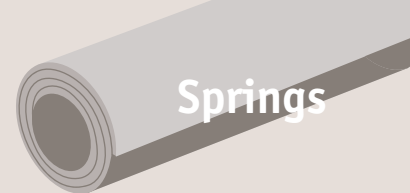
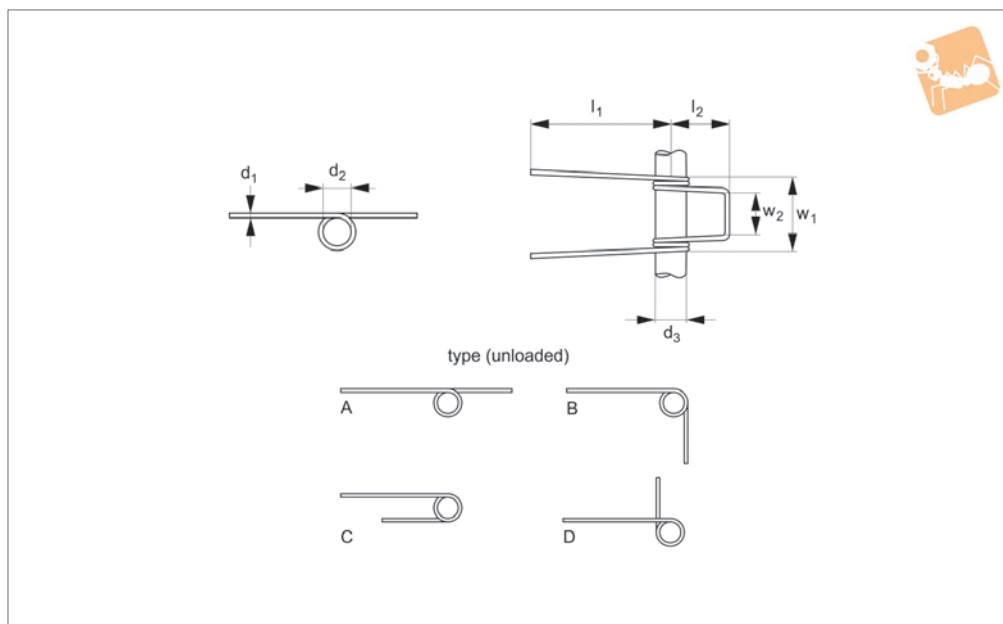




Double Torsion Springs stainless



Springs



P1312

SPRINGS

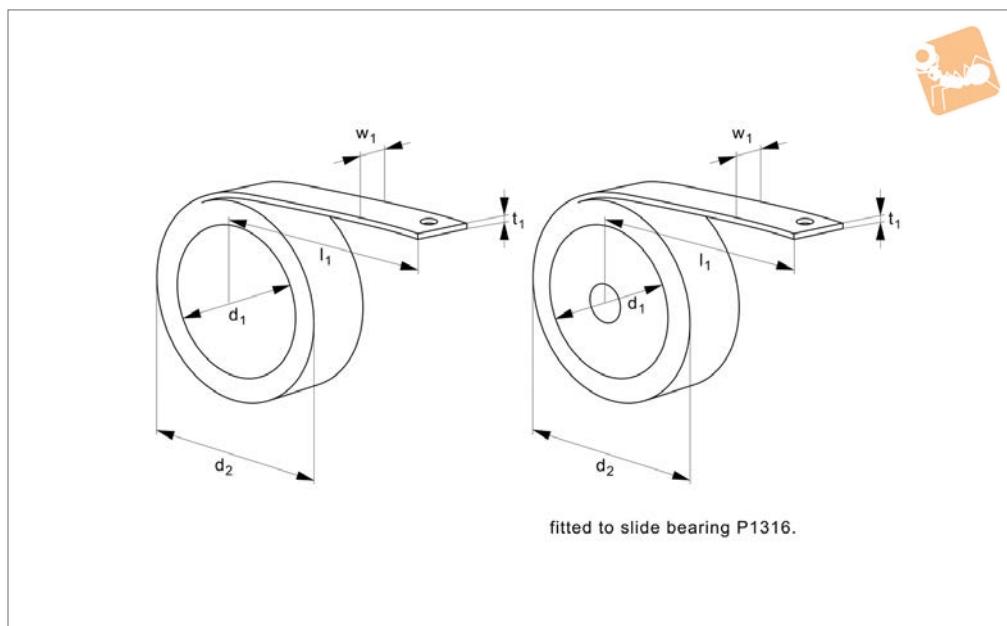
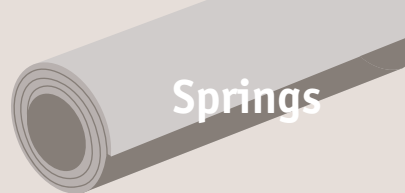
Material

