

THE INNOVATOR OF OUR INDUSTRY®

SuperSprings®

... They Simply Are the World's Finest Die Springs



The SuperSprings® Story

We take die springs very seriously ... that's why we recently built the most sophisticated die spring manufacturing plant in the world. You won't find a better die spring at any price.

Not all die springs are the same. Compare SuperSprings® to the competition. You'll find ...

- Longer Life (see next page) less downtime means greater productivity.
- Consistent Dimensional Accuracy - tighter tolerances on free lengths and perpendicularity.
- Because our die springs are more dimensionally accurate, our spring rates are more accurate.
- Better Value With SuperSprings®, you'll buy fewer die springs and lower your operating costs.
- We offer applications expertise, both technical support from our lab and sales support in the field.

We are the die spring experts in our industry. Try our SuperSprings[®], and you'll see the difference for yourself!

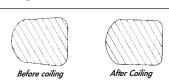
SuperSprings[®]

• Four Load Classes, Guaranteed Fit, Fully Interchangeable

More than 400 SuperSprings® are available in four color-coded load classifications. Uniform lengths and diameters provide full interchangeability between load ratings. Spring diameters are guaranteed to fit in the hole and over the rod diameters listed in the dimensional data. Lengths, diameters, rates, and colors are in accordance with ISO 10243.

• Engineered for High Performance and Long Service Life

Each SuperSpring® has the optimum design, pitch, and metallurgical content for efficient performance. Rectangular wire springs are made from a trapezoidal cross section wire, which changes to a "D" cross section during coiling. This shape results in a lower maximum stress level, substantially contributing to longer spring life.



Modified trapezoidal cross section of rectangular wire springs changes to a "D" cross section during coiling.

READY® applies several advanced manufacturing processes to enhance the life of SuperSprings®. These include precision heat treating, shot peening to reduce mechanical stresses, and presetting by compressing to solid for increased set resistance and greatest resistance to fatigue.

Dependable Performance Is Quality-Assured

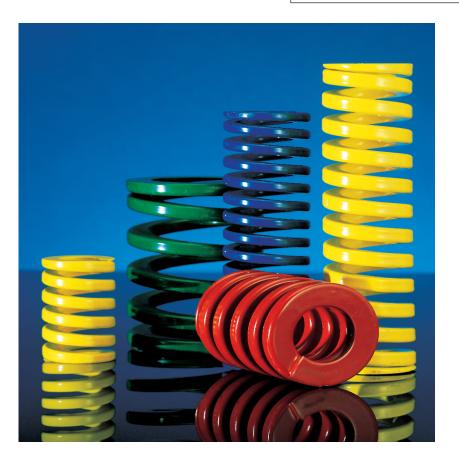
SuperSprings® are manufactured exclusively from vacuum degassed, valve spring quality alloy steel. State-of-the-art equipment, including CNC coiling

and grinding, is employed to achieve consistent dimensional accuracy within narrowest tolerances. Each production run is thoroughly inspected and documented to maintain strict quality. The result is a die spring of unsurpassed quality which many of the world's most demanding users specify for long, dependable performance.





Ends of each spring are closed and ground square to assure every spring will stand on either end, providing a maximum bearing surface and improving performance.

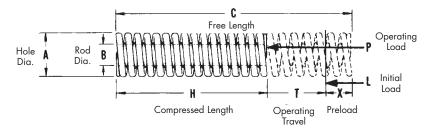


SuperSprings® Selection and Use

As the ratio of preload to total deflection increases, spring life increases. We recommend that you use a generous preload in your tool design whenever possible.

As the ratio of total deflection to free length decreases, spring life increases. Spring life can often be improved by drilling the spring pockets deeper and selecting the next longer spring.

The chart below and the spring tables presented on the following pages are designed to help you quickly select the die spring best suited to your needs.



Converting Compressed Lengths to Free Lengths

	Light I	Load		M	ediun	ı Load			łeavy	Load		Extr	a Hed	avy Lo	ad
	ipressed ompressi		С		npressed ompress	•	С		npressed ompressi	•	С		ipressed ompressi	•	С
Long Life 25%	Average Life 30%	Maximum Deflection 40%	Free Length	Long Life 25%	Average Life 30%	Maximum Deflection 37.5%	Free Length	Long Life 20%	Average Life 25%	Maximum Deflection 30%	Free Length	Long Life 17%	Average Life 20%	Maximum Deflection 25%	Free Length
					In	ch (Col	nve	rsid	n					
0.75	0.69	0.58	1	0.75	0.69	0.61	1	0.79	0.75	0.69	1	0.82	0.79	0.75	1
0.94	0.89	0.77	1 1/4	0.94	0.89	0.79	1 1/4	1.02	0.94	0.89	1 1/4	1.04	1.02	0.94	1 1/4
1.02	1.06	0.91	1 1/2	1.12	1.06	0.94	1 1/2	1.20	1.12	1.06	1 1/2	1.24	1.20	1.12	1 1/2
1.30	1.22	1.02	1 3/4	1.30	1.22	1.06	1 3/4	1.38	1.30	1.22	1 3/4	1.44	1.38	1.30	1 3/4
1.50	1.42	1.22	2	1.50	1.42	1.26	2	1.61	1.50	1.42	2	1.67	1.61	1.50	2
1.89	1.77	1.54	2 1/2	1.89	1.77	1.57	2 1/2	2.01	1.89	1.77	2 1/2	2.09	2.01	1.89	2 1/2
2.24	2.09	1.81	3	2.24	2.09	1.85	3	2.40	2.24	2.09	3	2.48	2.40	2.24	3
2.64 3.03	2.44	2.13	3 1/2	2.64 3.03	2.44 2.80	2.20	3 1/2 4	2.80 3.23	2.64 3.03	2.44	3 1/2 4	2.91 3.35	2.80 3.23	2.64 3.03	3 1/2 4
3.39	3.19	2.72	4 1/2	3.39	3.19	2.32	4 1/2	3.62	3.39	3.19	4 1/2	3.74	3.62	3.39	4 1/2
3.74	3.50	2.99	5	3.74	3.50	3.11	5	4.02	3.74	3.50	5	4.13	4.02	3.74	5
4.13	3.86	3.31	5 1/2	4.13	3.86	3.46	5 1/2	4.41	4.13	3.86	5 1/2	4.57	4.41	4.13	5 1/2
4.49	4.17	3.58	6	4.49	4.17	3.74	6	4.80	4.49	4.17	6	4.96	4.80	4.49	6
5.24	4.92	4.21	7	5.24	4.92	4.37	7	5.63	5.24	4.92	7	5.83	5.63	5.24	7
5.98	5.59	4.80	8	5.98	5.59	5.00	8	6.38	5.98	5.59	8	6.61	6.38	5.98	8
0.00	0.00	0.00	9	6.77	6.30	5.63	9	0.00	0.00	0.00	9	0.00	0.00	0.00	9
7.52	7.01	10.00	10	7.52	7.01	6.26	10	7.99	7.52	7.01	10	8.31	7.99	7.52	10
9.02	8.39	12.01	12	9.02	8.39	7.52	12	9.61	9.02	8.39	12	9.96	9.61	9.02	12
					Me	tric	C	nv	ersi	ion					
19	17.5	14.8	25	19	17.5	15.5	25	20	19	17.5	25	20.8	20	19	25
24	22.5	19.5	32	24	22.5	20	32	26	24	22.5	32	26.5	26	24	32
25.8	27	23	38	28.5	27	24	38	30.5	28.5	27	38	31.5	30.5	28.5	38
33	31	26	44	33	31	27	44	35	33	31	44	36.5	35	33	44
38	36	31	51	38	36	32	51	41	38	36	51	42.5	41	38	51
48	45	39	64	48	45	40	64	51	48	45	64	53	51	48	64
57	53	46	76 89	57	53	47	76	61	57	53	76	63	61	57	76 89
67 77	62 71	54 61	102	67 77	62 71	56 64	89 102	71 82	67 77	62 71	89 102	74 85	71 82	67 77	102
86	81	69	115	86	81	72	115	92	86	81	115	95	92	86	115
95	89	76	127	95	89	79	127	102	95	89	127	105	102	95	127
105	98	84	140	105	98	88	140	112	105	98	140	116	112	105	140
114	106	91	152	114	106	95	152	122	114	106	152	126	122	114	152
133	125	107	178	133	125	111	178	143	133	125	178	148	143	133	178
152	142	122	203	152	142	127	203	162	152	142	203	168	162	152	203
				172	160	143	229								
191	178	254	254	191	178	159	254	203	191	178	178	211	203	191	254
229	213	305	305	229	213	191	305	244	229	213	213	253	244	229	305

Take A Closer Look ...

Most die spring manufacturers will claim that based upon in-house testing, their spring outperforms the competition.

To eliminate all bias, we went outside and asked the prestigious Spring Research and Manufacturer's Association to life test our SuperSpring® against the competition. The results of this independent test, certified under Test Certificate No. 002860, prove* the long-life performance of our SuperSpring®:

The springs were cycled between lengths corresponding to the 'catalog' maximum deflection conditions of 23.97mm and 18.80mm at a test speed of 3000 cycles/minute.

The results have also been analyzed by means of the 'weibull' technique, and a value of 'B10' (the life in cycles which 90% of springs would be expected to survive without failure) determined for each batch.

The B10 values are:

READY SuperSprings®
RAYMOND springs
DANLY DIE SET springs

333,139 152,159 117,706

SuperSprings® (color code yellow)	Spring No.	Cycles	Broken	Unbroken
e 2.	1	466,450	Х	
2 2	2	10,000,000		X
rSp code	3	3,043,070	Х	
9 2	4	1,995,730	Х	
Supe	5	10,000,000		х
જુ હ	6	10,000,000		X
	7	10,000,000		х
Ready	8	314,670	Х	
Ö	9	10,000,000		Х
8	10	10,000,000		X

Danly Die Set Springs (color code yellow/green)	Spring No.	Cycles	Broken	Unbroken
ri. gre	1	238,290	Х	
S 3	2	286,540	х	
± €	3	178,390	х	
% §	4	138,640	х	
e e.	5	231,390	Х	
O Š	6	199,170	х	
م ح	7	114,490	Х	
5 3	8	144,870	x	
ٽ ٽ	9	136,010	Х	
	10	211,740	Х	

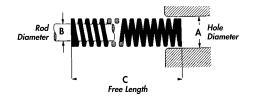
Springs de green)	Spring No.	Cycles	Broken	Unbroken
g.	1	185,000	Х	
တ္တန	2	156,760	х	
	3	166,160	Х	
	4	164,410	х	
/mon (color	5	154,530	Х	
چ	6	9,000,860	Х	
<u>ڇ</u>	7	157,470	Х	
	8	198,250	X	
	9	152,030	Х	
	10	167,680	Х	

- *1.Every effort was made to test representative samples. SuperSprings were randomly selected from stock, and competitors' springs were supplied against a purchase order. The possibility remains, however, that these samples may somehow not be representative.
- 2. This is a test on only one spring size and one specific set of operating conditions, performed in a laboratory environment; it may not be typical of the way you use springs. We urge you to run a comparison life test in your own plant and compare the fatigue life of our SuperSpring to those of our competitors under actual manufacturing conditions.



SuperSprings[®]





				D 4 T T			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	RATE Pounds Required to Deflect	Recomi for Lo	eflection mended ng Life of C)	Total De Recomi for Avei		Max Ope Defle	imum rating ection of C)		Travel iolid
A	В	с		1/10 in.	Load Ibs.	Deflection Inches	Load Ibs.	Deflection Inches	Load Ibs.	Deflection Inches	Load Ibs.	Deflection Inches
			Rectar	gula	r W	ire C	ons	truct	ion			
		1	9 - 0604 - LE	5.7	14	0.25	17	0.30	23	0.40	34	0.59
		1.25 1.5	9 - 0605 - LE 9 - 0606 - LE	4.9 3.9	15 15	0.31 0.38	18 1 <i>7</i>	0.38 0.45	24 23	0.50 0.60	36 35	0.75 0.91
3/8	3/16	1.75	9 - 0607 - LE	3.4	15	0.44	18	0.53	24	0.70	36	1.06
0,0	0, 10	2 2.5	9 - 0608 - LE 9 - 0610 - LE	2.9 2.5	14 15	0.50 0.63	1 <i>7</i> 18	0.60 0.75	23	0.80 1.00	35 40	1.22 1.61
		3	9 - 0612 - LE	1.8	14	0.75	16	0.73	25 22	1.20	35	1.89
		12	9 - 0648 - LE	0.6	19	3.00	23	3.60	30	4.80	46	7.36
		1	9 - 0804 - LE	10.2	26	0.25	31	0.30	41	0.40	52	0.51
		1.25 1.5	9 - 0805 - LE 9 - 0806 - LE	9.4 7.8	29 29	0.31 0.38	35 35	0.38 0.45	47 47	0.50 0.60	63 67	0.67 0.87
		1.75	9 - 0807 - LE	6.9	30	0.44	36	0.53	48	0.70	68	0.87
		2	9 - 0808 - LE	6.5	33	0.50	39	0.60	52	0.80	74	1.14
1/2	9/32	2.5 3	9 - 0810 - LE 9 - 0812 - LE	5.3 4.1	33 30	0.63 0.75	40 36	0.75 0.90	53 49	1.00 1.20	77 75	1.46 1.85
1/2	7/32	3.5	9 - 0812 - LE 9 - 0814 - LE	3.1	27	0.73	32	1.05	43	1.40	66	2.13
		4.5	9 - 0818 - LE	2.5	28	1.13	34	1.35	45	1.80	71	2.83
		5.5 6.5	9 - 0822 - LE 9 - 0826 - LE	2.1 1.5	29 24	1.38 1.63	35 29	1.65 1.95	46 39	2.20 2.60	76 58	3.58 3.90
		7.5	9 - 0820 - LE 9 - 0830 - LE	1.1	21	1.88	26	2.25	34	3.00	50	4.37
		12	9 - 0848 - LE	0.8	24	3.00	29	3.60	38	4.80	58	7.24
		1	9 - 1004 - LE	13.4	33	0.25	40	0.30	53	0.40	58	0.43
		1.25	9 - 1005 - LE	13.1	41	0.31	49	0.38	65	0.50	87	0.67
		1.5 1.75	9 - 1006 - LE 9 - 1007 - LE	11.0 9.8	41 43	0.38 0.44	50 51	0.45 0.53	66 68	0.60 0.70	87 92	0.79 0.94
F /0	11/00	2	9 - 1007 - LE 9 - 1008 - LE	9.0	45 45	0.50	54	0.60	72	0.80	102	1.14
5/8	11/32	2.5	9 - 1010 - LE	6.1	38	0.63	46	0.75	61	1.00	89	1.46
		3 3.5	9 - 1012 - LE 9 - 1014 - LE	5.7 4.9	43 43	0.75 0.88	51 52	0.90 1.05	68 69	1.20 1.40	94 99	1.65 2.01
		3.5 4	9 - 1014 - LE	4.5	45 45	1.00	53	1.03	71	1.60	109	2.44
		12	9 - 1048 - LE	1.4	43	3.00	51	3.60	68	4.80	102	7 .13
		1	9 - 1204 - L	31.7	79 71	0.25	95	0.30	127	0.40	162	0.51
		1.25 1.5	9 - 1205 - L 9 - 1206 - L	24.4 19.3	76 73	0.31 0.38	91 87	0.38 0.45	122 116	0.50 0.60	154 145	0.63 0.75
		1.75	9 - 1207 - L	16.3	71	0.44	85	0.53	114	0.70	147	0.91
		2	9 1208 L	14.1	70	0.50	85	0.60	113	0.80	144	1.02
		2.5 3	9 - 1210 - L 9 - 1212 - L	11.0 9.2	69 69	0.63 0.75	82 83	0.75 0.90	110 110	1.00 1.20	139 145	1.26 1.57
3/4	3/8	3.5	9 1214 L	7.7	67	0.75	81	1.05	107	1.40	139	1.81
		4	9 - 1216 - L	6.7	67	1.00	81	1.20	108	1.60	141	2.09
		4.5 5	9 - 1218 - L 9 - 1220 - L	5.9 5.4	67 67	1.13 1.25	80 80	1.35 1.50	107 107	1.80 2.00	140 142	2.36 2.64
		5.5	9 - 1222 - L	4.8	67	1.38	80	1.65	107	2.20	139	2.87
		6 12	9 - 1224 - L 9 - 1248 - L	4.5	67 65	1.50	81 70	1.80	108	2.40	143	3.19
			9 - 1248 - L 9 - 1604 - L	2.2 57.1	65 143	3.00 0.25	78 171	3.60 0.30	104 228	4.80 0.40	138 292	6.38
		1 1.25	9 - 1604 - L 9 - 1605 - L	37.1 46.0	143 144	0.25	171 172	0.30	230	0.40	292 290	0.51 0.63
		1.5	9 - 1606 - L	37.0	139	0.38	166	0.45	222	0.60	277	0.75
		1.75	9 - 1607 - L	30.4	133	0.44	160 158	0.53	213	0.70	275	0.91
		2 2.5	9 - 1608 - L 9 - 1610 - L	26.4 20.4	132 127	0.50 0.63	158 153	0.60 0.75	211 204	0.80 1.00	260 249	0.98 1.22
		3	9 - 1612 - L	16.7	125	0.75	150	0.90	200	1.20	256	1.54
1	1/2	3.5	9 - 1614 - L	14.2	124	0.88	149	1.05	198	1.40	256	1.81
	'-	4 4.5	9 - 1616 - L 9 - 1618 - L	12.1 10.7	121 120	1.00 1.13	145 144	1.20 1.35	194 193	1.60 1.80	248 248	2.05 2.32
		4.5 5	9 - 1620 - L	9.6	119	1.25	143	1.50	191	2.00	248	2.60
		5.5	9 - 1622 - L	8.7	119	1.38	143	1.65	191	2.20	253	2.91
		6	9 - 1624 - L 9 - 1628 - L	7.9 6.8	119 119	1.50 1.75	143 143	1.80 2.10	190 190	2.40 2.80	250 249	3.15 3.66
		7 8	9 - 1632 - L	6.0	120	2.00	143	2.40	190	3.20	253	4.21
		12	9 - 1648 - L	4.0	120	3.00	144	3.60	191	4.80	251	6.30

