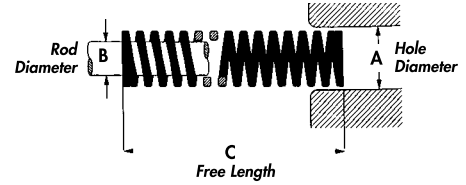




EXTRA HEAVY LOAD

Vacuum degassed,
valve spring quality alloy steel



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

Color: Yellow

Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	RATE Pounds Required to Deflect 1/10 in.	LOAD - DEFLECTION TABLE							
					Total Deflection Recommended for Long Life (17% of C)		Total Deflection Recommended for Average Life (20% of C)		Maximum Operating Deflection (25% of C)		Total Travel to Solid	
					Load lbs.	Deflection inches	Load lbs.	Deflection inches	Load lbs.	Deflection inches	Load lbs.	Deflection inches
3/8	3/16	1	9-0604-X	18.5	32	0.17	37	0.20	46	0.25	66	0.35
		1 1/4	9-0605-X	14.3	30	0.21	36	0.25	45	0.31	56	0.39
		1 1/2	9-0606-X	11.9	30	0.26	36	0.30	45	0.38	61	0.51
		1 3/4	9-0607-X	10.2	30	0.30	36	0.35	45	0.44	60	0.59
		2	9-0608-X	8.6	29	0.34	34	0.40	43	0.50	57	0.67
		2 1/2	9-0610-X	6.8	29	0.43	34	0.50	43	0.63	57	0.83
		3	9-0612-X	5.7	29	0.51	34	0.60	43	0.75	58	1.02
		12	9-0648-X	1.4	28	2.04	33	2.40	41	3.00	57	4.17
1/2	9/32	1	9-0804-X	33.3	57	0.17	67	0.20	83	0.25	118	0.35
		1 1/4	9-0805-X	25.3	54	0.21	63	0.25	79	0.31	110	0.43
		1 1/2	9-0806-X	20.5	52	0.26	62	0.30	77	0.38	105	0.51
		1 3/4	9-0807-X	17.6	52	0.30	62	0.35	77	0.44	104	0.59
		2	9-0808-X	15.4	52	0.34	62	0.40	77	0.50	109	0.71
		2 1/2	9-0810-X	12.3	52	0.43	62	0.50	77	0.63	107	0.87
		3	9-0812-X	10.2	52	0.51	61	0.60	76	0.75	108	1.06
		3 1/2	9-0814-X	8.7	52	0.60	61	0.70	76	0.88	113	1.30
12	9-0848-X	2.5	50	2.04	59	2.40	74	3.00	108	4.41		
5/8	11/32	1	9-1004-X	71.6	122	0.17	143	0.20	179	0.25	254	0.35
		1 1/4	9-1005-X	53.0	113	0.21	132	0.25	166	0.31	229	0.43
		1 1/2	9-1006-X	42.7	109	0.26	128	0.30	160	0.38	219	0.51
		1 3/4	9-1007-X	36.0	107	0.30	126	0.35	157	0.44	212	0.59
		2	9-1008-X	31.4	107	0.34	126	0.40	157	0.50	223	0.71
		2 1/2	9-1010-X	24.5	104	0.43	122	0.50	153	0.63	212	0.87
