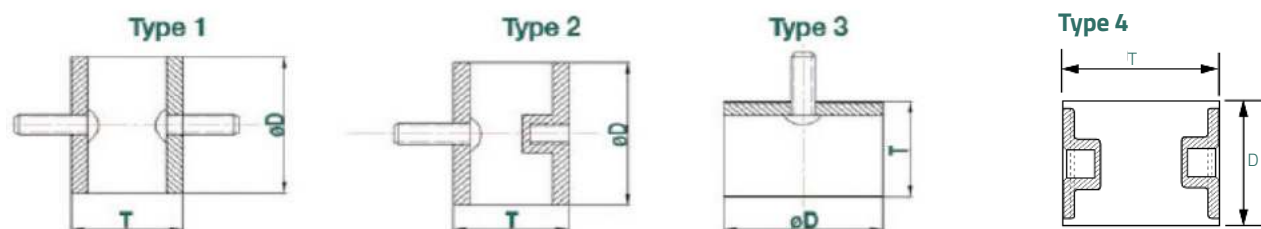




ASSORTED PT

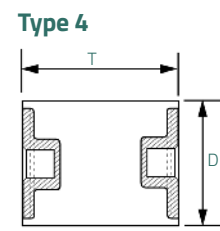
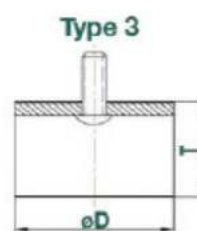
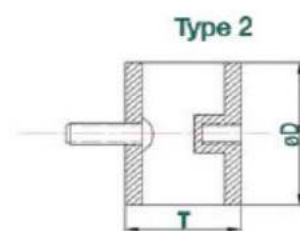
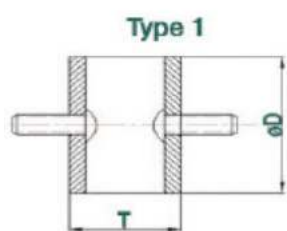
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Circlips - External	9.2.10
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Motor Rails.....	9.2.20
Torque Limiters	9.2.21



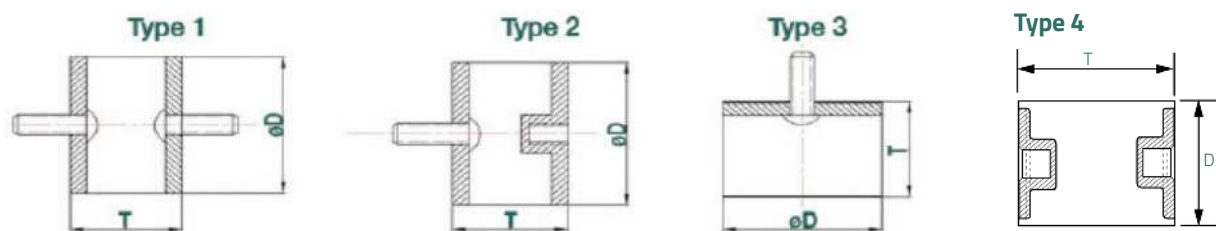
Shore Hardness	
A	40.5
B	55.65
C	65.75



Size/Part No.	Shore Hardness	Type	Max Compressive Load(kg)	STATIC DEFL (mm)	Thread Size	Bolt/Nut
F 13x13	a	1	4.5	1	3/16"BSW x 13L	3/16"BSW x 4 Deep
F 16x13	A	1	4.3	1	M5x0.8P x12L	M5x0.8P x5 Deep
		3				
F 16x15	A	1	4.1	1	M5x0.8P x12L	M5x0.8P x5 Deep
		2	4.3			
		3	4.5			
F 19x19	A	1	17	3	M6x1P x18L	M6 x 1P x6 Deep
	B	2	28			
F 20x20	A	1	55	4	M6x1P x15L	M6x1P x15L Deep
	B	2	55			
	C	3	55			
F 20x25	A	1	9.8	3	M6x1P x 18L M6*	M6 x 1P x 6 Deep
		4	30.5			-
	B	2	18			M6 x 1P x 6 Deep
		4	65			-
	C	3	30			M6 x 1P x 6 Deep
		4	89.5			-
F 25X20	A	1	33.8	3.5	M6 x 1P x 13L M6*	M6 x 1P x 6 Deep
		4	36			
	B	2	55			M6 x 1P x 6 Deep
		4	54			
	C	3	80			M6 x 1P x 6 Deep
		4	66			



Size/Part No.	Shore Hardness	Type	Max Compressive Load(kg)	STATIC DEFL (mm)	Thread Size	Bolt/Nut
F 25X22	A	2	50	3.5	M8 x 1.25P x 18L	M8 x 1.25P x 7 Deep
F 25X30	A	1	13.8	3	M8 x 1.25P x 18 M6*	M8 x 1.25P x 7 Deep
		4	55			-
	B	2	23			M8 x 1.25P x 7 Deep
		4	98			-
	C	3	32			M8 x 1.25P x 7 Deep
		4	120			-
F 30x20	A	4	42	2.5	M6*	-
	B		62			
	C		82			
F 30X22	A	1	46	3.5	M8 x 1.25P x 23L	M8 x 1.25P x 7 Deep
		2	46			
F 30X30	A	1	21	3	M8 x 1.25P x 23L M8*	M8 x 1.25P x 7 Deep
		2	23			-
		3	23			-
		4	44			-
	B	4	77			-
	C		108			-
F 30x40	A	4	49.5	8	M8*	-
	B		86			
	C		131			
F 35X25	A	1	15	1.5	M10 x 1.5P x 38L	M10 x 1.5P x 10 Deep
	B	2	27			
	C	3				
F 38X25	A	1	65	4	M8 x 1.25P x 18L	M8 x 1.25P x 7 Deep
	B	2	127			
	C	3	165			
F 38X38	A	1	61	6	M8 x 1.25P x 18L	M8 x 1.25P x 7 Deep
	B		78			
	C		100			
F 40x30	A	4	60.5	5	M8 x 1.25P x 23L M8*	-
	B	1	108			M8 x 1.25P x 7 Deep
		2	108			-
		3	108			-
		4	114			-
	c	4	195			-
F 40x40	A	1	65	6	M10 x 1.5P x 38L M8	M10 x 1.5P x 10 Deep
		4	78			-
	B	2	93			M10 x 1.5P x 10 Deep
		4	148			-
	C	3	132			M10 x 1.5P x 10 Deep
		4	233			-



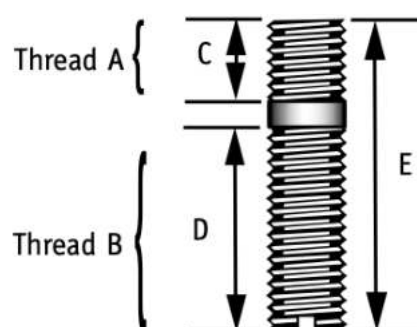
Size/Part No.	Shore Hardness	Type	Max Compressive Load(kg)	STATIC DEFL (mm)	Thread Size	Bolt/Nut
F 50x35	A	4	139.5	6	M10	-
	B		264			
	C		363			
F 50X40	A	1	83	5	M10 x 1.5P x 22L	M10 x 1.5P x 12 Deep
	B	2	149			
F 50X45	A	4	111.5	7	M10 x 1.5P x 25L M10*	-
	B	1	151			M10 x 1.5P x 12 Deep
		4	195			-
	C	4	244			-
F 50X50	A	1	71.5	7	M10 x 1.5P x 22L	M10 x 1.5P x 12 Deep
	B	2	132			
	C	3	202			
F 55X38	A	1	55	3	M10 x 1.5P x 32L	M10 x 1.5P x 12 Deep
	B	2	89			
F 60X50	A	1	112	6.5	M12 x 1.75P x 27L	M12 x 1.75P x 15 Deep
	B	2	201			
	C	3	285			
F 75X50	A	4	150	6.5	M10	-
	B	4	280			
	C	4	390			
F 75X55	A	1	178	6	M12 x 1.75P x 37L	M12 x 1.75P x 15 Deep
	B	2	292			
	C	3	443			
F 80X60	A	1	230	8	M12 x 1.75P x 30L	M12 x 1.75P x 20 Deep
	B	2	352			
	C	3	505			
F 100X55	A	1	324	6	M16 x 2P x 43L	M16 x 2P x 20 Deep