Sizes: 1 1/4" to 2 1/2", Rectangular Wire Construction Sizes: 3/8" to 5/8", Round Wire Construction

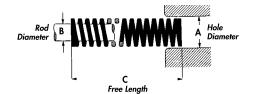
Color: Green

				RATE			LOAD	- DEFL	ECTION	TABLE		
Hole Dia.	Rod Dia.	Free Length	CATALOC	Pounds	n .	eflection mended		eflection mended		imum rating	Total	Travel
in.	in.	in.	CATALOG NUMBER	Required to Deflect	for Lo	ong Life of C)	for Ave	rage Life of C)	Defle	ection of C)		Solid
A	В	с		1/10 in.	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches
		1.5 1.75	9 - 2006 - L 9 - 2007 - L	53.6 45.4	201 199	0.38 0.44	241 238	0.45 0.53	322 318	0.60 0.70	401 393	0.75 0.87
		2	9 - 2008 - L	38.2	191	0.50	229	0.60	306	0.80	376	0.98
		2.5 3	9 - 2010 - L 9 - 2012 - L	31.4 26.3	196 197	0.63 0.75	235 236	0.75 0.90	314 315	1.00 1.20	395 403	1.26 1.54
		3.5	9 - 2014 - L	21.2	186	0.88	223	1.05	297	1.40	376	1.77
1 1/4	5/8	4 4.5	9 - 2016 - L 9 - 2018 - L	18.3 16.9	183 190	1.00 1.13	219 228	1.20 1.35	292 304	1.60 1.80	374 386	2.05 2.28
/-	3,0	5	9 - 2020 - L	14.3	178	1.25	214	1.50	285	2.00	365	2.56
		5.5 6	9 - 2022 - L 9 - 2024 - L	13.4 12.3	184 184	1.38 1.50	221 221	1.65 1.80	295 295	2.20 2.40	380 378	2.83 3.07
		7	9 - 2028 - L	10.4	182	1.75	218	2.10	291	2.80	360	3.46
		8 10	9 - 2032 - L 9 - 2040 - L	9.1 7.2	181 180	2.00 2.50	217 216	2.40 3.00	290 288	3.20 4.00	371 368	4.09 5.12
		12	9 - 2048 - L	5.9	178	3.00	213	3.60	284	4.80	361	6.10
		2	9 - 2408 - L	52.5	263	0.50	315	0.60	420	0.80	517	0.98
		2.5 3	9 - 2410 - L 9 - 2412 - L	41.6 36.0	260 270	0.63 0.75	312 324	0.75 0.90	416 431	1.00 1.20	524 538	1.26 1.50
		3.5	9 - 2414 - L	29.1	255	0.88	306	1.05	408	1.40	516	1.77
		4 4.5	9 - 2416 - L 9 - 2418 - L	24.5 22.6	245 254	1.00 1.13	295 305	1.20 1.35	393 407	1.60 1.80	493 516	2.01 2.28
1 1/2	3/4	5	9 - 2420 - L	21.1	264	1.25	317	1.50	422	2.00	540	2.56
		5.5 6	9 - 2422 - L 9 - 2424 - L	18.3 16.0	251 240	1.38 1.50	301 288	1.65 1.80	402 384	2.20 2.40	511 491	2.80 3.07
		7	9 - 2424 - L 9 - 2428 - L	14.4	252	1.75	302	2.10	403	2.80	521	3.62
		8 10	9 - 2432 - L 9 - 2440 - L	13.0 9.7	259 243	2.00 2.50	311 291	2.40 3.00	415 388	3.20 4.00	536 500	4.13 5.16
		12	9 - 2448 - L	8.5	254 254	3.00	304	3.60	406	4.80	523	6.18
		2.5	9 - 3210 - L	89.7	560	0.63	672	0.75	897	1.00	1130	1.26
		3 3.5	9 - 3212 - L 9 - 3214 - L	72.0 60.0	540 525	0.75 0.88	648 630	0.90 1.05	864 841	1.20 1.40	1105 1064	1.54
		3.5 4	9 - 3214 - L 9 - 3216 - L	51.3	513	1.00	615	1.20	820	1.60	1049	1.77 2.05
		4.5	9 - 3218 - L	43.8	492	1.13	591 400	1.35	788	1.80 2.00	1000	2.28
2	1	5 5.5	9 - 3220 - L 9 - 3222 - L	40.0 36.0	500 495	1.25 1.38	600 594	1.50 1.65	800 792	2.20	1023 1020	2.56 2.83
		6	9 - 3224 - L	32.8	492	1.50	590	1.80	787	2.40	1007	3.07
		7 8	9 - 3228 - L 9 - 3232 - L	27.8 23.7	486 474	1.75 2.00	584 569	2.10 2.40	778 758	2.80 3.20	1006 970	3.62 4.09
		10 12	9 - 3240 - L	18.8 15.5	470 445	2.50 3.00	564 558	3.00	752 744	4.00 4.80	962 952	5.12
		3	9 - 3248 - L 9 - 4012 - L	110	465 825	0.75	990	3.60 0.90		1.20	1645	6.14 1.50
		3.5	9 - 4012 - L 9 - 4014 - L	90.1	789	0.73	946	1.05	1319 1262	1.40	1561	1.73
		4 4.5	9 - 4016 - L 9 - 4018 - L	76.4 66.2	764 744	1.00 1.13	916 893	1.20 1.35	1222 1191	1.60 1.80	1503 1485	1.97 2.24
2 1/2	1 1/2	5	9 - 4020 - L	58.0	725	1.13	870	1.50	1160	2.00	1461	2.52
2 1/2	1 1/2	6 7	9 - 4024 - L 9 - 4028 - L	47.7 40.1	716 701	1.50 1.75	859 842	1.80	1145	2.40 2.80	1428 1404	2.99 3.50
		8	9 - 4032 - L	34.5	690	2.00	828	2.10 2.40	1122 1103	3.20	1385	4.02
		10 12	9 - 4040 - L 9 - 4048 - L	26.8 22.1	670 663	2.50 3.00	804 795	3.00 3.60	1072 1060	4.00 4.80	1329 1322	4.96 5.98
		12	Rot		Vire			ctio		4.00	1322	5.70
1		1	9 - 0604 - L	2.6	7	0.25	8	0.30	11	0.40	13	0.51
		1.25	9 - 0605 - L	2.0	6	0.31	7	0.38	10	0.50	13	0.63
3/8	3/16	1.5 1.75	9 - 0606 - L 9 - 0607 - L	1.6 1.4	6 6	0.38 0.44	7 7	0.45 0.53	10 10	0.60 0.70	13 12	0.79 0.91
3/8	3/16	2	9 - 0608 - L	1.2	6	0.50	7	0.60	10	0.80	13	1.06
		2.5 3	9 - 0610 - L 9 - 0612 - L	1.0 0.8	6 6	0.63 0.75	7	0.75 0.90	10 9	1.00 1.20	13 12	1.34 1.57
		12	9 - 0648 - L	0.2	5	3.00	6	3.60	9	4.80	12	6.42
		l 1 25	9 - 0804 - L	5.1	13	0.25	15	0.30	21	0.40	26	0.51
		1.25 1.5	9 - 0805 - L 9 - 0806 - L	3.8 3.1	12 12	0.31 0.38	14 14	0.38 0.45	19 18	0.50 0.60	26 24	0.67 0.79
1/0	0./22	1.75	9 - 0807 - L	2.6	11	0.44	14	0.53	18	0.70	24	0.91
1/2	9/32	2 2.5	9 - 0808 - L 9 - 0810 - L	2.2 1.7	11 11	0.50 0.63	13 13	0.60 0.75	18 17	0.80 1.00	23 24	1.06 1.38
		3	9 - 0812 - L	1.4	11	0.75	13	0.90	1 <i>7</i>	1.20	23	1.61
		3.5 12	9 - 0814 - L 9 - 0848 - L	1.2 0.3	10 10	0.88 3.00	13 12	1.05 3.60	17 16	1.40 4.80	23 22	1.93 6.54
		1	9 - 1004 - L	10.2	25	0.25	30	0.30	41	0.40	52	0.51
		1.25 1.5	9 - 1005 - L 9 - 1006 - L	7.6 6.0	24	0.31 0.38	29 27	0.38 0.45	38 36	0.50 0.60	48 47	0.63 0.79
		1.75	9 - 1007 - L	6.0 5.0	23 22	0.44	26	0.53	35	0.70	45	0.91
5/8	11/32	2 2.5	9 - 1008 - L 9 - 1010 - L	4.3 3.4	22 21	0.50 0.63	26 25	0.60 0.75	35 34	0.80 1.00	46 45	1.06 1.34
		3	9 - 1012 - L	2.7	20	0.75	25	0.90	33	1.20	44	1.61
		3.5 4	9 - 1014 - L 9 - 1016 - L	2.3 2.0	20 20	0.88 1.00	25 24	1.05 1.20	33 32	1.40 1.60	45 44	1.93 2.20
			, .J.U.L	0.6	19	3.00	23	3.60	31	4.80	43	6.69



SuperSprings®





Color: Blue

Sizes: 3/8" to 1", Rectangular Wire Construction

							LOAD	- DEFLE	CTION	TARIF		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	RATE Pounds Required to Deflect	Recomi for Lo	eflection mended ng Life of C)	Total De Recom- for Ave	eflection mended rage Life of C)	Max Oper Defle	imum rating ection % of C)		Travel Solid
A	В	С		1/10 in.	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load lbs.	Deflection inches	Load Ibs.	Deflection inches
			Recta	ngula	r W	ire (Cons	truc	tion			
		1	9 - 0604 - ME	9.1	23	0.25	27	0.30	34	0.38	40	0.43
		1 1/4	9 - 0605 - ME	7.4	23	0.31	28	0.38	35	0.47	53	0.71 0.79
		1 1/2 1 3/4	9 - 0606 - ME 9 - 0607 - ME	6.8 5.9	25 26	0.38 0.44	31 31	0.45 0.53	38 39	0.56 0.66	53 51	0.77
3/8	3/16	2	9 - 0608 - ME	5.1	25	0.50	30	0.60	38	0.75	52	1.02
		2 1/2	9 - 0610 - ME	4.3	27	0.63	32	0.75	40	0.94	54	1.26
		3 12	9 - 0612 - ME	3.0 0.9	23 27	0.75 3.00	27 33	0.90 3.60	34 41	1.13 4.50	45 54	1.50 5.87
			9 - 0648 - ME									
		1 1 1/4	9 - 0804 - ME 9 - 0805 - ME	17.1 14.2	43 44	0.25 0.31	51 53	0.30 0.38	64 66	0.38 0.47	88 100	0.51 0.71
		1 1/4	9 - 0806 - ME	12.2	46	0.31	55 55	0.35	69	0.47	96	0.79
	_ ,	1 3/4	9 - 0807 - ME	10.6	46	0.44	55	0.53	69	0.66	100	0.94
1/2	9/32	2 1/2	9 - 0808 - ME	8.8	44	0.50	53 53	0.60	66 45	0.75	98 05	1.10
		2 1/2 3	9 - 0810 - ME 9 - 0812 - ME	6.9 5.8	43 44	0.63 0.75	52 52	0.75 0.90	65 65	0.94 1.13	95 94	1.38 1.61
		3 1/2	9 - 0814 - ME	4.8	42	0.88	50	1.05	63	1.31	92	1.93
		12	9 - 0848 - ME	1.2	36	3.00	43	3.60	54	4.50	70	5.87
		1	9 - 1004 - ME	28.2	70	0.25	85	0.30	106	0.38	133	0.47
		1 1/4	9 - 1005 - ME	21.2	66	0.31	79	0.38	99	0.47	125	0.59
		1 1/2 1 3/4	9 - 1006 - ME 9 - 1007 - ME	19.3 17.1	73 75	0.38 0.44	87 90	0.45 0.53	109 112	0.56 0.66	145 142	0.75 0.83
- 10	/	2	9 1007 ME 9 1008 ME	15.1	75 75	0.50	90	0.55	113	0.88	142	0.83
5/8	11/32	2 1/2	9 - 1010 - ME	11.7	73	0.63	88	0.75	110	0.94	147	1.26
		3	9 - 1012 - ME	10.2	76	0.75	91	0.90	114	1.13	156	1.54
		3 1/2 4	9 - 1014 - ME 9 - 1016 - ME	8.7 7.7	76 77	0.88 1.00	91 92	1.05 1.20	114 116	1.31 1.50	154 161	1.77 2.09
		12	9 1048 ME	2.7	82	3.00	99	3.60	123	4.50	162	5.91
		1	9 - 1204 - M	51.5	129	0.25	155	0.30	193	0.38	223	0.43
		1 1/4	9 - 1205 - M	39.0	122	0.23	146	0.38	183	0.47	200	0.51
		1 1/2	9 - 1206 - M	31.4	118	0.38	142	0.45	177	0.56	198	0.63
		1 3/4 2	9 - 1207 - M	25.7	112	0.44	135	0.53	169	0.66	192	0.75
		2 1/2	9 - 1208 - M 9 - 1210 - M	22.2 17.4	111 108	0.50 0.63	133 130	0.60 0.75	167 163	0.75 0.94	184 184	0.83 1.06
3/4	3/8	3	9 - 1212 - M	14.2	106	0.75	127	0.90	159	1.13	184	1.30
0,4	3/6	3 1/2	9 - 1214 - M	12.2	106	0.88	128	1.05	160	1.31	187	1.54
		4 4 1/2	9 - 1216 - M 9 - 1218 - M	10.6 9.3	106 105	1.00 1.13	127 126	1.20 1.35	159 157	1.50 1.69	184 180	1.73 1.93
		5	9 - 1210 - M	9.3 8.4	105	1.15	126	1.50	157	1.88	182	2.17
		5 1/2	9 - 1222 - M	7.6	104	1.38	125	1.65	1 <i>57</i>	2.06	182	2.40
		6 12	9 - 1224 - M 9 - 1248 - M	6.8 3.5	103 104	1.50 3.00	123 125	1.80 3.60	154 156	2.25 4.50	178 185	2.60 5.35
		1	9 - 1604 - M	86.0	215	0.25	258	0.30	323	0.38	372	0.43
		1 1/4	9 - 1605 - M	67.6	211	0.31	254	0.38	31 <i>7</i>	0.47	346	0.51
		1 1/2	9 - 1606 - M	53.3	200	0.38	240	0.45	300	0.56	336 355	0.63
		1 3/4 2	9 - 1607 - M 9 - 1608 - M	47.5 39.3	208 197	0.44 0.50	249 236	0.53 0.60	312 295	0.66 0.75	355 325	0.75 0.83
		2 1/2	9 - 1610 - M	30.4	190	0.63	228	0.75	285	0.94	323	1.06
		3 1/2	9 - 1612 - M	24.7	185	0.75	222	0.90	278	1.13	321	1.30
1	1/2	3 1/2 4	9 - 1614 - M 9 - 1616 - M	21.7 18.8	190 188	0.88 1.00	228 226	1.05 1.20	285 283	1.31 1.50	333 326	1.54 1.73
		4 1/2	9 - 1618 - M	16.7	188	1.13	226	1.35	282	1.69	329	1.97
		5	9 - 1620 - M	15.1	188	1.25	226	1.50	283	1.88	332	2.20
		5 1/2	9 - 1622 - M	13.6	187	1.38	224	1.65	280	2.06	337	2.48 2.64
		6 7	9 - 1624 - M 9 - 1628 - M	12.4 10.6	187 185	1.50 1.75	224 222	1.80 2.10	280 277	2.25 2.63	328 328	3.11
		8	9 - 1632 - M	9.1	182	2.00	219	2.40	273	3.00	323	3.54
		12	9 - 1648 - M	6.0	179	3.00	215	3.60	269	4.50	317	5.31