		3	9-1012-X	20.1	103	0.51	121	0.60	151	0.75	206	1.02
		3 1/2	9-1014-X	17.0	101	0.60	119	0.70	149	0.88	208	1.22
4	9-1016-X	14.9	101	0.68	119	0.80	149	1.00	211	1.42		
12	9-1048-X	4.9	100	2.04	117	2.40	146	3.00	211	4.33		
3/4	3/8	1	9-1204-X	167	284	0.17	334	0.20	418	0.25	527	0.31
		1 1/4	9-1205-X	128	272	0.21	320	0.25	400	0.31	503	0.39
		1 1/2	9-1206-X	101	258	0.26	303	0.30	379	0.38	477	0.47
		1 3/4	9-1207-X	85.0	253	0.30	298	0.35	372	0.44	469	0.55
		2	9-1208-X	73.1	248	0.34	292	0.40	365	0.50	460	0.63
		2 1/2	9-1210-X	56.5	240	0.43	283	0.50	353	0.63	467	0.83
		3	9-1212-X	46.6	238	0.51	280	0.60	350	0.75	459	0.98
		3 1/2	9-1214-X	39.7	236	0.60	278	0.70	347	0.88	468	1.18
		4	9-1216-X	34.6	235	0.68	277	0.80	346	1.00	463	1.34
		4 1/2	9-1218-X	30.2	231	0.77	272	0.90	340	1.13	453	1.50
		5	9-1220-X	27.2	231	0.85	272	1.00	340	1.25	460	1.69
		5 1/2	9-1222-X	24.5	229	0.94	270	1.10	337	1.38	454	1.85
6	9-1224-X	22.3	227	1.02	267	1.20	334	1.50	447	2.01		
12	9-1248-X	12.1	247	2.04	290	2.40	363	3.00	500	4.13		
1	1/2	1 1/4	9-1605-X	202	430	0.21	506	0.25	632	0.31	796	0.39
		1 1/2	9-1606-X	160	408	0.26	480	0.30	600	0.38	756	0.47
		1 3/4	9-1607-X	132	394	0.30	463	0.35	579	0.44	729	0.55
		2	9-1608-X	113	384	0.34	452	0.40	564	0.50	711	0.63
		2 1/2	9-1610-X	87.8	373	0.43	439	0.50	549	0.63	726	0.83
		3	9-1612-X	71.3	364	0.51	428	0.60	535	0.75	702	0.98
		3 1/2	9-1614-X	60.2	358	0.60	421	0.70	527	0.88	687	1.14
		4	9-1616-X	52.1	354	0.68	416	0.80	521	1.00	697	1.34
		4 1/2	9-1618-X	46.3	354	0.77	417	0.90	521	1.13	711	1.54
		5	9-1620-X	41.2	350	0.85	412	1.00	514	1.25	697	1.69
		5 1/2	9-1622-X	37.4	350	0.94	411	1.10	514	1.38	706	1.89
		6	9-1624-X	34.3	350	1.02	412	1.20	515	1.50	716	2.09
7	9-1628-X	29.3	348	1.19	410	1.40	512	1.75	715	2.44		
8	9-1632-X	25.5	347	1.36	408	1.60	510	2.00	703	2.76		
12	9-1648-X	16.9	345	2.04	405	2.40	507	3.00	718	4.25		