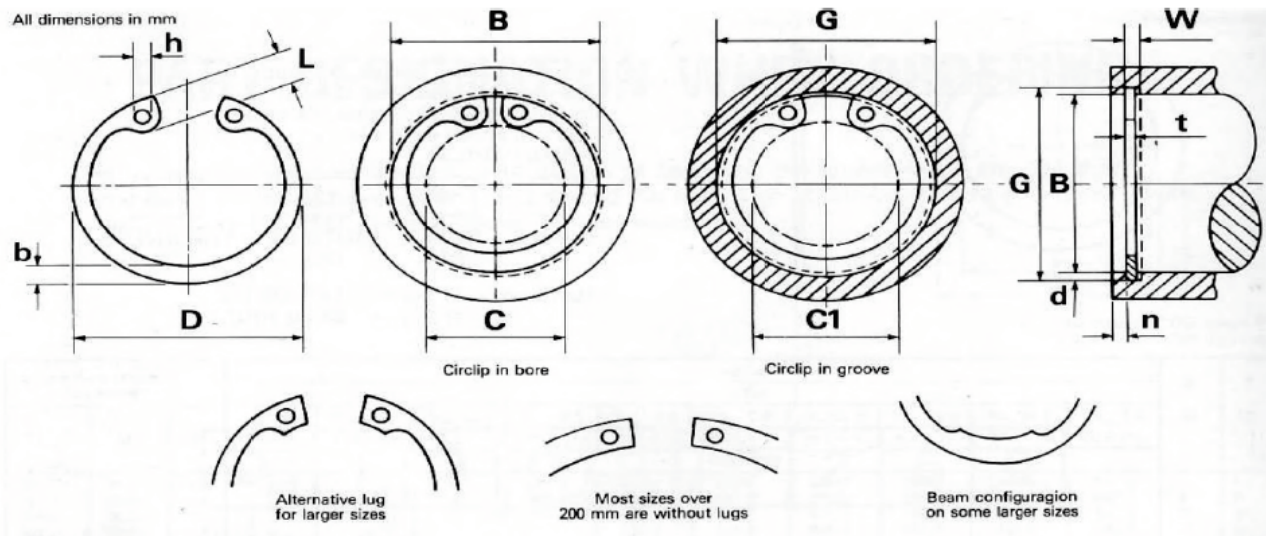
NB. Relevant for Type 4 Female-Female Mounts – see Stud Details table for further information

Stud Details

Stud Part No.	Threads		Dimensions		
	A	B	C	D	E
M10XM10	M10 x 1.5	M10 x 1.5	10	25	37
M10XM12	M10 x 1.5	M12 x 1.75	10	35	49
M6XM6	M6 x 1.0	M6 x 1.0	6	15	21
M6XM8	M6 x 1.0	M8 x 1.25	6	20	28
M8XM10	M8 x 1.25	M10 x 1.5	8	25	35
M8XM8	M8 x 1.25	M8 x 1.25	8	20	28

All Studs are continuous threads.

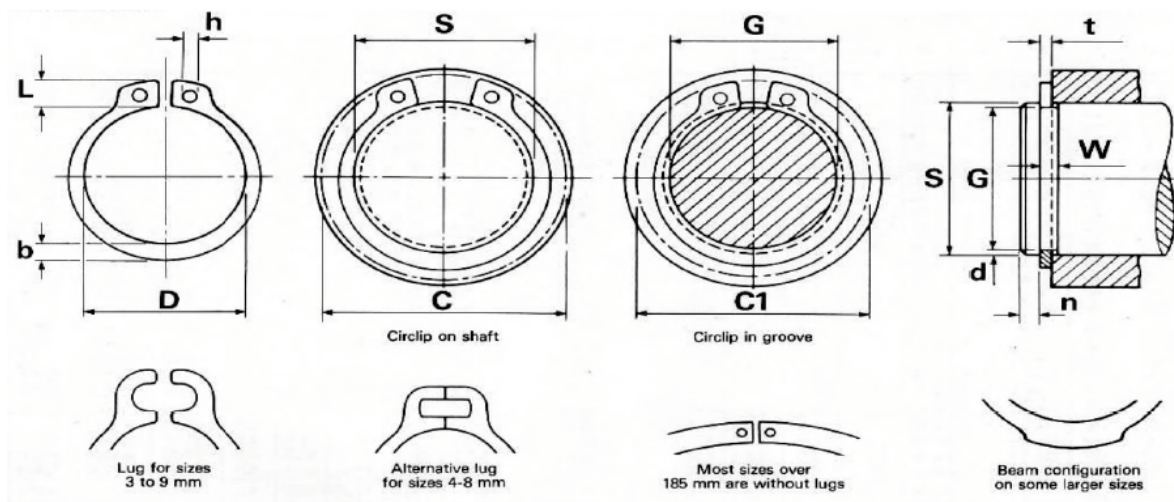




Circlips - Internal																
SIZE CODE	BORE	GROOVE (G)						CIRCLIP (F)								
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-8	8	8.4	(+0.09 -0.00)	0.9	(+0.14 -0.00)	0.6	0.2	0.8	-	8.7	(+0.36 -0.10)	3	3.6	2.4	1.1	1
1300-9	9	9.4		0.9		0.6	0.2	0.8	-	9.8		3.7	4.4	2.5	1.3	1
1300-10	10	10.4	(+0.11 -0.00)	1.1		0.6	0.2	1	-	10.8		3.3	4	3.2	1.4	1.2
1300-11	11	11.4		1.1		0.6	0.2	1	-	11.8		4.1	4.8	3.3	1.5	1.2
1300-12	12	12.5		1.1		0.8	0.25	1	-	13		4.9	5.7	3.4	1.7	1.5
1300-13	13	13.6		1.1		0.9	0.3	1	-	14.1		5.4	6.4	3.6	1.8	1.5
1300-14	14	14.6		1.1		0.9	0.3	1	-	15.1		6.2	7.2	3.7	1.9	1.7
1300-15	15	15.7		1.1		1.1	0.35	1	-	16.2		7.2	8.3	3.7	2	1.7
1300-16	16	16.8		1.1		1.2	0.4	1	-	17.3		8	9.2	3.8	2	1.7
1300-17	17	17.8		1.1		1.2	0.4	1	-	18.3	(+0.42 -0.13)	8.8	10	3.9	2.1	1.7
1300-18	18	19	(+0.13 -0.00)	1.1		1.5	0.5	1	-	19.5		9.4	10.8	4.1	2.2	2
1300-19	19	20		1.1		1.5	0.5	1	-	20.5		10.4	11.8	4.1	2.2	2
1300-20	20	21		1.1		1.5	0.5	1	-	21.5		11.2	12.6	4.2	2.3	2
1300-21	21	22		1.1		1.5	0.5	1	-	22.5		12.2	13.6	4.2	2.4	2
1300-22	22	23		1.1		1.5	0.5	1	-	23.5		13.2	14.6	4.2	2.5	2
1300-23	23	24.1		1.3		1.7	0.6	1.2	-	24.6		14.2	15.7	4.2	2.5	2
1300-24	24	25.2		1.3		1.8	0.6	1.2	-	25.9	(+0.42 -0.21)	14.8	16.4	4.4	2.6	2
1300-25	25	26.2	(+0.21 -0.00)	1.3		1.8	0.6	1.2	-	26.9		15.5	17.2	4.5	2.7	2
1300-26	26	27.2		1.3		1.8	0.6	1.2	-	27.9		16.1	17.8	4.7	2.8	2
1300-27	27	28.4		1.3		2.1	0.7	1.2	-	29.1		17.1	19	4.7	2.9	2
1300-28	28	29.4		1.3		2.1	0.7	1.2	-	30.1		17.9	19.8	4.8	2.9	2
1300-29	29	30.4		1.3		2.1	0.7	1.2	-	31.1		18.9	20.8	4.8	3	2
1300-30	30	31.4		1.3		2.1	0.7	1.2	-	32.1		19.9	21.8	4.8	3	2
1300-31	31	32.7	(+0.25 -0.00)	1.3		2.6	0.85	1.2	-	33.4		20	22.3	5.2	3.2	2.5
1300-32	32	33.7		1.3		2.6	0.85	1.2	-	34.4		20.6	22.9	5.4	3.2	2.5
1300-33	33	34.7		1.3		2.6	0.85	1.2	-	35.5		21.6	23.9	5.4	3.3	2.5