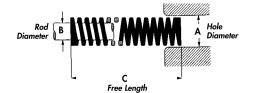
Sizes: 1 1/4" to 2 1/2", Rectangular Wire Construction

Sizes: 3/8" to 5/8", Round Wire Construction Color: Blue

шег	D . I	E		RATE			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	Pounds Required to Deflect	Recom for Lo	eflection mended ng Life of C)	Recom for Ave	eflection mended rage Life of C)	Opei Defle	imum rating ection % of C)		Travel Solid
Α	В	с		1/10 in.	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load lbs.	Deflectio inches
		1 1/2	9 - 2006 - M	04.7	255	0.38	426	0.45	533	0.56	597	0.63
		1 3/4	9 - 2006 - M 9 - 2007 - M	94.7 77.9	355 341	0.38	409	0.43	533 511	0.56	582	0.03
		2	9 - 2008 - M	66.2	331	0.50	397	0.60	497	0.75	547	0.83
		2 1/2	9 - 2010 - M	50.0	312	0.63	375	0.75	469	0.94	531	1.06
		3 3 1/2	9 - 2012 - M 9 - 2014 - M	40.5 34.2	304 299	0.75 0.88	365 359	0.90 1.05	456 449	1.13 1.31	511 498	1.26 1.46
		4	9 - 2016 - M	29.6	296	1.00	355	1.20	444	1.50	501	1.69
1 1/4	5/8	4 1/2	9 - 2018 - M	26.3	296	1.13	355	1.35	444	1.69	507	1.93
		5 5 1/2	9 - 2020 - M 9 - 2022 - M	23.7	296 294	1.25 1.38	355 353	1.50 1.65	444 441	1.88 2.06	513 505	2.17 2.36
		6	9 - 2024 - M	21.4 19.3	294 290	1.50	348	1.80	435	2.25	503	2.60
		7	9 - 2028 - M	16.6	290	1.75	348	2.10	436	2.63	503	3.03
		8	9 - 2032 - M	14.4	288	2.00	345	2.40	432	3.00	499	3.46 4.33
		10 12	9 - 2040 - M 9 - 2048 - M	11.4 9.5	284 285	2.50 3.00	341 342	3.00 3.60	426 427	3.75 4.50	492 497	5.24
		2	9 - 2408 - M	97.4	487	0.50	585	0.60	731	0.75	805	0.83
		2 1/2	9 - 2410 - M	73.6	460	0.63	552	0.75	690	0.94	753	1.02
		3 1/2	9 - 2412 - M 9 - 2414 - M	60.1	451 439	0.75	541 527	0.90	676 658	1.13	757 731	1.26 1.46
		3 1/2 4	9 - 2414 - M 9 - 2416 - M	50.2 43.4	439 434	0.88 1.00	527 521	1.05 1.20	658 651	1.31 1.50	731 735	1.46
		4 1/2	9 - 2418 - M	38.0	427	1.13	513	1.35	641	1.69	718	1.89
1 1/2	3/4	5	9 - 2420 - M	33.9	424	1.25	509	1.50	636	1.88	721 710	2.13
		5 1/2 6	9 - 2422 - M 9 - 2424 - M	30.6 28.0	421 420	1.38 1.50	505 504	1.65 1.80	631 631	2.06 2.25	710 717	2.32 2.56
		7	9 - 2428 - M	23.7	415	1.75	497	2.10	622	2.63	709	2.99
		8	9 - 2432 - M	20.7	413	2.00	496	2.40	620	3.00	708	3.43
		10 12	9 - 2440 - M 9 - 2448 - M	16.6 13.5	414 406	2.50 3.00	497 487	3.00 3.60	621 609	3.75 4.50	717 698	4.33 5.16
		2 1/2 3	9 - 3210 - M 9 - 3212 - M	121 95.6	755 717	0.63 0.75	906 860	0.75 0.90	1133 1075	0.94 1.13	1284 1204	1.06 1.26
		3 1/2	9 - 3214 - M	80.1	701	0.88	841	1.05	1052	1.31	1167	1.46
		4	9 - 3216 - M	69.4	694	1.00	833	1.20	1041	1.50	1175	1.69
		4 1/2 5	9 - 3218 - M 9 - 3220 - M	61.1 54.0	688 675	1.13 1.25	825 810	1.35 1.50	1032 1012	1.69 1.88	1179 1148	1.93 2.13
2	1	5 1/2	9 - 3222 - M	48.7	670	1.38	804	1.65	1012	2.06	1132	2.13
		6	9 - 3224 - M	44.6	669	1.50	802	1.80	1003	2.25	1158	2.60
		7	9 - 3228 - M	37.9	663	1.75	796	2.10	994	2.63	1148	3.03
		8 9	9 - 3232 - M 9 - 3236 - M	32.8 29.0	656 652	2.00 2.25	788 783	2.40 2.70	985 979	3.00 3.38	1137 1141	3.46 3.94
		10	9 - 3240 - M	26.1	653	2.50	784	3.00	980	3.75	1204	4.61
		12	9 - 3248 - M	22.1	664	3.00	797	3.60	997	4.50	1168	5.28
		3 3 1/2	9 - 4012 - M	174	1302	0.75	1562	0.90	1953	1.13	2187	1.26
		3 1/2	9 - 4014 - M 9 - 4016 - M	143 121	1247 1208	0.88 1.00	1496 1450	1.05 1.20	1870 1812	1.31 1.50	2132 2093	1.50 1.73
		4 1/2	9 - 4018 - M	106	1194	1.13	1433	1.35	1791	1.69	2090	1.97
0.1/0	1.1/0	5	9 - 4020 - M	93.7	1171	1.25	1406	1.50	1757	1.88	2066	2.20
2 1/2	1 1/2	6 7	9 - 4024 - M 9 - 4028 - M	75.7 63.7	1136 1115	1.50 1.75	1363 1338	1.80 2.10	1704 1672	2.25 2.63	1998 1956	2.64 3.07
		8	9 - 4032 - M	54.9	1098	2.00	1318	2.40	1647	3.00	1945	3.54
		9	9 - 4036 - M	48.7	1095	2.25	1314	2.70	1643	3.38	1955	4.02
		10 12	9 - 4040 - M 9 - 4048 - M	43.8 36.2	1094 1086	2.50 3.00	1313 1303	3.00 3.60	1642 1628	3.75 4.50	1982 1966	4.53 5.43
										4.50	1700	5.46
			Rou	ind W	/ire	Con	stru	ction				
		1	9 - 0604 - M	7.1	18	0.25	21	0.30	27	0.38	31	0.43
		1 1/4 1 1/2	9 - 0605 - M 9 - 0606 - M	5.5 4.5	1 <i>7</i> 1 <i>7</i>	0.31 0.38	21 20	0.38 0.45	26 25	0.47 0.56	28 28	0.51 0.63
3/8	2/14	1 3/4	9 - 0607 - M	3.8	17	0.38	20	0.43	25 25	0.66	28	0.75
J/0	3/16	2	9 - 0608 - M	3.3	16	0.50	20	0.60	25	0.75	27	0.83
		2 1/2 3	9 - 0610 - M 9 - 0612 - M	2.6 2.1	16 16	0.63 0.75	19 19	0.75 0.90	24 24	0.94 1.13	27 27	1.06 1.30
		12	9 - 0648 - M	0.5	15	3.00	18	3.60	23	4.50	27 27	5.35
		1	9 - 0804 - M	13.0	32	0.25	39	0.30	49	0.38	56	0.43
		1 1/4	9 - 0805 - M	10.0	31	0.31	37	0.38	47	0.47	51	0.51
		1 1/2 1 3/4	9 - 0806 - M 9 - 0807 - M	8.1 6.7	30 29	0.38 0.44	36 35	0.45 0.53	46 44	0.56 0.66	51 50	0.63 0.75
1/2	9/32	2	9 - 0808 - M	5.8	29	0.44	35	0.60	43	0.86	50	0.75
	'	2 1/2	9 - 0810 - M	4.5	28	0.63	34	0.75	42	0.94	50	1.10
		3 1/2	9 - 0812 - M	3.7	28 28	0.75	33	0.90	42 43	1.13	50 52	1.34
		3 1/2 12	9 - 0814 - M 9 - 0848 - M	3.2 0.9	28 27	0.88 3.00	34 33	1.05 3.60	43 41	1.31 4.50	52 52	1.61 5.67
		1	9 - 1004 - M	19.3	48	0.25	58	0.30	72	0.38	84	0.43
		1 1/4	9 - 1004 - M 9 - 1005 - M	14.3	45	0.23	54	0.38	67	0.47	73	0.43
		1 1/2	9 - 1006 - M	11.5	43	0.38	52	0.45	65	0.56	72	0.63
		1 3/4	9 - 1007 - M	9.5 8.1	42 40	0.44 0.50	50 49	0.53	63 61	0.66 0.75	71 67	0.75 0.83
5/8	11/32	2 2 1/2	9 - 1008 - M 9 - 1010 - M	6.3	39	0.50	47	0.60 0.75	59	0.73	67	1.06
3/6												
3/8		3	9 - 1012 - M	5.1	38	0.75	46	0.90	57	1.13	66	1.30
3/8		3 3 1/2 4	9 - 1012 - M 9 - 1014 - M 9 - 1016 - M	5.1 4.3 3.8	38 38 38	0.75 0.88 1.00	46 46 46	0.90 1.05 1.20	57 57 57	1.13 1.31 1.50	66 67 68	1.30 1.54 1.77







Color: Red

Sizes: 3/8" to 1", Rectangular Wire Construction

							LOAD	- DEFLE	CTION	TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	RATE Pounds Required to Deflect	Recom for Lo (20%	eflection mended ng Life of C)	Recomi for Avei (25%	eflection mended rage Life of C)	Oper Defle (30%	imum cating ection of C)	Total T to Sc	olid
A	В	С		1/10 in.	Load Ibs.	Deflection inches	Load lbs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches
			Recta	ngula	r W	ire C	ons	truc	tion			
		. 1,,	9 - 0604 - HE	12.6	25	0.20	32	0.25	38	0.30	60	0.47
3/8	3/16	1 1/4 1 1/2 1 3/4 2	9 - 0605 - HE 9 - 0606 - HE 9 - 0607 - HE 9 - 0608 - HE	10.0 9.8 8.6 7.3	25 29 30 29	0.25 0.30 0.35 0.40	31 37 37 37	0.31 0.38 0.44 0.50	37 44 45 44	0.38 0.45 0.53 0.60	51 58 64 66	0.51 0.59 0.75 0.91
		2 1/2 3 12	9 - 0610 - HE 9 - 0612 - HE 9 - 0648 - HE	6.1 4.3 1.2	31 26 29	0.50 0.60 2.40	38 32 36	0.63 0.75 3.00	46 39 43	0.75 0.90 3.60	65 54 66	1.06 1.26 5.51
1/2	9/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2	9 - 0804 - HE 9 - 0805 - HE 9 - 0806 - HE 9 - 0807 - HE 9 - 0808 - HE 9 - 0810 - HE 9 - 0812 - HE 9 - 0814 - HE 9 - 0848 - HE	24.0 18.9 16.7 14.0 11.2 8.6 7.5 6.5	48 47 50 49 45 43 45 46 38	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 2.40	60 59 63 61 56 54 57 57	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 3.00	72 71 75 74 67 64 68 68 58	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 3.60	114 119 132 122 110 101 110 108 82	0.47 0.63 0.79 0.87 0.98 1.18 1.46 1.65 5.12
5/8	11/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 12	9 - 1004 - HE 9 - 1005 - HE 9 - 1006 - HE 9 - 1007 - HE 9 - 1008 - HE 9 - 1010 - HE 9 - 1012 - HE 9 - 1014 - HE 9 - 1016 - HE 9 - 1048 - HE	43.2 30.1 27.7 24.4 21.2 17.3 14.7 12.4 11.0 4.1	86 75 83 85 85 86 88 87 88	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 2.40	108 94 104 107 106 108 110 108 110	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 3.00	130 113 125 128 127 130 132 130 132 146	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 1.20 3.60	170 154 185 202 192 197 196 190 195	0.39 0.51 0.67 0.83 0.91 1.14 1.34 1.54 1.77 4.57
3/4	3/8	1 1 1/4 1 1/2 1 3/4 2 2 1 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 12	9 - 1204 - H 9 - 1205 - H 9 - 1206 - H 9 - 1207 - H 9 - 1208 - H 9 - 1210 - H 9 - 1212 - H 9 - 1214 - H 9 - 1216 - H 9 - 1218 - H 9 - 1220 - H 9 - 1222 - H 9 - 1224 - H 9 - 1224 - H	123 95.9 73.6 63.9 53.6 41.2 34.1 28.8 25.2 21.9 19.5 17.7 16.1 8.6	247 240 221 224 215 206 204 202 202 197 195 195 193 205	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 2.40	308 300 276 280 268 257 256 252 247 243 243 241 257	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 3.00	370 360 331 336 322 309 307 303 303 296 292 292 290 308	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 1.20 1.35 1.50 1.65 1.80 3.60	388 377 348 352 338 340 349 340 348 345 337 341 336 364	0.31 0.39 0.47 0.55 0.63 0.83 1.02 1.18 1.38 1.57 1.73 1.93 2.09 4.25
1	1/2	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8	9 - 1604 - H 9 - 1605 - H 9 - 1606 - H 9 - 1607 - H 9 - 1608 - H 9 - 1610 - H 9 - 1612 - H 9 - 1614 - H 9 - 1618 - H 9 - 1620 - H 9 - 1622 - H 9 - 1622 - H 9 - 1623 - H 9 - 1632 - H 9 - 1634 - H	217 158 125 105 89.8 69.4 57.1 48.2 41.9 37.2 32.8 29.7 27.4 23.3 20.4 13.1	434 394 376 369 359 347 343 337 336 335 328 327 329 327 329 327	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40	543 493 470 461 449 434 428 421 419 410 409 411 409 408 392	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 3.00	651 591 564 553 539 521 514 506 503 502 492 491 493 490 489	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 1.20 1.35 1.50 1.65 1.80 2.10 2.40 3.60	684 621 642 622 636 601 607 626 611 630 607 609 615 625 618	0.31 0.39 0.51 0.59 0.71 0.87 1.06 1.30 1.46 1.69 1.85 2.05 2.24 2.68 3.03 4.53

Sizes: 1 1/4" to 2", Rectangular Wire Construction
Sizes: 3/8" to 5/8", Round Wire Construction

