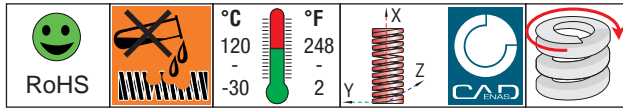
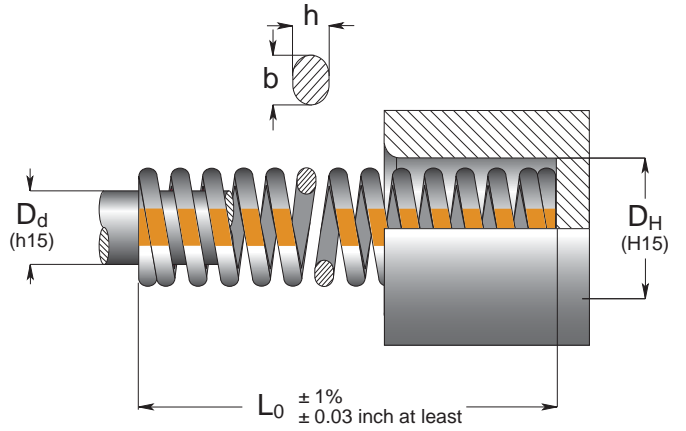


HGO SERIES

US standard
Oval Wire
SPECIAL SPRINGS

- EN** Heavy load springs
Silver-gold color
- ES** Muelles carga fuerte
Color plateado-oro
- FR** Ressorts charge forte
Couleur argent-or



Code	D _H Hole Diameter	D _d Rod Diameter	L ₀ Free Length	R Spring Constant	A 15% L ₀		B 20% L ₀		C 25% L ₀		D 30% L ₀		E approx. do not use	Pcs
					inch	lbs	inch	lbs	inch	lbs	inch	lbs		
				± 10%	+ 3.000.000		~ 1.500.000		300 - 500.000		100 - 200.000			
	b x h													
	inch	inch	inch	lbs/0.1 in.	inch	lbs	inch	lbs	inch	lbs	inch	lbs	inch	
HGO 10 - 025	3/8	3/16	1	12.8	0.15	19	0.20	26	0.25	32	0.30	38	0.36	50
HGO 10 - 032			1 1/4	10.6	0.19	20	0.25	27	0.31	33	0.38	40	0.48	50
HGO 10 - 038			1 1/2	9.0	0.23	21	0.30	27	0.38	34	0.45	41	0.52	50
HGO 10 - 044			1 3/4	7.8	0.26	20	0.35	27	0.44	34	0.53	41	0.59	50
HGO 10 - 051			2	6.7	0.30	20	0.40	27	0.50	34	0.60	40	0.77	25
HGO 10 - 064			2 1/2	5.0	0.38	19	0.50	25	0.63	31	0.75	37	0.86	25
HGO 10 - 076			3	3.7	0.45	17	0.60	22	0.75	28	0.90	33	1.10	25
HGO 10 - 305	0.07 x 0.06		12	1.0	1.80	18	2.40	24	3.00	30	3.60	36	5.01	10
HGO 13 - 025	1/2	9/32	1	21.6	0.15	32	0.20	43	0.25	54	0.30	65	0.39	50
HGO 13 - 032			1 1/4	18.6	0.19	35	0.25	46	0.31	58	0.38	71	0.54	50
HGO 13 - 038			1 1/2	16.2	0.23	37	0.30	49	0.38	61	0.45	73	0.57	50
HGO 13 - 044			1 3/4	14.0	0.26	36	0.35	49	0.44	61	0.53	74	0.71	25
HGO 13 - 051			2	10.6	0.30	32	0.40	42	0.50	53	0.60	64	0.88	25
HGO 13 - 064			2 1/2	9.0	0.38	34	0.50	45	0.63	56	0.75	68	1.07	25
HGO 13 - 076			3	7.8	0.45	35	0.60	47	0.75	59	0.90	70	1.30	25
HGO 13 - 089	3 1/2	6.2	0.53	33	0.70	43	0.88	54	1.05	65	1.53	20		
HGO 13 - 102	4	4.2	0.60	25	0.80	34	1.00	42	1.20	50	1.72	10		
HGO 13 - 305	0.09 x 0.07		12	1.8	1.80	32	2.40	43	3.00	54	3.60	65	5.50	10
HGO 16 - 025	5/8	11/32	1	44.6	0.15	67	0.20	89	0.25	112	0.30	134	0.33	50
HGO 16 - 032			1 1/4	34.1	0.19	65	0.25	85	0.31	107	0.38	130	0.41	50
HGO 16 - 038			1 1/2	29.1	0.23	67	0.30	87	0.38	109	0.45	131	0.54	25
HGO 16 - 044			1 3/4	24.6	0.26	64	0.35	86	0.44	108	0.53	130	0.63	25
HGO 16 - 051			2	21.8	0.30	65	0.40	87	0.50	109	0.60	131	0.74	25
HGO 16 - 064			2 1/2	17.9	0.38	68	0.50	90	0.63	112	0.75	134	0.98	25
HGO 16 - 076			3	14.0	0.45	63	0.60	84	0.75	105	0.90	126	1.15	20
HGO 16 - 089	3 1/2	11.8	0.53	63	0.70	83	0.88	103	1.05	124	1.36	20		
HGO 16 - 102	4	10.6	0.60	64	0.80	85	1.00	106	1.20	127	1.54	20		
HGO 16 - 115	4 1/2	9.0	0.68	61	0.90	81	1.13	101	1.35	122	1.73	10		
HGO 16 - 305	0.12 x 0.10		12	3.2	1.80	58	2.40	77	3.0	96	3.60	115	4.08	10
HGO 19 - 025	3/4	3/8	1	103.6	0.15	155	0.20	207	0.25	259	0.30	311	0.33	50
HGO 19 - 032			1 1/4	78.4	0.19	149	0.25	196	0.31	245	0.38	298	0.43	50
HGO 19 - 038			1 1/2	61.6	0.23	142	0.30	185	0.38	231	0.45	277	0.50	25
HGO 19 - 044			1 3/4	53.7	0.26	140	0.35	188	0.44	235	0.53	285	0.60	25
HGO 19 - 051			2	44.8	0.30	134	0.40	179	0.50	224	0.60	269	0.70	25
HGO 19 - 064			2 1/2	37.1	0.38	141	0.50	186	0.63	232	0.75	278	0.90	25
HGO 19 - 076			3	32.5	0.45	146	0.60	195	0.75	244	0.90	293	1.09	25
HGO 19 - 089	3 1/2	26.9	0.53	143	0.70	188	0.88	235	1.05	282	1.26	20		
HGO 19 - 102	4	23.5	0.60	141	0.80	188	1.0	235	1.20	282	1.46	20		
HGO 19 - 115	4 1/2	20.7	0.68	141	0.90	186	1.13	233	1.35	279	1.69	10		
HGO 19 - 127	5	18.5	0.75	139	1.00	185	1.25	231	1.50	278	1.84	10		
HGO 19 - 140	5 1/2	16.8	0.83	139	1.10	185	1.38	231	1.65	277	2.09	10		
HGO 19 - 152	6	14.6	0.90	131	1.20	175	1.5	219	1.80	263	2.22	10		
HGO 19 - 305	0.16 x 0.13		12	8.4	1.80	151	2.40	202	3.0	252	3.60	302	4.54	10