Stainless steel (DIN 1.4310).

Order No.	d ₁	d ₂	d ₃	Leg	l ₁	w ₁	l ₂	w ₂	No. of coils	Torque angle	Torque Nmm max.	Spring rate Nmm/°
P1312.04-02545A	0.4	3	2.5	A	16	7	4	4.5	2	45	18.6	0.412
P1312.04-02551B	0.4	3	2.5	B	16	7	4	4.5	2.25	51	18.6	0.366
P1312.04-02557C	0.4	3	2.5	C	16	7	4	4.5	2.5	57	18.6	0.330
P1312.04-02562D	0.4	3	2.5	D	16	7.5	4	4.5	2.75	62	18.6	0.3
P1312.04-02568A	0.4	3	2.5	A	16	7.5	4	4.5	3	68	18.6	0.274
P1312.04-02596B	0.4	3	2.5	B	16	8.5	4	4.5	4.25	96	18.6	0.194
P1312.04-025147C	0.4	3	2.5	C	16	10.2	4	4.5	6.5	147	18.6	0.126
P1312.05-03040A	0.5	3.5	3.0	A	20	8.5	5	5.5	2	40	33.4	0.83
P1312.05-03045B	0.5	3.5	3.0	B	20	8.5	5	5.5	2.25	45	33.4	0.738
P1312.05-03050C	0.5	3.5	3.0	C	20	8.5	5	5.5	2.5	50	33.4	0.664
P1312.05-03055D	0.5	3.5	3.0	D	20	9.5	5	5.5	2.75	55	33.4	0.604
P1312.05-03060A	0.5	3.5	3.0	A	20	9.5	5	5.5	3	60	33.4	0.552
P1312.05-03086B	0.5	3.5	3.0	B	20	10.5	5	5.5	4.25	86	33.4	0.39
P1312.05-030131C	0.5	3.5	3.0	C	20	12.5	5	5.5	6.5	131	33.4	0.256
P1312.06-04046A	0.6	5.0	4.0	A	22	10.1	7	6.5	2	46	59.6	1.266
P1312.06-04052B	0.6	5.0	4.0	B	22	10.1	7	6.5	2.25	52	59.6	1.126
P1312.06-04058C	0.6	5.0	4.0	C	22	10.1	7	6.5	2.5	58	59.6	1.012
P1312.06-04064D	0.6	5.0	4.0	D	22	11.3	7	6.5	2.75	64	59.6	0.92
P1312.06-04070A	0.6	5.0	4.0	A	22	11.3	7	6.5	3	70	59.6	0.844
P1312.06-04099B	0.6	5.0	4.0	B	22	11.3	7	6.5	4.25	99	59.6	0.596
P1312.06-040151C	0.6	5.0	4.0	C	22	11.3	7	6.5	6.5	151	59.6	0.39
P1312.075-05044A	0.75	6.0	5.0	A	25	12.0	8	7.5	2	44	110	2.488
P1312.075-05050B	0.75	6.0	5.0	B	25	12.0	8	7.5	2.25	50	110	2.212
P1312.075-05055C	0.75	6.0	5.0	C	25	12.0	8	7.5	2.5	55	110	1.99
P1312.075-05061D	0.75	6.0	5.0	D	25	13.5	8	7.5	2.75	61	110	1.81
P1312.075-05066A	0.75	6.0	5.0	A	25	13.5	8	7.5	3	66	110	1.658
P1312.075-05094B	0.75	6.0	5.0	B	25	15.0	8	7.5	4.25	94	110	1.17
P1312.075-050143C	0.75	6.0	5.0	C	25	17.5	8	7.5	6.5	143	110	0.766
P1312.100-06038A	1.0	7.0	6.0	A	35	14.5	10	8.5	2	38	254	6.64
P1312.100-06043B	1.0	7.0	6.0	B	35	14.5	10	8.5	2.25	43	254	5.9
P1312.100-06048C	1.0	7.0	6.0	C	35	14.5	10	8.5	2.5	48	254	5.3
P1312.100-06052D	1.0	7.0	6.0	D	35	16.5	10	8.5	2.75	52	254	4.82
P1312.100-06057A	1.0	7.0	6.0	A	35	16.5	10	8.5	3	57	254	4.42
P1312.100-06081B	1.0	7.0	6.0	B	35	18.5	10	8.5	4.25	81	254	3.12