Color: Red

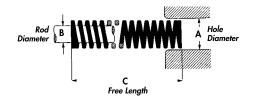
				RATE			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	Pounds Required to Deflect	Recom for Lo	eflection mended ng Life of C)	Recomi for Ave	eflection mended rage Life of C)	Oper Defle	mum ating ction of C)	Total to S	
А	В	с		1/10 in.	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches
		1 1/2 1 3/4 2 2 1/2	9 - 2006 - H 9 - 2007 - H 9 - 2008 - H 9 - 2010 - H	215 177 150 117	644 618 601 584	0.30 0.35 0.40 0.50	805 773 751 730	0.38 0.44 0.50 0.63	966 928 902 876	0.45 0.53 0.60 0.75	1014 974 947 965	0.47 0.55 0.63 0.83
1 1/4	5/8	3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 2012 - H 9 - 2014 - H 9 - 2016 - H 9 - 2018 - H 9 - 2022 - H 9 - 2024 - H 9 - 2028 - H 9 - 2032 - H 9 - 2048 - H	94.7 80.2 69.1 60.8 54.7 49.3 44.9 38.1 33.0 26.4 21.8	568 561 553 547 547 542 539 533 529 529 529	0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.00 2.40	711 701 691 684 683 678 674 666 661 661	0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	853 842 829 820 820 814 809 800 793 793 784	0.90 1.05 1.20 1.35 1.50 1.65 1.80 2.10 2.40 3.00 3.60	970 947 952 957 969 971 955 945 937 957	1.02 1.18 1.38 1.57 1.77 1.97 2.13 2.48 2.83 3.62 4.33
1 1/2	3/4	2 2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 2408 - H 9 - 2410 - H 9 - 2412 - H 9 - 2416 - H 9 - 2418 - H 9 - 2420 - H 9 - 2422 - H 9 - 2424 - H 9 - 2422 - H 9 - 2424 - H 9 - 2432 - H 9 - 2432 - H 9 - 2432 - H 9 - 2434 - H	201 153 125 105 90.7 80.4 71.5 64.3 59.1 50.3 43.8 34.5 28.7	804 766 750 738 726 724 715 708 709 704 700 691 688	0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.00 2.40	957 938 923 907 905 893 884 886 880 876 863	0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	1207 1149 1125 1107 1088 1086 1072 1061 1063 1056 1051 1036	0.60 0.75 0.90 1.05 1.20 1.35 1.50 1.65 1.80 2.10 2.40 3.00 3.60	1346 1327 1329 1329 1321 1330 1322 1317 1326 1326 1310 1319 1308	0.67 0.87 1.06 1.26 1.46 1.65 1.85 2.05 2.24 2.64 2.99 3.82 4.57
2	1	2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 3210 - H 9 - 3212 - H 9 - 3214 - H 9 - 3216 - H 9 - 3218 - H 9 - 3220 - H 9 - 3222 - H 9 - 3224 - H 9 - 3228 - H 9 - 3232 - H 9 - 3240 - H 9 - 3248 - H	242 193 161 140 123 108 96.5 88.1 75.1 65.8 51.6	1209 1158 1124 1119 1104 1080 1061 1057 1051 1053 1032 1023	0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.00 2.40	1512 1448 1405 1398 1380 1351 1326 1321 1314 1316 1290 1279	0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	1814 1737 1686 1678 1657 1621 1592 1585 1576 1579 1548	0.75 0.90 1.05 1.20 1.35 1.50 1.65 1.80 2.10 2.40 3.00 3.60	2000 1976 1896 1927 1932 1914 1899 1872 1891 1865 1869 1880	0.83 1.02 1.18 1.38 1.57 1.77 1.97 2.13 2.52 2.83 3.62 4.41
l ,			Rou			_		etion		0.00	40	0.05
3/8	3/16	1 1/4 1 1/2 1 3/4 2 2 1/2 3 12	9 - 0604 - H 9 - 0605 - H 9 - 0606 - H 9 - 0607 - H 9 - 0608 - H 9 - 0610 - H 9 - 0612 - H 9 - 0648 - H	12.2 9.4 7.6 6.7 5.6 4.4 3.6 0.9	24 23 23 23 22 22 22 22	0.20 0.25 0.30 0.35 0.40 0.50 0.60 2.40	30 29 28 29 28 27 27 27	0.25 0.31 0.38 0.44 0.50 0.63 0.75 3.00	37 35 34 35 34 33 32 31	0.30 0.38 0.45 0.53 0.60 0.75 0.90 3.60	43 44 42 45 42 43 41 41	0.35 0.47 0.55 0.67 0.75 0.98 1.14 4.72
1/2	9/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 12	9 - 0804 - H 9 - 0805 - H 9 - 0806 - H 9 - 0807 - H 9 - 0808 - H 9 - 0810 - H 9 - 0812 - H 9 - 0814 - H 9 - 0848 - H	22.5 17.2 13.8 11.5 10.1 7.9 6.5 5.5	45 43 41 40 40 39 39 38 37	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 2.40	56 54 52 50 50 49 49 48 46	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 3.00	67 64 62 60 61 59 58 58	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 3.60	80 74 71 72 76 75 74 71	0.35 0.43 0.51 0.63 0.75 0.94 1.14 1.30 4.72
5/8	11/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 12	9 - 1004 - H 9 - 1005 - H 9 - 1006 - H 9 - 1007 - H 9 - 1008 - H 9 - 1010 - H 9 - 1012 - H 9 - 1014 - H 9 - 1016 - H 9 - 1048 - H	49.6 36.4 29.5 24.0 20.9 16.2 13.2 11.2 9.8 3.1	99 91 89 84 84 81 79 79 78 74	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 2.40	124 114 111 105 104 101 99 98 98	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 3.00	149 136 133 126 125 121 119 118 118	0.30 0.38 0.45 0.53 0.60 0.75 0.90 1.05 1.20 3.60	176 157 163 151 148 146 151 151 154	0.35 0.43 0.55 0.63 0.71 0.91 1.14 1.34 1.57 4.80





EXTRA HEAVY LOAD

Vacuum degassed, valve spring quality alloy steel



Sizes: 3/8" to 1", Rectangular Wire Construction

Color: Yellow

		_		RATE			LOAD	- DEFLI	CTION	I TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	Pounds Required to Deflect	Recom for Lo	eflection mended ng Life of C)	Recom for Ave	eflection mended rage Life of C)	Oper Defle	imum rating ection of C)	Total 1 to S	
Α	В	С		1/10 in.	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches
3/8	3/16	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 12	9 - 0604 - X 9 - 0605 - X 9 - 0606 - X 9 - 0607 - X 9 - 0608 - X 9 - 0610 - X 9 - 0612 - X 9 - 0648 - X	18.5 14.3 11.9 10.2 8.6 6.8 5.7 1.4	32 30 30 30 29 29 29 29 28	0.17 0.21 0.26 0.30 0.34 0.43 0.51 2.04	37 36 36 36 34 34 34 34 33	0.20 0.25 0.30 0.35 0.40 0.50 0.60 2.40	46 45 45 45 43 43 43 41	0.25 0.31 0.38 0.44 0.50 0.63 0.75 3.00	66 56 61 60 57 57 58 57	0.35 0.39 0.51 0.59 0.67 0.83 1.02 4.17
1/2	9/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 12	9 - 0804 - X 9 - 0805 - X 9 - 0806 - X 9 - 0807 - X 9 - 0808 - X 9 - 0810 - X 9 - 0812 - X 9 - 0814 - X 9 - 0848 - X	33.3 25.3 20.5 17.6 15.4 12.3 10.2 8.7 2.5	57 54 52 52 52 52 52 52 52 52 52	0.17 0.21 0.26 0.30 0.34 0.43 0.51 0.60 2.04	67 63 62 62 62 62 61 61 59	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 2.40	83 79 77 77 77 77 76 76 74	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 3.00	118 110 105 104 109 107 108 113	0.35 0.43 0.51 0.59 0.71 0.87 1.06 1.30 4.41
5/8	11/32	1 1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4	9 - 1004 - X 9 - 1005 - X 9 - 1006 - X 9 - 1007 - X 9 - 1008 - X 9 - 1010 - X 9 - 1012 - X 9 - 1014 - X 9 - 1016 - X 9 - 1048 - X	71.6 53.0 42.7 36.0 31.4 24.5 20.1 17.0 14.9	122 113 109 107 107 104 103 101 101	0.17 0.21 0.26 0.30 0.34 0.43 0.51 0.60 0.68 2.04	143 132 128 126 126 122 121 119 119	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 2.40	179 166 160 157 157 153 151 149 149	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 3.00	254 229 219 212 223 212 206 208 211 211	0.35 0.43 0.51 0.59 0.71 0.87 1.02 1.22 1.42 4.33
3/4	3/8	1 1 1/4 1 1/2 1 3/4 2 2 11/2 3 3 1/2 4 4 1/2 5 5 1/2 6	9 - 1204 - X 9 - 1205 - X 9 - 1206 - X 9 - 1207 - X 9 - 1208 - X 9 - 1210 - X 9 - 1212 - X 9 - 1214 - X 9 - 1216 - X 9 - 1218 - X 9 - 1220 - X 9 - 1222 - X 9 - 1224 - X 9 - 1248 - X	167 128 101 85.0 73.1 56.5 46.6 39.7 34.6 30.2 27.2 24.5 22.3 12.1	284 272 258 253 248 240 238 236 235 231 231 229 227 247	0.17 0.21 0.26 0.30 0.34 0.43 0.51 0.60 0.68 0.77 0.85 0.94 1.02 2.04	334 320 303 298 292 283 280 278 277 272 272 270 267 290	0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 2.40	418 400 379 372 365 353 350 347 346 340 340 337 334 363	0.25 0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 3.00	527 503 477 469 460 467 459 468 463 453 460 454 447 500	0.31 0.39 0.47 0.55 0.63 0.83 0.98 1.18 1.34 1.50 1.69 1.85 2.01
1	1/2	1 1/4 1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8	9 - 1605 - X 9 - 1606 - X 9 - 1607 - X 9 - 1608 - X 9 - 1610 - X 9 - 1612 - X 9 - 1614 - X 9 - 1618 - X 9 - 1618 - X 9 - 1620 - X 9 - 1622 - X 9 - 1624 - X 9 - 1632 - X 9 - 1632 - X 9 - 1648 - X	202 160 132 113 87.8 71.3 60.2 52.1 46.3 41.2 37.4 34.3 29.3 25.5 16.9	430 408 394 384 373 364 358 354 354 350 350 350 348 347 345	0.21 0.26 0.30 0.34 0.43 0.51 0.60 0.68 0.77 0.85 0.94 1.02 1.19 1.36 2.04	506 480 463 452 439 428 421 416 417 412 411 412 410 408 405	0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.40	632 600 579 564 549 535 527 521 521 514 514 515 512 510 507	0.31 0.38 0.44 0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 3.00	796 756 729 711 726 702 687 697 711 697 706 716 715 703 718	0.39 0.47 0.55 0.63 0.83 0.98 1.14 1.34 1.54 1.69 1.89 2.09 2.44 2.76 4.25

				RATE			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	Pounds Required to Deflect	Recomi for Lo	eflection mended ng Life of C)			Opei Defle	imum rating ection of C)		Travel iolid
A	В	с		1/10 in.	Load lbs.	Deflection inches	Load Ibs.	Deflection inches	Load Ibs.	Deflection inches	Load lbs.	Deflection inches
1 1/4	5/8	1 1/2 1 3/4 2 2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 2006 - X 9 - 2007 - X 9 - 2008 - X 9 - 2010 - X 9 - 2012 - X 9 - 2016 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X 9 - 2024 - X 9 - 2032 - X 9 - 2034 - X 9 - 2040 - X 9 - 2048 - X	279 231 197 152 123 104 89.1 77.8 69.7 63.8 57.9 49.0 42.8 34.1 28.3	712 687 670 648 629 619 606 596 593 596 590 583 582 580 577	0.26 0.30 0.34 0.43 0.51 0.60 0.68 0.77 0.85 0.94 1.02 1.19 1.36 1.70 2.04	837 809 789 762 740 729 713 701 697 701 694 686 685 683 679	0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.10 1.20 1.40 1.60 2.00 2.40	1046 1011 986 953 925 911 891 876 872 877 868 857 853 849	0.38 0.44 0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	1208 1183 1165 1200 1165 1189 1158 1103 1126 1180 1139 1137 1146	0.43 0.51 0.59 0.79 0.79 1.14 1.30 1.42 1.61 1.85 1.97 2.32 2.68 3.35 4.06
1 1/2	3/4	2 2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 2408 - X 9 - 2410 - X 9 - 2412 - X 9 - 2414 - X 9 - 2416 - X 9 - 2418 - X 9 - 2420 - X 9 - 2422 - X 9 - 2422 - X 9 - 2428 - X 9 - 2432 - X 9 - 2440 - X 9 - 2448 - X	319 241 193 161 139 122 108 97.6 88.8 75.1 65.0 51.7 42.9	1086 1023 985 959 949 933 922 913 905 893 884 879 876	0.34 0.43 0.51 0.60 0.68 0.77 0.85 0.94 1.02 1.19 1.36 1.70 2.04	1278 1203 1158 1128 1116 1097 1085 1074 1065 1051 1040 1034 1030	0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.00 2.40	1597 1504 1448 1410 1395 1372 1356 1342 1331 1314 1300 1293 1288	0.50 0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	1886 1800 1824 1776 1812 1776 1751 1767 1747 1714 1715 1730 1724	0.59 0.75 0.94 1.10 1.30 1.46 1.61 1.81 1.97 2.28 2.64 3.35 4.02
2	1	2 1/2 3 3 1/2 4 4 1/2 5 5 1/2 6 7 8 10	9 - 3210 - X 9 - 3212 - X 9 - 3214 - X 9 - 3216 - X 9 - 3218 - X 9 - 3220 - X 9 - 3222 - X 9 - 3224 - X 9 - 3228 - X 9 - 3232 - X 9 - 3232 - X 9 - 3240 - X 9 - 3248 - X	413 327 271 231 201 178 160 136 123 106 83.5 68.9	1756 1667 1610 1569 1516 1500 1391 1459 1442 1419	0.43 0.51 0.60 0.68 0.77 0.85 0.94 1.02 1.19 1.36 1.70 2.04	2066 1962 1894 1846 1811 1784 1765 1637 1716 1697 1669	0.50 0.60 0.70 0.80 0.90 1.00 1.10 1.20 1.40 1.60 2.00	2582 2452 2368 2308 2308 2264 2229 2206 2046 2145 2121 2087 2066	0.63 0.75 0.88 1.00 1.13 1.25 1.38 1.50 1.75 2.00 2.50 3.00	3091 2960 2876 2817 2773 2773 2779 2524 2703 2672 2629 2630	0.75 0.91 1.06 1.22 1.38 1.54 1.73 1.85 2.20 2.52 3.15 3.82

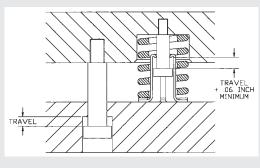


Spring Retainers

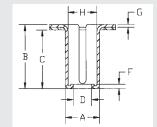
- all steel construction, zinc-plated finish
- compatible with 3/4" and 1", 20 and 25 mm diameter spring rods
- use with any length that allows clearance

READY® Spring Retainers locate and provide a light pre-load to each spring. This allows for easy assembly and disassembly of strippers in a die even while in the press. Broken springs can easily be replaced without long downtime.

Shoulder bolts or spools must be used in conjunction with the READY Spring Retainer.