Circlips - Internal																
SIZE CODE	BORE	GROOVE (G)						CIRCLIP (F)								
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-34	34	35.7	(+0.25 (-)0.00	1.6		2.6	0.85	1.5	(+0.00 (-)0.06	36.5	(+0.050 (-)0.25	22.6	24.9	5.4	3.3	2.5
1300-35	35	37		1.6		3	1	1.5		37.8		23.6	26.2	5.4	3.4	2.5
1300-36	36	38		1.6		3	1	1.5		38.8		24.6	27.2	5.4	3.5	2.5
1300-37	37	39		1.6		3	1	1.5		39.8		25.4	28	5.5	3.6	2.5
1300-38	38	40		1.6		3	1	1.5		40.8	(+0.090 (-)0.39	26.4	29	5.5	3.7	2.5
1300-39	39	41		1.6		3	1	1.5		42		27.3	29.8	5.6	3.8	2.5
1300-40	40	42.5		1.85		3.8	1.25	1.75		43.5		27.8	30.9	5.8	3.9	2.5
1300-41	41	43.5		1.85		3.8	1.25	1.75		44.5		28.6	31.7	5.9	4	2.5
1300-42	42	44.5		1.85		3.8	1.25	1.75		45.5		29.6	32.7	5.9	4.1	2.5
1300-43	43	45.5		1.85		3.8	1.25	1.75		46.5		30.6	33.7	5.9	4.2	2.5
1300-44	44	46.5		1.85		3.8	1.25	1.75		47.5		31.4	34.5	6	4.2	2.5
1300-45	45	47.5		1.85		3.8	1.25	1.75		48.5		32	35.1	6.5	4.3	2.5
1300-46	46	48.5		1.85		3.8	1.25	1.75		49.5		32.8	35.9	6.3	4.4	2.5
1300-47	47	49.5		1.85		3.8	1.25	1.75		50.5	(+0.110 (-)0.46	33.5	36.7	6.4	4.4	2.5
1300-48	48	50.5	(+0.30 (-)0.00	1.85	(+0.14 (-)0.00	3.8	1.25	1.75	(+0.00 (-)0.07	51.5		34.5	37.7	6.4	4.5	2.5
1300-50	50	53		2.15		4.5	1.5	2		54.2		36.3	40	6.5	4.6	2.5
1300-51	51	54		2.15		4.5	1.5	2		55.2		37.3	41	6.5	4.7	2.5
1300-52	52	55		2.15		4.5	1.5	2		56.2		37.9	41.6	6.7	4.7	2.5
1300-53	53	56		2.15		4.5	1.5	2		57.2		39	42.6	6.7	4.9	2.5
1300-54	54	57		2.15		4.5	1.5	2		58.2		40	43.6	6.7	5	2.5
1300-55	55	58		2.15		4.5	1.5	2		59.2		40.7	44.4	6.8	5	2.5
1300-56	56	59		2.15		4.5	1.5	2		60.2		41.7	45.4	6.8	5.1	2.5
1300-57	57	60		2.15		4.5	1.5	2		61.2		42.7	46.4	6.8	5.2	2.5
1300-58	58	61		2.15		4.5	1.5	2		62.2		43.5	47.2	6.9	5.2	2.5
1300-60	60	63		2.15		4.5	1.5	2		64.2		44.7	48.4	7.3	5.4	2.5
1300-61	61	64		2.15		4.5	1.5	2		65.2		45.7	49.4	7.3	5.4	2.5
1300-62	62	65	(+0.35 (-)0.00	2.15		4.5	1.5	2	(+0.00 (-)0.07	66.2	(+0.130 (-)0.54	46.7	50.4	7.3	5.5	2.5
1300-63	63	66		2.15		4.5	1.5	2		67.2		47.7	51.4	7.3	5.6	2.5
1300-64	64	67		2.15		4.5	1.5	2		68.2		48.7	52.4	7.4	5.7	2.5
1300-65	65	68		2.65		4.5	1.5	2.5		69.2		49	52.8	7.6	5.8	3
1300-67	67	70		2.65		4.5	1.5	2.5		71.5		50.8	54.6	7.7	6	3
1300-68	68	71		2.65		4.5	1.5	2.5		72.5		51.6	55.4	7.8	6.1	3
1300-70	70	73		2.65		4.5	1.5	2.5		74.5		53.6	57.4	7.8	6.2	3
1300-72	72	75		2.65		4.5	1.5	2.5		76.5		55.6	59.4	7.8	6.4	3
1300-75	75	78		2.65		4.5	1.5	2.5		79.5		58.6	62.4	7.8	6.6	3
1300-77	77	80		2.65		4.5	1.5	2.5		82.5		59.2	63	8.5	6.8	3
1300-78	78	81		2.65		4.5	1.5	2.5		82.5	(+0.130 (-)0.54	60.1	64	8.5	6.8	3
1300-80	80	83.5		2.65		5.3	1.75	2.5		85.5		62.1	66.5	8.5	7	3
1300-81	81	84.5		2.65		5.3	1.75	2.5		86.5		62.2		8.5	7	3

Circlips - Internal																
SIZE CODE	BORE	GROOVE (G)							CIRCLIP (F)							
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-82	82	85.5	(+0.35 (-)0.00	2.65	(+0.14 (-)0.00	5.3	1.75	2.5	(+0.00 (-)0.07	87.5	(+1.30 (-)0.54	64.1	68.5	8.5	7	3
1300-83	83	86.5		2.65		5.3	1.75	2.5		88.5		65.2	69.5	8.5	7	3
1300-85	85	88.5		3.15	(+0.00 (-)0.08	5.3	1.75	3	(+0.00 (-)0.08	90.5		66.9	71.3	8.6	7.2	3.5
1300-87	87	90.5		3.15		5.3	1.75	3		93.5		69	73.3	8.6	7.4	3.5
1300-88	88	91.5		3.15		5.3	1.75	3		93.5		69.9	74.3	8.6	7.4	3.5
1300-90	90	93.5		3.15		5.3	1.75	3		95.5		71.9	76.3	8.6	7.6	3.5
1300-92	92	95.5		3.15		5.3	1.75	3		97.5		73.7	78.1	8.7	7.8	3.5
1300-95	95	98.5		3.15		5.3	1.75	3		100.5		76.5	80.9	8.8	8.1	3.5
1300-97	97	100.5		3.15		5.3	1.75	3		103.5		78.1	82.5	9	8.3	3.5
1300-98	98	101.5		3.15		5.3	1.75	3		103.5		79	83.5	9	8.3	3.5
1300-100	100	103.5		3.15		5.3	1.75	3		105.5		80.6	85.1	9.2	8.4	3.5
1300-102	102	106	(+0.54 (-)0.00	4.15	(+0.18 (-)0.00	6	2	4	(+0.00 (-)0.10	108	(+1.50 (-)0.63	82	87	9.5	8.5	3.5
1300-105	105	109		4.15		6	2	4		112		85	90	9.5	8.7	3.5
1300-107	107	111		4.15		6	2	4		115		87	92	9.5	8.9	3.5
1300-108	108	112		4.15		6	2	4		115		88	93	9.5	8.9	3.5
1300-110	110	114		4.15		6	2	4		117		88.2	93.2	10.4	9	3.5
1300-112	112	116		4.15		6	2	4		119		90	95	10.5	9.1	3.5
1300-115	115	119		4.15		6	2	4		122		93	98	10.5	9.3	3.5
1300-117	117	121		4.15		6	2	4		125		94.6	99.6	10.7	9.6	3.5
1300-118	118	122		4.15		6	2	4		125		95.6	100.6	10.7	9.6	3.5
1300-120	120	124		4.15		6	2	4		127		96.9	102	11	9.7	3.5
1300-125	125	129	(+0.63 (-)0.00	4.15		6	2	4		132		101.9	107	11	10	4
1300-127	127	131		4.15		6	2	4		135		103.9	109	11	10	4
1300-128	128	132		4.15		6	2	4		135		104.9	110	11	10	4
1300-130	130	134		4.15		6	2	4		137		106.9	112	11	10.2	4
1300-135	135	139		4.15		6	2	4		142		111.5	116	11.2	10.5	4
1300-140	140	144		4.15		6	2	4		147		116.5	121	11.2	10.7	4
1300-145	145	149		4.15		6	2	4		152		121	126	11.4	10.9	4
1300-150	150	155		4.15		7.5	2.5	4		158		124.8	131	12	11.2	4
1300-155	155	160		4.15		7.5	2.5	4		164		129.8	136	12	11.4	4
1300-160	160	165		4.15		7.5	2.5	4		169		132.7	144	13	11.6	4
1300-165	165	170	(+0.72 (-)0.00	4.15		7.5	2.5	4		174.5	(+1.7 (-)0.72	137.7	144	13	11.8	4
1300-170	170	175		4.15		7.5	2.5	4		179.5		141.6	148	13.5	12.2	4
1300-175	175	180		4.15		7.5	2.5	4		184.5		146.6	153	13.5	12.7	4
1300-180	180	185		4.15		7.5	2.5	4		189.5		150.2	156	14.2	13.2	4
1300-185	185	190		4.15		7.5	2.5	4		194.5		155.2	161	14.2	13.7	4
1300-190	190	195		4.15		7.5	2.5	4		199.5		160.2	166	14.2	13.8	4
1300-195	195	200		4.15		7.5	2.5	4		204.5		165.2	171	14.2	13.8	4
1300-200	200	205		4.15		7.5	2.5	4		209.5		170.2	176	14.2	14	4

