



US Series

Raymond® EXTRA HEAVY DUTY DIE SPRINGS					INCH DIMENSIONS						GREEN
Hole Dia. (in)	Rod Dia. (in)	Free Length (in)	CATALOG NUMBER	Load at 1/10 in. Def. (lb)	LOAD DEFLECTION TABLE						
					For Optimum Life (15% of free length)		For Long Life (17% of free length)		Maximum Operating Def. (20% of free length)		*Maximum Deflection (25% of free length)
					Load (lb)	Deflection (in)	Load (lb)	Deflection (in)	Load (lb)	Deflection (in)	Deflection (in)
A	B	C									
3/8	3/16	1	106-104	21.0	31.5	0.15	35.7	0.17	42.0	0.20	0.25
		1 1/4	106-105	14.6	27.7	0.19	30.7	0.21	36.5	0.25	0.31
		1 1/2	106-106	12.5	28.8	0.23	32.5	0.26	37.5	0.30	0.38
		1 3/4	106-107	10.5	27.3	0.26	31.5	0.30	36.8	0.35	0.44
		2	106-108	9.0	27.0	0.30	30.6	0.34	36.0	0.40	0.50
		2 1/2	106-110	7.5	28.5	0.38	32.3	0.43	37.5	0.50	0.63
		3	106-112	6.3	28.4	0.45	32.1	0.51	37.8	0.60	0.75
		12	106-148	1.5	27.0	1.80	30.6	2.04	36.0	2.40	3.00
		1/2	9/32	1	106-204	31.0	46.5	0.15	52.7	0.17	62.0
1 1/4	106-205			24.0	45.6	0.19	50.4	0.21	60.0	0.25	0.31
1 1/2	106-206			19.2	44.2	0.23	49.9	0.26	57.6	0.30	0.38
1 3/4	106-207			17.0	44.2	0.26	51.0	0.30	59.5	0.35	0.44
2	106-208			14.0	42.0	0.30	47.6	0.34	56.0	0.40	0.50
2 1/2	106-210			11.5	43.7	0.38	49.5	0.43	57.5	0.50	0.63
3	106-212			9.4	42.3	0.45	47.9	0.51	56.4	0.60	0.75
3 1/2	106-214			8.0	42.4	0.53	48.0	0.60	56.0	0.70	0.88
12	106-248			2.4	43.2	1.80	49.0	2.04	57.6	2.40	3.00
5/8	11/32	1	106-304	63.0	94.5	0.15	107.1	0.17	126.0	0.20	0.25
		1 1/4	106-305	43.8	83.2	0.19	92.0	0.21	109.5	0.25	0.31
		1 1/2	106-306	37.0	85.1	0.23	96.2	0.26	111.0	0.30	0.38
		1 3/4	106-307	31.0	80.6	0.26	93.0	0.30	108.5	0.35	0.44
		2	106-308	28.0	84.0	0.30	95.2	0.34	112.0	0.40	0.50
		2 1/2	106-310	22.0	83.6	0.38	94.6	0.43	110.0	0.50	0.63
		3	106-312	19.0	85.5	0.45	96.9	0.51	114.0	0.60	0.75
		3 1/2	106-314	15.4	81.6	0.53	92.4	0.60	107.8	0.70	0.88
		4	106-316	13.5	81.0	0.60	91.8	0.68	108.0	0.80	1.00
12	106-348	4.5	81.0	1.80	91.8	2.04	108.0	2.40	3.00		
3/4	3/8	1	106-404	140.0	210.0	0.15	238.0	0.17	280.0	0.20	0.25
		1 1/4	106-405	110.0	209.0	0.19	231.0	0.21	275.0	0.25	0.31
		1 1/2	106-406	89.0	204.7	0.23	231.4	0.26	267.0	0.30	0.38
		1 3/4	106-407	75.0	195.0	0.26	225.0	0.30	262.5	0.35	0.44
		2	106-408	66.0	198.0	0.30	224.4	0.34	264.0	0.40	0.50
		2 1/2	106-410	50.0	190.0	0.38	215.0	0.43	250.0	0.50	0.63
		3	106-412	40.5	182.3	0.45	206.6	0.51	243.0	0.60	0.75
		3 1/2	106-414	34.5	182.9	0.53	207.0	0.60	241.5	0.70	0.88
		4	106-416	30.0	180.0	0.60	204.0	0.68	240.0	0.80	1.00
		4 1/2	106-418	26.5	180.2	0.68	204.1	0.77	238.5	0.90	1.13
		5	106-420	23.5	176.3	0.75	199.8	0.85	235.0	1.00	1.25
		5 1/2	106-422	21.5	178.5	0.83	202.1	0.94	236.5	1.10	1.38
		6	106-424	19.5	175.5	0.90	198.9	1.02	234.0	1.20	1.50
12	106-448	9.5	171.0	1.80	193.8	2.04	228.0	2.40	3.00		

* Deflection values shown represent compressed lengths near solid and are for design information only. The color blue is a registered trademark of Barnes Group Inc.