Color: Yellow

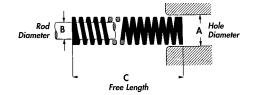
CATALOG NUMBER inch	A	В	С	D	E	F	G	н
9-0615-16	0.79	1.90	1.77	0.39	1.46	0.16	0.05	0.62
9-0815-16	0.99	1.90	1.73	0.53	1.93	0.12	0.08	0.85
9-0823-16	0.99	2.88	2.76	0.53	1.93	0.12	0.08	0.85

CATALOG NUMBER metric	A	В	С	D	E	F	G	н
9-0615-16	20	48	45	10	37	4	1.3	15.8
9-0815-16	25	48	44	13.5	49	3	2	21.5
9-0823-16	25	73	70	13.5	49	3	2	21.5



SuperSprings®





Color: Green

Sizes: 10 to 25 mm, Rectangular Wire Construction

Dia.	_				RATE			LOAD	- DEFLE	CTION	TABLE		
CATALOG Canalog Cana	Hole	Rod	Free		Deka-	Total De	eflection	Total De	flection	Max	imum		
Mart	Dia.	Dia.	Length	CATALOG		Recomi	mended	Recomr	nended	Oper	ating	Total	Travel
A B C Perfect Deffect Section Deffect De	mm	mm	mm					for Aver	age Life			to S	iolid
Rectangular Wire Construction Load Confection Load				NOMBER		(25%	of C)	(30%	of C)	(40%	of C)		
Rectangular Wire Construction Service Service Construction Service Ser						Load	Deflection	Load	Deflection	Load	Deflection	Load	Deflection
10 S	А	В	С		1 mm								
10 S				Rectan	gula	r Wi	re C	onst	ruct	ion			
10 5 44 9 - 0607 - LE 0.60 6.65 1.7 9.5 7.8 11 1 10.3 15 15.6 22 75 15 1 9 - 0608 - LE 0.60 6.6 11 7.9 13 10.6 18 16.2 27 16 6.6 11 7.9 13 10.6 18 16.2 27 16 16 16 17.7 15 10.2 20 15.5 31 17.6 16 16 17.7 15 10.2 20 15.5 31 17.6 17.6 9 - 0612 - LE 0.43 6.9 16 8.3 19 11.0 26 17.6 41 17.6 9 - 0610 - LE 0.43 6.9 16 8.3 19 11.0 26 17.6 41 17.6 9 - 0610 - LE 0.13 8.4 7.6 10.1 19 17.3 122 17.7 15 10.2 20 15.5 31 15.4 17.5 17.6 17.6 17.6 17.6 17.7 15 10.2 20 15.5 18.7 17.6 17.6 17.6 17.7 17.7 15 10.2 20 15.5 18.7 17.7 15 10.2 15.6 18.7 17.7 17.7 15 10.2 15.6 18.7 17.7 17.7 17.7 17.7 17.7 17.7 17.7										10.0			15
10 5 \$\frac{44}{0.0007}\$ \text{\tex{													19
10 5													
12.5 6.4 9.0610 LE 0.32 6.1 19 7.3 23 9.7 30 15.4 44	10	5											
Texas													41
12.5 9 - 0.804 - UE 1.79 11.2 6.3 13.47 7.5 17.9 10 23.3 13.3 13.3 13.2 13.2 13.3 13.3 13.5			76	9 - 0612 - LE	0.32	6.1	19	7.3			30	15.4	48
12.5 1.64 1.3.1 1.3.1 1.8.0 15.7 9.6 21.0 13 27.9 17 17 18 18 18 18 18 18			305	9 - 0648 - LE		8.4	76				122	20.6	187
12.5 A4													13 17
12.5 9.0807 · LE 1.21 13.3 11 16.0 13 21.3 23.3 20 33.1 29													
12.5 6.3 76 9-0810-1E 0.93 14.9 16 17.9 19 23.8 26 34.4 37 11.2 12.5 6.3 76 9-0812-1E 0.71 13.5 19 16.2 23 21.6 30 33.4 47 11.4 9-0818-1E 0.44 12.0 22 14.4 27 19.2 36 29.2 36 11.4 9-0818-1E 0.44 12.0 22 14.4 27 19.2 36 29.2 36 11.4 9-0818-1E 0.44 12.0 35 15.5 42 20.7 56 33.7 79 16.5 9-0826-1E 0.26 10.7 41 12.9 50 17.2 66 25.7 99 16.5 9-0826-1E 0.20 9.5 48 11.4 57 15.2 76 22.2 111 305 9-0848-1E 0.14 10.7 76 12.8 92 17.1 122 25.8 184 13.3 9-0848-1E 0.14 10.7 76 12.8 92 17.1 122 25.8 184 13.3 9-1005-1E 2.24 14.6 6.3 17.6 7.5 23.4 10 25.7 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0													25
12.5					1.14				15				29
Section Sect	10.5	4.0											
114	12.5	0.ა											
140 9 \cdot 90822 \cdot 0.37 13.0 35 15.5 42 20.7 56 33.7 91													
190 9-0830-LE 0.20 9.5 48													
16 305 9-0848-LE 0.14 10.7 76 12.8 92 17.1 122 25.8 184 25 9-1004-LE 2.34 14.6 6.3 17.6 7.5 23.4 10 25.7 11 32 9-1005-LE 2.29 18.3 8.0 22.0 9,6 29.3 13 38.9 17 38 9-1006-LE 1.93 18.3 9.5 22.0 11 29.3 15 38.6 20 44 9-1007-LE 1.71 18.8 11 22.6 13 30.1 18 41.0 24 44 9-1007-LE 1.77 17.1 16 20.5 19 27.4 26 39.6 37 76 9-1012-LE 1.00 19.0 19 22.8 23 30.4 30 42.0 42 89 9-1014-LE 0.86 19.1 22 23.0 27 30.6 36 43.9 51 102 9-1048-LE 0.25 19.1 76 22.9 92 30.5 122 45.3 181 25 9-1204-L 5.56 34.8 6.3 41.7 7.5 55.6 10 72.3 181 32 9-1205-L 4.27 34.2 80 41.0 9,6 54.7 13 68.4 16 38 9-1206-L 3.39 32.2 9.5 38.6 11 51.5 50.4 20 64.2 23 31 9-1208-L 2.47 31.5 13 37.8 15 50.4 20 64.2 23 31 9-1208-L 2.47 31.5 13 37.8 15 50.4 20 64.2 26 40 9-1210-L 1.93 30.8 16 37.0 94.3 26 61.6 32 40 9-1210-L 1.93 30.8 16 37.0 94.3 26 61.6 23 102 9-1216-L 1.18 30.1 26 36.2 31 49.2 41 62.7 53 127 9-1220-L 0.94 29.8 32 35.8 38 47.8 41 62.7 53 129 9-1248-L 0.08 29.9 29 35.8 35 47.8 46 62.3 30 127 9-1220-L 0.94 29.8 32 35.8 38 47.8 46 62.3 30 127 9-1220-L 0.94 29.8 32 35.8 38 47.8 41 62.7 53 152 9-1248-L 0.08 28.8 76 34.6 91.5 91.5 15 123 19 25 9-1604-L 0.38 28.8 76 34.6 91.5 91.5 15 123 19 25 9-1604-L 0.35 55.5 59.9 13 70.7 15 94.2 20 116 25 51 9-1608-L 0.36 64.4 8.0 77.3 9.6 61.3 33.8 18 123 23 25 9-1604-L 0.38 28.8 76 34.6 91.5 91.5 56.2 111 31.5 127 9-1608-L 0.38 28.5 38.6 31.7 71.7 11 93.0 64.6 35.5 81.1 111													99
16													
16 8 38 9 - 1006 - LE 1.93 18.3 8.0 22.0 9.6 29.3 13 38.9 17 44 9 - 1007 - LE 1.71 18.8 11 22.6 13 30.1 18 41.0 24 45 1 9 - 1008 - LE 1.57 20.0 13 24.0 15 32.0 20 45.5 29 46 9 - 1010 - LE 1.07 17.1 16 20.5 19 27.4 26 39.6 37 76 9 - 1012 - LE 1.00 19.0 19 22.8 23 30.4 30 42.0 42. 89 9 - 1014 - LE 0.86 19.1 22 23.0 27 30.6 36 43.9 51 102 9 - 1016 - LE 0.78 19.9 26 23.9 31 31.8 41 48.4 62 305 9 - 1048 - LE 0.25 19.1 76 22.9 92 30.5 122 45.3 181 25 9 - 1205 - L 4.27 34.2 8.0 41.0 9.6 54.7 13 68.4 16.3 38 9 - 1206 - L 3.39 31.2 2.9 5.3 8.6 11 51.5 15 64.4 19 44 9 - 1207 - L 2.85 31.4 11 37.6 13 50.2 18 65.6 23 51 9 - 1208 - L 1.97 30.8 16 37.0 19 49.3 26 61.6 32 51 9 - 1212 - L 1.61 30.6 19 36.7 23 48.9 30 64.4 40 102 9 - 1214 - L 1.35 29.9 22 35.9 27 47.9 36 61.9 46. 102 20 10 89 9 - 1214 - L 1.35 29.9 29 35.8 35 47.8 46 62.3 60. 127 9 - 1224 L 1.8 30.1 26 36.2 27 31 48.2 47.6 56 62.0 73 115 9 - 1218 - L 1.04 29.9 39 55.8 35 47.8 46 62.3 60. 127 9 - 1224 L 0.94 29.8 32 35.8 35 47.8 46 62.3 60. 127 9 - 1224 L 0.85 29.7 35.8 35.8 38 47.8 51 63.0 67. 140 9 - 1222 - L 0.85 29.7 35.8 35.8 35 47.8 46 62.3 60. 127 9 - 1224 L 0.79 29.9 38 35.9 27 47.9 36 61.9 46. 127 9 - 1224 L 0.79 29.9 38 35.9 27 47.9 36 61.9 46. 23. 60. 127 9 - 1224 L 0.79 29.9 38 35.9 27 47.9 36 61.9 46. 23. 60. 127 9 - 1224 L 0.79 29.9 38 35.9 35.8 35 47.8 46 62.3 60. 127 9 - 1224 L 0.79 29.9 38 35.9 35.9 46.4 79. 61 63.8 81 305 9 - 1248 - L 0.79 29.9 38 35.9 46.4 79. 61 63.8 81 305 9 - 1248 - L 0.38 28.8 76 34.6 92 46.2 122 61.3 162 25 9 - 1604 - L 10.00 62.5 6.3 75.0 75.0 100 10 130 13 129 16. 11.00 12.00 1				9 - 0848 - LE	0.14	10.7	/6	12.8	92	17.1	122	25.8	184
16 8 44 9 - 1006 - LE 1.73 18.8 11 22.6 13 30.1 18 41.0 24 44 9 - 1007 - LE 1.77 18.8 11 22.6 13 30.1 18 41.0 24 45 47 42 48 49 - 1010 - LE 1.07 17.1 16 20.5 19 27.4 26 39.6 37 6 9 - 1012 - LE 1.00 19.0 19 22.8 23 30.4 30 42.0 42 89 9 - 1014 - LE 0.86 19.1 22 23.0 27 30.6 36 43.9 51 102 9 - 1016 - LE 0.78 19.9 26 23.9 31 31.8 41 48.4 62 305 9 - 1048 - LE 0.25 19.1 76 22.9 92 30.5 122 45.3 181 22 40 102 9 - 104 - LE 0.78 19.9 26 23.9 31 31.8 41 48.4 62 305 9 - 1048 - LE 0.25 19.1 76 22.9 92 30.5 122 45.3 181 32 9 - 1205 - LE 4.27 34.2 8.0 41.0 9.6 54.7 13 68.4 16 38 9 - 1206 - LE 3.39 32.2 9.5 38.6 11 51.5 15 64.4 19 44 9 - 1207 - LE 3.39 30.8 16 37.0 19 49.3 26 61.6 32 51 10 10 89 9 - 1214 - LE 1.93 30.8 16 37.0 19 49.3 26 61.6 32 51 11 51.5 15 64.4 40 40 40 40 40 40 40 40 40 40 40 40 40													
16 8													
16													
16													
Section Sect	10	8		9 - 1010 - LE			16				26	39.6	
102 9 - 1016 - LE 0.78 19.9 26 23.9 31 31.8 41 48.4 62 62.9													
20 10 25 9 - 1048 - 1E 0.25 19.1 76 22.9 92 30.5 122 45.3 181													
25													
20 10 76 9 - 1212 - 1 1.61 30.6 19 36.7 23 48.9 30 64.4 40 8.5 115 9 - 1220 - 1 1.8 30.1 26 36.2 31.8 31.6 32.9 32.9 35.8 31.4 31.5 30.2 36 61.6 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9			25										
20 10				9 - 1205 - L									
20 10													
20													
20													
10	00												
115	20	10			1.35	29.9	22	35.9	27	47.9		61.9	46
127													
140													
152													
25													
25 12.5 12.5 25 12.5 26 27 28 29 - 1605 - L 20 20 20 20 20 20 20 20 20 2			305	9 - 1248 - L	0.38			34.6		46.2			
25 12.5 38 9 - 1606 - L													
25 44 9 - 1607 - L 5.33 58.6 11 70.4 13 93.8 18 123 23 23 51 9 - 1608 - L 4.62 58.9 13 70.7 15 94.2 20 116 25 64 9 - 1610 - L 3.57 57.2 16 68.6 19 91.5 26 111 31 76 9 - 1612 - L 2.92 55.6 19 66.7 23 88.9 30 114 39 89 9 - 1614 - L 2.48 55.2 22 66.2 27 88.3 36 114 46 46 46 46 47 47 48 48 48 48 48 48													
25 12.5 12.5 12.5 12.5 12.5 12.5 12.5 12													
25 12.5 64													
25 12.5 89 9 - 1614 - L 2.48 55.2 22 66.2 27 88.3 36 114 46 46 46 46 47 47 47 4			64	9 - 1610 - L	3.57	57.2	16	68.6	19	91.5	26	111	31
12.5 102 9 - 1616 - L 2.12 54.0 26 64.8 31 86.5 41 110 52 115 9 - 1618 - L 1.87 53.9 29 64.6 35 86.2 46 111 59 127 9 - 1620 - L 1.67 53.2 32 63.8 38 85.1 51 111 66 140 9 - 1622 - L 1.52 53.2 35 63.8 42 85.1 56 112 74 152 9 - 1624 - L 1.39 52.8 38 63.4 46 84.5 61 111 80 178 9 - 1628 - L 1.19 53.0 45 63.5 53 84.7 71 111 93 120													
115	25	12.5											
127 9 - 1620 - L 1.67 53.2 32 63.8 38 85.1 51 111 66 140 9 - 1622 - L 1.52 53.2 35 63.8 42 85.1 56 112 74 152 9 - 1624 - L 1.39 52.8 38 63.4 46 84.5 61 111 80 178 9 - 1628 - L 1.19 53.0 45 63.5 53 84.7 71 111 93 203 9 - 1632 - L 1.05 53.4 51 64.1 61 85.5 81 113 107													
140 9 - 1622 - L 1.52 53.2 35 63.8 42 85.1 56 112 74 152 9 - 1624 - L 1.39 52.8 38 63.4 46 84.5 61 111 80 178 9 - 1628 - L 1.19 53.0 45 63.5 53 84.7 71 111 93 203 9 - 1632 - L 1.05 53.4 51 64.1 61 85.5 81 113 107													
178 9 - 1628 - L 1.19 53.0 45 63.5 53 84.7 71 111 93 203 9 - 1632 - L 1.05 53.4 51 64.1 61 85.5 81 113 107			140	9 - 1622 - L	1.52	53.2	35	63.8	42	85.1	56	112	74
203 9 - 1632 - L 1.05 53.4 51 64.1 61 85.5 81 113 107													
305 9 - 1648 - L 0.70 53.3 76 63.9 92 85.3 122 112 160													160

Color: Green

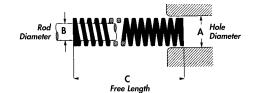
Sizes: 10 to 16 mm, Round Wire Construction