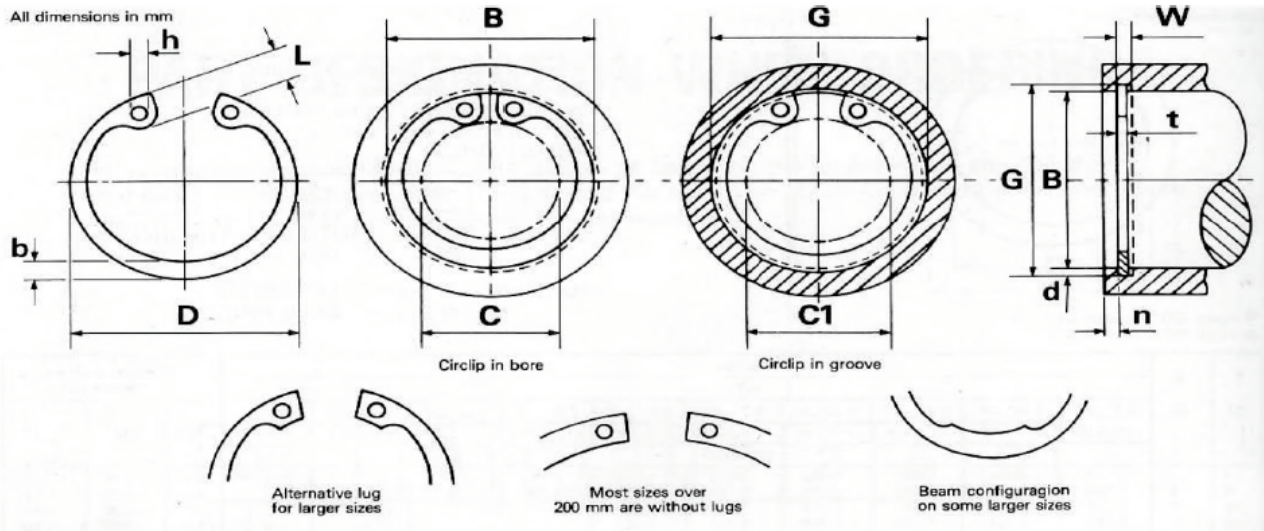


Circlips - External																
SIZE CODE	SHAFT	GROOVE (G)						CIRCLIP (F)								
	S	G	Tol.		W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	h (min)
1400-3	3	2.8	(+)0.00	(-)0.04	0.5		0.3	0.1	0.4		2.7		7	6.6	1.9	1
1400-4	4	3.8	(+) 0.00 (-) 0.048		0.5		0.3	0.1	0.4	(+)0.00 (-)0.05	3.7	(+)0.04 (-)0.15	8.6	8.2	2.2	1
1400-5	5	4.8			0.7		0.3	0.1	0.6		4.7		10.3	9.8	2.5	1
1400-6	6	5.7			0.8		0.5	0.15	0.7		5.6		11.7	11.1	2.7	1.2
1400-7	7	6.7	(+) 0.00 (-) 0.06		0.9		0.5	0.15	0.8		6.5	(+)0.06 (-) 0.18	13.5	12.9	3.1	1.2
1400-8	8	7.6			0.9		0.6	0.2	0.8		7.4		14.7	14	3.2	1.2
1400-9	9	8.6			1.1		0.6	0.2	1		8.4		16	15.2	3.3	1.2
1400-10	10	9.6	(+)0.00 (-)0.11	(+)0.14 (-)0.00	1.1		0.6	0.2	1	(+)0.00 (-)0.06	9.3	(+)0.10 (-)0.36	17	16.2	3.3	1.5
1400-11	11	10.5			1.1		0.8	0.25	1		10.2		18	17.1	3.3	1.5
1400-12	12	11.5			1.1		0.8	0.25	1		11		19	18.1	3.3	1.7
1400-13	13	12.4			1.1		0.9	0.3	1		11.9		20.2	19.2	3.4	1.7
1400-14	14	13.4			1.1		0.9	0.3	1		12.9		21.4	20.4	3.5	1.7
1400-15	15	14.3			1.1		1.1	0.35	1		13.8		22.5	21.5	3.6	1.7
1400-16	16	15.2			1.1		1.2	0.4	1		14.7		23.8	22.6	3.7	1.7
1400-17	17	16.2			1.1		1.2	0.4	1		15.7		25	23.8	3.8	1.7
1400-18	18	17	(+)0.00 (-)0.13		1.3		1.5	0.5	1.2	(+)0.00 (-)0.06	16.5	(+)0.13 (-)0.42	26.2	24.8	3.9	2
1400-19	19	18			1.3		1.5	0.5	1.2		17.5		27.2	25.8	3.9	2
1400-20	20	19			1.3		1.5	0.5	1.2		18.5		28.4	27	4	2
1400-21	21	20			1.3		1.5	0.5	1.2		19.5		29.6	28.2	4.1	2
1400-22	22	21			1.3		1.5	0.5	1.2		20.5		30.8	29.4	4.2	2
1400-23	23	22			1.3		1.5	0.5	1.2		21.5		32	30.6	4.3	2
1400-24	24	22.9			1.3		1.7	0.55	1.2		22.2	(+)0.21 (-)0.42	33.2	31.7	4.4	2
1400-25	25	23.9			1.3		1.7	0.55	1.2		23.2		34.2	32.7	4.4	2
1400-26	26	24.9	(+)0.00 (-)0.21		1.3		1.7	0.55	1.2		24.2		35.5	33.9	4.5	2
1400-27	27	25.6			1.3		2.1	0.7	1.2		24.9		36.7	34.8	4.6	2
1400-28	28	26.6			1.6		2.1	0.7	1.5		25.9		37.9	36	4.7	2