Order No.	d ₁	d ₂	d ₃	Leg	l ₁	w ₁	l ₂	w ₂	No. of coils	Torque angle	Torque Nmm max.	Spring rate Nmm/°
P1312.100-060124C	1.0	7.0	6.0	C	35	22.5	10	8.5	6.5	124	254	2.04
P1312.125-08038A	1.25	9.0	8.0	A	40	18.5	12	11	2	38	476	12.64
P1312.125-08042B	1.25	9.0	8.0	B	40	18.5	12	11	2.25	42	476	11.24
P1312.125-08047C	1.25	9.0	8.0	C	40	18.5	12	11	2.5	47	476	10.12
P1312.125-08052D	1.25	9.0	8.0	D	40	21.0	12	11	2.75	52	476	9.2
P1312.125-08057A	1.25	9.0	8.0	A	40	21.0	12	11	3	57	476	8.42
P1312.125-08080B	1.25	9.0	8.0	B	40	23.5	12	11	4.25	80	476	5.94
P1312.125-080123C	1.25	9.0	8.0	C	40	28.5	12	11	6.5	123	476	3.90
P1312.150-10040A	1.5	12.0	10.0	A	45	22.0	16	13	2	40	800	19.9
P1312.150-10045B	1.5	12.0	10.0	B	45	22.0	16	13	2.25	45	800	17.7
P1312.150-10050C	1.5	12.0	10.0	C	45	22.0	16	13	2.5	50	800	15.92
P1312.150-10055D	1.5	12.0	10.0	D	45	25.0	16	13	2.75	55	800	14.48
P1312.150-10060A	1.5	12.0	10.0	A	45	25.0	16	13	3	60	800	13.26
P1312.150-10085B	1.5	12.0	10.0	B	45	28.0	16	13	4.25	85	800	9.36
P1312.150-100130C	1.5	12.0	10.0	C	45	34.0	16	13	6.5	130	800	6.12
P1312.200-12034A	2.0	14.0	12.0	A	60	28.0	18	16	2	34	1830	53.08
P1312.200-12039B	2.0	14.0	12.0	B	60	28.0	18	16	2.25	39	1830	47.18
P1312.200-12043C	2.0	14.0	12.0	C	60	28.0	18	16	2.5	43	1830	42.46
P1312.200-12047D	2.0	14.0	12.0	D	60	32.0	18	16	2.75	47	1830	38.6
P1312.200-12052A	2.0	14.0	12.0	A	60	32.0	18	16	3	52	1830	35.38
P1312.200-12073B	2.0	14.0	12.0	B	60	36.0	18	16	4.25	73	1830	24.98
P1312.200-120112C	2.0	14.0	12.0	C	60	44.0	18	16	6.5	112	1830	16.34
P1312.250-15033A	2.5	17.0	15.0	A	70	37.0	24	21	2	33	3510	106.4
P1312.250-15037B	2.5	17.0	15.0	B	70	36.0	24	21	2.25	37	3510	94.4
P1312.250-15041C	2.5	17.0	15.0	C	70	36.0	24	21	2.5	41	3510	85.0
P1312.250-15045D	2.5	17.0	15.0	D	70	36.0	24	21	2.75	45	3510	77.4
P1312.250-15050A	2.5	17.0	15.0	A	70	41.0	24	21	3	50	3510	70.8
P1312.250-15070B	2.5	17.0	15.0	B	70	41.0	24	21	4.25	70	3510	50
P1312.250-150107C	2.5	17.0	15.0	C	70	56.0	24	21	6.5	107	3510	32.8
P1312.300-20035A	3.0	23.0	20.0	A	80	44.0	30	26	2	35	5828	165.4
P1312.300-20040B	3.0	23.0	20.0	B	80	44.0	30	26	2.25	40	5828	147
P1312.300-20044C	3.0	23.0	20.0	C	80	44.0	30	26	2.5	44	5828	132.2
P1312.300-20048D	3.0	23.0	20.0	D	80	50.0	30	26	2.75	48	5828	120.2
P1312.300-20053A	3.0	23.0	20.0	A	80	50.0	30	26	3	53	5828	110.2
P1312.300-20075B	3.0	23.0	20.0	B	80	56.0	30	26	4.25	75	5828	77.8
P1312.300-200115C	3.0	23.0	20.0	C	80	68.0	30	26	6.5	115	5828	50.8
P1312.400-25031A	4.0	28.0	25.0	A	90	55.0	40	31	2	31	13420	438
P1312.400-25035B	4.0	28.0	25.0	B	90	55.0	40	31	2.25	35	13420	390
P1312.400-25038C	4.0	28.0	25.0	C	90	55.0	40	31	2.5	38	13420	350
P1312.400-25042D	4.0	28.0	25.0	D	90	63.0	40	31	2.75	42	13420	318
P1312.400-25046A	4.0	28.0	25.0	A	90	63.0	40	31	3	46	13420	292
P1312.400-25065B	4.0	28.0	25.0	B	90	71.0	40	31	4.25	65	13420	206
P1312.400-250100C	4.0	28.0	25.0	C	90	87.0	40	31	6.5	100	13420	135
P1312.500-30029A	5.0	34.0	30.0	A	100	66.0	50	36	2	29	25072	876
P1312.500-30032B	5.0	34.0	30.0	B	100	66.0	50	36	2.25	32	25072	780
P1312.500-30036C	5.0	34.0	30.0	C	100	66.0	50	36	2.5	36	25072	702
P1312.500-30039D	5.0	34.0	30.0	D	100	76.0	50	36	2.75	39	25072	638
P1312.500-30043A	5.0	34.0	30.0	A	100	76.0	50	36	3	43	25072	584
P1312.500-30061B	5.0	34.0	30.0	B	100	86.0	50	36	4.25	61	25072	412
P1312.500-30093C	5.0	34.0	30.0	C	100	106.0	50	36	6.5	93	25072	270