		_		RATE Deka-			LOAD	- DEFLE	CTION	TABLE		
Hole Dia.	Rod Dia.	Free Length		newtons		eflection		eflection		imum	_	_
mm	mm	mm	CATALOG	(daN)		mended		mended verage		rating ection		Travel Solid
			NUMBER	Required to		ng Life of C)		verage 0% of C)		of C)	10 .	oona
А	В	С		Deflect	Load	Deflection	Load	Deflection	Load	Deflection	Load	Deflection
r	,			1 mm	daN	mm	daN	mm	daN	mm	daN	mm
		38 44	9 - 2006 - L 9 - 2007 - L	9.40 7.95	89.3 87.5	9.5 11	107 105	11 13	143 140	15 18	179 175	19 22
		51	9 - 2008 - L	6.70	85.4	13	103	15	137	20	168	25
		64 76	9 - 2010 - L 9 - 2012 - L	5.50 4.60	88.0 87.4	16 19	106 105	19 23	141 140	26 30	176 179	32 39
		89	9 - 2014 - L	3.72	82.8	22	99.3	27	132	36	167	45
32	16	102 115	9 - 2016 - L 9 - 2018 - L	3.20 2.96	81.6 85.1	26 29	97.9 102	31 35	131 136	41 46	166 172	52 58
		127	9 - 2020 - L	2.50	79.4	32	95.3	38	127	51	163	65
		140 152	9 - 2022 - L 9 - 2024 - L	2.35 2.15	82.3 81.9	35 38	98.7 98.2	42 46	132 131	56 61	169 168	72 78
		178	9 - 2028 - L	1.82	81.1	45	97.3	53	130	71	160	88
		203 254	9 - 2032 - L 9 - 2040 - L	1.59 1.26	80.5 80.0	51 64	96.6 96.0	61 76	129 128	81 102	165 164	104 130
		305	9 - 2048 - L	1.04	79.1	76	94.9	92	126	122	161	155
		51	9 - 2408 - L	9.20	117	13	141	15	188	20	230	25
		64	9 - 2410 - L 9 - 2412 - L	7.29 4.20	117	16 10	140	19	187	26	233	32
		76 89	9 - 2412 - L 9 - 2414 - L	6.30 5.10	120 113	19 22	144 136	23 27	192 182	30 36	239 230	38 45
		102	9 - 2416 - L	4.30	110	26	132	31	175	41	219	51
40	20	115 127	9 - 2418 - L 9 - 2420 - L	3.96 3.70	114 117	29 32	137 141	35 38	182 188	46 51	230 241	58 65
	_	140	9 - 2422 - L	3.20	112	35	134	42	179	56	227	71
		152 178	9 - 2424 - L 9 - 2428 - L	2.80 2.52	106 112	38 45	128 135	46 53	170 179	61 71	218 232	78 92
		203	9 - 2432 - L	2.27	115	51	138	61	184	81	238	105
		254 305	9 - 2440 - L 9 - 2448 - L	1.70 1.48	108 113	64 76	130 136	76 92	173 181	102 122	223 233	131 157
		64	9 - 3210 - L	15.7	251	16	302	19	402	26	503	32
		76	9 - 3212 - L	12.6	240	19	287	23	383	30	492	39
		89 102	9 - 3214 - L 9 - 3216 - L	10.5 8.98	234 229	22 26	281 275	27 31	375 366	36 41	473 467	45 52
		115	9 - 3218 - L	7.67	221	29	265	35	353	46	445	58
50	25	127 140	9 - 3220 - L 9 - 3222 - L	7.01 6.30	222 221	32 35	267 265	38 42	356 353	51 56	455 454	65 72
		152	9 - 3224 - L	5.74	218	38	262	46	349	61	448	78
		178 203	9 - 3228 - L 9 - 3232 - L	4.87 4.15	217 211	45 51	260 253	53 61	347 337	71 81	448 432	92 104
		254	9 - 3240 - L	3.29	209	64	251	76	335	102	428	130
		305	9 - 3248 - L	2.71	207	76	248	92	331	122	423	156
		76 89	9 - 4012 - L 9 - 4014 - L	19.3 15.8	366 351	19 22	439 422	23 27	586 562	30 36	732 695	38 44
		102	9 - 4014 - L	13.4	341	26	409	31	546	41	669	50
		115 127	9 - 4018 - L	11.6 10.2	333 323	29 32	400 387	35 38	533 516	46 51	661 650	57 64
63	38	152	9 - 4020 - L 9 - 4024 - L	8.36	318	38	381	46	508	61	635	76
		178 203	9 - 4028 - L 9 - 4032 - L	7.02 6.04	313 307	45 51	375 368	53 61	500 491	71 81	625 616	89 102
		254	9 - 4032 - L 9 - 4040 - L	4.69	298	64	358	76	477	102	591	126
		305	9 - 4048 - L	3.87	295	76	354	92	472	122	588	152
			Rou	nd W	lire (Cons	truc	tion				
		25	9 - 0604 - L	0.46	2.9	6.3	3.5	7.5	4.6	10	6.0	13
		32 38	9 - 0605 - L 9 - 0606 - L	0.35 0.28	2.8 2.7	8.0 9.5	3.4 3.2	9.6 11	4.5 4.3	13 15	5.6 5.7	16 20
10	5	44	9 - 0607 - L	0.24	2.6	11	3.1	13	4.2	18	5.5	23
10	J	51 64	9 - 0608 - L 9 - 0610 - L	0.21 0.17	2.7 2.7	13 16	3.2 3.3	15 19	4.3 4.4	20 26	5.7 5.8	27 34
		76	9 - 0612 - L	0.17	2.5	19	3.0	23	4.0	30	5.3	40
		305	9 - 0648 - L	0.03	2.4	76	2.9	92	3.8	122	5.1	163
		25 32	9 - 0804 - L 9 - 0805 - L	0.90 0.67	5.6 5.4	6.3 8.0	6.8 6.5	7.5 9.6	9.0 8.6	10 13	11. <i>7</i> 11.4	13
		32	9 - 0806 - L	0.54	5.1	9.5	6.5 6.2	9.6 11	8.6 8.2	15	10.8	17 20
12.5	6.3	44 51	9 - 0807 - L 9 - 0808 - L	0.46	5.0 4.9	11	6.0	13 15	8.0	18	10.5	23
12.5	0.5	64	9 - 0810 - L	0.39 0.30	4.9	13 16	5.9 5.7	19	7.9 7.7	20 26	10.5 10.5	27 35
		76	9 - 0812 - L	0.25	4.8	19	5.8	23	7.7	30	10.4	41
		89 305	9 - 0814 - L 9 - 0848 - L	0.21 0.06	4.7 4.5	22 76	5.6 5.4	27 92	7.5 7.3	36 122	10.3 9.9	49 166
		25	9 - 1004 - L	1.78	11.1	6.3	13.4	7.5	17.8	10	23.1	13
		32	9 - 1005 - L	1.34	10.7 10.0	8.0 9.5	12.9	9.6	17.2	13	21.4	16
		38 44	9 - 1006 - L 9 - 1007 - L	1.06 0.87	9.6	9.5 11	12.0 11.5	11 13	16.1 15.3	15 18	21.1 20.0	20 23
16	8	51	9 - 1008 - L	0.76	9.7	13	11.6	15	15.5	20	20.5	27
	_	64 76	9 - 1010 - L 9 - 1012 - L	0.59 0.48	9.5 9.1	16 19	11.4 10.9	19 23	15.2 14.5	26 30	20.1 19.6	34 41
		89	9 - 1014 - L	0.41	9.1	22	10.9	27	14.6	36	20.1	49
		102 305	9 - 1016 - L 9 - 1048 - L	0.35 0.11	9.0 8.5	26 76	10.8 10.3	31 92	14.4 13.7	41 122	19.7 19.1	56 170
												1.7



SuperSprings[®]





Sizes: 10 to 25 mm, Rectangular Wire Construction

Color: Blue

oizes:	IU to	25 mm	, Rectangu	ıar Wii	re Con	structi	on				Cole	or: Blue
				RATE			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. mm	Rod Dia. mm	Free Length mm	CATALOG NUMBER	Deka- newtons (daN) Required to	Total De Recomn for Lor (25%	nended ng Life	Total De Recomi for Avei	eflection mended rage Life of C)	Max Opei Defle	imum rating ection % of C)		Travel Solid
Α	В	с		Deflect 1 mm	Load daN	Deflection mm	Load daN	Deflection mm	Load daN	Deflection mm	Load daN	Deflection mm
			Rectar	gula	r Wi	ire C	ons	truct	ion			
		25	9 - 0604 - ME	1.60	10.0	6.3	12.0	7.5	15.0	9.4	17.6	11
		32 38	9 - 0605 - ME 9 - 0606 - ME	1.30 1.19	10.4 11.3	8.0 9.5	12.5 13.6	9.6 11	15.6 17.0	12 14	23.4 23.8	18 20
10	5	44	9 - 0607 - ME	1.03	11.3	11	13.6	13	17.0	17	22.7	22
10	3	51	9 - 0608 - ME	0.89	11.3	13	13.6	15	17.0	19	23.1	26
		64 76	9 - 0610 - ME 9 - 0612 - ME	0.75 0.53	12.0 10.1	16 19	14.4 12.1	19 23	18.0 15.1	24 29	24.0 20.1	32 38
		305	9 - 0648 - ME	0.16	12.2	76	14.6	92	18.3	114	23.8	149
		25	9 - 0804 - ME	3.00	18.8	6.3	22.5	7.5	28.1	9.4	39.0	13
		32	9 - 0805 - ME	2.48	19.8	8.0	23.8	9.6	29.8	12	44.6	18
		38 44	9 - 0806 - ME 9 - 0807 - ME	2.14 1.85	20.3 20.4	9.5 11	24.4 24.4	11 13	30.5 30.5	14 17	42.8 44.4	20 24
12.5	6.3	51	9 - 0808 - ME	1.55	19.8	13	23.7	15	29.6	19	43.4	28
		64	9 - 0810 - ME	1.21	19.4	16	23.2	19	29.0	24	42.4	35
		76 89	9 - 0812 - ME 9 - 0814 - ME	1.02 0.84	19.4 18.7	19 22	23.3 22.4	23 27	29.1 28.0	29 33	41.8 41.2	41 49
		305	9 - 0848 - ME	0.21	16.0	76	19.2	92	24.0	114	31.3	149
		25	9 - 1004 - ME	4.94	30.9	6.3	37.1	7.5	46.3	9.4	59.3	12
		32	9 - 1005 - ME	3.71	29.7	8.0	35.6	9.6	44.5	12	55.7	15
		38 44	9 - 1006 - ME 9 - 1007 - ME	3.39 3.00	32.2 33.0	9.5 11	38.6 39.6	11 13	48.3 49.5	14 17	64.4 63.0	19 21
16	8	51	9 - 1008 - ME	2.64	33.7	13	40.4	15	50.5	19	66.0	25
10		64	9 - 1010 - ME	2.05	32.8	16	39.4	19	49.2	24	65.6	32
		76 89	9 - 1012 - ME 9 - 1014 - ME	1.78 1.52	33.8 33.8	19 22	40.6 40.6	23 27	50.7 50.7	29 33	69.4 68.4	39 45
		102	9 - 1016 - ME	1.35	34.4	26	41.3	31	51.6	38	71.6	53
		305	9 - 1048 - ME	0.48	36.6	76	43.9	92	54.9	114	72.0	150
		25	9 - 1204 - M	9.03	56.4	6.3	67.7	7.5	84.7	9.4	99.3	11
		32 38	9 - 1205 - M 9 - 1206 - M	6.83 5.51	54.6 52.3	8.0 9.5	65.6 62.8	9.6 11	82.0 78.5	12 14	88.8 88.2	13 16
		44	9 - 1207 - M	4.50	49.5	11	59.4	13	74.3	17	85.5	19
		51	9 - 1208 - M	3.89	49.6	13 16	59.5	15	74.4	19	81.7	21
		64 76	9 - 1210 - M 9 - 1212 - M	3.04 2.48	48.6 47.1	19	58.4 56.5	19 23	73.0 70.7	24 29	82.1 81.8	27 33
20	10	89	9 - 1214 - M	2.13	47.3	22	56.9	27	71.1	33	83.1	39
		102	9 - 1216 - M	1.86	47.4	26 29	56.8	31 35	71.0 70.4	38	81.7	44
		115 127	9 - 1218 - M 9 - 1220 - M	1.63 1.47	46.9 46.7	32	56.3 56.0	35 38	70.4	43 48	80.0 80.9	49 55
		140	9 - 1222 - M	1.33	46.6	35	55.9	42	69.8	53	81.1	61
		152 305	9 - 1224 - M 9 - 1248 - M	1.20 0.61	45.6 46.2	38 76	54.7 55.4	46 92	68.4 69.3	57 114	79.2 82.4	66 136
		25	9 - 1604 - M	15.1	94.2	6.3	113	7.5	141	9.4	166	11
		32	9 - 1605 - M	11.9	94.8	8.0	114	9.6	142	12	154	13
		38	9 - 1606 - M	9.34	88.7	9.5	106	11	133	14	149	16
		44 51	9 - 1607 - M 9 - 1608 - M	8.32 6.89	91.5 87.8	11 13	110 105	13 15	137 132	17 19	158 145	19 21
		64	9 - 1610 - M	5.32	85.1	16	102	19	128	24	144	27
		76	9 - 1612 - M	4.33	82.3	19	98.7	23	123	29	143	33
25	12.5	89 102	9 - 1614 - M 9 - 1616 - M	3.80 3.30	84.6 84.2	22 26	101 101	27 31	127 126	33 38	148 145	39 44
		115	9 - 1618 - M	2.93	84.2	29	101	35	126	43	147	50
		127	9 - 1620 - M	2.64	83.8	32	101	38 42	126	48	148	56
		140 152	9 - 1622 - M 9 - 1624 - M	2.38 2.18	83.3 82.8	35 38	100 99.4	42 46	125 124	53 57	150 146	63 67
		178	9 - 1628 - M	1.85	82.3	45	98.8	53	123	67	146	79
		203 305	9 - 1632 - M	1.60 1.05	81.0 79.7	51 76	97.2 95.7	61 92	121 120	76 114	144 141	90 135
		303	9 - 1648 - M	1.03	7.7	, 0	75.7	72	120	1 14	1-4-1	133

Color: Blue

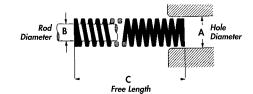
Sizes: 32 to 63 mm, Rectangular Wire Construction Sizes: 10 to 16 mm, Round Wire Construction