Circlips - External																
SIZE CODE	SHAFT	GROOVE (G)							CIRCLIP (F)							
	S	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1400-29	29	27.6	(+0.00 (-)0.21	1.6		2.1	0.7	1.5		26.9	(+0.21 (-)0.42	39.1	37.2	4.8	3.4	2
1400-30	30	28.6		1.6		2.1	0.7	1.5		27.9		40.5	38.6	5	3.5	2
1400-31	31	29.3		1.6		2.6	0.85	1.5		28.6		41.7	40.9	5.1	3.5	2.5
1400-32	32	30.3	(+0.00 (-)0.25	1.6		2.6	0.85	1.5	(+0.00 (-)0.06	29.6	(+0.25 (-)0.5	43	40.7	5.2	3.6	2.5
1400-33	33	31.3		1.6		2.6	0.85	1.5		30.5		44	41.7	5.2	3.7	2.5
1400-34	34	32.3		1.6		2.6	0.85	1.5		31.5		45.4	43.1	5.4	3.8	2.5
1400-35	35	33		1.6		3	1	1.5		32.2		46.8	44.2	5.6	3.9	2.5
1400-36	36	34		1.85		3	1	1.75		33.2		47.8	45.2	5.6	4	2.5
1400-37	37	35		1.85		3	1	1.75		34.2		49	47	5.7	4.1	2.5
1400-38	38	36		1.85		3	1	1.75		35.2		50.2	47.6	5.8	4.2	2.5
1400-39	39	37		1.85		3	1	1.75		36		51.4	48.5	5.9	4.3	2.5
1400-40	40	37.5		1.85		3.8	1.25	1.75		36.5	52.6	49.5	6	4.4	2.5	
1400-41	41	38.5		1.85		3.8	1.25	1.75		37.5	54	51.5	6.2	4.5	2.5	
1400-42	42	39.5		1.85		3.8	1.25	1.75		38.5	55.7	52.5	6.5	4.5	2.5	
1400-43	43	40.5		1.85		3.8	1.25	1.75		39.5	56.8	53.5	6	5.3	2.5	
1400-44	44	41.5		1.85		3.8	1.25	1.75		40.5	57.9	55.4	6.6	4.6	2.5	
1400-45	45	42.5		1.85		3.8	1.25	1.75		41.5	59.1	55.9	6.7	4.7	2.5	
1400-46	46	43.5		1.85		3.8	1.25	1.75		42.5	60.1	56.9	6.7	4.8	2.5	
1400-47	47	44.5		1.85		3.8	1.25	1.75		43.5	61.3	58.1	6.8	4.9	2.5	
1400-48	48	45.5		1.85	(+0.14 (-)0.00	3.8	1.25	1.75		44.5	62.5	59.3	6.9	5	2.5	
1400-50	50	47	2.15	4.5		1.5	2	(+0.39 (-)0.90	45.8	64.5	60.8	6.9	5.1	2.5		
1400-51	51	48	2.15	4.5		1.5	2		46.8	65.6	61.9	6.9	5	2.5		
1400-52	52	49	2.15	4.5		1.5	2		47.8	66.7	63	7	5.2	2.5		
1400-53	53	50	2.15	4.5		1.5	2		48.8	68.8	64.1	7	6.3	2.5		
1400-54	54	51	2.15	4.5		1.5	2		49.8	69	65.2	7.1	5.3	2.5		
1400-55	55	52	2.15	4.5		1.5	2		50.8	70.2	66.4	7.2	5.4	2.5		
1400-56	56	53	2.15	4.5		1.5	2		51.8	71.6	67.6	7.3	5.5	2.5		
1400-57	57	54	2.15	4.5		1.5	2		52.8	72.3	69.3	7.3	5.5	2.5		
1400-58	58	55	2.15	4.5		1.5	2		53.8	73.6	69.6	7.3	5.6	2.5		
1400-60	60	57	2.15	4.5		1.5	2		55.8	75.6	71.8	7.4	5.8	2.5		
1400-61	61	58	2.15	4.5		1.5	2		56.8	76.7	72.9	7.4	5.9	2.5		
1400-62	62	59	2.15	4.5		1.5	2		57.8	77.8	74	7.5	6	2.5		
1400-63	63	60	2.15	4.5		1.5	2		58.8	79	75.2	7.6	6.2	2.5		
1400-64	64	61	2.15	4.5		1.5	2		59.8	80.2	76.4	7.8	7.4	2.5		
1400-65	65	62	2.65	4.5		1.5	2.5		60.8	81.4	77.6	7.8	6.3	3		
1400-67	67	64	2.65	4.5		1.5	2.5		62.5	83.6	79.8	7.9	6.4	3		
1400-68	68	65	2.65	4.5		1.5	2.5		63.5	84.4	81	8	6.5	3		
1400-70	70	67	2.65	4.5		1.5	2.5		65.5	87	83.2	8.1	6.6	3		
1400-72	72	69	2.65	4.5		1.5	2.5		67.5	89.2	85.4	8.2	6.8	3		

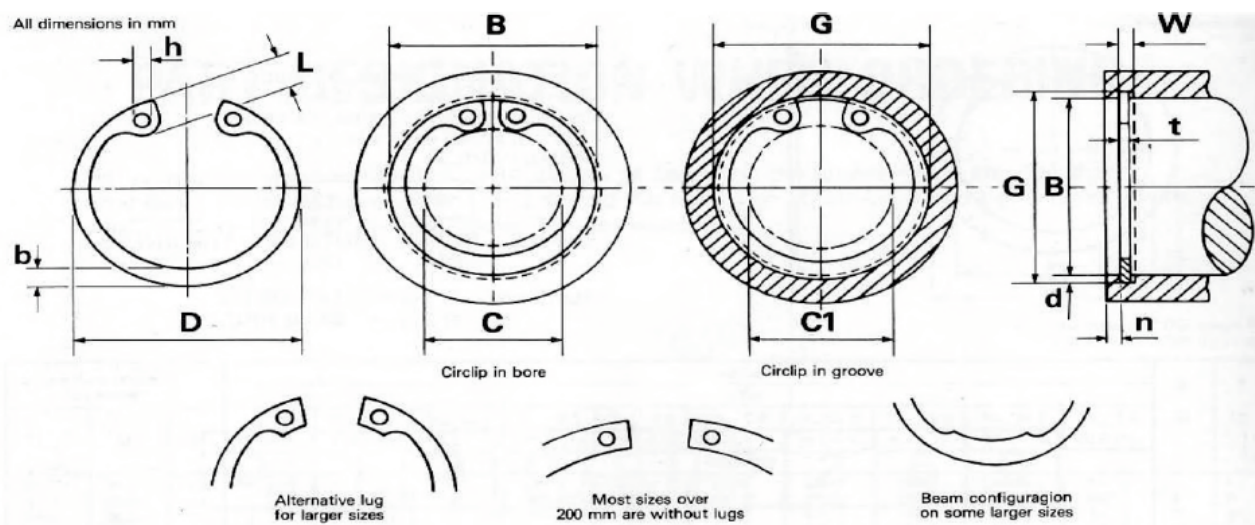
Circlips - External																
SIZE CODE	SHAFT	GROOVE (G)						CIRCLIP (F)								
	S	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1400-75	75	72	(+0.00 (-)0.30	2.65	(+0.14 (-)0.00	4.5	1.5	2.5	(+0.00 (-)0.07	70.5	(+0.46 (-)1.10	92.7	88.8	8.4	7	3
1400-77	77	74		2.65		4.5	1.5	2.5		72.5		94.9	91	8.5	7.2	3
1400-78	78	75		2.65		4.5	1.5	2.5		73.5		96.1	92.2	8.6	7.3	3
1400-80	80	76.5		2.65		5.3	1.75	2.5		74.5		98.1	93.7	8.6	7.4	3
1400-82	82	78.5	(+0.00 (-)0.35	2.65	(+0.00 (-)0.08	5.3	1.75	2.5	(+0.00 (-)0.08	76.5	(+0.54 (-)1.30	100.3	95.9	8.7	7.6	3
1400-85	85	81.5		3.15		5.3	1.75	3		79.5		103.3	98.9	8.7	7.8	3.5
1400-87	87	83.5		3.15		5.3	1.75	3		81.5		105.5	100.9	8.8	7.9	3.5
1400-88	88	84.5		3.15		5.3	1.75	3		82.5		106.5	102	8.8	8	3.5
1400-90	90	86.5		3.15		5.3	1.75	3		84.5		108.5	104	8.8	8.2	3.5
1400-92	92	88.5		3.15		5.3	1.75	3		86.5		110.9	107.4	9	8.4	3.5
1400-95	95	91.5		3.15		5.3	1.75	3		89.5		114.8	111	9.4	8.6	3.5
1400-97	97	93.5		3.15		5.3	1.75	3		91.5		116.7	113.2	9.4	8.8	3.5
1400-98	98	94.5		3.15		5.3	1.75	3		91.5		118.6	114	9.4	8.8	3.5
1400-100	100	96.5		3.15		5.3	1.75	3		94.5		120.2	116	9.6	9	3.5
1400-102	102	98		4.15	(+0.00 (-)0.54	6	2	4	(+0.00 (-)0.1	95		122.4	118	9.7	9.2	3.5
1400-105	105	101		4.15		6	2	4		98		126.2	122	9.9	9.3	3.5
1400-110	110	106		4.15		6	2	4		103		131.2	127	10.1	9.6	3.5
1400-112	112	108		4.15		6	2	4		105		133.6	129.6	10.3	9.7	3.5
1400-115	115	111		4.15		6	2	4		108		137.3	133	10.6	9.8	3.5
1400-120	120	116		4.15		6	2	4		113		143.1	138	11	10.2	3.5
1400-122	122	118		4.15		6	2	4		115		145.5	141.5	11.2	10.3	4
1400-125	125	121		4.15	(+0.18 (-)0.00	6	2	4		118	(+0.63 (-)1.5	149	144	11.4	10.4	4
1400-127	127	123		4.15		6	2	4		120		150.9	146.8	11.4	10.5	4
1400-128	128	124		4.15		6	2	4		120		151.9	147.9	11.4	10.5	4
1400-130	130	126		4.15		6	2	4		123		154.4	150	11.6	10.7	4
1400-135	135	131		4.15		6	2	4		128		159.8	155	11.8	11	4
1400-140	140	136		4.15		6	2	4		133		165.2	160	12	11.2	4
1400-145	145	141		4.15		6	2	4		138		170.6	166	12.2	11.5	4
1400-150	150	145		4.15		7.5	2.5	4		142		177.3	171	13	11.8	4
1400-155	155	150		4.15		7.5	2.5	4		146		182.3	176	13	12	4
1400-160	160	155		4.15		7.5	2.5	4		151		188	182	13.3	12.2	4
1400-165	165	160		4.15		7.5	2.5	4		155.5		193.4	187	13.5	12.5	4
1400-170	170	165	(+0.00 (-)0.63	4.15		7.5	2.5	4	(+0.00 (-)0.1	160.5	(+0.72 (-)1.7	198.4	192	13.5	12.9	4
1400-175	175	170		4.15		7.5	2.5	4		165.5		203.4	197	13.5	12.9	4
1400-180	180	175		4.15		7.5	2.5	4		170.5		210	204	14.2	13.5	4
1400-185	185	180		4.15		7.5	2.5	4		175.5		215.2	209	14.2	13.5	4
1400-190	190	185		4.15		7.5	2.5	4		180.5		220	214	14.2	14	4
1400-195	195	190		4.15		7.5	2.5	4		185.5		225	219	14.2	14	4
1400-200	200	195		4.15		7.5	2.5	4		190.5		230	224	14.2	14	4