P1315

SPRINGS

Material

Stainless steel (EN10270-3, DIN 1.4310).

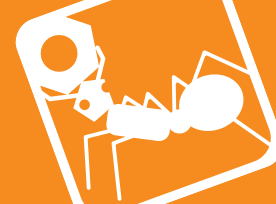
Technical Notes

Constant force extension springs provide a

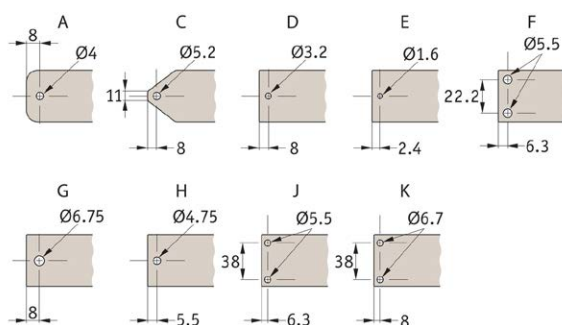
huge range of application opportunities. Springs can be extended in excess of 50 times the relaxed length of the spring, and can be mounted on a bobbin or bush free

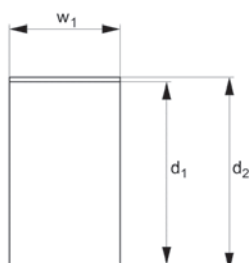
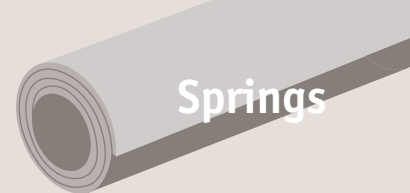
running in a cavity or recess. Springs can be joined or laminated to provide increased force with minimal increases in space requirements.