				RATE			LOAD	- DEFLE	CTION	TABLE		
Hole	Rod	Free		Deka-	Total D	eflection	Total D	eflection	Max	imum		
Dia.	Dia.	Length	CATALOG	newtons (daN)	Recom	mended	Recom	mended	Oper	ating		Travel
mm	mm	mm	NUMBER	Required		ng Life of C)		rage Life of C)		ection % of C)	to S	olid
				to Deflect	Load	Deflection	Load	Deflection	Load	Deflection	Load	Deflection
Α	В	С		1 mm	daN	mm	daN	mm	daN	imm	daN	mm
		38 44	9 - 2006 - M 9 - 2007 - M	16.6 13.6	158 150	9.5 11	189 180	11 13	237 225	14 17	266 259	16 19
		51	9 - 2008 - M	11.6	148	13	1 <i>77</i>	15	222	19	244	21
		64 76	9 - 2010 - M	8.76 7.10	140	16	168	19 23	210	24 29	237 227	27
		76 89	9 - 2012 - M 9 - 2014 - M	7.10 5.99	135 133	19 22	162 160	23 27	202 200	33	227	32 37
		102	9 - 2016 - M	5.19	132	26	159	31	199	38	223	43
32	16	115 127	9 - 2018 - M 9 - 2020 - M	4.61 4.15	132 132	29 32	159 158	35 38	199 198	43 48	226 228	49 55
		140	9 - 2022 - M	3.75	131	35	157	42	197	53	225	60
		152	9 - 2024 - M	3.39	129	38	155	46	193	57	224	66
		178 203	9 - 2028 - M 9 - 2032 - M	2.91 2.52	129 128	45 51	155 154	53 61	194 192	67 76	224 222	77 88
		254	9 - 2040 - M	1.99	126	64	152	76	190	95	219	110
		305	9 - 2048 - M	1.66	127	76	152	92	190	114	221	133
		51 64	9 - 2408 - M	17.1 12.9	218 206	13 16	261 247	15 19	326 309	19 24	358 335	21
		76	9 - 2410 - M 9 - 2412 - M	10.5	200	19	247	23	309	24 29	337	26 32
		89	9 - 2414 - M	8.79	196	22	235	27	293	33	325	37
		102 115	9 - 2416 - M 9 - 2418 - M	7.61 6.65	194 191	26 29	233 230	31 35	291 287	38 43	327 319	43 48
40	20	127	9 - 2420 - M	5.94	189	32	226	38	283	48	321	54
		140	9 - 2422 - M	5.36	188	35	225	42	281	53	316	59
		152 178	9 - 2424 - M 9 - 2428 - M	4.91 4.15	187 185	38 45	224 222	46 53	280 277	57 67	319 315	65 76
		203	9 - 2432 - M	3.62	184	51	220	61	276	76	315	87
		254 305	9 - 2440 - M 9 - 2448 - M	2.90 2.37	184 181	64 76	221 21 <i>7</i>	76 92	276 271	95 114	319 310	110
		1.1.1				1 1		19				131
		64 76	9 - 3210 - M 9 - 3212 - M	21.2 16.8	339 318	16 19	406 382	23	508 477	24 29	572 536	27 32
		89	9 - 3214 - M	14.0	312	22	375	27	469	33	519	37
		102 115	9 - 3216 - M 9 - 3218 - M	12.2 10.7	310 308	26 29	372 369	31 35	465 462	38 43	523 525	43 49
		127	9 - 3220 - M	9.46	300	32	360	38	450	48	511	54
50	25	140	9 - 3222 - M	8.54	299	35	359	42	448	53	504	59
		152 178	9 - 3224 - M 9 - 3228 - M	7.81 6.64	297 295	38 45	356 354	46 53	445 443	57 67	516 511	66 77
		203	9 - 3232 - M	5.75	292	51	350	61	438	76	506	88
		229	9 - 3236 - M	5.08	291	57	349	69	436	86	508	100
		254 305	9 - 3240 - M 9 - 3248 - M	4.58 3.88	291 296	64 76	349 355	76 92	436 444	95 114	536 520	11 <i>7</i> 134
		76	9 - 4012 - M	30.4	578	19	693	23	867	29	973	32
		89	9 - 4014 - M	25.0	556	22	667	27	833	33	949	38
		102 115	9 - 4016 - M 9 - 4018 - M	21.2 18.6	540 535	26 29	648 642	31 35	810 802	38 43	931 930	44 50
		127	9 - 4020 - M	16.4	521	32	626	38	782	48	920	56
63	38	152	9 - 4024 - M	13.3	504	38	605	46	756	57	889	67
		178 203	9 - 4028 - M 9 - 4032 - M	11.2 9.62	497 488	45 51	596 586	53 61	745 732	67 76	870 866	78 90
		229	9 - 4036 - M	8.53	488	57	586	69	733	86	870	102
		254 305	9 - 4040 - M 9 - 4048 - M	7.67 6.34	487 483	64 76	584 580	76 92	731 725	95 114	882 875	115
		303							723		0/3	138
			Rou			Cons		tion	,, -	0.1	100	
		25 32	9 - 0604 - M 9 - 0605 - M	1.25 0.97	7.8 7.8	6.3 8.0	9.4 9.3	7.5 9.6	11. <i>7</i> 11.6	9.4 12	13.8 12.6	11 13
		38	9 - 0605 - M 9 - 0606 - M	0.78	7.4	9.5	8.9	11	11.1	14	12.5	16
10	5	44 51	9 - 0607 - M	0.66	7.3	11 13	8.8 8.8	13 15	11.0 11.0	17 19	12.6 12.0	19
		51 64	9 - 0608 - M 9 - 0610 - M	0.57 0.45	7.3 7.2	16	8.8 8.7	19	10.8	24	12.0	21 27
		76	9 - 0612 - M	0.37	7.0	19	8.4	23	10.5	29	12.2	33
		305	9 - 0648 - M	0.09	6.8	76	8.2	92	10.2	114	12.1	136
		25 32	9 - 0804 - M 9 - 0805 - M	2.28 1.75	14.2 14.0	6.3 8.0	17.1 16.8	7.5 9.6	21.3	9.4	25.0 22.7	11
		32 38	9 - 0805 - M 9 - 0806 - M	1.75 1.42	13.5	8.0 9.5	16.8 16.2	9.6 11	21.0 20.2	12 14	22.7 22.7	13 16
		44	9 - 0807 - M	1.1 <i>7</i>	12.9	11	15.4	13	19.3	1 <i>7</i>	22.2	19
12.5	6.3	51 64	9 - 0808 - M 9 - 0810 - M	1.01 0.79	12.9 12.7	13 16	15.5 15.2	15 19	19.3 19.0	19 24	22.2 22.2	22 28
		76	9 - 0812 - M	0.65	12.3	19	14.8	23	18.5	29	22.1	34
		89 305	9 - 0814 - M	0.57	12.7	22	15.2	27	19.0	33	23.3	41
		305	9 - 0848 - M	0.16	12.2	76	14.6	92	18.3	114	23.0	144
		25 32	9 - 1004 - M 9 - 1005 - M	3.38 2.51	21.1 20.1	6.3 8.0	25.4 24.1	7.5 9.6	31. <i>7</i> 30.1	9.4 12	37.2 32.6	11 13
		38	9 - 1005 - M 9 - 1006 - M	2.01	19.1	9.5	23.0	9.6 11	28.7	14	32.2	16
		44	9 - 1007 - M	1.67	18.4	11	22.0	13	27.6	1 <i>7</i> 19	31.7	19
16	8	51 64	9 - 1008 - M 9 - 1010 - M	1.42 1.10	18.1 17.5	13 16	21.7 21.0	15 19	27.1 26.3	24	29.8 29.6	21 27
		76	9 - 1012 - M	0.89	1 <i>7</i> .0	19	20.4	23	25.5	29	29.5	33
		89 102	9 - 1014 - M 9 - 1016 - M	0.76 0.67	16.9 17.1	22 26	20.3 20.5	27 31	25.4 25.6	33 38	29.6 30.2	39 45
		305	9 - 1018 - M 9 - 1048 - M	0.21	16.0	76	19.2	92	24.0	114	29.0	138



SuperSprings®





Color: Red

Sizes: 10 to 25 mm, Rectangular Wire Construction

				RATE			LOAD	- DEFLE	CTION	TABLE		
Hole Dia. mm	Rod Dia. mm	Free Length mm	CATALOG NUMBER	Deka- newtons (daN) Required to	Recomi for Lo	eflection mended ng Life of C)	Total De Recomi for Avei	eflection mended age Life of C)	Max Oper Defle	imum rating ection of C)		Travel folid
A	В	с		Deflect 1 mm	Load daN	Deflection mm	Load daN	Deflection mm	Load daN	Deflection mm	Load daN	Deflection mm
			Rectan	gula	r Wi	re C	ons	truct	ion			
		25	9 - 0604 - HE	2.21	11.1	5.0	13.8	6.3	16.6	7.5	26.5	12
		32 38	9 - 0605 - HE 9 - 0606 - HE	1.75 1.71	11.2 13.0	6.4 7.6	14.0 16.2	8.0 9.5	16.8 19.5	9.6 11	22.8 25.7	13 15
	_	36 44	9 - 0607 - HE	1.50	13.0	8.8	16.2	11	19.5	13	23.7 28.5	19
10	5	51	9 - 0608 - HE	1.28	13.1	10	16.3	13	19.6	15	29.4	23
		64	9 - 0610 - HE	1.07	13.7	13	17.1	16	20.5	19	28.9	27
		76	9 - 0612 - HE	0.75	11.4	15	14.3	19	17.1	23	24.0	32
		305	9 - 0648 - HE	0.21	12.8	61	16.0	76	19.2	92	29.4	140
		25	9 - 0804 - HE	4.21	21.1	5.0	26.3	6.3	31.6	7.5	50.5	12
		32	9 - 0805 - HE	3.32	21.2	6.4	26.6	8.0	31.9	9.6	53.1	16
		38	9 - 0806 - HE	2.93	22.3	7.6	27.8	9.5	33.4	11	58.6	20
12.5	6.3	44 51	9 - 0807 - HE	2.46	21.6	8.8	27.1	11	32.5 30.0	13	54.1	22
12.5	0.3	64	9 - 0808 - HE 9 - 0810 - HE	1.96 1.50	20.0 19.2	10 13	25.0 24.0	13 16	30.0 28.8	15 19	49.0 45.0	25 30
		76	9 - 0812 - HE	1.32	20.1	15	25.1	19	30.1	23	48.8	37
		89	9 - 0814 - HE	1.14	20.3	18	25.4	22	30.4	27	47.9	42
		305	9 - 0848 - HE	0.28	17.1	61	21.4	76	25.6	92	36.4	130
		25	9 - 1004 - HE	7.57	37.9	5.0	47.3	6.3	56.8	7.5	76	10
		32	9 - 1005 - HE	5.28	33.8	6.4	42.2	8.0	50.7	9.6	69	13
		38	9 - 1006 - HE	4.85	36.9	7.6	46.1	9.5	55.3	11	82	17
		44	9 - 1007 - HE	4.28	37.7	8.8	47.1	11	56.5	13	90	21
16	8	51	9 - 1008 - HE	3.71	37.8	10	47.3	13	56.8	15	85	23 29
		64 76	9 - 1010 - HE 9 - 1012 - HE	3.03 2.57	38.8 39.1	13 15	48.5 48.8	16 19	58.2 58.6	19 23	88 87	34
		89	9 - 1014 - HE	2.17	38.6	18	48.3	22	57.9	27	85	39
		102	9 - 1016 - HE	1.93	39.4	20	49.2	26	59.1	31	87	45
		305	9 - 1048 - HE	0.71	43.3	61	54.1	76	65.0	92	82	116
		25 22	9 - 1204 - H	21.6	108	5.0	135	6.3	162	7.5	173	8
		32 38	9 - 1205 - H 9 - 1206 - H	16.8	108 98.0	6.4 7.6	134 123	8.0	161	9.6 11	168 155	10 12
		44	9 1200 H 9 1207 H	12.9 11.2	98.6	8.8	123	9.5 11	147 148	13	157	14
		51	9 - 1208 - H	9.40	95.9	10	120	13	144	15	150	16
		64	9 - 1210 - H	7.21	92.3	13	115	16	138	19	151	21
20	10	76	9 - 1212 - H	5.97	90.7	15	113	19	136	23	155	26
	-•	89	9 - 1214 - H	5.05	89.9	18	112	22	135	27	152	30
		102 115	9 - 1216 - H 9 - 1218 - H	4.42 3.84	90.2 88.3	20 23	113 110	26 29	135 132	31 35	155 154	35 40
		113	9 - 1210 - H	3.84	86.6	25 25	108	32	132	38	150	44
		140	9 - 1222 - H	3.10	86.8	28	109	35	130	42	152	49
		152	9 - 1224 - H	2.82	85.7	30	107	38	129	46	149	53
		305	9 - 1248 - H	1.50	91.5	61	114	76	137	92	162	108
		25	9 - 1604 - H	38.0	190	5.0	238	6.3	285	7.5	304	8
		32	9 - 1605 - H	27.6	1 <i>77</i>	6.4	221	8.0	265	9.6	276	10
		38	9 - 1606 - H	22.0	167	7.6	209	9.5	250	11	286	13
		44 51	9 - 1607 - H 9 - 1608 - H	18.5	162	8.8	203	11	244	13	277	15
		51 64	9 1610 H	15.7 12.2	160 156	10 13	201 195	13 16	241 233	15 19	283 268	18 22
		76	9 - 1612 - H	10.0	152	15	190	19	228	23	270	27
25	12.5	89	9 - 1614 - H	8.44	150	18	188	22	225	27	279	33
		102	9 - 1616 - H	7.35	150	20	187	26	225	31	272	37
		115	9 - 1618 - H	6.52	150	23	187	29	225	35	280	43
		127	9 - 1620 - H	5.75	146	25	183	32	219	38	270	47
		140 152	9 - 1622 - H 9 - 1624 - H	5.21 4.80	146 146	28 30	182 182	35 38	219 219	42 46	271 274	52 57
		178	9 - 1628 - H	4.09	146	36	182	45	218	53	274 278	68
		203	9 - 1632 - H	3.57	145	41	181	51	217	61	275	77
		305	9 - 1648 - H	2.29	140	61	175	76	210	92	263	115

Color: Red

Sizes: 32 to 50 mm, Rectangular Wire Construction
Sizes: 10 to 16 mm, Round Wire Construction

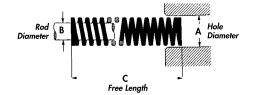
Hole	Rod	Free		KAIE Deka-	Total D	eflection		- DEFLE		IABLE		
Dia.	Dia.	Length	CATALOG	newtons (daN)	1	mended		mended		rating	Total	Travel
mm	mm	mm	NUMBER	Required to	for Lo	ong Life of C)	for Ave	rage Life of C)	Defle	ection of C)		Solid
Α	В	с		Deflect 1 mm	Load daN	Deflection mm	Load daN	Deflection mm	Load daN	Deflection imm	Load daN	Deflection mm
		38	9 - 2006 - H	37.6	286	7.6	357	9.5	429	11	451	12
		44	9 - 2007 - H	31.0	272	8.8	341	11	409	13	433	14
		51 64	9 - 2008 - H 9 - 2010 - H	26.3 20.5	269 262	10 13	336 327	13 16	403 393	15 19	421 430	16 21
		76	9 - 2012 - H	16.6	252	15	315	19	378	23	432	26
		89	9 - 2014 - H	14.0	250	18	313	22	375	27	421	30
		102	9 - 2016 - H	12.1	247	20	309	26	370	31	424	35
32	16	115 127	9 - 2018 - H 9 - 2020 - H	10.6 9.58	245 243	23 25	306 304	29 32	367 365	35 38	426 431	40 45
		140	9 2022 H	8.64	242	28	302	35	363	42	432	50
		152	9 - 2024 - H	7.87	239	30	299	38	359	46	425	54
		178	9 - 2028 - H	6.67	238	36	297	45	356	53	420	63
		203 254	9 - 2032 - H 9 - 2040 - H	5.79 4.63	235 235	41 51	294 294	51 64	352 353	61 76	417 426	72 92
		305	9 - 2048 - H	3.82	233	61	294 291	76	349	92	420 420	110
		51	9 - 2408 - H	35.2	359	10	449	13	539	15	599	17
		64	9 - 2410 - H	26.8	344	13	429	16	515	19	590	22
		76	9 2412 H	21.9	333	15	416	19	500	23	592	27
		89	9 - 2414 - H	18.5	329	18	411	22	493	27	591	32
		102 115	9 - 2416 - H 9 - 2418 - H	15.9 14.1	324 324	20 23	405 405	26 29	486 486	31 35	588 592	37 42
40	20	113	9 2420 H	12.5	318	25	398	32	477	38	589	47
		140	9 - 2422 - H	11.3	316	28	394	35	473	42	586	52
		152	9 - 2424 - H	10.4	315	30	393	38	472	46	590	57
		178	9 - 2428 - H	8.81	314	36	392	45	470	53	590	67
		203 254	9 - 2432 - H 9 - 2440 - H	7.67 6.05	311 307	41 51	389 384	51 64	467 461	61 76	583 587	76 97
		305	9 2448 H	5.02	306	61	383	76	459	92	582	116
		64	9 - 3210 - H	42.4	542	13	678	16	814	19	890	21
		76	9 - 3212 - H	33.8	514	15	643	19	771	23	879	26
		89	9 - 3214 - H	28.1	501	18	626	22	751	27	844	30
		102	9 - 3216 - H	24.5	500 405	20	625 618	26 29	750 742	31	858	35
		115 127	9 - 3218 - H 9 - 3220 - H	21.5 18.9	495 481	23 25	601	32	721	35 38	860 852	40 45
50	25	140	9 - 3222 - H	16.9	473	28	592	35	710	42	845	50
		152	9 - 3224 - H	15.4	469	30	586	38	704	46	833	54
		178	9 - 3228 - H	13.2	468	36	585	45	702	53	842	64
		203 254	9 - 3232 - H 9 - 3240 - H	11.5 9.04	468 459	41 51	585 574	51 64	702 689	61 76	830 832	72 92
		305	9 - 3248 - H	7.47	456	61	570	76	684	92	837	112
			Rou	ind V	Vire	Con	stru	ction				
		25	9 - 0604 - H	2.14	10.7	5.0	13.4	6.3	16.0	7.5	19.2	9
		32 38	9 - 0605 - H 9 - 0606 - H	1.65 1.33	10.5 10.1	6.4 7.6	13.2 12.6	8.0 9.5	15.8 15.2	9.6 11	19.8 18.6	12 14
	_	38 44	9 - 0607 - H	1.33	10.1	7.6 8.8	12.6	9.5 11	15.2	13	18.6	17
10	5	51	9 - 0608 - H	0.98	10.0	10	12.5	13	15.0	15	18.6	19
		64	9 - 0610 - H	0.77	9.9	13	12.3	16	14.8	19	19.3	25
		76 305	9 - 0612 - H 9 - 0648 - H	0.63 0.15	9.6 9.3	15 61	12.0 11.6	19 76	14.4 13.9	23 92	18.3 18.3	29 120
		25	9 - 0804 - H	3.94	19.7	5.0	24.6	6.3	29.6	7.5	35.3	9
		32	9 - 0805 - H	3.01	19.3	6.4	24.1	8.0	28.9	9.6	33.1	11
		38	9 - 0806 - H	2.42	18.4	7.6	23.0	9.5	27.6	11	31.4	13
10.5	, ,	44	9 - 0807 - H	2.01	17.7	8.8	22.2	11	26.6	13	32.2	16
12.5	6.3	51 64	9 - 0808 - H 9 - 0810 - H	1.77 1.38	18.0 1 <i>7.7</i>	10 13	22.6 22.1	13 16	27.1 26.6	15 19	33.6 33.2	19 24
		76	9 - 0812 - H	1.14	17.7	15	21.6	19	26.0	23	33.0	29
		89	9 - 0814 - H	0.96	17.1	18	21.4	22	25.7	27	31.8	33
		305	9 - 0848 - H	0.27	16.3	61	20.4	76	24.5	92	32.2	120
		25	9 - 1004 - H	8.69	43.5	5.0	54.3	6.3	65.2	7.5	78.2	9
		32	9 - 1005 - H	6.37	40.8	6.4	51.0	8.0	61.2	9.6	<i>7</i> 0.1	11
		38	9 - 1006 - H	5.17	39.3	7.6	49.1	9.5	58.9	11	72.4	14
		44 51	9 - 1007 - H 9 - 1008 - H	4.20 3.66	37.0 37.3	8.8 10	46.2 46.7	11 13	55.5 56.0	13 15	67.3 65.9	16 18
16	8	64	9 - 1010 - H	2.83	36.2	13	45.3	16	54.3	19	65.1	23
		76	9 - 1012 - H	2.31	35.1	15	43.9	19	52.7	23	67.0	29
		89	9 - 1014 - H	1.97	35.1	18	43.8	22	52.6	27	67.0	34
		102 305	9 - 1016 - H 9 - 1048 - H	1.72 0.54	35.0 33.1	20 61	43.8 41.4	26 76	52.5 49.7	31 92	68.7	40
		303	, 10 -1 0 - 11	0.54	JJ. I	01	→1. 4		 /./	7.4	66.2	122

1 daN = 2.24 lbs. 1 mm = .0394 in.



