Total Deflection Recommended for Avg. Life (20% of C)		Maximum Operating Deflection (25% of C)		Box Quantity
					Load lbs.	Defl. in.	Load lbs.	Defl. in.	Load lbs.	Defl. in.	
1	1/2	1 1/2	XH13L	160.0	407	0.25	479	0.30	598	0.37	24
		2	XH14L	113.0	386	0.34	454	0.40	567	0.50	24
		2 1/2	XH15L	87.8	376	0.43	442	0.50	553	0.63	24
		3	XH16L	71.4	363	0.51	427	0.60	534	0.75	24
		3 1/2	XH17L	60.2	359	0.60	422	0.70	527	0.88	24
		4	XH18L	52.0	355	0.68	418	0.80	522	1.00	24
		4 1/2	XH19L	46.2	353	0.76	415	0.90	518	1.12	24
		5	XH20L	41.2	350	0.85	412	1.00	515	1.25	24
		6	XH21L	34.4	351	1.02	413	1.20	516	1.50	24
		12	XH22AL	16.9	345	2.04	406	2.40	507	3.00	8
1 1/4	5/8	2	XH37L	197.0	672	0.34	791	0.40	989	0.50	16
		2 1/2	XH38L	152.0	651	0.43	766	0.50	957	0.63	16
		3	XH39L	123.0	626	0.51	736	0.60	920	0.75	16
		3 1/2	XH40L	104.0	619	0.60	729	0.70	911	0.88	16
		4	XH41L	88.9	607	0.68	714	0.80	893	1.00	16
		4 1/2	XH42L	77.5	591	0.76	696	0.90	870	1.12	16
		5	XH43L	69.6	592	0.85	696	1.00	870	1.25	16
		6	XH45L	57.6	586	1.02	689	1.20	862	1.50	16
		8	XH47L	42.6	579	1.36	681	1.60	851	2.00	16
		10	XH48L	34.0	578	1.70	680	2.00	850	2.50	8
		12	XH48AL	28.3	578	2.04	680	2.40	850	3.00	8
1 1/2	3/4	2	XH49L	319.0	1089	0.34	1281	0.40	1601	0.50	16
		2 1/2	XH50L	241.0	1032	0.43	1214	0.50	1518	0.63	16
		3	XH51L	193.0	982	0.51	1155	0.60	1444	0.75	16
		3 1/2	XH52L	160.0	953	0.60	1121	0.70	1402	0.88	16
		4	XH53L	139.0	949	0.68	1116	0.80	1395	1.00	16
		4 1/2	XH54L	122.0	931	0.76	1095	0.90	1369	1.12	16
		5	XH55L	108.0	918	0.85	1080	1.00	1350	1.25	16
		6	XH56L	88.7	902	1.02	1062	1.20	1327	1.50	16
		8	XH57L	65.0	883	1.36	1039	1.60	1299	2.00	16
		10	XH58L	51.6	877	1.70	1032	2.00	1290	2.50	8
		12	XH58AL	42.8	874	2.04	1028	2.40	1285	3.00	8
2	1	2 1/2	XH70L	414.0	1773	0.43	2086	0.50	2608	0.63	16
		3	XH71L	327.0	1663	0.51	1957	0.60	2446	0.75	16
		3 1/2	XH72L	271.0	1614	0.60	1899	0.70	2374	0.88	16
		4	XH73L	231.0	1577	0.68	1855	0.80	2319	1.00	16
		4 1/2	XH74L	201.0	1534	0.76	1804	0.90	2255	1.12	16
		5	XH75L	179.0	1522	0.85	1790	1.00	2238	1.25	16
		6	XH77L	145.0	1475	1.02	1735	1.20	2169	1.50	16
		8	XH80L	106.0	1440	1.36	1694	1.60	2118	2.00	8
		10	XH82L	83.5	1420	1.70	1670	2.00	2088	2.50	8
		12	XH83L	68.9	1406	2.04	1655	2.40	2068	3.00	8

Spring Accessories

Spring Cages

- Our spring cages enhance die spring life by providing a flat, hardened die pocket for spring operation.
- Material: 0.049" case hardened cold rolled steel with black oxide finish.
- Conforms to NAAMS standards.



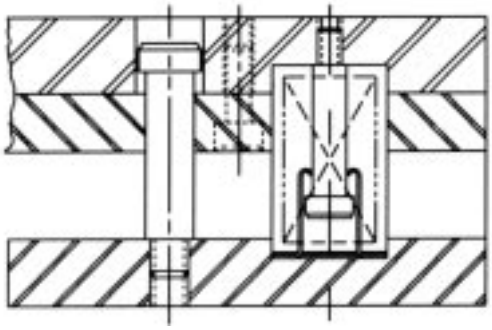
Spring Diameter (in)	Pocket Diameter (in)	Tube O.D. (in)	Diameter (H) (in)
3/4	29/32	0.855	7/16
1	1-5/32	1.105	9/16
1-1/4	1-13/32	1.355	3/4
1-1/2	1-21/32	1.605	31/32
2	2-5/32	2.105	1-3/8