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					For Optimum Life (15% of free length)		For Long Life (17% of free length)		Maximum Operating Def. (20% of free length)		*Maximum Deflection (25% of free length)	
					Load (lb)	Deflection (in)	Load (lb)	Deflection (in)	Load (lb)	Deflection (in)	Deflection (in)	
A	B	C										
1	1/2	1 1/2	106-506	160.0	368.0	0.23	416.0	0.26	480.0	0.30	0.38	
		2	106-508	116.0	348.0	0.30	394.4	0.34	464.0	0.40	0.50	
		2 1/2	106-510	89.6	340.5	0.38	385.3	0.43	448.0	0.50	0.63	
		3	106-512	73.6	331.2	0.45	375.4	0.51	441.6	0.60	0.75	
		3 1/2	106-514	62.4	330.7	0.53	374.4	0.60	436.8	0.70	0.88	
		4	106-516	55.2	331.2	0.60	375.4	0.68	441.6	0.80	1.00	
		4 1/2	106-518	48.8	331.8	0.68	375.8	0.77	439.2	0.90	1.13	
		5	106-520	43.2	324.0	0.75	367.2	0.85	432.0	1.00	1.25	
		6	106-524	36.0	324.0	0.90	367.2	1.02	432.0	1.20	1.50	
		12	106-548	17.6	316.8	1.80	359.0	2.04	422.4	2.40	3.00	
1 1/4	5/8	2	106-608	205.0	615.0	0.30	697.0	0.34	820.0	0.40	0.50	
		2 1/2	106-610	152.5	579.5	0.38	655.8	0.43	762.5	0.50	0.63	
		3	106-612	122.0	549.0	0.45	622.2	0.51	732.0	0.60	0.75	
		3 1/2	106-614	108.5	575.1	0.53	651.0	0.60	759.5	0.70	0.88	
		4	106-616	89.0	534.0	0.60	605.2	0.68	712.0	0.80	1.00	
		4 1/2	106-618	83.5	567.8	0.68	643.0	0.77	751.5	0.90	1.13	
		5	106-620	70.0	525.0	0.75	595.0	0.85	700.0	1.00	1.25	
		6	106-624	57.5	517.5	0.90	586.5	1.02	690.0	1.20	1.50	
		8	106-632	46.0	552.0	1.20	625.6	1.36	736.0	1.60	2.00	
		10	106-640	34.5	517.5	1.50	586.5	1.70	690.0	2.00	2.50	
12	106-648	27.0	486.0	1.80	550.8	2.04	648.0	2.40	3.00			
1 1/2	3/4	2	106-708	408.5	1225.5	0.30	1388.9	0.34	1634.0	0.40	0.45	
		2 1/2	106-710	328.5	1248.3	0.38	1412.6	0.43	1642.5	0.50	0.63	
		3	106-712	255.0	1147.5	0.45	1300.5	0.51	1530.0	0.60	0.75	
		3 1/2	106-714	213.5	1131.6	0.53	1281.0	0.60	1494.5	0.70	0.88	
		4	106-716	184.5	1107.0	0.60	1254.6	0.68	1476.0	0.80	1.00	
		4 1/2	106-718	162.5	1105.0	0.68	1251.3	0.77	1462.5	0.90	1.13	
		5	106-720	145.0	1087.5	0.75	1232.5	0.85	1450.0	1.00	1.25	
		6	106-724	120.5	1084.5	0.90	1229.1	1.02	1446.0	1.20	1.50	
		8	106-732	90.5	1086.0	1.20	1230.8	1.36	1448.0	1.60	2.00	
		10	106-740	71.0	1065.0	1.50	1207.0	1.70	1420.0	2.00	2.50	
12	106-748	55.0	990.0	1.80	1122.0	2.04	1320.0	2.40	3.00			
2	1	2 1/2	106-810	411.0	1561.8	0.38	1767.3	0.43	2055.0	0.50	0.60	
		3	106-812	319.0	1435.5	0.45	1626.9	0.51	1914.0	0.60	0.70	
		3 1/2	106-814	276.4	1464.9	0.53	1658.4	0.60	1934.8	0.70	0.88	
		4	106-816	231.1	1386.6	0.60	1571.5	0.68	1848.8	0.80	0.97	
		4 1/2	106-818	188.8	1283.8	0.68	1453.8	0.77	1699.2	0.90	1.13	
		5	106-820	180.4	1353.0	0.75	1533.4	0.85	1804.0	1.00	1.25	
		6	106-824	147.3	1325.7	0.90	1502.5	1.02	1767.6	1.20	1.50	
		8	106-832	111.6	1339.2	1.20	1517.8	1.36	1785.6	1.60	2.00	
		10	106-840	88.4	1326.0	1.50	1502.8	1.70	1768.0	2.00	2.50	
		12	106-848	71.2	1281.6	1.80	1452.5	2.04	1708.8	2.40	3.00	

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