Stainless Steel Circlips - Internal



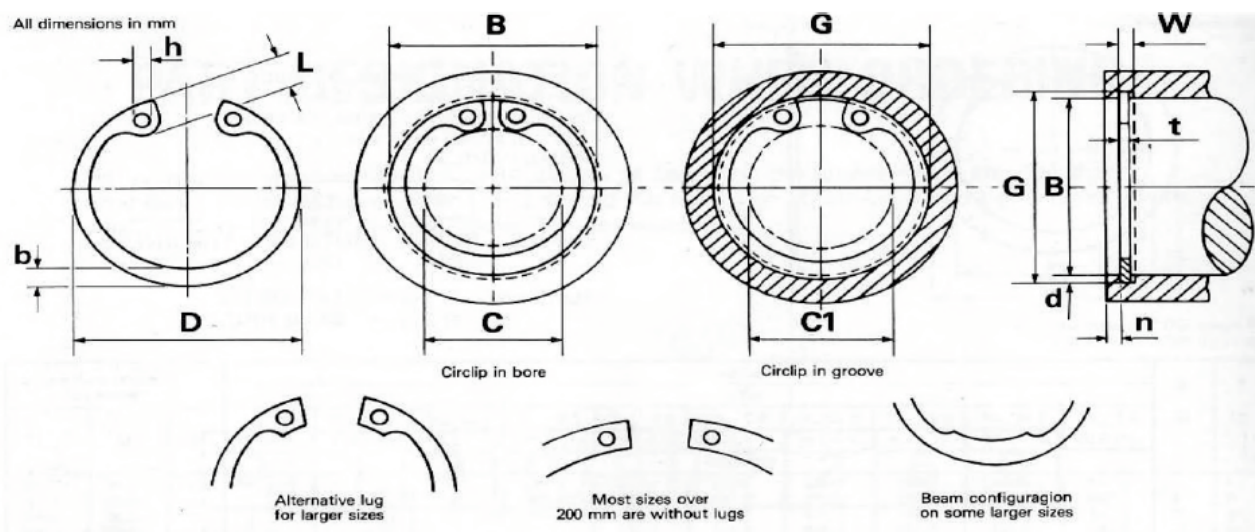
Stainless Steel Circlips - Internal																
SIZE CODE	BORE		GROOVE (G)						CIRCLIP (F)							
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-10	10	10.4	(+0.11 (-)0.00)	1.1	(+0.14 (-)0.00)	0.6	0.2	1	-	10.8	-	3.3	4	3.2	1.4	1.2
1300-11	11	11.4		1.1		0.6	0.2	1	-	11.8		4.1	4.8	3.3	1.5	1.2
1300-12	12	12.5		1.1		0.8	0.25	1	-	13		4.9	5.7	3.4	1.7	1.5
1300-13	13	13.6		1.1		0.9	0.3	1	-	14.1		5.4	6.4	3.6	1.8	1.5
1300-14	14	14.6		1.1		0.9	0.3	1	-	15.1		6.2	7.2	3.7	1.9	1.7
1300-15	15	15.7		1.1		1.1	0.35	1	-	16.2		7.2	8.3	3.7	2	1.7
1300-16	16	16.8		1.1		1.2	0.4	1	-	17.3		8	9.2	3.8	2	1.7
1300-17	17	17.8		1.1		1.2	0.4	1	-	18.3		8.8	10	3.9	2.1	1.7
1300-18	18	19	(+0.13 (-)0.00)	1.1	(+0.14 (-)0.00)	1.5	0.5	1	-	19.5	(+0.42 (-)0.13)	9.4	10.8	4.1	2.2	2
1300-19	19	20		1.1		1.5	0.5	1	-	20.5		10.4	11.8	4.1	2.2	2
1300-20	20	21		1.1		1.5	0.5	1	-	21.5		11.2	12.6	4.2	2.3	2
1300-21	21	22		1.1		1.5	0.5	1	-	22.5		12.2	13.6	4.2	2.4	2
1300-22	22	23		1.1		1.5	0.5	1	-	23.5		13.2	14.6	4.2	2.5	2
1300-24	24	25.2	(+0.21 (-)0.00)	1.3	(+0.14 (-)0.00)	1.8	0.6	1.2	-	25.9	(+0.42 (-)0.21)	14.8	16.4	4.4	2.6	2
1300-25	25	26.2		1.3		1.8	0.6	1.2	-	26.9		15.5	17.2	4.5	2.7	2
1300-26	26	27.2		1.3		1.8	0.6	1.2	-	27.9		16.1	17.8	4.7	2.8	2
1300-27	27	28.4		1.3		2.1	0.7	1.2	-	29.1		17.1	19	4.7	2.9	2
1300-28	28	29.4	(+0.25 (-)0.00)	1.3	(+0.14 (-)0.00)	2.1	0.7	1.2	-	30.1	(+0.42 (-)0.21)	17.9	19.8	4.8	2.9	2
1300-29	29	30.4		1.3		2.1	0.7	1.2	-	31.1		18.9	20.8	4.8	3	2
1300-30	30	31.4		1.3		2.1	0.7	1.2	-	32.1		19.9	21.8	4.8	3	2
1300-32	32	33.7		1.3		2.6	0.85	1.2	-	34.4		20.6	22.9	5.4	3.2	2.5

