SHIMS

D1460

SUPPORT RINGS

N1460

D1300

B1500

D1400

D1500

N1300

N1500

N1400

N1501
PAGE 24

N1540

N1800

A1500 'U'

A1500 'C'

A1500 'S'

M1800

D2000

D2100

M3200

M2300

M2400

A0500

A0600

A0700

A0900

A1000

M2500

A1100

A1200

M1700

N1302

M1440

N1440

N1305

M1465

N1465

M1308

M1408

N1308

N1408

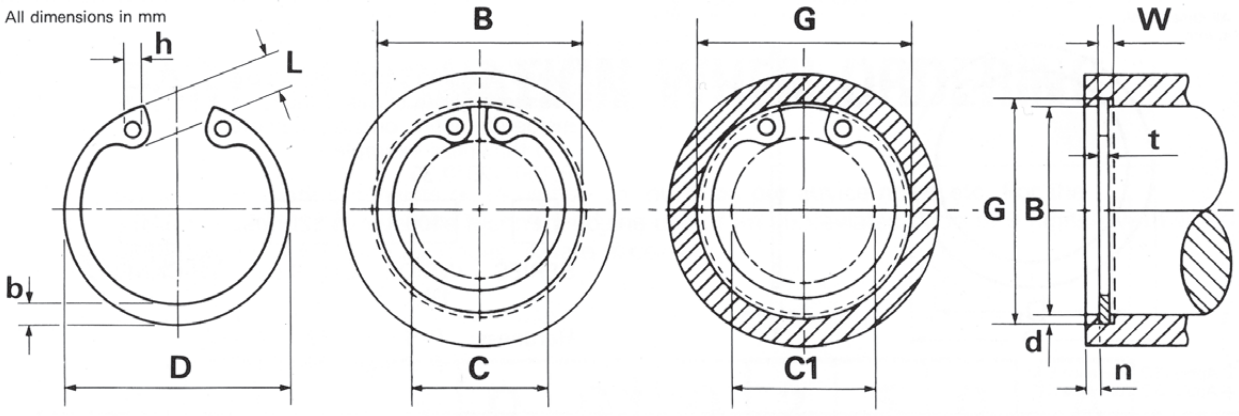
PLIERS

APPLICATORS

STACKFEEDAS

VISIPACKS

All dimensions in mm



Sizes printed in blue are preferred sizes

Alternative lug for larger sizes

Most sizes over 200 mm are without lugs

Beam configuragion on some larger sizes

SIZE CODE	Bore B	Groove (G) G	Tol.	W	Tol.	n (min)	d ~	Circlip (F) t	Tol.	D	Tol.	C	C1	L (max)	b ~	h (min)	Wt. (kg/k)	Tc† (N)	Tg† (N)
0080	8	8.4	+0.09 −0.00	0.90		0.6	0.2	0.80	+0.00 −0.05	8.7		3.0	3.6	2.4	1.1	1.0	0.11	6200	600
0090	9	9.4		0.90		0.6	0.2	0.80		9.8		3.7	4.4	2.5	1.3	1.0	0.17	7000	680
0095	9.5	9.9		1.10		0.6	0.2	1.00		10.3		3.2	3.9	3.0	1.3	1.2	0.22	9300	720
0100	10	10.4		1.10		0.6	0.2	1.00		10.8		3.3	4.0	3.2	1.4	1.2	0.24	9700	750
0110	11	11.4		1.10		0.6	0.2	1.00		11.8	+0.36 −0.10	4.1	4.8	3.3	1.5	1.2	0.30	10700	830
0120	12	12.5	+0.11 −0.00	1.10		0.8	0.3	1.00		13.0		4.9	5.7	3.4	1.7	1.5	0.34	11700	1130
0130	13	13.6		1.10		0.9	0.3	1.00		14.1		5.4	6.4	3.6	1.8	1.5	0.39	12700	1470
0140	14	14.6		1.10		0.9	0.3	1.00		15.1		6.2	7.2	3.7	1.9	1.7	0.45	13600	1580
0150	15	15.7		1.10		1.1	0.4	1.00		16.2		7.2	8.3	3.7	2.0	1.7	0.48	14600	1980
0160	16	16.8		1.10		1.2	0.4	1.00		17.3		8.0	9.2	3.8	2.0	1.7	0.54	15600	2410
0170	17	17.8	+0.13 −0.00	1.10		1.2	0.4	1.00		18.3		8.8	10.0	3,9	2.1	1.7	0.59	16600	2560
0180	18	19.0		1.10		1.5	0.5	1.00		19.5		9.4	10.8	4.1	2.2	2.0	0.61	17500	3390
0190	19	20.0		1.10		1.5	0.5	1.00		20.5	+0.42 −0.13	10.4	11.8	4.1	2.2	2.0	0.72	18500	3580
0200	20	21.0		1.10		1.5	0.5	1.00		21.5		11.2	12.6	4.2	2.3	2.0	0.75	19500	3770
0210	21	22.0		1.10		1.5	0.5	1.00		22.5		12.2	13.6	4.2	2.4	2.0	0.84	20400	3960
0220	22	23.0	+0.21 −0.00	1.10		1.5	0.5	1.00		23.5		13.2	14.6	4.2	2.5	2.0	0.86	21400	4150
0230	23	24.1		1.30		1.7	0.6	1.20		24.6		14.2	15.7	4.2	2.5	2.0	1.20	26900	4770
0240	24	25.2		1.30		1.8	0.6	1.20		25.9	+0.42 −0.21	14.8	16.4	4.4	2.6	2.0	1.21	28000	5430
0250	25	26.2		1.30		1.8	0.6	1.20		26.9		15.5	17.2	4.5	2.7	2.0	1.33	29200	5650
0260	26	27.2		1.30		1.8	0.6	1.20	+0.00 −0.06	27.9		16.1	17.8	4.7	2.8	2.0	1.35	30400	5880
0270	27	28.4	+0.25 −0.00	1.30	+0.14 −0.00	2.1	0.7	1.20		29.1		17.1	19.0	4.7	2.9	2.0	1.55	31600	7130
0280	28	29.4		1.30		2.1	0.7	1.20		30.1		17.9	19.8	4.8	2.9	2.0	1.64	32700	7390
0290	29	30.4		1.30		2.1	0.7	1.20		31.1		18.9	20.8	4.8	3.0	2.0	1.74	33900	7650
0300	30	31.4		1.30		2.1	0.7	1.20		32.1		19.9	21.8	4.8	3.0	2.0	1.87	35100	7920
0310	31	32.7		1.30		2.6	0.9	1.20		33.4		20.0	22.3	5.2	3.2	2.5	2.20	36200	9930
0320	32	33.7		1.30		2.6	0.9	1.20		34.4	+0.50 −0.25	20.6	22.9	5.4	3.2	2.5	1.98	37400	10300
0330	33	34.7		1.30		2.6	0.9	1.20		35.5		21.6	23.9	5.4	3.3	2.5	2.13	36800	10600
0340	34	35.7		1.60		2.6	0.9	1.50		36.5		22.6	24.9	5.4	3.3	2.5	2.88	49700	10900
0350	35	37.0		1.60		3.0	1.0	1.50		37.8		23.6	26.2	5.4	3.4	2.5	2.93	51100	13200
0360	36	38.0		1.60		3.0	1.0	1.50		38.8		24.6	27.2	5.4	4.0	2.5	3.23	52600	13600
0370	37	39.0	+0.30 −0.00	1.60		3.0	1.0	1.50		39.8		25.4	28.0	5.5	3.2	2.5	2.98	54100	13900
0380	38	40.0		1.60		3.0	1.0	1.50		40.8		26.4	29.0	5.5	3.7	2.5	3.54	55500	14300
0400	40	42.5		1.85		3.8	1.3	1.75		43.5		27.8	30.9	5.8	3.9	2.5	4.63	56600	18800
0410	41	43.5		1.85		3.8	1.3	1.75		44.5	+0.90 −0.39	28.6	31.7	5.9	4.0	2.5	5.37	58000	19300
0420	42	44.5		1.85		3.8	1.3	1.75		45.5		29.6	32.7	5.9	4.1	2.5	5.21	59500	19800
0450	45	47.5		1.85		3.8	1.3	1.75		48.5		32.0	35.1	6.2	4.3	2.5	5.88	63700	21200
0470	47	49.5		1.85		3.8	1.3	1.75		50.5		33.5	36.7	6.4	4.4	2.5	6.13	66500	22100
0480	48	50.5		1.85		3.8	1.3	1.75		51.5		34.5	37.7	6.4	4.5	2.5	6.31	68000	22600
0500	50	53.0		2.15		4.5	1.5	2.00		54.2		36.3	40.0	6.5	4.6	2.5	8.01	80900	28300
0510	51	54.0		2.15		4.5	1.5	2.00		55.2		37.3	41.0	6.5	4.7	2.5	8.72	82500	28800
0520	52	55.0		2.15		4.5	1.5	2.00		56.2		37.9	41.6	6.7	4.7	2.5	8.91	84100	29400
0550	55	58.0		2.15		4.5	1.5	2.00		59.2		40.7	44.4	6.8	5.0	2.5	9.44	89000	31100
0560	56	59.0		2.15		4.5	1.5	2.00		60.2		41.7	45.4	6.8	5.1	2.5	9.75	90600	31700
0570	57	60.0		2.15		4.5	1.5	2.00	+0.00 −0.07	62.2	+1.10 −0.46	42.7	46.4	6.8	5.1	2.5	9.56	92200	32200
0580	58	61.0		2.15		4.5	1.5	2.00		62.2		43.5	47.2	6.9	5.2	2.5	10.36	93800	32800
0600	60	63.0		2.15		4.5	1.5	2.00		64.2		44.7	48.4	7.3	5.4	2.5	11.15	97100	33900
0620	62	65.0		2.15		4.5	1.5	2.00		66.2		46.7	50.4	7.3	5.5	2.5	11.59	100000	35100
0630	63	66.0		2.15		4.5	1.5	2.00		67.2		47.7	51.4	7.3	5.6	2.5	11.78	102000	35600
0640	64	67.0		2.15		4.5	1.5	2.00		68.2		48.7	52.4	7.3	5.2	2.5	16.80	104000	36200
0650	65	68.0		2.65		4.5	1.5	2.50		69.2		49.0	52.8	7.6	5.8	3.0	17.71	131000	36800

Standard material - carbon spring steel. Standard finish - phosphate and oil.