Code	D _H	D _d	L ₀	R	A		B		C		D		E	Pcs
	Hole Diameter	Rod Diameter	Free Length	Spring Constant	15% L ₀		20% L ₀		25% L ₀		30% L ₀		do not use approx.	
	b x h			± 10%	+ 3.000.000		~ 1.500.000		300 - 500.000		100 - 200.000		inch	
	inch	inch	inch	lbs/0.1 in.	inch	lbs	inch	lbs	inch	lbs	inch	lbs	inch	
HGO 26 - 025	1	1/2	1	190.4	0.15	286	0.20	381	0.25	476	0.30	571	0.30	50
HGO 26 - 032			1 1/4	147.0	0.19	279	0.25	368	0.31	459	0.38	559	0.42	25
HGO 26 - 038			1 1/2	120.4	0.23	277	0.30	361	0.38	452	0.45	542	0.50	25
HGO 26 - 044			1 3/4	100.8	0.26	262	0.35	353	0.44	441	0.53	534	0.60	25
HGO 26 - 051			2	84.6	0.30	254	0.40	338	0.50	423	0.60	508	0.70	25
HGO 26 - 064			2 1/2	68.3	0.38	260	0.50	342	0.63	427	0.75	512	0.90	20
HGO 26 - 076			3	57.1	0.45	257	0.60	343	0.75	428	0.90	514	1.08	20
HGO 26 - 089			3 1/2	47.6	0.53	252	0.70	333	0.88	417	1.05	500	1.28	20
HGO 26 - 102			4	42.0	0.60	252	0.80	336	1.0	420	1.20	504	1.56	10
HGO 26 - 115			4 1/2	36.4	0.68	248	0.90	328	1.13	410	1.35	491	1.68	10
HGO 26 - 127			5	32.5	0.75	244	1.00	325	1.25	406	1.50	488	1.89	10
HGO 26 - 140			5 1/2	29.1	0.83	242	1.10	320	1.38	400	1.65	480	2.08	10
HGO 26 - 152	6	26.9	0.90	242	1.20	323	1.5	404	1.80	484	2.24	10		
HGO 26 - 178	7	23.5	1.05	247	1.40	329	1.75	411	2.10	494	2.69	10		
HGO 26 - 203	8	20.7	1.20	248	1.60	331	2.0	414	2.40	497	3.05	10		
HGO 26 - 305	0.22 x 0.16	12	12.9	1.80	232	2.40	310	3.0	387	3.60	464	4.45	5	
HGO 32 - 038	1 1/4	5/8	1 1/2	207.2	0.23	477	0.30	622	0.38	777	0.45	932	0.50	20
HGO 32 - 044			1 3/4	175.8	0.26	457	0.35	615	0.44	769	0.53	932	0.54	20
HGO 32 - 051			2	150.1	0.30	450	0.40	600	0.50	751	0.60	901	0.63	20
HGO 32 - 064			2 1/2	117.6	0.38	447	0.50	588	0.63	735	0.75	882	0.86	20
HGO 32 - 076			3	98.0	0.45	441	0.60	588	0.75	735	0.90	882	1.05	20
HGO 32 - 089			3 1/2	84.0	0.53	445	0.70	588	0.88	735	1.05	882	1.18	10
HGO 32 - 102			4	72.8	0.60	437	0.80	582	1.0	728	1.20	874	1.46	10
HGO 32 - 115			4 1/2	64.4	0.68	438	0.90	580	1.13	725	1.35	869	1.64	10
HGO 32 - 127			5	57.7	0.75	433	1.00	577	1.25	721	1.50	866	1.78	10
HGO 32 - 140			5 1/2	50.4	0.83	418	1.10	554	1.38	693	1.65	832	2.01	10