Order No.	t ₁	F N ±10%	d ₁	w ₁	d ₂	d ₃	d ₄	l ₁	Total length	N _c	Hole	For bearing No.
P1315.010-A	0.1	2.8	10	10	12.3	12	14.0	300	360	15000	D	P1316.10-12-10
P1315.010-B	0.1	1.6	14	10	15.9	16	17.7	300	400	40000	D	P1316.12-16-10
P1315.015-A	0.15	6.2	14	15	17.9	17	20.4	500	600	15000	D	P1316.15-17-15
P1315.015-B	0.15	4.4	19	15	22.3	23	25.8	500	640	40000	D	P1316.20-23-15
P1315.015-C	0.15	8.4	14	20	19.9	17	20.4	500	600	15000	H	P1316.15-17-20
P1315.015-D	0.15	5.5	19	20	22.3	23	25.8	500	640	40000	H	P1316.20-23-20
P1315.020-A	0.2	9.3	19	15	24.3	23	27.6	700	830	15000	D	P1316.20-23-15
P1315.020-B	0.2	4.3	29	15	33.1	34	37.6	700	900	40000	D	P1316.30-34-15
P1315.020-C	0.2	12.3	19	20	24.3	23	27.6	700	830	15000	H	P1316.20-23-20
P1315.020-D	0.2	5.7	29	20	33.1	34	37.6	700	900	40000	H	P1316.30-34-20
P1315.020-E	0.2	15.4	19	25	24.3	23	27.6	700	830	15000	H	P1316.20-23-25
P1315.020-F	0.2	7.1	29	25	33.1	34	37.6	700	900	40000	H	P1316.30-34-25
P1315.025-A	0.25	11.5	24	15	31.2	28	34.5	1000	1170	15000	D	P1316.25-28-15
P1315.025-B	0.25	6.1	33	15	39.0	39	44.3	1000	1250	40000	D	P1316.35-39-15
P1315.025-C	0.25	15.4	24	20	31.2	28	34.5	1000	1170	15000	H	P1316.25-28-20
P1315.025-D	0.25	8.1	33	20	39.0	39	44.3	1000	1250	40000	H	P1316.35-39-20
P1315.025-E	0.25	19.2	24	25	31.2	28	34.5	1000	1170	15000	H	P1316.25-28-25
P1315.025-F	0.25	10.1	33	25	39.0	39	44.3	1000	1250	40000	H	P1316.35-39-25
P1315.030-A	0.30	17.0	30	20	37.4	36	42.4	1000	1200	15000	H	P1316.32-36-20
P1315.030-B	0.30	9.8	42	20	48.0	50	55.2	1000	1270	40000	H	P1316.45-50-20
P1315.030-C	0.30	21.3	28	25	35.8	34	40.7	1000	1200	15000	H	P1316.32-34-25
P1315.030-D	0.30	12.3	42	25	48.0	50	55.2	1000	1270	40000	H	P1316.45-50-25
P1315.030-E	0.30	25.5	30	30	37.4	36	42.4	1000	1200	15000	G	P1316.32-36-30
P1315.030-F	0.30	14.7	42	30	48.0	50	55.2	1000	1270	40000	G	P1316.45-50-30
P1315.040-A	0.40	33.7	37	25	48.8	44	54.4	1500	1850	15000	G	P1316.40-44-25
P1315.040-B	0.40	16.3	56	25	64.8	65	72.8	1500	1900	40000	G	P1316.60-65-25
P1315.040-C	0.40	40.4	37	30	48.8	44	54.4	1500	1850	15000	G	P1316.40-44-30
P1315.040-D	0.40	19.5	56	30	64.8	65	72.8	1500	1900	40000	G	P1316.60-65-30
P1315.040-E	0.40	54.0	37	40	48.8	44	54.4	1500	1850	15000	F	P1316.40-44-40
P1315.040-F	0.40	26.0	56	40	65.0	65	73.0	1500	1900	40000	F	P1316.60-65-40
P1315.050-A	0.50	51.2	46	30	58.6	55	66.0	1500	1900	15000	G	P1316.50-55-30
P1315.050-B	0.50	27.9	65	30	75.1	80	88.6	1500	2000	40000	G	P1316.75-80-30
P1315.050-C	0.50	68.3	46	40	58.6	55	66.0	1500	1900	15000	F	P1316.50-55-40