SIZE CODE	Bore B	Groove (G) G	Tol.	W	Tol.	n (min)	d ~	Circlip (F) t	Tol.	D	Tol.	C	C1	L (max)	b ~	h (min)	Wt. (kg/k)	Tc† (N)	Tg† (N)
0670	67	70.0		2.65		4.5	1.5	2.50		72.5		50.8	54.6	7.7	6.0	3.0	17.71	136000	37900
0680	68	71.0		2.65		4.5	1.5	2.50		72.5		51.6	55.4	7.8	6.1	3.0	17.72	138000	38500
0700	70	73.0		2.65		4.5	1.5	2.50	+0.00	74.5	+1.10	53.6	57.4	7.8	6.2	3.0	17.65	142000	39600
0720	72	75.0	+0.30	2.65		4.5	1.5	2.50	−0.07	76.5	−0.46	55.6	59.4	7.8	6.4	3.0	19.70	146000	40700
0750	75	78.0	−0.00	2.65		4.5	1.5	2.50		79.5		58.6	62.4	7.8	6.6	3.0	20.62	152000	42400
0760	76	79.0		2.65	+0.14	4.5	1.5	2.50		80.7		59.6	63.4	7.8	6.1	3.0	22.68	154000	43000
0780	78	81.0		2.65	−0.00	4.5	1.5	2.50		82.5		60.1	64.0	8.5	6.8	3.0	22.46	158000	44100
0800	80	83.5		2.65		5.3	1.8	2.50		85.5		62.1	66.5	8.5	7.0	3.0	21.38	162000	52800
0820	82	85.5		2.65		5.3	1.8	2.50		87.5		64.1	68.5	8.5	6.2	3.0	22.27	166000	54100
0850	85	88.5		3.15		5.3	1.8	3.00		90.5		66.9	71.3	8.6	7.2	3.5	31.78	206000	56100
0880	88	91.5	+0.35	3.15		5.3	1.8	3.00		93.5		69.9	74.3	8.6	7.4	3.5	32.94	214000	58100
0900	90	93.5	−0.00	3.15		5.3	1.8	3.00	+0.00	95.5	+1.30	71.9	76.3	8.6	7.6	3.5	33.35	218000	59400
0920	92	95.5		3.15		5.3	1.8	3.00	−0.08	97.5	−0.54	73.7	78.1	8.7	7.8	3.5	35.72	223000	60700
0950	95	98.5		3.15		5.3	1.8	3.00		100.5		76.5	80.9	8.8	8.1	3.5	38.88	231000	62700
0980	98	101.5		3.15		5.3	1.8	3.00		103.5		79.0	83.5	9.0	8.3	3.5	42.16	238000	64700
1000	100	103.5		3.15		5.3	1.8	3.00		105.5		80.6	85.1	9.2	8.4	3.5	43.41	243000	66000
1020	102	106.0		4.15		6.0	2.0	4.00		108.0		82.0	87.0	9.5	8.5	3.5	55.20	330000	76900
1050	105	109.0		4.15		6.0	2.0	4.00		112.0		85.0	90.0	9.5	8.7	3.5	59.20	340000	79200
1080	108	112.0	+0.54	4.15		6.0	2.0	4.00		115.0		88.0	93.0	9.5	8.9	3.5	62.60	350000	81400
1100	110	114.0	−0.00	4.15		6.0	2.0	4.00		117.0		88.2	93.2	10.4	9.0	3.5	71.75	356000	82900
1120	112	116.0		4.15		6.0	2.0	4.00		119.0		90.0	95.0	10.5	9.1	3.5	70.68	362000	84400
1150	115	119.0		4.15		6.0	2.0	4.00		122.0		93.0	98.0	10.5	9.3	3.5	73.16	372000	86700
1200	120	124.0		4.15		6.0	2.0	4.00		127.0		96.9	102.0	11.0	9.7	3.5	80.40	388000	90500
1250	125	129.0		4.15		6.0	2.0	4.00		132.0		101.9	107.0	11.0	10.0	4.0	81.20	405000	94300
1270	127	131.0		4.15		6.0	2.0	4.00		135.0		103.9	109.0	11.0	10.0	4.0	80.80	411000	95800
1300	130	134.0		4.15		6.0	2.0	4.00		137.0		106.9	112.0	11.0	10.2	4.0	85.13	421000	98000
1350	135	139.0		4.15		6.0	2.0	4.00	+0.00	142.0	+1.50	111.5	116.0	11.2	10.5	4.0	94.79	437000	102000
1400	140	144.0		4.15		6.0	2.0	4.00	−0.10	147.0	−0.63	116.5	121.0	11.2	10.7	4.0	98.61	453000	106000
1450	145	149.0	+0.63	4.15	+0.18	6.0	2.0	4.00		152.0		121.0	126.0	11.4	10.9	4.0	106.50	469000	109000
1500	150	155.0	−0.00	4.15	−0.00	7.5	2.5	4.00		158.0		124.8	131.0	12.0	11.2	4.0	106.80	485000	141000
1550	155	160.0		4.15		7.5	2.5	4.00		164.0		129.8	136.0	12.0	11.4	4.0	128.00	502000	146000
1600	160	165.0		4.15		7.5	2.5	4.00		169.0		132.7	139.0	13.0	11.6	4.0	130.50	518000	151000
1650	165	170.0		4.15		7.5	2.5	4.00		174.5		137.7	144.0	13.0	11.8	4.0	132.00	534000	156000
1700	170	175.0		4.15		7.5	2.5	4.00		179.5		141.6	148.0	13.5	12.0	4.0	149.50	550000	160000
1750	175	180.0		4.15		7.5	2.5	4.00		184.5		146.6	153.0	13.5	12.0	4.0	158.50	566000	165000
1800	180	185.0		4.15		7.5	2.5	4.00		189.5		150.2	156.0	14.2	13.0	4.0	168.00	583000	170000
1850	185	190.0		4.15		7.5	2.5	4.00		194.5		155.2	161.0	14.2	13.0	4.0	177.50	599000	174000
1900	190	195.0		4.15		7.5	2.5	4.00		199.5	+1.70	160.2	166.0	14.3	13.0	4.0	184.00	615000	179000
1950	195	200.0		4.15		7.5	2.5	4.00		204.5	−0.72	165.2	171.0	14.2	13.0	4.0	189.60	631000	184000
2000	200	205.0	+0.72	4.15		7.5	2.5	4.00		209.5		170.2	176.0	14.3	13.0	4.0	196.00	647000	188000
2100	210	216.0	−0.00	5.15		9.0	3.0	5.00		222.0		180.2	187.0	14.2	14.0	4.0	263.00	739000	237000
2200	220	226.0		5.15		9.0	3.0	5.00		232.0		190.2	197.0	14.2	14.0	4.0	276.00	774000	249000
2300	230	236.0		5.15		9.0	3.0	5.00		242.0		200.2	207.0	14.2	14.0	4.0	291.00	809000	260000
2400	240	246.0		5.15		9.0	3.0	5.00		252.0		210.2	217.0	14.2	14.0	4.0	304.00	845000	271000
2500	250	256.0		5.15		9.0	3.0	5.00	+0.00	262.0		220.2	227.0	14.2	14.0	4.0	318.50	880000	283000
2600	260	268.0		5.15		12.0	4.0	5.00	−0.12	275.0	+2.00	226.0	235.0	16.2	16.0	5.0	385.00	915000	392000
2700	270	278.0	+0.81	5.15		12.0	4.0	5.00		285.0	−0.81	236.0	245.0	16.2	16.0	5.0	401.50	950000	407000
2800	280	288.0	−0.00	5.15		12.0	4.0	5.00		295.0		246.0	255.0	16.2	16.0	5.0	417.50	985000	422000
2900	290	298.0		5.15		12.0	4.0	5.00		305.0		256.0	265.0	16.2	16.0	5.0	433.40	1020000	437000
3000	300	308.0		5.15		12.0	4.0	5.00		315.0		266.0	275.0	16.2	16.0	5.0	446.00	1060000	452000
3100	310	320.0		6.20		15.0	5.0	6.00		327.0		267.8	279.0	20.2	20.0	6.0	658.50	1310000	584000
3200	320	330.0		6.20		15.0	5.0	6.00		337.0		277.8	289.0	20.2	20.0	6.0	682.00	1350000	603000
3300	330	340.0		6.20		15.0	5.0	6.00		347.0		287.8	299.0	20.2	20.0	6.0	705.00	1390000	622000
3400	340	350.0		6.20		15.0	5.0	6.00		357.0		297.8	309.0	20.2	20.0	6.0	729.00	1440000	641000
3500	350	360.0	+0.89	6.20	+0.22	15.0	5.0	6.00	+0.00	367.0	+2.50	307.8	319.0	20.2	20.0	6.0	752.50	1480000	660000
3600	360	370.0	−0.00	6.20	−0.00	15.0	5.0	6.00	−0.18	377.0	−1.00	317.8	329.0	20.2	20.0	6.0	769.00	1520000	679000
3700	370	380.0		6.20		15.0	5.0	6.00		387.0		327.8	339.0	20.2	20.0	6.0	793.00	1560000	697000
3800	380	390.0		6.20		15.0	5.0	6.00		397.0		337.8	349.0	20.2	20.0	6.0	817.00	1610000	716000
3900	390	400.0		6.20		15.0	5.0	6.00		407.0		347.8	359.0	20.2	20.0	6.0	838.50	1650000	735000
4000	400	410.0		6.20		15.0	5.0	6.00		417.0		357.8	369.0	20.2	20.0	6.0	862.50	1690000	754000

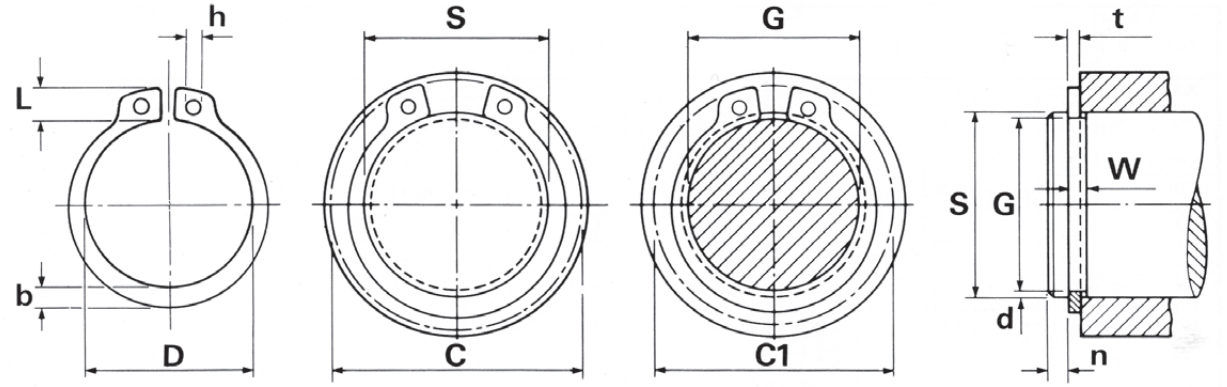
Reference to Table Headings

A = Free gap
a = Radial depth
B = Bore diameter
b = Beam dimension
C = Clearance on shaft or in bore
C_1 = Clearance in groove
D = Free diameter (Working)
D_1 = Free diamater (Non-functional)
d = Groove depth
E = End play take-up
F = Circlip details
G = Groove diameter
H = Height
h = Hole diameter
L = Lug depth
n = Edge margin
n_1 = Shaft or bore face to retained face
r = Radius
S = Shaft diameter
Tc = Thrust load for circlip
Tg = Thrust load of groove
t = Thickness
W = Groove width
ω = Wing dimension
Wt = Weight
X = Outer groove wall to retained face

Abbreviations used

B.S. = British Standard
dec. = Decimal
frac. = Fraction
kg/k = Kilogrammes per thousand
lb.f = Pounds force
lb/k = Pounds per thousand
max. = Maximum
min. = Minimum
N = Newton
Nom. = Nominal
Tol. = Tolerance