HGO 32 - 152			6	46.2	0.90	416	1.20	554	1.5	693	1.80	832	2.15	10
HGO 32 - 178			7	39.2	1.05	412	1.40	549	1.75	686	2.10	823	2.56	5
HGO 32 - 203	8	34.1	1.20	409	1.60	546	2.0	682	2.40	818	2.98	5		
HGO 32 - 254	10	26.8	1.50	402	2.00	536	2.5	670	3.00	804	3.76	5		
HGO 32 - 305	0.29 x 0.20	12	22.4	1.80	403	2.40	538	3.0	672	3.60	806	4.65	5	
HGO 38 - 051	1 1/2	3/4	2	179.2	0.30	538	0.40	717	0.50	896	0.60	1075	0.84	20
HGO 38 - 064			2 1/2	131.6	0.38	500	0.50	658	0.63	823	0.75	987	1.13	10
HGO 38 - 076			3	112.0	0.45	504	0.60	672	0.75	840	0.90	1008	1.32	10
HGO 38 - 089			3 1/2	98.0	0.53	519	0.70	686	0.88	858	1.05	1029	1.59	10
HGO 38 - 102			4	81.2	0.60	487	0.80	650	1.0	812	1.20	974	1.81	10
HGO 38 - 115			4 1/2	71.1	0.68	483	0.90	640	1.13	800	1.35	960	2.06	10
HGO 38 - 127			5	64.4	0.75	483	1.00	644	1.25	805	1.50	966	2.30	5
HGO 38 - 140			5 1/2	58.8	0.83	488	1.10	647	1.38	809	1.65	970	2.54	5
HGO 38 - 152			6	53.2	0.90	479	1.20	638	1.5	798	1.80	958	2.79	5
HGO 38 - 178			7	45.9	1.05	482	1.40	643	1.75	803	2.10	964	3.23	5
HGO 38 - 203			8	40.3	1.20	484	1.60	645	2.0	806	2.40	967	3.77	5
HGO 38 - 254			10	32.5	1.50	488	2.00	650	2.5	813	3.00	975	4.67	5
HGO 38 - 305	0.34 x 0.22	12	26.9	1.80	484	2.40	646	3.0	807	3.60	968	5.73	5	
HGO 51 - 064	2	1	2 1/2	224.0	0.38	851	0.50	1120	0.63	1400	0.75	1680	0.89	5
HGO 51 - 076			3	187.6	0.45	844	0.60	1126	0.75	1407	0.90	1688	1.07	5
HGO 51 - 089			3 1/2	156.8	0.53	831	0.70	1098	0.88	1372	1.05	1646	1.26	5
HGO 51 - 102			4	134.4	0.60	806	0.80	1075	1.0	1344	1.20	1613	1.45	5
HGO 51 - 115			4 1/2	117.6	0.68	800	0.90	1058	1.13	1323	1.35	1588	1.69	5
HGO 51 - 127			5	106.4	0.75	798	1.00	1064	1.25	1330	1.50	1596	1.87	5
HGO 51 - 140			5 1/2	95.2	0.83	790	1.10	1047	1.38	1309	1.65	1571	2.13	5
HGO 51 - 152			6	84.0	0.90	756	1.20	1008	1.5	1260	1.80	1512	2.29	2
HGO 51 - 178			7	72.8	1.05	764	1.40	1019	1.75	1274	2.10	1529	2.74	2
HGO 51 - 203			8	64.4	1.20	773	1.60	1030	2.0	1288	2.40	1546	3.16	2
HGO 51 - 254			10	50.4	1.50	756	2.00	1008	2.5	1260	3.00	1512	4.00	2
HGO 51 - 305			0.46 x 0.28	12	40.3	1.80	725	2.40	967	3.0	1209	3.60	1451	4.88