Hole Dia. in.	Rod Dia. in.	Free Length in.	CATALOG NUMBER	RATE Pounds Required to Deflect 1/10 in.	LOAD - DEFLECTION TABLE							
					Total Deflection Recommended for Long Life (17% of C)		Total Deflection Recommended for Average Life (20% of C)		Maximum Operating Deflection (25% of C)		Total Travel to Solid	
					Load lbs.	Deflection inches	Load lbs.	Deflection inches	Load lbs.	Deflection inches	Load lbs.	Deflection inches
1 1/4	5/8	1 1/2	9-2006-X	279	712	0.26	837	0.30	1046	0.38	1208	0.43
		1 3/4	9-2007-X	231	687	0.30	809	0.35	1011	0.44	1183	0.51
		2	9-2008-X	197	670	0.34	789	0.40	986	0.50	1165	0.59
		2 1/2	9-2010-X	152	648	0.43	762	0.50	953	0.63	1200	0.79
		3	9-2012-X	123	629	0.51	740	0.60	925	0.75	1165	0.94
		3 1/2	9-2014-X	104	619	0.60	729	0.70	911	0.88	1189	1.14
		4	9-2016-X	89.1	606	0.68	713	0.80	891	1.00	1158	1.30
		4 1/2	9-2018-X	77.8	596	0.77	701	0.90	876	1.13	1103	1.42
		5	9-2020-X	69.7	593	0.85	697	1.00	872	1.25	1126	1.61
		5 1/2	9-2022-X	63.8	596	0.94	701	1.10	877	1.38	1180	1.85
		6	9-2024-X	57.9	590	1.02	694	1.20	868	1.50	1139	1.97
		7	9-2028-X	49.0	583	1.19	686	1.40	857	1.75	1137	2.32
8	9-2032-X	42.8	582	1.36	685	1.60	856	2.00	1146	2.68		
10	9-2040-X	34.1	580	1.70	683	2.00	853	2.50	1142	3.35		
12	9-2048-X	28.3	577	2.04	679	2.40	849	3.00	1148	4.06		
1 1/2	3/4	2	9-2408-X	319	1086	0.34	1278	0.40	1597	0.50	1886	0.59
		2 1/2	9-2410-X	241	1023	0.43	1203	0.50	1504	0.63	1800	0.75
		3	9-2412-X	193	985	0.51	1158	0.60	1448	0.75	1824	0.94
		3 1/2	9-2414-X	161	959	0.60	1128	0.70	1410	0.88	1776	1.10
		4	9-2416-X	139	949	0.68	1116	0.80	1395	1.00	1812	1.30
		4 1/2	9-2418-X	122	933	0.77	1097	0.90	1372	1.13	1776	1.46
		5	9-2420-X	108	922	0.85	1085	1.00	1356	1.25	1751	1.61
		5 1/2	9-2422-X	97.6	913	0.94	1074	1.10	1342	1.38	1767	1.81
		6	9-2424-X	88.8	905	1.02	1065	1.20	1331	1.50	1747	1.97
		7	9-2428-X	75.1	893	1.19	1051	1.40	1314	1.75	1714	2.28
		8	9-2432-X	65.0	884	1.36	1040	1.60	1300	2.00	1715	2.64
		10	9-2440-X	51.7	879	1.70	1034	2.00	1293	2.50	1730	3.35
12	9-2448-X	42.9	876	2.04	1030	2.40	1288	3.00	1724	4.02		
2	1	2 1/2	9-3210-X	413	1756	0.43	2066	0.50	2582	0.63	3091	0.75
		3	9-3212-X	327	1667	0.51	1962	0.60	2452	0.75	2960	0.91
		3 1/2	9-3214-X	271	1610	0.60	1894	0.70	2368	0.88	2876	1.06
		4	9-3216-X	231	1569	0.68	1846	0.80	2308	1.00	2817	1.22
		4 1/2	9-3218-X	201	1539	0.77	1811	0.90	2264	1.13	2773	1.38
		5	9-3220-X	178	1516	0.85	1784	1.00	2229	1.25	2739	1.54
		5 1/2	9-3222-X	160	1500	0.94	1765	1.10	2206	1.38	2779	1.73
		6	9-3224-X	136	1391	1.02	1637	1.20	2046	1.50	2524	1.85
		7	9-3228-X	123	1459	1.19	1716	1.40	2145	1.75	2703	2.20
		8	9-3232-X	106	1442	1.36	1697	1.60	2121	2.00	2672	2.52
		10	9-3240-X	83.5	1419	1.70	1669	2.00	2087	2.50	2629	3.15
		12	9-3248-X	68.9	1405	2.04	1653	2.40	2066	3.00	2630	3.82

INCH

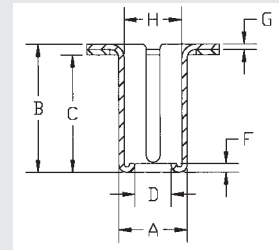
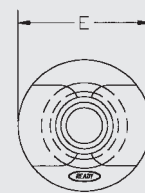
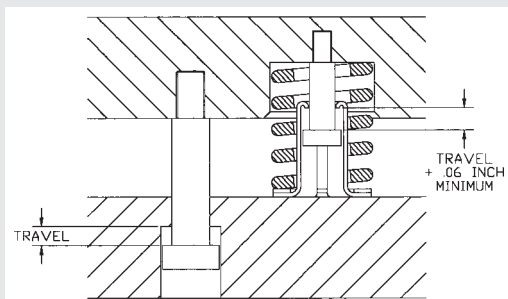


Spring Retainers

- 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.



CATALOG NUMBER <i>inch</i>	A	B	C	D	E	F	G	H
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 <i>metric</i>	A	B	C	D	E	F	G	H
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

SPRING RETAINERS