All dimensions in mm



Circlip on shaft

Circlip in groove

Lug for sizes 3 to 9 mm

Alternative lug for sizes 4-8 mm

Most sizes over 185 mm are without lugs

Beam configuration on some larger sizes

SIZE CODE	Shaft S	Groove (G) G	Tol.	W	Tol.	n (min)	d ~	Circlip (F) t	Tol.	D	Tol.	C	C1	L (max)	b ~	h (min)	Wt. (kg/k)	Tc† (N)	Tg† (N)
0030	3	2.8	+0.00 −0.04	0.50		0.3	0.10	0.40		2.7		7.0	6.6	1.9	0.8	1.0	0.02	1170	110
0040	4	3.8		0.50		0.3	0.10	0.40		3.7	+0.04 −0.15	8.6	8.2	2.2	0.9	1.0	0.03	1600	150
0050	5	4.8	+0.00 −0.048	0.70		0.3	0.10	0.60	+0.00 −0.05	4.7		10.3	9.8	2.5	1.1	1.0	0.08	2900	190
0060	6	5.7		0.80		0.5	0.15	0.70		5.6		11.7	11.1	2.7	1.3	1.2	0.13	4100	340
0070	7	6.7		0.90		0.5	0.15	0.80		6.5	+0.06 −0.18	13.5	12.9	3.1	1.4	1.2	0.18	5500	400
0080	8	7.6	+0.00 −0.06	0.90		0.6	0.20	0.80		7.4		14.7	14.0	3.2	1.5	1.2	0.20	6200	600
0090	9	8.6		1.10		0.6	0.20	1.00		8.4		16.0	15.2	3.3	1.7	1.2	0.32	8800	680
0100	10	9.6		1.10		0.6	0.20	1.00		9.3		17.0	16.2	3.3	1.8	1.5	0.40	9700	750
0110	11	10.5		1.10		0.8	0.25	1.00		10.2		18.0	17.1	3.3	1.8	1.5	0.41	10700	1040
0120	12	11.5		1.10		0.8	0.25	1.00		11.0		19.0	18.1	3.3	1.8	1.7	0.45	11700	1130
0130	13	12.4		1.10		0.9	0.30	1.00		11.9	+0.10 −0.36	20.2	19.2	3.4	2.0	1.7	0.52	12700	1470
0140	14	13.4		1.10		0.9	0.30	1.00		12.9		21.4	20.4	3.5	2.1	1.7	0.56	13600	1580
0150	15	14.3	+0.00 −0.11	1.10		1.1	0.35	1.00		13.8		22.6	21.5	3.6	2.2	1.7	0.62	14600	1980
0160	16	15.2		1.10		1.2	0.40	1.00		14.7		23.8	22.6	3.7	2.2	1.7	0.69	15600	2410
0170	17	16.2		1.10		1.2	0.40	1.00		15.7		25.0	23.8	3.8	2.3	1.7	0.77	16600	2560
0180	18	17.0		1.30		1.5	0.50	1.20		16.5		26.2	24.8	3.9	2.4	2.0	0.99	21000	3390
0190	19	18.0		1.30		1.5	0.50	1.20		17.5		27.2	25.8	3.9	2.5	2.0	1.10	22200	3580
0200	20	19.0		1.30		1.5	0.50	1.20		18.5		28.4	27.0	4.0	2.6	2.0	1.18	23400	3770
0210	21	20.0	+0.00 −0.13	1.30		1.5	0.50	1.20		19.5	+0.13 −0.42	29.6	28.2	4.1	2.7	2.0	1.26	24500	3960
0220	22	21.0		1.30		1.5	0.50	1.20		20.5		30.8	29.4	4.2	2.8	2.0	1.39	25700	4150
0230	23	22.0		1.30		1.5	0.50	1.20		21.5		32.0	30.6	4.3	2.9	2.0	1.54	26900	4340
0240	24	22.9		1.30		1.7	0.55	1.20	+0.00 −0.06	22.2		33.2	31.7	4.4	3.0	2.0	1.52	28000	4980
0250	25	23.9		1.30		1.7	0.55	1.20		23.2		34.2	32.7	4.4	3.0	2.0	1.70	29200	5180
0260	26	24.9	+0.00 −0.21	1.30		1.7	0.55	1.20		24.2		35.5	33.9	4.5	3.1	2.0	1.75	30400	5390
0270	27	25.6		1.30	+0.14 −0.00	2.1	0.70	1.20		24.9	+0.21 −0.42	36.7	34.8	4.6	3.1	2.0	1.89	31600	7130
0280	28	26.6		1.60		2.1	0.70	1.50		25.9		37.9	36.0	4.7	3.2	2.0	2.47	40900	7390
0290	29	27.6		1.60		2.1	0.70	1.50		26.9		39.1	37.2	4.8	3.4	2.0	2.75	42400	7650
0300	30	28.6		1.60		2.1	0.70	1.50		27.9		40.5	38.6	5.0	3.5	2.0	2.93	43800	7920
0320	32	30.3		1.60		2.6	0.85	1.50		29.6		43.0	40.7	5.2	3.6	2.5	3.02	46700	10300
0330	33	31.3		1.60		2.6	0.85	1.50		30.5		44.0	41.7	5.2	3.7	2.5	3.30	48200	10600
0340	34	32.3		1.60		2.6	0.85	1.50		31.5	+0.25 −0.50	45.4	43.1	5.4	3.8	2.5	3.72	49700	10900
0350	35	33.0		1.60		3.0	1.00	1.50		32.2		46.8	44.2	5.6	3.9	2.5	3.78	51100	13200
0360	36	34.0		1.85		3.0	1.00	1.75		33.2		47.8	45.2	5.6	4.0	2.5	4.55	51400	13600
0380	38	36.0		1.85		3.0	1.00	1.75		35.2		50.2	47.6	5.8	4.2	2.5	5.08	54800	14300
0400	40	37.5	+0.00 −0.25	1.85		3.8	1.25	1.75		36.5		52.6	49.5	6.0	5.0	2.5	5.54	56600	18800
0420	42	39.5		1.85		3.8	1.25	1.75		38.5		55.7	52.5	6.5	5.0	2.5	5.99	59500	19800
0450	45	42.5		1.85		3.8	1.25	1.75		41.5		59.1	55.9	6.7	5.0	2.5	6.75	63700	21200
0460	46	43.5		1.85		3.8	1.25	1.75		42.5	+0.39 −0.90	60.1	56.9	6.7	5.0	2.5	7.24	65100	21700
0470	47	44.5		1.85		3.8	1.25	1.75		43.5		61.3	58.1	6.8	5.0	2.5	7.30	66500	22100
0480	48	45.5		1.85		3.8	1.25	1.75		44.5		62.5	59.3	6.9	5.0	2.5	7.51	67900	22600
0500	50	47.0		2.15		4.5	1.50	2.00		45.8		64.5	60.8	6.9	5.5	2.5	9.88	80900	28300
0520	52	49.0		2.15		4.5	1.50	2.00		47.8		66.7	63.0	7.0	5.5	2.5	9.53	84100	29400
0540	54	51.0		2.15		4.5	1.50	2.00		49.8		69.0	65.2	7.1	5.5	2.5	10.30	87400	30500
0550	55	52.0		2.15		4.5	1.50	2.00		50.8		70.2	66.4	7.2	5.5	2.5	10.41	89000	31100
0560	56	53.0	+0.00 −0.30	2.15		4.5	1.50	2.00	+0.00 −0.07	51.8	+0.46 −1.10	71.6	67.6	7.3	5.5	2.5	10.50	90600	31700
0580	58	55.0		2.15		4.5	1.50	2.00		53.8		73.6	69.6	7.3	5.6	2.5	12.47	93800	32800
0600	60	57.0		2.15		4.5	1.50	2.00		55.8		75.6	71.8	7.4	5.8	2.5	13.69	97100	33900
0620	62	59.0		2.15		4.5	1.50	2.00		57.8		77.8	74.0	7.5	6.0	2.5	12.36	100000	35100
0630	63	60.0		2.15		4.5	1.50	2.00		58.8		79.0	75.2	7.6	6.2	2.5	13.10	102000	35600
0650	65	62.0		2.65		4.5	1.50	2.50		60.8		81.4	77.6	7.8	6.3	3.0	20.44	131000	36800

Standard material - carbon spring steel. Standard finish - phosphate and oil.

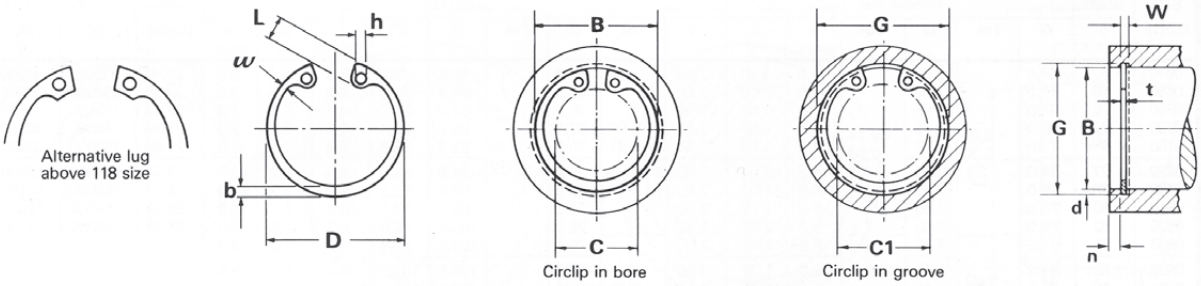
SIZE CODE	Shaft S	Groove (G) G	Tol.	W	Tol.	n (min)	d ~	Circlip (F) t	Tol.	D	Tol.	C	C1	L (max)	b ~	h (min)	Wt. (kg/k)	Tc† (N)	Tg† (N)
0670	67	64.0		2.65		4.5	1.50	2.50		62.5		83.6	79.8	7.9	6.4	3.0	20.43	135000	37900
0680	68	65.0		2.65		4.5	1.50	2.50		63.5		84.4	81.0	8.0	6.5	3.0	19.55	138000	38500
0700	70	67.0		2.65		4.5	1.50	2.50		65.5		87.0	83.2	8.1	6.6	3.0	22.13	142000	39600
0720	72	69.0	+0.00	2.65	+0.14	4.5	1.50	2.50	+0.00	67.5		89.2	85.4	8.2	6.8	3.0	21.60	146000	40700
0750	75	72.0	−0.30	2.65	−0.00	4.5	1.50	2.50	−0.07	70.5	+0.46 −1.10	92.7	88.8	8.4	7.0	3.0	24.65	152000	42400
0770	77	74.0		2.65		4.5	1.50	2.50		72.5		94.9	91.0	8.5	7.2	3.0	24.26	156000	43500
0780	78	75.0		2.65		4.5	1.50	2.50		73.5		96.1	92.2	8.6	7.3	3.0	28.10	158000	44100
0800	80	76.5		2.65		5.3	1.75	2.50		74.5		98.1	93.7	8.6	7.4	3.0	26.68	162000	52800
0820	82	78.5		2.65		5.3	1.75	2.50		76.5		100.3	95.9	8.7	7.6	3.0	28.35	166000	54100
0850	85	81.5		3.15		5.3	1.75	3.00		79.5		103.3	98.9	8.7	7.8	3.5	35.40	206000	56100
0880	88	84.5	+0.00	3.15		5.3	1.75	3.00		82.5		106.5	102.0	8.8	8.0	3.5	39.85	214000	58100
0900	90	86.5	−0.35	3.15		5.3	1.75	3.00	+0.00	84.5		108.5	104.0	8.8	8.2	3.5	38.89	218000	59400
0950	95	91.5		3.15		5.3	1.75	3.00	−0.08	89.5		114.8	111.0	9.4	8.6	3.5	42.39	231000	62700
0980	98	94.5		3.15		5.3	1.75	3.00		91.5		118.6	114.0	9.8	9.0	3.5	54.00	238000	64700
1000	100	96.5		3.15		5.3	1.75	3.00		94.5		120.2	116.0	9.6	9.0	3.5	48.86	243000	66000
1020	102	98.0		4.15		6.0	2.00	4.00		95.0	+0.54	122.4	118.0	9.7	9.2	3.5	68.73	330000	76900
1050	105	101.0		4.15		6.0	2.00	4.00		98.0	−1.30	126.2	122.0	10.1	9.3	3.5	73.16	340000	79200
1080	108	104.0	+0.00	4.15		6.0	2.00	4.00		100.0		129.0	124.0	10.0	9.5	3.5	83.45	349000	81400
1100	110	106.0	−0.54	4.15		6.0	2.00	4.00		103.0		131.2	127.0	10.1	9.6	3.5	75.24	356000	82900
1150	115	111.0		4.15		6.0	2.00	4.00		108.0		137.3	133.0	10.6	9.8	3.5	78.65	327000	86700
1200	120	116.0		4.15		6.0	2.00	4.00		113.0		143.1	138.0	11.0	10.2	3.5	85.58	388000	90500
1250	125	121.0		4.15		6.0	2.00	4.00		118.0		149.0	144.0	11.4	10.4	4.0	99.62	404000	94200
1300	130	126.0		4.15		6.0	2.00	4.00		123.0		154.4	150.0	11.6	10.7	4.0	98.10	421000	98000
1350	135	131.0		4.15		6.0	2.00	4.00		128.0		159.8	155.0	11.8	11.0	4.0	113.40	437000	102000
1400	140	136.0		4.15		6.0	2.00	4.00	+0.00	133.0		165.2	160.0	12.0	11.2	4.0	119.18	453000	106000
1450	145	141.0		4.15		6.0	2.00	4.00	−0.10	138.0		170.6	166.0	12.2	11.5	4.0	128.53	470000	109000
1500	150	145.0	+0.00	4.15		7.5	2.50	4.00		142.0		177.3	171.0	13.0	11.8	4.0	132.80	485000	141000
1550	155	150.0	−0.63	4.15	+0.18	7.5	2.50	4.00		146.0	+0.63	182.3	176.0	13.0	12.0	4.0	136.06	501000	146000
1600	160	155.0		4.15	−0.00	7.5	2.50	4.00		151.0	−1.50	188.0	182.0	13.3	12.2	4.0	137.50	518000	151000
1650	165	160.0		4.15		7.5	2.50	4.00		155.5		193.4	187.0	13.5	12.5	4.0	151.96	534000	156000
1700	170	165.0		4.15		7.5	2.50	4.00		160.5		198.4	192.0	13.5	12.9	4.0	169.00	550000	160000
1750	175	170.0		4.15		7.5	2.50	4.00		165.5		203.4	197.0	13.5	12.9	4.0	173.70	566000	165000
1800	180	175.0		4.15		7.5	2.50	4.00		170.5		210.0	204.0	14.2	13.5	4.0	188.00	582000	170000
1850	185	180.0		4.15		7.5	2.50	4.00		175.5		215.2	209.0	14.3	13.5	4.0	193.00	598000	174000
1900	190	185.0		4.15		7.5	2.50	4.00		180.5		220.0	214.0	14.2	14.0	4.0	203.00	615000	179000
1950	195	190.0		4.15		7.5	2.50	4.00		185.5		225.0	219.0	14.2	14.0	4.0	209.50	631000	184000
2000	200	195.0		4.15		7.5	2.50	4.00		190.5		230.0	224.0	14.2	14.0	4.0	214.00	647000	188000
2050	205	199.0	+0.00	5.15		9.0	3.00	5.00		193.0		235.0	228.0	14.2	14.0	4.0	278.00	721000	232000
2100	210	204.0	−0.72	5.15		9.0	3.00	5.00		198.0	+0.72	240.0	233.0	14.2	14.0	4.0	285.00	739000	238000
2200	220	214.0		5.15		9.0	3.00	5.00		208.0	−1.70	250.0	243.0	14.2	14.0	4.0	298.50	775000	249000
2300	230	224.0		5.15		9.0	3.00	5.00		218.0		260.0	253.0	14.2	14.0	4.0	312.00	809000	260000
2400	240	234.0		5.15		9.0	3.00	5.00	+0.00	228.0		270.0	263.0	14.2	14.0	4.0	326.00	844000	271000
2500	250	244.0		5.15		9.0	3.00	5.00	−0.12	238.0		280.0	272.0	14.2	14.0	4.0	340.00	880000	283000
2600	260	252.0		5.15		12.0	4.00	5.00		245.0		294.0	285.0	16.2	16.0	5.0	414.00	915000	392000
2700	270	262.0		5.15		12.0	4.00	5.00		255.0		304.0	295.0	16.2	16.0	5.0	430.50	950000	407000
2800	280	272.0	+0.00	5.15		12.0	4.00	5.00		265.0	+0.81	314.0	305.0	16.2	16.0	5.0	446.50	985000	422000
2900	290	282.0	−0.81	5.15		12.0	4.00	5.00		275.0	−2.00	324.0	315.0	16.2	16.0	5.0	463.00	1020000	437000
3000	300	292.0		5.15		12.0	4.00	5.00		285.0		334.0	325.0	16.2	16.0	5.0	479.00	1056000	452000
3100	310	300.0		6.20		15.0	5.00	6.00		293.0		352.2	341.0	20.2	20.0	6.0	710.50	1309000	584000
3200	320	310.0		6.20		15.0	5.00	6.00		303.0		362.2	351.1	20.2	20.0	6.0	734.00	1351000	603000
3300	330	320.0		6.20		15.0	5.00	6.00		313.0		372.2	361.0	20.2	20.0	6.0	757.00	1393000	622000
3400	340	330.0		6.20		15.0	5.00	6.00		323.0		382.2	371.0	20.2	20.0	6.0	780.00	1436000	641000
3500	350	340.0		6.20	+0.22	15.0	5.00	6.00	+0.00	333.0	+1.00	392.2	381.0	20.2	20.0	6.0	805.00	1478000	660000
3600	360	350.0	+0.00	6.20	−0.00	15.0	5.00	6.00	−0.18	343.0	−2.50	402.2	391.0	20.2	20.0	6.0	827.00	1520000	679000
3700	370	360.0	−0.89	6.20		15.0	5.00	6.00		353.0		412.2	401.0	20.2	20.0	6.0	850.00	1562000	697000
3800	380	370.0		6.20		15.0	5.00	6.00		363.0		422.2	411.0	20.2	20.0	6.0	873.00	1604000	716000
3900	390	380.0		6.20		15.0	5.00	6.00		373.0		432.2	421.0	20.2	20.0	6.0	896.00	1646000	735000
4000	400	390.0		6.20		15.0	5.00	6.00		383.0		442.2	431.0	20.2	20.0	6.0	919.00	1689000	754000