Stainless Steel Circlips - Internal



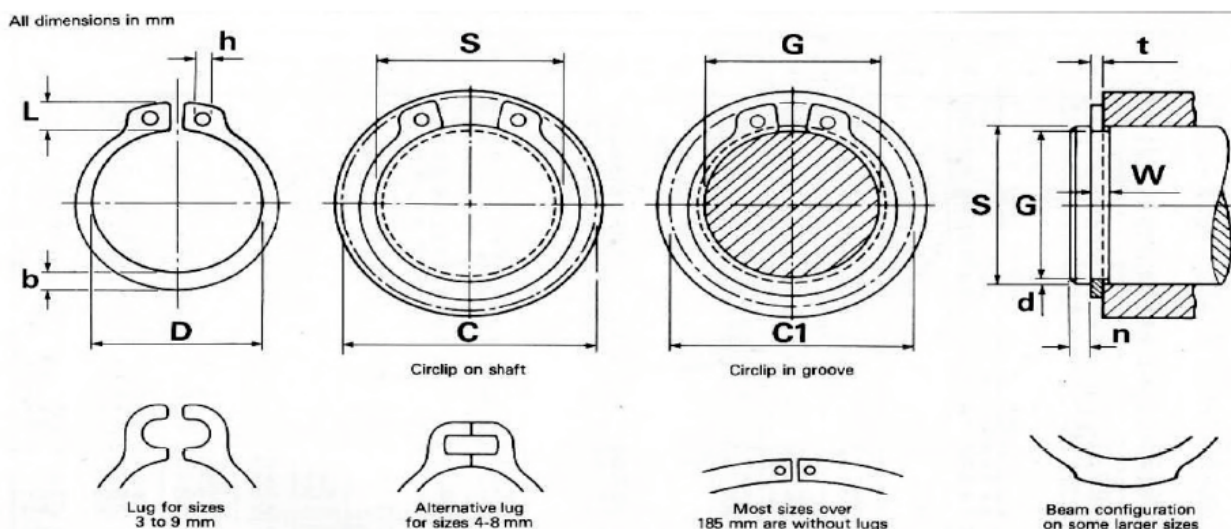
Stainless Steel Circlips - Internal																
SIZE CODE	BORE	GROOVE (G)							CIRCLIP (F)							
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-34	34	35.7	(+0.25 -0.00)	1.6	(+0.00 -0.06)	2.6	0.85	1.5	(+0.00 -0.06)	36.5	(+0.50 -0.25)	22.6	24.9	5.4	3.3	2.5
1300-35	35	37		1.6		3	1	1.5		37.8		23.6	26.2	5.4	3.4	2.5
1300-36	36	38		1.6		3	1	1.5		38.8		24.6	27.2	5.4	3.5	2.5
1300-37	37	39		1.6		3	1	1.5		39.8		25.4	28	5.5	3.6	2.5
1300-38	38	40		1.6		3	1	1.5		40.8		26.4	29	5.5	3.7	2.5
1300-39	39	41		1.6		3	1	1.5		42	(+0.90 -0.39)	27.3	29.8	5.6	3.8	2.5
1300-40	40	42.5		1.85		3.8	1.25	1.75		43.5		27.8	30.9	5.8	3.9	2.5
1300-42	42	44.5		1.85		3.8	1.25	1.75		45.5		29.6	32.7	5.9	4.1	2.5
1300-45	45	47.5		1.85		3.8	1.25	1.75		48.5		32	35.1	6.5	4.3	2.5
1300-47	47	49.5		1.85		3.8	1.25	1.75		50.5	(+1.10 -0.46)	33.5	36.7	6.4	4.4	2.5
1300-50	50	53	(+0.30 -0.00)	2.15	(+0.14 -0.00)	4.5	1.5	2	(+0.00 -0.07)	54.2		36.3	40	6.5	4.6	2.5
1300-51	51	54		2.15		4.5	1.5	2		55.2		37.3	41	6.5	4.7	2.5
1300-52	52	55		2.15		4.5	1.5	2		56.2		37.9	41.6	6.7	4.7	2.5
1300-55	55	58		2.15		4.5	1.5	2		59.2		40.7	44.4	6.8	5	2.5
1300-56	56	59		2.15		4.5	1.5	2		60.2		41.7	45.4	6.8	5.1	2.5
1300-57	57	60		2.15		4.5	1.5	2		62.2		42.7	46.4	6.8	5.1	2.5
1300-58	58	61		2.15		4.5	1.5	2		62.2		43.5	47.2	6.9	5.2	2.5
1300-59	59	-		-		-	-	-		-		-	-	-	-	-
1300-60	60	63		2.15		4.5	1.5	2		64.2		44.7	48.4	7.3	5.4	2.5
1300-61	61	-		2.15		-	-	-		-		-	-	-	-	-
1300-62	62	65	2.65	2.15	4.5	1.5	2	2	69.2	66.2	72.5	46.7	50.4	7.3	5.5	2.5
1300-63	63	66		2.15		4.5	1.5	2		67.2		47.7	51.4	7.3	5.5	2.5
1300-64	64	-		2.65		4.5	1.5	2.5		68.2		48.7	52.4	7.3	5.2	2.5
1300-65	65	68		2.65		4.5	1.5	2.5		69.2		49.0	52.8	7.6	5.8	3.0
1300-67	67	70		2.65		4.5	1.5	2.5		72.5		50.8	54.6	7.7	6.0	3.0
1300-68	68	71		2.65		4.5	1.5	2.5		72.5		51.6	55.4	7.8	6.1	3.0

Stainless Steel Circlips - Internal



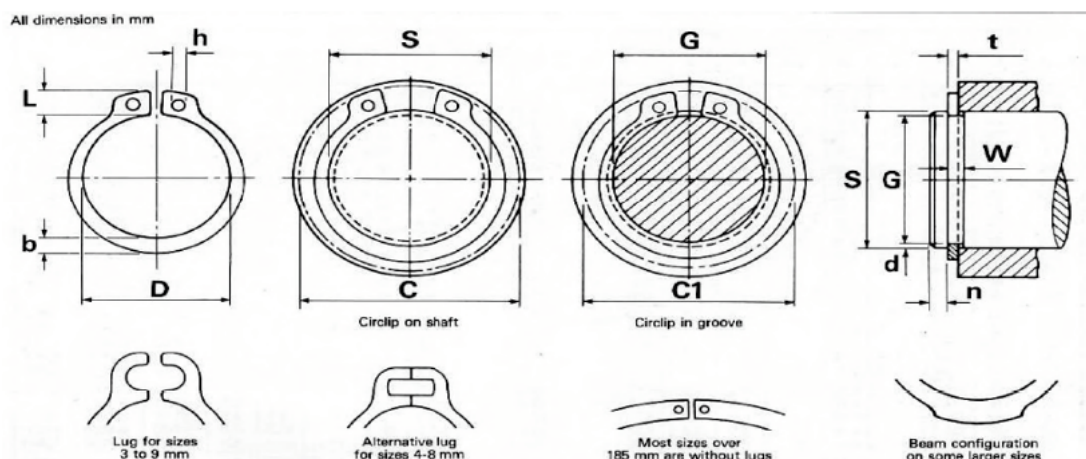
Stainless Steel Circlips - Internal																
SIZE CODE	BORE		GROOVE (G)						CIRCLIP (F)							
	B	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1300-70	70	73	(+0.30 -0.00)	2.65	(+0.14 -0.00)	4.5	1.5	2.5	(+0.00 -0.07)	74.5	(+1.10 -0.46)	53.6	57.4	7.8	6.2	3.0
1300-72	72	75		2.65		4.5	1.5	2.5		76.5		55.6	59.4	7.8	6.4	3.0
1300-75	75	78		2.65		4.5	1.5	2.5		79.5		58.6	62.4	7.8	6.6	3.0
1300-80	80	83.5	(+0.35 -0.00)	2.65	(+0.18 -0.00)	5.3	1.8	2.5	(+0.00 -0.08)	82.5	(+1.30 -0.54)	62.1	66.5	8.5	7.0	3.0
1300-85	85	88.5		3.15		5.3	1.8	3		90.5		66.9	71.3	8.6	7.2	3.5
1300-90	90	93.5		3.15		5.3	1.8	3		95.5		71.9	76.3	8.6	7.6	3.5
1300-95	95	98.5		3.15		5.3	1.8	3		100.5		76.5	80.9	8.8	8.1	3.5
1300-100	100	103.5		3.15		5.3	1.8	3		105.5		80.6	85.1	9.2	8.4	3.5