Order No.	t ₁	F N ±10%	d ₁	w ₁	d ₂	d ₃	d ₄	l ₁	Total length	N _c	Hole	For bearing No.
P1315.050-D	0.50	37.1	65	40	75.1	80	88.6	1500	2000	40000	F	P1316.75-80-40
P1315.050-E	0.50	85.3	46	50	58.6	55	66.0	1500	1900	15000	F	P1316.50-55-50
P1315.050-F	0.50	46.5	65	50	75.1	80	88.6	1500	2000	40000	F	P1316.75-80-50
P1315.060-A	0.60	100.0	53	40	69.2	65	78.9	2000	2400	15000	F	P1316.60-65-40
P1315.060-B	0.60	35.7	88	40	100.2	105	115.6	2000	2700	40000	F	P1316.100-105-40
P1315.060-C	0.60	125.2	53	50	69.2	65	78.9	2000	2400	15000	F	P1316.60-65-50
P1315.060-D	0.60	44.6	88	50	100.2	105	115.6	2000	2700	40000	F	P1316.100-105-50
P1315.060-E	0.60	150.2	53	60	69.2	65	78.9	2000	2400	15000	K	P1316.60-65-60
P1315.060-F	0.60	53.5	88	60	100.2	105	115.6	2000	2700	40000	K	P1316.100-105-60





P1316

SPRINGS

Material

Stainless steel (EN10270-3, DIN 1.4310).

Order No.	d ₁	d ₂	l ±0.25	For spring
P1316.10-12-10	10	12	10	P1315.10-A
P1316.12-16-10	12	16	10	P1315.10-B
P1316.15-17-15	15	17	15	P1315.15-A
P1316.20-23-15	20	23	15	P1315.15-B
P1316.15-17-20	15	17	20	P1315.15-C
P1316.20-23-20	20	23	20	P1315.15-D
P1316.30-34-15	30	34	15	P1315.20-B
P1316.30-34-20	30	34	20	P1315.20-D
P1316.20-23-25	20	23	25	P1315.20-E
P1316.30-34-25	30	34	25	P1315.20-F
P1316.25-28-15	25	28	15	P1315.25-A
P1316.35-39-15	35	39	15	P1315.25-B
P1316.25-28-20	25	28	20	P1315.25-C
P1316.35-39-20	35	39	20	P1315.25-D
P1316.25-28-25	25	28	25	P1315.25-E
P1316.35-39-25	35	39	25	P1315.25-F
P1316.32-36-20	32	36	20	P1315.30-A
P1316.45-50-20	45	50	20	P1315.30-B
P1316.32-34-25	30	34	25	P1315.30-C
P1316.45-50-25	45	50	25	P1315.30-D
P1316.32-36-30	32	36	30	P1315.30-E
P1316.45-50-30	45	50	30	P1315.30-F
P1316.40-44-25	40	44	25	P1315.40-A
P1316.60-65-25	60	65	25	P1315.40-B
P1316.40-44-30	40	44	30	P1315.40-C
P1316.60-65-30	60	65	30	P1315.40-D
P1316.40-44-40	40	44	40	P1315.40-E
P1316.60-65-40	60	65	40	P1315.40-F
P1316.50-55-30	50	55	30	P1315.50-A
P1316.75-80-30	75	80	30	P1315.50-B
P1316.50-55-40	50	55	40	P1315.50-C
P1316.75-80-40	75	80	40	P1315.50-D
P1316.50-55-50	50	55	50	P1315.50-E
P1316.75-80-50	75	80	50	P1315.50-F



Order No.	d ₁	d ₂	l ±0.25	For spring
P1316.100-105-40	100	105	40	P1315.60-B
P1316.60-65-50	60	65	50	P1315.60-C
P1316.100-105-50	100	105	50	P1315.60-D
P1316.60-65-60	60	65	60	P1315.60-E
P1316.100-105-60	100	105	60	P1315.60-F