Competitors Equivalents

Anderton	Seeger	Waldes/Salter	Anderton	Seeger	Waldes/Salter	Anderton	Seeger	Waldes/Salter
A0500	—	—	D1400	DIN471 (A)	7100*	N1500	—	5133
A0600	—	—	N1400	—	5100	A1500U,C&S	—	2025, 2021, 2026*
A0700	—	—	B1400	AZ	6100*	N1501	—	5131
A0900	—	—	M1408	AV	—	N1540	—	5144
A1000	—	—	N1408	—	5108	M1700	—	—
A1100	—	—	M1440	G	—	M1800	H	—
A1200	—	—	N1440	—	5555	N1800	—	5103
D1300	DIN472 (J)	7000*	D1460	DIN471 (AS)	—	D2000	DIN984 (JK)	—
N1300	—	N5000	N1460	—	5160	D2100	DIN983 (AK)	—
B1300	JZ	6000*	M1465	—	7115*	M2300	SB	—
N1302	—	N5002	N1465	—	5115	M2400	SW	—
N1305	—	5005	B1500	—	6133*	M2500	—	—
M1308	JV	—	D1500	DIN6799 (RS)	7133*	M3200	DIN5417 (SP)	—
N1308	—	5008						

*Salter only

All dimensions in inches



* These circlips should not be used as direct substitutes for British Standard Imperial sizes

SIZE CODE	Bore (B)		Groove (G)						Circlip (F)										Wt.	Tc†	Tg†
	B (frac)	B (dec)	G	Tol.	W	Tol.	n (min)	d ~	t	Tol.	D	Tol.	C	C1	L (max)	b ~	w ~	h (min)	(lb/k)	(lb.f)	(lb.f)
0025	1/4	.250	.268	± .001	.018	+ .002 − .000	.027	.009	.015		.280		.11	.13	.068	.025	.015	.029	0.08	530	130
0031	5/16	.312	.330		.018		.027	.009	.015		.346		.17	.19	.069	.033	.018	.029	0.11	660	160
0037	3/8	.375	.397		.029		.033	.011	.025		.415		.20	.22	.085	.040	.028	.039	0.25	1320	235
0043	7/16	.438	.461		.029		.036	.012	.025		.482		.23	.25	.101	.049	.029	.039	0.37	1550	285
0045	29/64	.453	.477		.029		.036	.012	.025		.498		.25	.27	.101	.050	.030	.045	0.43	1600	310
0050	1/2	.500	.530	± .002	.039		.045	.015	.035		.548	+ .010 − .005	.26	.29	.117	.053	.035	.045	0.70	2470	425
0051	—	.512	.542		.039		.045	.015	.035		.560		.27	.30	.119	.053	.035	.045	0.77	2530	435
0056	9/16	.562	.596		.039		.051	.017	.035		.620		.28	.32	.137	.053	.035	.045	0.86	2780	540
0062	5/8	.625	.665		.039		.060	.020	.035		.694		.35	.39	.137	.060	.035	.060	1.0	3090	705
0068	11/16	.688	.732		.039		.066	.022	.035		.763		.41	.45	.137	.063	.036	.060	1.2	3400	855
0075	3/4	.750	.796		.039	+ .003 − .000	.069	.023	.035		.831		.45	.50	.147	.070	.040	.060	1.3	3710	975
0077	—	.777	.825	± .003	.046		.072	.024	.042		.859		.47	.52	.151	.074	.044	.060	1.7	4610	1050
0081	13/16	.812	.862		.046		.075	.025	.042		.901		.49	.53	.160	.077	.044	.060	1.9	4820	1150
0086	—	.866	.920		.046		.081	.027	.042	± .002	.961		.54	.59	.160	.081	.045	.060	2.0	5140	1320
0087	7/8	.875	.931		.046		.084	.028	.042		.971		.55	.60	.160	.084	.045	.060	2.1	5190	1390
0090	—	.901	.959		.046		.087	.029	.042		1.000	+ .015 − .010	.58	.63	.160	.087	.047	.060	2.2	5350	1480
0093	15/16	.938	1.000		.046		.093	.031	.042		1.041		.61	.67	.160	.091	.050	.060	2.4	5570	1640
0100	1	1.000	1.066		.046		.099	.033	.042		1.111		.68	.74	.160	.104	.052	.060	2.7	5940	1870
0102	—	1.023	1.091		.046		.102	.034	.042		1.136		.70	.76	.160	.106	.054	.060	2.8	6070	1970
0106	1.1/16	1.062	1.130		.056		.102*	.034	.050		1.180		.69	.75	.185	.110	.055	.076	3.7	7500	2040
0112	1.1/8	1.125	1.197		.056		.108	.036	.050		1.249		.75	.82	.185	.116	.057	.076	4.0	7950	2290
0118	1.3/16	1.188	1.262		.056		.111	.037	.050		1.319		.81	.88	.185	.120	.058	.076	4.3	8400	2490
0125	1.1/4	1.250	1.330		.056		.120	.040	.050		1.388	+ .025 − .020	.88	.95	.185	.124	.062	.076	4.8	8850	2830
0131	1.5/16	1.312	1.396	± .004	.056		.126	.042	.050		1.456		.94	1.02	.185	.130	.062	.076	5.0	9300	3120
0137	1.3/8	1.375	1.461		.056		.129	.043	.050		1.526		1.00	1.08	.185	.130	.063	.076	5.1	9700	3340
0143	1.7/16	1.438	1.528		.056		.135	.045	.050		1.596		1.06	1.15	.185	.133	.065	.076	5.8	10200	3660
0145	—	1.456	1.548		.056		.138	.046	.050		1.616		1.08	1.17	.185	.133	.065	.076	6.0	10300	3790
0150	1.1/2	1.500	1.594		.056	+ .004 − .000	.141	.047	.050		1.660		1.13	1.22	.185	.133	.066	.076	6.1	10600	3990
0156	1.9/16	1.562	1.658		.068		.144	.048	.062		1.734		1.15	1.24	.205	.160	.079	.076	9.1	11400	4240
0162	1.5/8	1.625	1.725		.068		.150	.050	.062		1.804		1.21	1.31	.205	.160	.080	.076	10.1	11800	4590
0165	—	1.653	1.755		.068		.153	.051	.062		1.835		1.24	1.34	.205	.167	.083	.076	10.4	12100	4760
0168	1.11/16	1.688	1.792		.068		.156	.052	.062		1.874		1.27	1.38	.205	.170	.085	.076	10.8	12300	4960
0175	1.3/4	1.750	1.858	± .005	.068		.162	.054	.062		1.942	+ .035 − .025	1.34	1.44	.205	.175	.082	.076	11.5	12800	5340
0181	1.13/16	1.812	1.922		.068		.165	.055	.062		2.012		1.40	1.51	.205	.170	.084	.091	12.0	13200	5630
0185	—	1.850	1.962		.068		.168	.056	.062		2.054		1.44	1.55	.205	.170	.085	.091	12.8	13500	5860
0187	1.7/8	1.875	1.989		.068		.171	.057	.062		2.072		1.46	1.58	.205	.170	.085	.091	12.8	13700	6040
0193	1.15/16	1.938	2.056		.068		.177	.059	.062		2.141		1.52	1.64	.205	.165	.079	.091	13.3	14100	6470
0200	2	2.000	2.122		.068		.183	.061	.062		2.210		1.59	1.71	.205	.170	.085	.091	13.0	14600	6900
0206	2.1/16	2.062	2.186		.086		.186	.062	.078		2.280		1.61	1.73	.225	.186	.091	.091	18.0	18900	7230
0212	2.1/8	2.125	2.251		.086		.189	.063	.078		2.350		1.65	1.78	.236	.195	.096	.091	19.4	19500	7570
0218	2.3/16	2.188	2.318		.086		.195	.065	.078		2.415		1.71	1.84	.236	.199	.098	.091	19.6	20000	8040
0225	2.1/4	2.250	2.382		.086		.198	.066	.078		2.490		1.77	1.91	.236	.203	.107	.091	21.8	20600	8400
0231	2.5/16	2.312	2.450		.086		.207	.069	.078		2.560		1.84	1.98	.236	.205	.106	.091	22.6	21200	9020
0237	2.3/8	2.375	2.517		.086		.213	.071	.078		2.630		1.90	2.04	.236	.207	.108	.091	23.8	21700	9540
0244	2.7/16	2.440	2.584		.086		.216	.072	.078		2.702	+ .040 − .030	1.96	2.11	.236	.205	.104	.108	25.3	22300	10100
0250	2.1/2	2.500	2.648		.086		.222	.074	.078	± .003	2.775		2.02	2.17	.236	.210	.103	.108	29.3	22900	13000
0256	2.9/16	2.562	2.714		.103		.228	.076	.093		2.844		2.02	2.18	.268	.222	.109	.108	30.4	28000	11000
0262	2.5/8	2.625	2.781		.103		.234	.078	.093		2.910		2.08	2.24	.268	.226	.118	.108	34.5	28600	11600
0268	2.11/16	2.688	2.848		.103		.240	.080	.093		2.980		2.15	2.31	.268	.236	.122	.108	36.2	29300	12200
0275	2.3/4	2.750	2.914		.103		.246	.082	.093		3.050		2.18	2.34	.284	.234	.114	.108	35.5	30000	12800
0281	2.13/16	2.812	2.980	± .006	.103	+ .005 − .000	.252	.084	.093		3.121		2.24	2.40	.284	.230	.115	.108	39.2	30800	13400
0287	2.7/8	2.875	3.051		.103		.264	.088	.093		3.191		2.30	2.47	.284	.240	.125	.108	41.0	31500	14300
0300	3	3.000	3.182		.103		.273	.091	.093		3.325		2.43	2.60	.284	.250	.124	.108	42.5	32900	15400
0306	3.1/16	3.062	3.248		.120		.279	.093	.109		3.418		2.46	2.64	.299	.254	.126	.123	54.4	39300	16100
0312	3.1/8	3.125	3.315		.120		.285	.095	.109		3.488		2.52	2.71	.299	.260	.129	.123	56.0	40100	16800
0315	—	3.149	3.348		.120		.288	.096	.109		3.523		2.55	2.74	.299	.260	.129	.123	57.1	40400	17100
0325	3.1/4	3.250	3.446		.120		.294	.098	.109		3.623		2.65	2.84	.299	.269	.135	.123	59.9	41700	18000
0334	3.11/32	3.346	3.546		.120		.300	.100	.109		3.734	± .055	2.69	2.89	.323	.276	.140	.123	63.0	43000	18900
0347	3.15/32	3.469	3.675		.120		.309	.103	.109		3.857		2.77	2.96	.350	.294	.143	.123	69.0	44500	20200
0350	3.1/2	3.500	3.710		.120		.315	.105	.109		3.890		2.80	2.90	.350	.294	.143	.123	71.0	44900	20800
0354	—	3.543	3.776		.120		.321	.107	.109		3.936		2.84	3.07	.350	.292	.142	.123	72.1	45500	21400
0362	3.5/8	3.625	3.841		.120		.324	.108	.109		4.024		2.92	3.13	.350	.298	.149	.123	73.0	46500	22100
0375	3.3/4	3.750	3.974		.120		.336	.112	.109		4.157		3.04	3.26	.350	.309	.155	.123	78.0	48200	23700
0387	3.7/8	3.875	4.107		.120		.348	.116	.109		4.291	± .065	3.17	3.40	.350	.312	.165	.123	87.1	49800	25400
0393	3.15/16	3.938	4.174		.120		.354	.118	.109		4.358		3.23	3.46	.350	.319	.166	.123	87.9	50600	26300