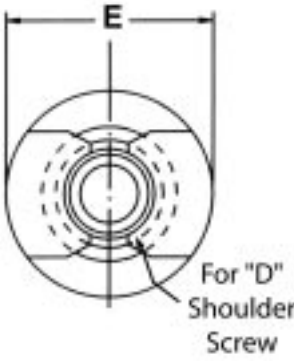
Length L (in)	3/4 inch Diameter Springs		1 inch Diameter Springs		1-1/4 inch Diameter Springs		1-1/2 inch Diameter Springs		2 inch Diameter Springs	
	CATALOG NUMBER	NAAMS Code	CATALOG NUMBER	NAAMS Code	CATALOG NUMBER	NAAMS Code	CATALOG NUMBER	NAAMS Code	CATALOG NUMBER	NAAMS Code
1	LSC0608	S212025	LSC0808	S212525	LSC1008	S213225	LSC1208	S214025	LSC1608	S215025
1-1/4	LSC0610	S212032	LSC0810	S212532	LSC1010	S213232	LSC1210	S214032	LSC1610	S215032
1-1/2	LSC0612	S212038	LSC0812	S212538	LSC1012	S213238	LSC1212	S214038	LSC1612	S215038
1-3/4	LSC0614	S212044	LSC0814	S212544	LSC1014	S213244	LSC1214	S214044	LSC1614	S215044
2	LSC0616	S212051	LSC0816	S212551	LSC1016	S213251	LSC1216	S214051	LSC1616	S215051
2-1/4	LSC0618	–	LSC0818	–	LSC1018	–	LSC1218	–	LSC1618	–
2-1/2	LSC0620	S212064	LSC0820	S212564	LSC1020	S213264	LSC1220	S214064	LSC1620	S215064
2-3/4	LSC0622	–	LSC0822	–	LSC1022	–	LSC1222	–	LSC1622	–
3	LSC0624	S212076	LSC0824	S212576	LSC1024	S213276	LSC1224	S214076	LSC1624	S215076
3-1/4	LSC0626	–	LSC0826	–	LSC1026	–	LSC1226	–	LSC1626	–
3-1/2	LSC0628	S212089	LSC0828	S212589	LSC1028	S213289	LSC1228	S214089	LSC1628	S215089
3-3/4	LSC0630	–	LSC0830	–	LSC1030	–	LSC1230	–	LSC1630	–
4	LSC0632	S212010	LSC0832	S212510	LSC1032	S213210	LSC1232	S214010	LSC1632	S215010
4-1/4	LSC0634	–	LSC0834	–	LSC1034	–	LSC1234	–	LSC1634	–
4-1/2	LSC0636	–	LSC0836	–	LSC1036	–	LSC1236	–	LSC1636	–
4-3/4	LSC0638	–	LSC0838	–	LSC1038	–	LSC1238	–	LSC1638	–
5	LSC0640	S212012	LSC0840	S212512	LSC1040	S213212	LSC1240	S214012	LSC1640	S215012
5-1/2	LSC0644	–	LSC0844	–	LSC1044	–	LSC1244	–	LSC1644	–
6	LSC0648	S212015	LSC0848	S212515	LSC1048	S213215	LSC1248	S214015	LSC1648	S215015
6-1/2	LSC0652	–	LSC0852	–	LSC1052	–	LSC1252	–	LSC1652	–
7	LSC0656	S212017	LSC0856	S212517	LSC1056	S213217	LSC1256	S214017	LSC1656	S215017
8	LSC0664	S212020	LSC0864	S212520	LSC1064	S213220	LSC1264	S214020	LSC1664	S215020
9	LSC0672	–	LSC0872	–	LSC1072	S213222	LSC1272	S214022	LSC1672	S215022
10	LSC0680	–	LSC0880	–	LSC1080	–	LSC1280	–	LSC1680	–
11	–	–	–	–	–	–	–	–	LSC1688	S215028
12	–	–	–	–	–	–	–	–	LSC1696	S215030

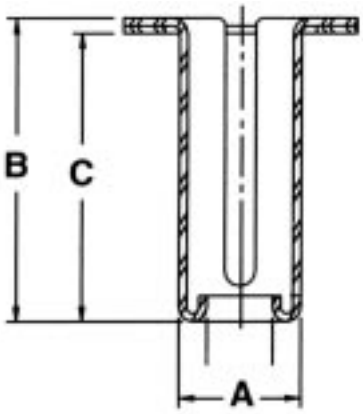
Spring Accessories

Spring Retainers

- Our spring retainers hold individual springs firmly in position while the die is being assembled or disassembled. Pre-loading the spring is easy since the springs can be set individually, which avoids working against the combined force of the springs.
- Available for springs 1 1/4", 1 1/2" and 2" diameters and any free length where clearance permits.
- Material: steel







CATALOG NUMBER	Spring Diameter (in)	Rod Diameter A (in)	B (in)	C (in)	Shoulder Screw D (in)	E (in)
SR125150	1 1/4	5/8	1 11/16	1 1/2	5/16	1 1/4
SR125200			2 3/16	2		1 1/4
SR125250			2 11/16	2 1/2		1 1/4
SR150150	1 1/2	3/4	1 11/16	1 1/2	3/8	1 1/2
9-0615-16			1 7/8	1 3/4		1 7/16
SR150200			2 3/16	2		1 1/2
SR150250			2 11/16	2 1/2		1 1/2
SR200150	2	1	1 11/16	1 1/2	1/2	2
9-0815-16			1 7/8	1 3/4		1 5/16
SR200200			2 3/16	2		2
SR200250			2 11/16	2 1/2		2
9-0823-16			2 7/8	2 3/4		1 5/16

Compression Spring
Special Requirement Quote Sheet

Company Information

Company: _____

Contact: _____ Title: _____

Address: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Sales Requirements

Estimated Annual Volume: _____ Order Quantity: _____

Delivery Date Required: _____

Compression Spring Specifications

Spring Material: _____ Wire Size: _____

Outside Diameter: _____ Inside Diameter: _____

Free Length: _____ Maximum Solid Height: _____

Ends (Closed & Ground or Closed & Unground): _____

Specify One of the Next Three Attributes

Total Coils: _____ Spring Rate: _____

Load at a Given Rate: _____

Application Explanation

_____

_____

_____

_____

Finish (Painted, Unpainted, Plating)

_____

Critical Tolerances, Certifications or Inspections Required

_____

_____

_____

_____

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