SuperSprings[®]





Sizes: 10 to 25 mm, Rectangular Wire Construction

Color: Yellow

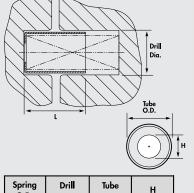
				KAIL			LUAD	- DEFLE	CHON	IABLE		
Hole Dia.	Rod Dia.	Free Length		Deka- newtons		eflection		eflection		imum .·		- 1
mm	mm	mm	CATALOG	(daN)	Recomm for Lo	mended	_	nended verage		rating ection		Travel Solid
			NUMBER	Required to		of C)		% of C)		of C)	10	Jolia
				Deflect	Load	Deflection	Load	Deflection	Load	Deflection	Load	Deflection
A	В	С		1 mm	daN	mm	daN	mm	daN	mm	daN	mm
		25	9 - 0604 - X	3.25	13.8	4.3	16.3	5.0	20.3	6.3	29.3	9
		32 38	9 - 0605 - X 9 - 0606 - X	2.51 2.09	13.7 13.5	5.4 6.5	16.1 15.9	6.4 7.6	20.1 19.9	8.0 9.5	25.1 27.2	10 13
	_	44	9 - 0607 - X	1.79	13.4	7.5	15.7	8.8	19.7	11	26.9	15
10	5	51	9 - 0608 - X	1.50	13.0	8.7	15.3	10	19.1	13	25.5	17
		64	9 - 0610 - X	1.20	13.1	11	15.4	13	19.2	16	25.2	21
		76 305	9 - 0612 - X 9 - 0648 - X	1.00 0.24	12.9 12.4	13 52	15.2 14.6	15 61	19.0 18.3	19 76	26.0 25.4	26 106
		25	9 - 0804 - X	5.84	24.8	4.3	29.2	5.0	36.5	6.3	52.6	9
		32	9 - 0805 - X	4.44	24.2	5.4	28.4	6.4	35.5	8.0	48.8	11
		38	9 - 0806 - X	3.60	23.3	6.5	27.4	7.6	34.2	9.5	46.8	13
12.5	6.3	44 51	9 - 0807 - X 9 - 0808 - X	3.09 2.70	23.1 23.4	7.5 8.7	27.2 27.5	8.8 10	34.0 34.4	11 13	46.4 48.6	15 18
12.5	0.0	64	9 - 0810 - X	2.16	23.5	11	27.6	13	34.6	16	47.5	22
		76	9 - 0812 - X	1.78	23.0	13	27.1	15	33.8	19	48.1	27
		89	9 - 0814 - X	1.52	23.0	15	27.1	18	33.8	22	50.2	33
		305	9 - 0848 - X	0.43	22.3	52	26.2	61	32.8	76	48.2	112
		25	9 - 1004 - X	12.6	53.3	4.3	62.8	5.0	78.4	6.3	113	9
		32 38	9 - 1005 - X 9 - 1006 - X	9.28 7.49	50.5 48.4	5.4 6.5	59.4 56.9	6.4 7.6	74.2 71.2	8.0 9.5	102 97.4	11 13
		44	9 1007 X	6.30	47.1	7.5	55.4	8.8	69.3	11	94.5	15
16	8	51	9 - 1008 - X	5.51	47.8	8.7	56.2	10	70.3	13	99.2	18
10	8	64	9 - 1010 - X	4.29	46.7	11	54.9	13	68.6	16	94.4	22
		76 89	9 - 1012 - X 9 - 1014 - X	3.53 2.98	45.6 45.1	13 15	53.7 53.0	15 18	67.1 66.3	19 22	91.8 92.4	27 31
		102	9 1014 X	2.61	45.3	17	53.2	20	66.6	26	94.0	36
		305	9 - 1048 - X	0.85	44.3	52	52.1	61	65.2	76	94.0	110
		25	9 - 1204 - X	29.3	125	4.3	147	5.0	183	6.3	234	8
		32	9 - 1205 - X	22.4	122	5.4	143	6.4	179	8.0	224	10
		38 44	9 - 1206 - X 9 - 1207 - X	17.7 14.9	114 111	6.5 7.5	135 131	7.6 8.8	168 164	9.5 11	212 209	12 14
		51	9 - 1207 - X 9 - 1208 - X	12.8	111	8.7	131	10	163	13	205	16
		64	9 - 1210 - X	9.90	108	11	127	13	158	16	208	21
20	10	76	9 - 1212 - X	8.17	106	13	124	15	155	19	204	25
		89 102	9 - 1214 - X 9 - 1216 - X	6.95 6.06	105 105	15 17	124 124	18 20	155 155	22 26	209 206	30 34
		115	9 1218 X	5.30	103	20	122	23	152	29	201	38
		127	9 - 1220 - X	4.76	103	22	121	25	151	32	205	43
		140	9 - 1222 - X	4.30	102	24	120	28	151	35	202	47
		152 305	9 - 1224 - X 9 - 1248 - X	3.90 2.12	101 110	26 52	119 129	30 61	148 162	38 76	199 223	51 105
		32	9 - 1605 - X	35.4	193	5.4	227	6.4	283	8.0	354	10
		38	9 - 1606 - X	28.0	181	6.5	213	7.6	266	9.5	336	12
		44	9 - 1607 - X	23.2	173	7.5	204	8.8	255	11	325	14
		51 64	9 - 1608 - X	19.8	171 167	8.7	202 197	10 13	252 246	13 16	316 323	16 21
		76	9 - 1610 - X 9 - 1612 - X	15.4 12.5	162	11 13	197	15	238	16 19	323 313	21 25
		89	9 - 1614 - X	10.6	160	15	188	18	235	22	306	29
25	12.5	102	9 - 1616 - X	9.12	158	17	186	20	233	26	310	34
		115	9 1618 X	8.11	159	20	187	23	233	29	316	39
		127 140	9 - 1620 - X 9 - 1622 - X	7.21 6.55	156 156	22 24	183 183	25 28	229 229	32 35	310 314	43 48
		152	9 - 1624 - X	6.01	155	26	183	30	228	38	319	53
		178	9 - 1628 - X	5.13	155	30	183	36	228	45	318	62
		203	9 - 1632 - X	4.47	154	35 52	181	41 41	227	51 74	313	70 100
		305	9 - 1648 - X	2.96	153	52	181	61	226	76	320	108

Color: Yellow

Rod Dia. mm	Free Length mm c 38 44 51 64 76 89 102 115 127 140 152 178	9 - 2006 - X 9 - 2007 - X 9 - 2007 - X 9 - 2010 - X 9 - 2012 - X 9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X 9 - 2024 - X	Deka- newtons (daN) Required to Deflect 1 mm 48.9 40.5 34.6 26.7 21.6 18.2 15.6 13.6 12.2	Recoming for Log (17%) Logd dan 316 303 300 291 279 276 271	eflection mended ng Life of C) Deflection mm 6.5 7.5 8.7 11	Recommoder Recommoder Average Recommoder Rec	eflection mended rage Life of C) Deflection mm 7.6 8.8 10 13	Ope Defl	cimum rating ection 6 of C) Deflection mm 9.5 11 13	Load daN 538 526 518	Deflection mm
	38 44 44 76 89 102 115 127 140 152 178	9 - 2007 - X 9 - 2008 - X 9 - 2010 - X 9 - 2012 - X 9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	1 mm 48.9 40.5 34.6 26.7 21.6 18.2 15.6 13.6	316 303 300 291 279 276 271	6.5 7.5 8.7 11	372 356 352 342	7.6 8.8 10	464 445 441	9.5 11 13	538 526 518	mm 11 13
16	44 51 64 76 89 102 115 127 140 152 178	9 - 2007 - X 9 - 2008 - X 9 - 2010 - X 9 - 2012 - X 9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	40.5 34.6 26.7 21.6 18.2 15.6 13.6	303 300 291 279 276 271	7.5 8.7 11 13	356 352 342	8.8 10	445 441	11 13	526 518	13
16	51 64 76 89 102 115 127 140 152 178	9 - 2008 - X 9 - 2010 - X 9 - 2012 - X 9 - 2014 - X 9 - 2018 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	34.6 26.7 21.6 18.2 15.6 13.6	300 291 279 276 271	8.7 11 13	352 342	10	441	13	518	
16	64 76 89 102 115 127 140 152 178	9 - 2010 - X 9 - 2012 - X 9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	26.7 21.6 18.2 15.6 13.6	291 279 276 271	11 13	342					1.5
16	76 89 102 115 127 140 152 178	9 - 2012 - X 9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	21.6 18.2 15.6 13.6	279 276 271	13		13	127			
16	89 102 115 127 140 152 178	9 - 2014 - X 9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	18.2 15.6 13.6	276 271		220		721	16	534	20
16	102 115 127 140 152 178	9 - 2016 - X 9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	15.6 13.6	271	15	320	15	410	19	518	24
16	115 127 140 152 178	9 - 2018 - X 9 - 2020 - X 9 - 2022 - X	13.6			325	18	406	22	529	29
16	127 140 152 178	9 - 2020 - X 9 - 2022 - X			17	319	20	398	26	515	33
	140 152 178	9 - 2022 - X	12.2	267	20	314	23	392	29	491	36
	140 152 178	9 - 2022 - X		264	22	310	25	388	32	501	41
	152 178		11.2	266	24	313	28	391	35	525	47
	178	7 ZUZ4 A	10.1	262	26	308	30	385	38	507	50
		9 - 2028 - X	8.58	260	30	305	36	382	45	506	59
	203	9 - 2032 - X	7.50	259	35	305	41	381	51	510	68
	254	9 - 2040 - X	5.98	258	43	304	51	380	64	508	85
	305	9 - 2048 - X	4.96	257	52	303	61	378	76	511	103
					-						
	51	9 - 2408 - X	56.0	485	8.7	571	10	714	13	840	15
	64	9 - 2410 - X	42.2	459	11	540	13	674	16	801	19
	76	9 2412 X	33.8	437	13	514	15	643	19	812	24
	89	9 - 2414 - X	28.2	427	15	503	18	628	22	790	28
	102	9 - 2416 - X	24.4	424	17	499	20	623	26	807	33
											37
20			19.0	410							41
	140		17.1	407	24	479	28		35	787	46
	152		15.6	402	26	473	30	591	38	778	50
	178		13.2	398	30	468	36	585	45	763	58
	203	9 - 2432 - X	11.4	393	35	462	41	578	51	763	67
	254	9 - 2440 - X	9.06	391	43	460	51	575	64	770	85
	305	9 - 2448 - X	7.52	390	52	459	61	573	76	767	102
	64	9 - 3210 - X	72.4	788	11	927	13	1158	16	1375	19
											23
											27
											31
											35
											39
25											44
											47
											56
											64
											80
											97
	25	140 152 178 203 254 305 64 76 89 102 115 127 140 152 178 203 254 305	20	20	20	20	20	20	20	20	20

Spring Cages

black oxide finishmade of rolled, cold steel



			_
Spring O.D.	Dri ll Dia.	Tube O.D.	Н
	In	ch	
3/4	29/32	.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
	Me	tric	
20	24	21.7	11
25	30	28.0	14
32	36	34.4	19
40	43	40.8	25
50	56	53.4	35

L		CATA	LOG NUM	NBERS	
(inch)	3/ ₄ O.D.	1 O.D.	1 ¹ / ₄ O.D.	1 ¹ / ₂ O.D.	2 O.D.
1.00	6 - 8	8 - 8	10 - 8		
1.25	6 - 10	8 - 10	10 - 10	12 - 10	16 - 10
1.50	6 - 12	8 - 12	10 - 12	12 - 12	16 - 12
1.75	6 - 14	8 - 14	10 - 14	12 - 14	16 - 14
2.00	6 - 16	8 - 16	10 - 16	12 - 16	16 - 16
2.25	6 - 18	8 - 18	10 - 18	12 - 18	16 - 18
2.50	6 - 20	8 - 20	10 - 20	12 - 20	16 - 20
2.75	6 - 22	8 - 22	10 - 22	12 - 22	16 - 22
3.00	6 - 24	8 - 24	10 - 24	12 - 24	16 - 24
3.25	6 - 26	8 - 26	10 - 26	12 - 26	16 - 26
3.50	6 - 28	8 - 28	10 - 28	12 - 28	16 - 28
3.75	6 - 30	8 - 30	10 - 30	12 - 30	16 - 30
4.00	6 - 32	8 - 32	10 - 32	12 - 32	16 - 32
4.25	6 - 34	8 - 34	10 - 34	12 - 34	16 - 34
4.50	6 - 36	8 - 36	10 - 36	12 - 36	16 - 36
4.75	6 - 38	8 - 38	10 - 38	12 - 38	16 - 38
5.00	6 - 40	8 - 40	10 - 40	12 - 40	16 - 40
5.50	6 - 44	8 - 44	10 - 44	12 - 44	16 - 44
6.00	6 - 48	8 - 48	10 - 48	12 - 48	16 - 48
6.50	6 - 52	8 - 52	10 - 52	12 - 52	16 - 52
7.00	6 - 56	8 - 56	10 - 56	12 - 56	16 - 56
8.00	6 - 64	8 - 64	10 - 64	12 - 64	16 - 64
9.00			10 - 72	12 - 72	16 - 72
10.00			10 - 80	12 - 80	16 - 80
11.00					16 - 88
12.00					16 - 96

L	CATALOG NUMBERS				
(mm)	20 O.D.	25 O.D.	32 O.D.	40 O.D.	50 O.D.
25	20 - 25	25 - 25	32 - 25		
32	20 - 32	25 - 32	32 - 32	40 - 32	50 - 32
38	20 - 38	25 - 38	32 - 38	40 - 38	50 - 38
44	20 - 44	25 - 44	32 - 44	40 - 44	50 - 44
51	20 - 51	25 - 51	32 - 51	40 - 51	50 - 51
57	20 - 57	25 - 57	32 - 57	40 - 57	50 - 57
64	20 - 64	25 - 64	32 - 64	40 - 64	50 - 64
70	20 - 70	25 - 70	32 - 70	40 - 70	50 - 70
76	20 - 76	25 - 76	32 - 76	40 - 76	50 - 76
83	20 - 83	25 - 83	32 - 83	40 - 83	50 - 83
89	20 - 89	25 - 89	32 - 89	40 - 89	50 - 89
95	20 - 95	25 - 95	32 - 95	40 - 95	50 - 95
102	20 - 102	25 - 102	32 - 102	40 - 102	50 - 102
108	20 - 108	25 - 108	32 - 108	40 - 108	50 - 108
114	20 - 114	25 - 114	32 - 114	40 - 114	50 - 114
121	20 - 121	25 - 121	32 - 121	40 - 121	50 - 121
127	20 - 127	25 - 127	32 - 127	40 - 127	50 - 127
140	20 - 140	25 - 140	32 - 140	40 - 140	50 - 140
152	20 - 152	25 - 152	32 - 152	40 - 152	50 - 152
165	20 - 165	25 - 165	32 - 165	40 - 165	50 - 165
178	20 - 178	25 - 178	32 - 178	40 - 178	50 - 178
203	20 - 203	25 - 203	32 - 203	40 - 203	50 - 203
229	20 - 229	25 - 229	32 - 229	40 - 229	50 - 229
254	20 - 254	25 - 254	32 - 254	40 - 254	50 - 254
279					50 - 279
305					50 - 305





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