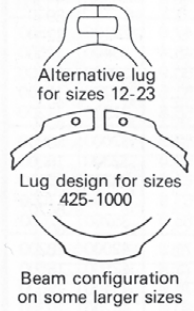
Standard material - carbon spring steel. Standard finish - phosphate and oil.

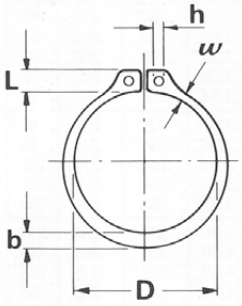
SIZE CODE	Bore (B)		Groove (G)						Circlip (F)										Wt.	Tc†	Tg†
	B (frac)	B (dec)	G	Tol.	W	Tol.	n (min)	d	t	Tol.	D	Tol.	C	C1	L (max)	b ~	ω ~	h (min)	(lb/k)	(lb.f)	(lb.f)
0400	4	4.000	4.240		.120		.360	.120	.109		4.424		3.24	3.47	.378	.330	.166	.123	95.0	51400	27100
0412	4.1/8	4.125	4.365		.120		.360	.120	.109		4.558		3.36	3.60	.378	.330	.171	.123	97.0	53000	28000
0425	4.1/4	4.250	4.490		.120		.360	.120	.109		4.691		3.49	3.72	.378	.335	.180	.123	100	54600	28800
0433	—	4.331	4.571		.120	+ .005	.360	.120	.109	± .003	4.756		3.50	3.73	.413	.345	.180	.151	107	55600	29400
0450	4.1/2	4.500	4.740	± .006	.120	− .000	.360	.120	.109		4.940		3.67	3.90	.413	.351	.181	.151	111	57800	30500
0462	4.5/8	4.625	4.865		.120		.360	.120	.109		5.076		3.79	4.03	.413	.360	.185	.151	119	59400	31400
0475	4.3/4	4.750	4.995		.120		.366	.122	.109		5.213	± .065	3.92	4.16	.413	.370	.175	.151	124	61000	32800
0500	5	5.000	5.260		.120		.390	.130	.109		5.485		4.10	4.36	.445	.395	.218	.151	136	64200	36800
0525	5.1/4	5.250	5.520		.139		.405	.135	.125		5.770		4.31	4.58	.465	.408	.212	.151	175	77300	40100
0537	5.3/8	5.375	5.650		.139		.405	.135	.125		5.910		4.44	4.71	.465	.408	.198	.151	179	78800	41000
0550	5.1/2	5.500	5.770	± .007	.139	+ .006	.405	.135	.125	± .004	6.066		4.56	4.83	.465	.408	.200	.151	189	81000	42000
0575	5.3/4	5.750	6.020		.139	− .000	.405	.135	.125		6.336		4.81	5.08	.465	.408	.198	.151	195	84700	43900
0600	6	6.000	6.270		.139		.405	.135	.125		6.620		5.06	5.33	.465	.416	.223	.151	204	88400	45800
0625	6.1/4	6.250	6.530		.174		.420	.140	.156		6.895		5.34	5.61	.454	.441	.213	.182	263	114900	49500
0650	6.1/2	6.500	6.790		.174		.435	.145	.156		7.170	± .080	5.59	5.87	.454	.441	.244	.182	281	119500	53300
0662	6.5/8	6.625	6.925		.174		.450	.150	.156		7.308		5.71	6.01	.454	.441	.220	.182	300	121700	56200
0675	6.3/4	6.750	7.055		.174		.456	.152	.156		7.445		5.73	6.03	.508	.456	.224	.182	325	124000	58000
0700	7	7.000	7.315		.174		.471	.157	.156		7.720		5.91	6.22	.540	.485	.258	.182	344	128600	62200
0725	7.1/4	7.250	7.575		.209		.486	.162	.187		7.995		6.10	6.42	.570	.490	.238	.182	428	159700	66400
0750	7.1/2	7.500	7.840		.209		.510	.170	.187		8.270		6.35	6.69	.570	.507	.282	.182	476	165200	72100
0775	7.3/4	7.750	8.100	± .008	.209	+ .008	.525	.175	.187	± .005	8.545		6.62	6.97	.560	.500	.241	.182	520	170700	76700
0800	8	8.000	8.360		.209	− .000	.540	.180	.187		8.820		6.79	7.15	.600	.550	.280	.182	555	152700	81400
0825	8.1/4	8.250	8.620		.209		.555	.185	.187		9.095		7.04	7.41	.600	.548	.260	.182	603	157500	86300
0850	8.1/2	8.500	8.880		.209		.570	.190	.187		9.285		7.23	7.60	.632	.573	.277	.182	634	162300	91300
0875	8.3/4	8.750	9.145		.209		.591	.197	.187		9.558	± .090	7.48	7.88	.632	.576	.283	.182	653	167000	97700
0900	9	9.000	9.405		.209		.606	.202	.187		9.830		7.73	8.13	.632	.592	.294	.182	732	171800	103000
0925	9.1/4	9.250	9.668		.209		.627	.209	.187		10.102		7.98	8.39	.632	.622	.299	.182	767	176600	109000
0950	9.1/2	9.500	9.930		.209		.645	.215	.187		10.375		8.23	8.65	.632	.622	.354	.182	803	181400	116000
0975	9.3/4	9.750	10.190		.209		.660	.220	.187		10.648		8.50	8.93	NO	.622	.295	.182	833	186200	121300
1000	10	10.000	10.450		.209		.675	.225	.187		10.920		8.75	9.19	LUG	.622	.295	.182	863	191000	127200

Standard Internal Circlips American Specification

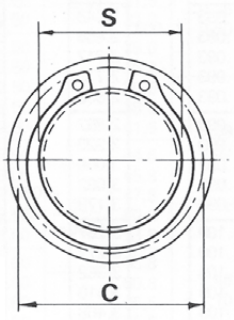
N14 Equivalent to MIL-R-21248/MS 16624

All dimensions in inches

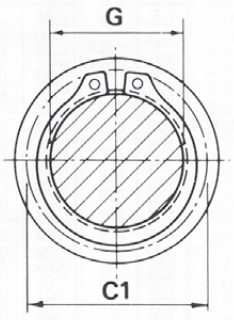




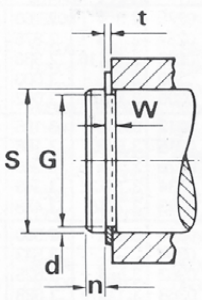
* These circlips should not be used as direct substitutes for British Standard Imperial sizes



Circlip on shaft



Circlip in groove



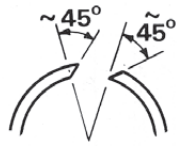
*Sizes 12-23 Beryllium copper only

SIZE CODE	Shaft (S)		Groove (G)						Circlip (F)										Wt.	Tc†	Tg†
	S (frac)	S (dec)	G	Tol.	W	Tol.	n (min)	d ~	t	Tol.	D	Tol.	C	C1	L (max)	b ~	ω ~	h (min)	(lb/k)	(lb.f)	(lb.f)
*0012	1/8	.125	.117		.012		.014	.004	.010	± .001	.112		.22	.214	.048	.018	.011	.024	0.018	110	28
*0015	5/32	.156	.146		.012		.017	.005	.010		.142		.27	.260	.056	.026	.016	.024	0.037	130	44
*0018	3/16	.188	.175		.018	+ .002	.022	.007	.015		.168		.30	.286	.052	.025	.016	.023	0.059	240	69
*0019	—	.197	.185	± .0015	.018	− .000	.020	.006	.015		.179	+ .002	.32	.307	.058	.026	.016	.024	0.063	250	67
*0021	7/32	.219	.205		.018		.023	.007	.015		.196	− .004	.34	.324	.058	.028	.017	.024	0.074	280	87
*0023	15/64	.236	.222		.018		.023	.007	.015		.215		.36	.341	.058	.030	.019	.024	0.086	310	93
0025	1/4	.250	.230		.029		.032	.010	.025		.225		.45	.43	.083	.035	.025	.039	0.21	880	141
0027	—	.276	.255		.029		.035	.010	.025		.250		.48	.46	.084	.035	.024	.039	0.25	980	164
0028	9/32	.281	.261		.029		.033	.010	.025	± .002	.256		.49	.47	.083	.038	.025	.039	0.24	990	160
0031	5/16	.312	.290		.029		.036	.011	.025		.281	+ .002	.54	.52	.090	.040	.026	.039	0.27	1100	194
0034	11/32	.344	.321	± .002	.029	+ .003	.038	.012	.025		.309	− .005	.57	.55	.090	.042	.026	.039	0.31	1210	224
0035	—	.354	.330		.029	− .000	.038	.012	.025		.320		.59	.57	.090	.046	.029	.039	0.35	1250	240
0037	3/8	.375	.352		.029		.038	.012	.025		.338		.61	.59	.091	.050	.030	.039	0.39	1320	244
0039	—	.394	.369		.029		.041	.013	.025		.354		.62	.60	.090	.052	.031	.039	0.42	1390	278
0040	13/32	.406	.382		.029		.039	.012	.025		.366		.63	.61	.090	.054	.033	.039	0.43	1430	275

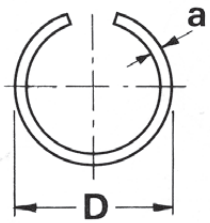
Standard material - carbon spring steel. Standard finish - phosphate and oil.

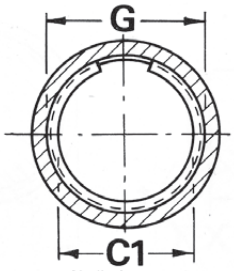
SIZE CODE	Shaft (S) S (frac)	Shaft (S) S (dec)	Groove (G) G	Groove (G) Tol.	Groove (G) W	Groove (G) Tol.	Groove (G) n (min)	Groove (G) d ~	Circlip (F) t	Circlip (F) Tol.	Circlip (F) D	Circlip (F) Tol.	Circlip (F) C	Circlip (F) C1	Circlip (F) L (max)	Circlip (F) b ~	Circlip (F) w ~	Circlip (F) h (min)	Wt. (lb/k)	Tc† (lb.f)	Tg† (lb.f)
0043	7/16	.438	.412	± .002	.029	+ .003 − .000	.042	.013	.025	± .002	.395	+ .002 − .005	.66	.64	.091	.055	.033	.039	0.50	1550	322
0046	15/32	.469	.443		.029		.042	.013	.025		.428		.68	.66	.091	.060	.035	.039	0.54	1660	345
0050	1/2	.500	.468		.039		.051	.016	.035		.461		.77	.74	.111	.065	.040	.045	0.91	2470	452
0055	—	.551	.519		.039		.051	.016	.035		.509	+ .005 − .010	.81	.78	.111	.053	.036	.045	0.90	2730	500
0056	9/16	.562	.530		.039		.051	.016	.035		.521		.82	.79	.111	.072	.041	.045	1.10	2780	508
0059	19/32	.594	.559		.039		.057	.017	.035		.550		.86	.83	.112	.076	.043	.045	1.20	2940	588
0062	5/8	.625	.588		.039		.060	.018	.035		.579		.90	.87	.113	.080	.045	.045	1.30	3090	654
0066	43/64	.672	.631		.039		.066	.020	.035		.621		.93	.89	.113	.082	.043	.045	1.40	3320	780
0068	11/16	.688	.646		.046		.068	.021	.042		.635		1.01	.97	.140	.084	.048	.050	1.80	4080	817
0075	3/4	.750	.704		.046		.074	.023	.042		.693		1.09	1.05	.140	.092	.051	.050	2.10	4450	975
0078	25/32	.781	.733	± .003	.046		.076	.024	.042		.722		1.12	1.08	.140	.094	.052	.050	2.2	4600	1060
0081	13/16	.812	.762		.046		.080	.025	.042		.751		1.15	1.10	.140	.096	.054	.050	2.5	4800	1150
0087	7/8	.875	.821		.046		.085	.027	.042		.810		1.21	1.16	.141	.104	.057	.050	2.8	5200	1340
0093	15/16	.938	.882		.046		.088	.028	.042		.867		1.34	1.29	.170	.110	.063	.076	3.1	5600	1480
0098	63/64	.984	.926		.046		.091	.029	.042		.910		1.39	1.34	.171	.114	.065	.076	3.5	5800	1610
0100	1	1.000	.940		.046		.094	.030	.042		.925		1.41	1.35	.171	.116	.065	.076	3.6	5900	1700
0102	—	1.023	.961		.046		.097	.031	.042		.946		1.43	1.37	.172	.118	.066	.076	3.9	6100	1790
0106	1.1/16	1.062	.998		.056		.102	.032	.050		.982		1.50	1.44	.185	.122	.069	.076	4.8	7500	1920
0112	1.1/8	1.125	1.059		.056		.105	.033	.050		1.041		1.55	1.49	.186	.128	.071	.076	5.1	7900	2100
0118	1.3/16	1.188	1.118		.056		.111	.035	.050		1.098		1.61	1.54	.186	.132	.072	.076	5.6	8400	2350
0125	1.1/4	1.250	1.176	± .004	.056		.117	.037	.050		1.156	+ .010 − .015	1.69	1.62	.187	.140	.076	.076	5.9	8800	2610
0131	1.5/16	1.312	1.232		.056		.126	.040	.050		1.214		1.75	1.67	.187	.146	.077	.076	6.8	9300	2970
0137	1.3/8	1.375	1.291		.056		.132	.042	.050		1.272		1.80	1.72	.188	.152	.082	.076	7.2	9700	3270
0143	1.7/16	1.438	1.350		.056		.138	.044	.050		1.333		1.87	1.79	.188	.160	.086	.076	8.1	10200	3580
0150	1.1/2	1.500	1.406		.056	+ .004 − .000	.147	.047	.050		1.387		1.99	1.90	.218	.168	.091	.118	9.0	10600	3990
0156	1.9/16	1.562	1.468		.068		.148	.047	.062		1.446		1.95	1.85	.189	.180	.098	.100	11.7	10700	4150
0162	1.5/8	1.625	1.529		.068		.151	.048	.062		1.503		2.17	2.08	.189	.180	.097	.100	12.8	11100	4410
0168	1.11/16	1.688	1.589		.068		.156	.049	.062		1.560		2.04	1.95	.205	.197	.099	.100	13.2	11500	4720
0175	1.3/4	1.750	1.650		.068		.157	.050	.062		1.618	+ .013 − .020	2.11	2.01	.205	.197	.101	.100	13.8	11900	4950
0177	—	1.772	1.669	± .005	.068		.162	.051	.062		1.618		2.19	2.09	.205	.197	.102	.100	14.1	12100	5160
0181	1.13/16	1.812	1.708		.068		.163	.052	.062		1.675		2.23	2.13	.205	.197	.095	.100	14.7	12400	5330
0187	1.7/8	1.875	1.769		.068		.166	.053	.062		1.735		2.29	2.19	.205	.197	.104	.100	15.5	12800	5620
0196	—	1.968	1.857		.068		.174	.055	.062		1.819		2.39	2.27	.205	.197	.106	.123	18.2	13400	5170
0200	2	2.000	1.886		.068		.178	.057	.062		1.850		2.48	2.36	.232	.224	.108	.123	19.2	13600	6450
0206	2.1/16	2.062	1.946		.086		.183	.058	.078		1.906		2.52	2.40	.225	.217	.111	.123	22.6	17700	6760
0212	2.1/8	2.125	2.003		.086		.192	.061	.078		1.964		2.61	2.48	.236	.228	.120	.123	24.4	18200	7330
0215	2.5/32	2.156	2.032		.086		.195	.062	.078		1.993		2.62	2.49	.225	.217	.113	.123	26.6	18500	7560
0225	2.1/4	2.250	2.120		.086		.204	.065	.078		2.081	+ .015 − .025	2.87	2.74	.225	.217	.116	.123	26.0	19300	8270
0231	2.5/16	2.312	2.178		.086		.210	.067	.078		2.139		2.94	2.81	.225	.217	.118	.123	28.4	19800	8760
0237	2.3/8	2.375	2.239		.086		.213	.068	.078		2.197		2.86	2.72	.236	.228	.119	.123	27.9	20400	9130
0243	2.7/16	2.438	2.299		.086		.217	.069	.078		2.255		2.92	2.78	.236	.228	.120	.123	29.4	20900	9580
0250	2.1/2	2.500	2.360		.086		.219	.070	.078		2.313		2.98	2.84	.236	.228	.122	.123	29.7	21400	9900
0255	—	2.559	2.419		.086		.219	.070	.078		2.377		3.09	2.94	.258	.250	.130	.123	31.7	21900	10100
0262	2.5/8	2.625	2.481		.086		.225	.072	.078		2.428		3.11	2.96	.236	.228	.120	.123	35.0	22500	10700
0268	2.11/16	2.688	2.541		.086		.230	.073	.078		2.485		3.32	3.18	.273	.246	.129	.123	36.0	23000	11200
0275	2.3/4	2.750	2.602		.103		.231	.074	.093	± .003	2.543		3.33	3.18	.284	.276	.145	.123	47.0	28100	11500
0287	2.7/8	2.875	2.721		.103	+ .005 − .000	.240	.077	.093		2.659		3.42	3.26	.268	.260	.133	.123	48.4	29400	12500
0293	2.15/16	2.938	2.779		.103		.247	.079	.093		2.717		3.49	3.32	.268	.260	.125	.123	50.0	30000	13200
0300	3	3.000	2.838		.103		.252	.081	.093		2.775		3.55	3.38	.268	.260	.138	.123	51.5	30700	13700
0306	3.1/16	3.062	2.898		.103		.255	.082	.093		2.832		3.61	3.44	.268	.260	.131	.123	56.8	31300	14200
0312	3.1/8	3.125	2.957	± .006	.103		.261	.084	.093		2.892		3.75	3.57	.305	.272	.141	.123	57.9	32000	14800
0315	3.5/32	3.156	2.986		.103		.264	.085	.093		2.920		3.74	3.56	.284	.276	.143	.123	59.0	32300	15200
0325	3.1/4	3.250	3.076		.103		.270	.087	.093		3.006		3.83	3.65	.284	.276	.145	.123	61.9	33200	16000
0334	3.11/32	3.346	3.166		.103		.279	.090	.093		3.092	+ .020 − .030	3.93	3.74	.284	.276	.147	.123	63.9	34200	17000
0343	3.7/16	3.438	3.257		.103		.280	.090	.093		3.179		4.02	3.83	.284	.276	.130	.123	65.9	35200	17600
0350	3.1/2	3.500	3.316		.120		.285	.092	.109		3.237		4.15	3.96	.320	.285	.148	.123	71.9	42000	18200
0354	—	3.543	3.357		.120		.288	.093	.109		3.277		4.20	4.00	.320	.288	.149	.123	72.9	42500	18600
0362	3.5/8	3.625	3.435		.120		.294	.095	.109		3.352		4.28	4.09	.323	.315	.153	.123	76.0	43400	19500
0368	3.11/16	3.688	3.493		.120		.301	.097	.109		3.410		4.31	4.11	.335	.302	.156	.123	80.0	44200	20300
0375	3.3/4	3.750	3.552		.120		.306	.099	.109		3.468		4.44	4.23	.337	.310	.160	.123	82.9	44900	21000
0387	3.7/8	3.875	3.673		.120		.312	.101	.109		3.584		4.56	4.35	.335	.318	.163	.123	87.9	46400	22100
0393	3.15/16	3.938	3.734		.120		.315	.102	.109		3.642		4.60	4.39	.323	.318	.163	.123	95.0	47200	22700
0400	4	4.000	3.792		.120		.321	.104	.109		3.700		4.72	4.50	.352	.344	.176	.123	100	47900	23500
0425	4.1/4	4.250	4.065		.120		.287	.092	.109		3.989		4.91	4.72	.323	.318	.176	.123	112	50900	22200
0437	4.3/8	4.375	4.190		.120		.287	.092	.109		4.106		5.04	4.84	.323	.318	.181	.123	115	52400	22900
0450	4.1/2	4.500	4.310		.120		.294	.095	.109		4.223		5.16	4.96	.323	.285	.128	.123	100	53900	24200
0475	4.3/4	4.750	4.550		.120		.309	.100	.109		4.458		5.47	5.26	.437	.303	.152	.123	113	56900	26900
0500	5	5.000	4.790		.120		.324	.105	.109		4.692		5.72	5.50	.445	.360	.186	.151	149	59900	29700
0525	5.1/4	5.250	5.030	± .007	.139	+ .006 − .000	.339	.110	.125	± .004	4.927	+ .020 − .040	6.18	5.95	.457	.372	.211	.151	188	72200	32700
0550	5.1/2	5.500	5.265		.139		.363	.117	.125		5.162		6.43	6.19	.457	.390	.209	.151	196	75600	36500
0575	5.3/4	5.750	5.505		.139		.378	.122	.125		5.396		6.68	6.43	.457	.408	.220	.151	199	79000	39800
0600	6	6.000	5.745		.139		.393	.127	.125		5.631		6.93	6.67	.457	.381	.171	.151	212	82500	43300
0625	6.1/4	6.250	5.985		.174		.409	.132	.156		5.866	+ .020 − .050	7.28	7.01	.508	.396	.176	.151	281	107000	46800
0650	6.1/2	6.500	6.225		.174		.425	.137	.156		6.100		7.53	7.25	.508	.438	.236	.151	322	112000	50500
0675	6.3/4	6.750	6.465		.174		.440	.142	.156		6.335		7.78	7.49	.508	.456	.246	.182	356	116000	54400
0700	7	7.000	6.705		.174		.455	.147	.156		6.570		8.03	7.73	.508	.460	.256	.182	388	120000	58400
0750	7.1/2	7.500	7.180	± .008	.209	+ .008 − .000	.492	.160	.187	± .005	7.039		8.78	8.45	.632	.507	.269	.182	534	143000	67900
0800	8	8.000	7.660		.209		.522	.170	.187		7.508		9.27	8.93	.632	.540	.275	.182	628	153000	76900
0850	8.1/2	8.500	8.140		.209		.552	.180	.187		7.977	+ .020 − .160	9.78	9.41	.632	.573	.300	.182	700	163000	86500
0900	9	9.000	8.620		.209		.582	.190	.187		8.445		10.25	9.87	No Lugs	.609	.410	.182	756	172000	96700
0950	9.1/2	9.500	9.100		.209		.612	.200	.187		8.915		10.78	10.38		.625	.420	.182	820	181000	107400
1000	10	10.000	9.575		.209		.650	.212	.187		9.385		11.27	10.85	.632	.625	.370	.182	964	191000	120200

All dimensions in mm

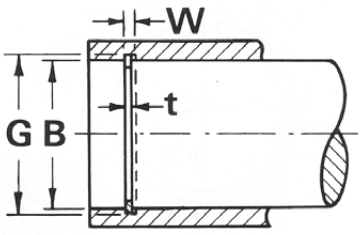


Alternative gap sizes above 21





Circlip in groove



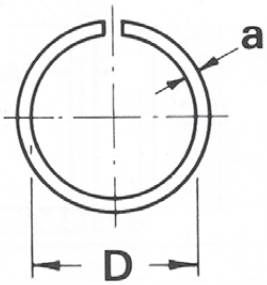
SIZE CODE	Bore (B) B	Groove (G) G	Tol.	W	Tol.	Circlip (F) D (min)	a	Tol.	t	Tol.	C1	Tc† (N)	Tg† (N)	SIZE CODE
0110	11	11.40		1.1		11.6	1.30		1.0		8.80	8380	830	0110
0120	12	12.40		1.1		12.7	1.30		1.0		9.80	9140	900	0120
0130	13	13.50	+0.11	1.1		13.8	1.30		1.0		10.90	9900	1220	0130
0140	14	14.50	−0.00	1.1		14.8	1.30		1.0		11.90	10600	1320	0140
0150	15	15.50		1.1		15.8	1.30		1.0		12.90	11400	1410	0150
0180	18	18.50		1.3	+0.075	18.9	1.75		1.2		15.00	16400	1700	0180
0190	19	19.60		1.3	−0.000	19.9	1.75		1.2		16.10	17300	2150	0190
0200	20	20.60		1.3		21.0	1.75		1.2		17.10	18300	2260	0200
0220	22	22.60	+0.13	1.3		23.0	1.75		1.2		19.10	20100	2490	0220
0240	24	24.80	−0.00	1.3		25.2	1.75		1.2		21.30	21900	3620	0240
0250	25	25.80		1.3		26.2	1.75		1.2		22.30	22800	3770	0250
0260	26	26.80		1.3		27.2	1.75		1.2		23.30	23700	3920	0260
0280	28	28.80		1.3		29.2	1.75		1.2		25.30	25600	4220	0280
0300	30	31.00		1.6		31.4	2.30		1.5		26.40	34300	5650	0300
0320	32	33.00		1.6		33.4	2.30		1.5		28.40	36600	6030	0320
0340	34	35.00		1.6		35.4	2.30		1.5		30.40	38900	6410	0340
0350	35	36.00		1.6		36.4	2.30		1.5		31.40	40000	6600	0350
0380	38	39.20	+0.16	1.6		39.8	2.30		1.5		34.60	43400	8600	0380
0400	40	41.20	−0.00	1.6		41.8	2.30		1.5		36.60	45700	9050	0400
0420	42	43.20		1.6		43.8	2.30		1.5		38.60	48000	9500	0420
0440	44	45.20		1.6		45.8	2.30		1.5		40.60	50300	9950	0440
0450	45	46.20		1.6		46.8	2.30		1.5		41.60	51400	10200	0450
0470	47	48.20		1.6	+0.10	48.8	2.30		1.5		43.60	53700	10600	0470
0480	48	49.20		1.6	−0.00	49.8	2.30		1.5		44.60	54800	10800	0480
0500	50	51.20		1.6		51.8	2.30		1.5		46.60	57100	11300	0500
0520	52	53.50		1.6		54.3	2.30		1.5		48.90	59400	14700	0520
0550	55	56.50		1.6		57.3	2.30		1.5		51.90	62800	15500	0550
0600	60	61.50		1.6		62.3	2.30		1.5		56.90	68600	17000	0600
0620	62	63.50	+0.19	1.6		64.3	2.30		1.5		58.90	70800	17500	0620
0650	65	66.50	−0.00	1.6		67.3	2.30		1.5		61.90	74300	18400	0650
0680	68	69.50		1.6		70.3	2.30		1.5		64.90	77700	19200	0680
0700	70	71.50		1.6		72.3	2.30		1.5		66.90	80000	19800	0700
0720	72	73.80		2.2		74.6	2.80	+0.00	2.0	+0.00	68.20	105200	24400	0720
0760	76	77.80		2.2		78.6	2.80	−0.10	2.0	−0.10	72.20	111000	25800	0760
0800	80	81.80		2.2		82.6	2.80		2.0		76.20	117000	27100	0800
0820	82	83.80		2.2		84.6	2.80		2.0		78.20	120000	27800	0820
0850	85	86.80		2.2		87.6	2.80		2.0		81.20	124000	28800	0850
0880	88	90.00		2.7		91.0	3.40		2.5		83.20	143000	33200	0880
0900	90	92.00		2.7		93.0	3.40		2.5		85.20	147000	33900	0900
0920	92	94.00		2.7		95.0	3.40		2.5		87.20	150000	34700	0920
0950	95	97.00		2.7		98.0	3.40		2.5		90.20	155000	35800	0950
0970	97	99.00	+0.22	2.7		100.0	3.40		2.5		92.20	158000	36600	0970
0980	98	100.00	−0.00	2.7		101.0	3.40		2.5		93.20	160000	36900	0980
1000	100	102.00		2.7		103.0	3.40		2.5		95.20	163000	37700	1000
1050	105	107.30		2.7		108.3	3.40		2.5		100.50	171000	45500	1050
1070	107	109.30		2.7		110.3	3.40		2.5		102.50	174000	46400	1070
1100	110	112.30		2.7		113.3	3.40		2.5		105.50	179000	47700	1100
1120	112	114.30		2.7		115.3	3.40		2.5		107.50	183000	48600	1120
1150	115	117.30		2.7	+0.13	118.3	3.40		2.5		110.50	187000	49900	1150
1200	120	122.30		2.7	−0.00	123.3	3.40		2.5		115.50	196000	52000	1200
1250	125	127.30		2.7		128.3	3.40		2.5		120.50	204000	54200	1250
1270	127	129.30		2.7		130.3	3.40		2.5		122.50	207000	55100	1270
1300	130	132.30		2.7		133.3	3.40		2.5		125.50	212000	56400	1300
1350	135	137.30		2.7		138.3	3.40		2.5		130.50	220000	58500	1350
1400	140	142.60		2.7		143.6	4.00		2.5		134.60	228000	68600	1400
1430	143	145.60	+0.25	2.7		146.6	4.00		2.5		137.60	233000	70100	1430
1500	150	152.60	−0.00	2.7		153.6	4.00		2.5		144.60	244000	73500	1500
1530	153	155.60		2.7		156.6	4.00		2.5		147.60	249000	75000	1530
1600	160	162.60		2.7		163.6	4.00		2.5		154.60	261000	78400	1600
1650	165	167.60		2.7		168.6	4.00		2.5		159.60	269000	80900	1650
1700	170	172.60		2.7		173.6	4.00		2.5		164.60	277000	83300	1700
1750	175	177.60		2.7		178.6	4.00		2.5		169.60	285000	85800	1750
1800	180	182.60		2.7		183.6	4.00		2.5		174.60	293000	88200	1800
1900	190	193.00	+0.29	3.2		194.5	5.00		3.0		183.00	372000	107000	1900
1950	195	198.00	−0.00	3.2		199.5	5.00		3.0		188.00	381000	110000	1950
2000	200	203.00		3.2		204.5	5.00		3.0		193.00	391000	113000	2000

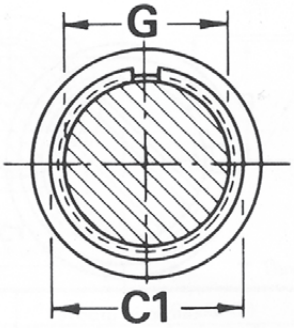
Standard material - carbon spring steel. Standard finish - phosphate and oil.

Other sizes available on request

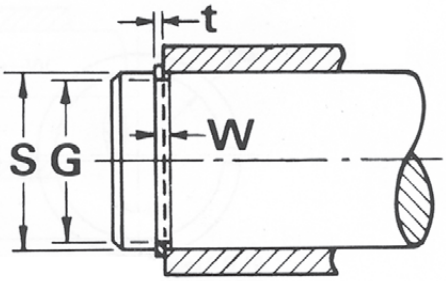
All dimensions in mm

Some sizes below 40





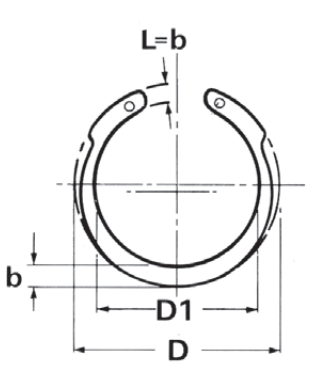
Circlip in groove

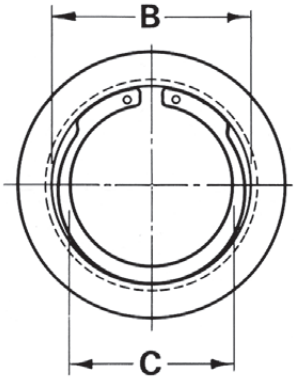


SIZE CODE	Shaft (S)	Groove (G)				Circlip (F)						Tc †	Tg †	SIZE CODE
	S	G	Tol.	W	Tol.	D (max)	a	Tol.	t	Tol.	C1	(N)	(N)	
0100	10	9.60	+0.00 −0.09	1.1	+0.075 −0.000	9.4	1.30	+0.00 −0.10	1.0	+0.00 −0.10	12.20	6860	754	0100
0110	11	10.50		1.1		10.2	1.30		1.0		13.10	7540	1040	0110
0120	12	11.50	+0.00 −0.11	1.1		11.2	1.30		1.0		14.10	8230	1130	0120
0150	15	14.40		1.3		14.0	1.75		1.2		17.90	12600	1700	0150
0170	17	16.40		1.3		16.0	1.75		1.2		19.90	14200	1920	0170
0180	18	17.40		1.3		17.0	1.75		1.2		20.90	15100	2030	0180
0190	19	18.40		1.3		17.9	1.75		1.2		21.90	15900	2150	0190
0200	20	19.20		1.3		18.7	1.75		1.2		22.70	16800	3020	0200
0210	21	20.20		1.3		19.7	1.75		1.2		23.70	17600	3170	0210
0250	25	24.00	+0.00 −0.13	1.3		23.5	1.75		1.2		27.50	21000	4710	0250
0260	26	25.00		1.3		24.5	1.75		1.2		28.50	21800	4900	0260
0270	27	26.00		1.6		25.5	2.30		1.5		30.60	28800	5090	0270
0280	28	27.00		1.6		26.5	2.30		1.5		31.60	29900	5280	0280
0300	30	29.00		1.6		28.5	2.30		1.5		33.60	32000	5650	0300
0320	32	30.80		1.6		30.2	2.30		1.5		35.40	34100	7240	0320
0350	35	33.80	+0.00 −0.16	1.6	+0.10 −0.00	33.2	2.30		1.5		38.40	37300	7920	0350
0400	40	38.50		1.6		37.8	2.30		1.5		43.10	42600	11300	0400
0450	45	43.50		1.6		42.8	2.30		1.5		48.10	48000	12700	0450
0480	48	46.50		1.6		45.8	2.30		1.5		51.10	51200	13600	0480
0500	50	48.50		1.6		47.8	2.30		1.5		53.10	53300	14100	0500
0550	55	53.50		1.6		52.6	2.30		1.5		58.10	58700	15500	0550
0600	60	58.50		1.6		57.6	2.30		1.5		63.10	64000	17000	0600
0650	65	63.50	+0.00 −0.19	1.6		62.6	2.30		1.5		68.10	69300	18400	0650
0700	70	68.20		2.2	+0.13 −0.00	67.4	2.80		2.0		73.80	97100	23800	0700
0750	75	73.20		2.2		72.4	2.80		2.0		78.80	104000	25400	0750
0800	80	78.20		2.2		77.4	2.80		2.0		83.80	111000	27100	0800
0850	85	83.00		2.7		82.0	3.40		2.5		89.80	133000	32000	0850
0900	90	88.00		2.7		87.0	3.40		2.5		94.80	141000	33900	0900
0950	95	93.00		2.7		92.0	3.40		2.5		99.80	149000	35800	0950
1000	100	98.00	+0.00 −0.22	2.7		97.0	3.40		2.5		104.80	156000	37700	1000
1050	105	102.70		2.7		101.7	3.40		2.5		109.50	164000	45500	1050
1100	110	107.70		2.7		106.7	3.40		2.5		114.50	172000	47700	1100
1150	115	112.70		2.7		111.7	3.40		2.5		119.50	180000	49900	1150
1200	120	117.70		2.7		116.7	3.40		2.5		124.50	188000	52000	1200
1250	125	122.70		2.7		121.7	3.40		2.5		129.50	196000	54200	1250
1300	130	127.70		2.7	+0.15 −0.00	126.7	3.40		2.5		134.50	203000	56400	1300
1350	135	132.40		2.7		131.6	4.00		2.5		140.40	211000	66200	1350
1400	140	137.40		2.7		136.6	4.00		2.5		145.40	219000	68600	1400
1450	145	142.40		2.7		141.6	4.00		2.5		150.40	227000	71100	1450
1500	150	147.40	+0.00 −0.25	2.7		146.6	4.00		2.5		155.40	235000	73500	1500
1550	155	152.40		2.7		151.6	4.00		2.5		160.40	242000	76000	1550
1600	160	157.40		2.7		156.6	4.00		2.5		165.40	250000	78400	1600
1650	165	162.40		2.7		161.6	4.00		2.5		170.40	258000	80900	1650
1700	170	167.40		2.7		166.6	4.00		2.5		175.40	266000	83300	1700
1750	175	172.40		2.7		171.6	4.00		2.5		180.40	274000	85000	1750
1800	180	177.00		3.2		175.6	5.00		3.0		187.00	340000	101000	1800
1850	185	182.00		3.2		180.6	5.00		3.0		192.00	350000	105000	1850
1900	190	187.00	+0.00 −0.29	3.2		185.6	5.00		3.0		197.00	359000	107000	1900
1950	195	192.00		3.2		190.6	5.00		3.0		202.00	369000	110000	1950
2000	200	197.00		3.2		195.6	5.00		3.0		207.00	378000	113000	2000

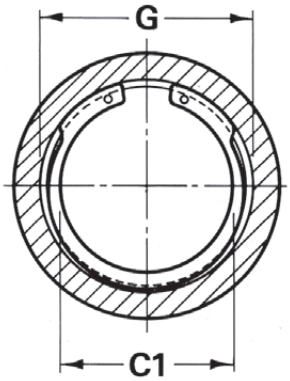
Standard material - carbon spring steel. Standard finish - phosphate and oil.

Other sizes available on request

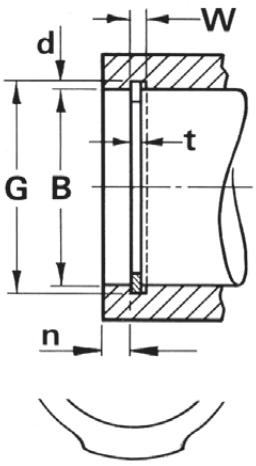




Circlip in bore



Circlip in groove



Beam configuration on some larger sizes

SIZE CODE	Bore (B) B	Groove (G) G	Tol.	W	Tol.	n	d ~	Circlip (F) t	Tol.	D	Tol.	D1 ~	C	C1	b ~	Tc † (N)	Tg † (N)	SIZE CODE
0160	16	16.8	+0.11 −0.00	1.10		1.3	0.43	1.00		17.3		13.1	11.5	12.4	2,1	7800	1210	0160
0170	17	17.8		1.10		1.3	0.43	1.00		18.3		14.1	12.5	13.4	2.1	8300	1280	0170
0180	18	19.0		1.10		1.6	0.54	1.00		19.5		15.1	13.3	14.4	2.2	8800	1700	0180
0190	19	20.0		1.10		1.6	0.54	1.00		20.5		16.1	14.3	15.4	2.2	9300	1790	0190
0200	20	21.0	+0.15 −0.00	1.10		1.6	0.54	1.00		21.5		16.9	15.1	16.2	2.3	9700	1890	0200
0210	21	22.0		1.10		1.6	0.54	1.00		22.5	+0.42 −0.21	17.7	15.9	17.0	2.4	10200	1980	0210
0220	22	23.0		1.10		1.6	0.54	1.00		23.5		18.7	16.9	18.0	2.4	10700	2070	0220
0240	24	25.2		1.30		2.0	0.65	1.20		25.9		20.3	18.1	19.4	2.8	14000	2710	0240
0250	25	26.2		1.30		2.0	0.65	1.20		27.1		21.7	18.9	20.2	2.9	14600	2830	0250
0260	26	27.2	+0.21 −0.00	1.30		2.0	0.65	1.20		27.9		21.9	19.7	21.0	3.0	15200	2940	0260
0270	27	28.4		1.30		2.3	0.75	1.20		29.1		23.1	20.7	22.2	3.0	15800	3560	0270
0280	28	29.4		1.30		2.3	0.75	1.20	+0.00 −0.06	30.1		23.9	21.5	23.0	3.1	16400	3690	0280
0300	30	31.4		1.30		2.3	0.75	1.20		32.1		25.7	23.3	24.8	3.2	17500	3960	0300
0320	32	33.7		1.30		2.8	0.91	1.20		34.4		27.8	25.1	26.9	3.3	18700	5130	0320
0330	33	34.7		1.30		2.8	0.91	1.20		35.5	+0.50 −0.25	28.9	26.1	27.9	3.3	19300	5290	0330
0350	35	37.0		1.60		3.2	1.06	1.50		37.8		31.0	27.9	30.0	3.4	25600	6600	0350
0360	36	38.0	+0.25 −0.00	1.60	+0.14 −0.00	3.2	1.06	1.50		38.8		31.6	28.5	30.6	3.6	26300	6790	0360
0380	38	40.0		1.60		3.2	1.06	1.50		40.8		33.2	30.1	32.2	3.8	27800	7160	0380
0400	40	42.5		1.85		4.0	1.31	1.75		43.5		35.1	31.0	33.7	4.2	28300	9420	0400
0420	42	44.5		1.85		4.0	1.31	1.75		45.5	+0.78 −0.39	37.1	33.0	35.7	4.2	29700	9900	0420
0450	45	47.5		1.85		4.0	1.31	1.75		48.5		39.7	35.6	38.7	4.4	31800	10600	0450
0470	47	49.5		1.85		4.0	1.31	1.75		50.5		41.1	37.0	39.7	4.7	33300	11100	0470
0480	48	50.5		1.85		4.0	1.33	1.75		51.5		42.1	38.0	40.7	4.7	34000	11300	0480
0500	50	53.0		2.15		4.8	1.58	2.00		54.2		43.8	39.0	42.2	5.2	40500	14100	0500
0520	52	55.0		2.15		4.8	1.58	2.00		56.2		45.8	41.0	44.2	5.2	42000	14700	0520
0550	55	58.0		2.15		4.8	1.58	2.00		59.2		48.8	44.0	47.2	5.2	44500	15500	0550
0570	57	60.0		2.15		4.8	1.58	2.00		61.2	+0.92 −0.46	50.8	46.0	49.2	5.2	46100	16100	0570
0580	58	61.0	+0.30 −0.00	2.15		4.8	1.58	2.00		62.2		51.8	47.0	50.2	5.2	46900	16400	0580
0600	60	63.0		2.15		4.8	1.58	2.00	+0.00 −0.07	64.2		53.8	49.0	52.2	5.2	48500	17000	0600
0620	62	65.0		2.15		4.8	1.58	2.00		66.2		55.8	51.0	54.2	5.2	50200	17500	0620
0650	65	68.0		2.65		4.8	1.58	2.50		69.2		57.8	52.7	56.0	5.7	65700	18400	0650
0670	67	70.0		2.65		4.8	1.58	2.50		71.5		60.1	54.7	58.0	5.7	67800	18900	0670
0680	68	71.0		2.65		4.8	1.58	2.50		72.5		61.1	55.7	59.0	5.7	68800	19200	0680
0720	72	75.0		2.65		4.8	1.58	2.50		76.5		64.5	59.1	62.4	6.0	72800	20400	0720
0800	80	83.5	+0.35 −0.00	2.65		5.5	1.84	2.50		85.5	+1.08 −0.54	73.5	67.1	70.9	6.0	80900	26400	0800
0850	85	88.5		3.15		5.5	1.84	3.00	+0.00 −0.08	90.5		77.3	70.9	74.7	6.6	108300	28000	0850

Standard material - carbon spring steel. Standard finish - phosphate and oil.

Note. For further information or technical assistance, please contact Clarendon.