Stainless Steel Circlips - External



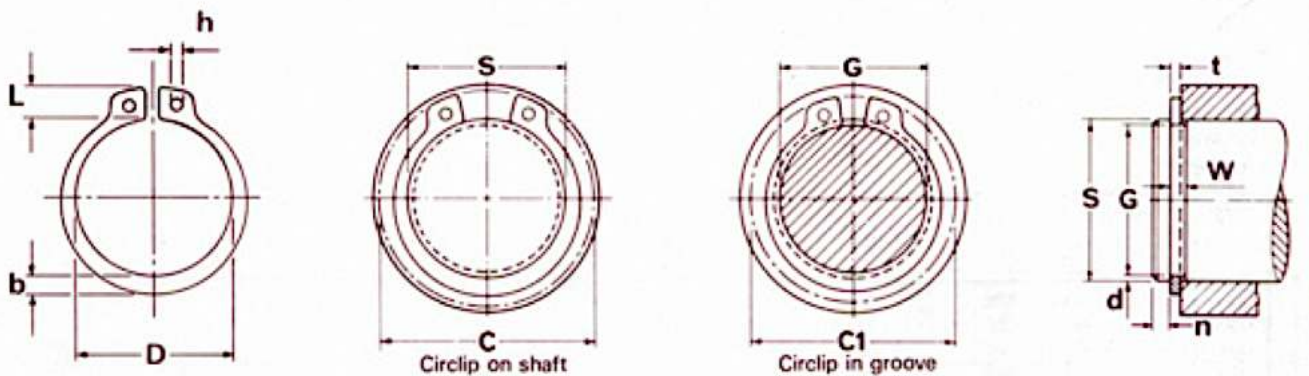
Stainless Steel Circlips - External																	
SIZE CODE	SHAFT	GROOVE (G)						CIRCLIP (F)									
	S	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)	
1400-4	4	3.8	(+)0.00 (-) 0.048	0.5		0.3	0.1	0.4	(+0.00 (-)0.05-	3.7	(+)0.04 (-) 0.15	8.6	8.2	2.2	0.9	1	
1400-5	5	4.8		0.7		0.3	0.1	0.6		4.7		10.3	9.8	2.5	1.1	1	
1400-6	6	5.7		0.8		0.5	0.15	0.7		5.6		11.7	11.1	2.7	1.3	1.2	
1400-7	7	6.7	(+) 0.00 (-) 0.06	0.9		0.5	0.15	0.8	(+0.00 (-)0.05-	6.5	(+)0.06 (-) 0.18	13.5	12.9	3.1	1.4	1.2	
1400-8	8	7.6		0.9		0.6	0.2	0.8		7.4		14.7	14	3.2	1.5	1.2	
1400-9	9	8.6		1.1		0.6	0.2	1		8.4		16	15.2	3.3	1.7	1.2	
1400-10	10	9.6		1.1		0.6	0.2	1		9.3		17	16.2	3.3	1.8	1.5	
1400-11	11	10.5	(+)0.00 (-)0.11	1.1	-	0.8	0.25	1		10.2	(+)0.10 (-)0.36	18	17.1	3.3	1.8	1.5	
1400-12	12	11.5		1.1		0.8	0.25	1		11		19	18.1	3.3	1.8	1.7	
1400-13	13	12.4		1.1		0.9	0.3	1		11.9		20.2	19.2	3.4	2	1.7	
1400-14	14	13.4		1.1		0.9	0.3	1		12.9		21.4	20.4	3.5	2.1	1.7	
1400-15	15	14.3		1.1		1.1	0.35	1		13.8		22.5	21.5	3.6	2.2	1.7	
1400-16	16	15.2		1.1		1.2	0.4	1		14.7		23.8	22.6	3.7	2.2	1.7	
1400-17	17	16.2		1.1		1.2	0.4	1		15.7		25	23.8	3.8	2.3	1.7	
1400-18	18	17		1.3		1.5	0.5	1.2		16.5		26.2	24.8	3.9	2.4	2	
1400-19	19	18		1.3		1.5	0.5	1.2	(+)0.00 (-)0.06	17.5			27.2	25.8	3.9	2.5	2
1400-20	20	19		1.3		1.5	0.5	1.2		18.5			(+)0.13 (-)0.42	28.4	27	4	2.6
1400-21	21	20	(+)0.00 (-)0.13	1.3		1.5	0.5	1.2	19.5	29.6	28.2	4.1		2.7	2		
1400-22	22	21		1.3		1.5	0.5	1.2	20.5	30.8	29.4	4.2		2.8	2		
1400-23	23	22		1.3		1.5	0.5	1.2	21.5	32	30.6	4.3		2.9	2		
1400-24	24	22.9	(+)0.00 (-)0.21	1.3			1.7	0.55	1.2		22.2	(+)0.21 (-)0.42	33.2	31.7	4.4	3	2
1400-25	25	23.9		1.3			1.7	0.55	1.2		23.2		34.2	32.7	4.4	3	2
1400-26	26	24.9		1.3			1.7	0.55	1.2		24.2		35.5	33.9	4.5	3.1	2
1400-27	27	25.6		1.3			2.1	0.7	1.2		24.9		36.7	34.8	4.6	3.1	2
1400-28	28	26.6		1.6			2.1	0.7	1.5		25.9		37.9	36	4.7	3.2	2

Stainless Steel Circlips - External



Stainless Steel Circlips - External																
SIZE CODE	SHAFT	GROOVE (G)							CIRCLIP (F)							
	S	G	Tol.	W	Tol.	n (min.)	d~	t	Tol.	D	Tol.	C	C1	L (max)	b~	h (min)
1400-29	29	27.6	(+0.00 -0.21)	1.6	(+0.00 -0.25)	2.1	0.7	1.5	(+0.00 -0.06)	26.9	(+0.21 -0.42)	39.1	37.2	4.8	3.4	2
1400-30	30	28.6		1.6		2.1	0.7	1.5		27.9		40.5	38.6	5	3.5	2
1400-32	32	30.3	(+0.00 -0.25)	1.6		2.6	0.85	1.5		29.6	(+0.25 -0.5)	43	40.7	5.2	3.6	2.5
1400-33	33	31.3		1.6		2.6	0.85	1.5		30.5		44	41.7	5.2	3.7	2.5
1400-35	35	33		1.6		3	1	1.5		32.2		46.8	44.2	5.6	3.9	2.5
1400-36	36	34		1.85		3	1	1.75		33.2		47.8	45.2	5.6	4	2.5
1400-37	37	35		1.85		3	1	1.75		34.2	(+0.39 -0.90)	49	47	5.7	4.1	2.5
1400-38	38	36		1.85		3	1	1.75		35.2		50.2	47.6	5.8	4.2	2.5
1400-40	40	37.5		1.85		3.8	1.25	1.75		36.5		52.6	49.5	6	4.4	2.5
1400-41	41	38.5		1.85		3.8	1.25	1.75		37.5		54	51.5	6.2	4.5	2.5
1400-42	42	39.5		1.85		3.8	1.25	1.75		38.5		55.7	52.5	6.5	4.5	2.5
1400-45	45	42.5		1.85		3.8	1.25	1.75		41.5		59.1	55.9	6.7	4.7	2.5
1400-47	47	44.5		1.85		3.8	1.25	1.75		43.5		61.3	58.1	6.8	4.9	2.5
1400-48	48	45.5		1.85		3.8	1.25	1.75		44.5		62.5	59.3	6.9	5	2.5
1400-50	50	47	(+0.00 -0.30)	2.15	(+0.14 -0.00)	4.5	1.5	2	(+0.00 -0.07)	45.8	(+0.46 -1.10)	64.5	60.8	6.9	5.1	2.5
1400-52	52	49		2.15		4.5	1.5	2		47.8		66.7	63	7	5.2	2.5
1400-55	55	52		2.15		4.5	1.5	2		50.8		70.2	66.4	7.2	5.4	2.5
1400-56	56	53		2.15		4.5	1.5	2		51.8		71.6	67.6	7.3	5.5	2.5
1400-57	57	-		-		-	-	-		-		-	-	-	-	-
1400-58	58	55		2.15		4.5	1.5	2		53.8		73.6	68.6	7.3	5.5	2.5
1400-60	60	75		2.15		4.5	1.5	2		55.8		75.6	71.8	7.4	5.8	2.5
1400-61	61	-		2.15		-	-	-		-		-	-	-	-	-
1400-62	62	59		2.15		4.5	1.5	2		57.8		77.8	74	7.5	6.0	2.5
1400-63	63	60		2.15		4.5	1.5	2		58.8		79.0	75.2	7.6	6.2	2.5
1400-64	64	-		-		-	-	-		-		-	-	-	-	-
1400-65	65	62	(+0.00 -0.35)	2.65	(+0.18 -0.00)	4.5	1.5	2.5	(+0.00 -0.08)	60.8	(+0.54 -1.13)	81.4	77.6	7.8	6.3	3.0
1400-67	67	64		2.65		4.5	1.5	2.5		62.5		83.6	79.8	7.9	6.4	3.0
1400-68	68	65		2.65		4.5	1.5	2.5		63.5		84.4	81.0	8.0	6.5	3.0
1400-70	70	67		2.65		4.5	1.5	2.5		65.5		87.0	83.2	8.1	6.6	3.0
1400-72	72	69		2.65		4.5	1.5	2.5		67.5		89.2	85.4	8.2	6.8	3.0
1400-75	75	72		2.65		4.5	1.5	2.5		70.5		92.7	88.8	8.4	7.0	3.0
1400-80	80	76		2.65		5.3	1.75	2.5		74.5		98.1	93.7	8.6	7.4	3.0
1400-85	85	81.5		3.15		5.3	1.75	3		79.5		103.3	98.9	8.7	7.8	3.5
1400-90	90	86.5		3.15		5.3	1.75	3		84.5		108.5	104.0	8.8	8.2	3.5
1400-95	95	91.5		3.15		5.3	1.75	3		89.5		114.8	111.0	9.4	8.6	3.5
1400-100	100	96.5		3.15		5.3	1.75	3		94.5		120.2	116.0	9.6	9.0	3.5

Heavy Duty Circlips - External



Circlips - Heavy Duty																			
SIZE CODE	SHAFT	GROOVE (G)						CIRCLIP (F)									Wt (kg/k)	Tc (N)	Tg (N)
	S	G	Tol.	W	Tol.	n	d	t	Tol.	D	Tol.	C	C1	L	b	h			
1460-12	12	11.5	+0.00 -0.01	1.6	+0.14 -0.00	0.7	0.25	1.5	+0.00 -0.06	11	+0.10 -0.36	19.3	8.3	3.4	1.8	1.7	0.75	17500	1130
1460-15	15	14.3		1.6		1.1	0.35	1.5		13.8		25.1	3.9	4.8	2	2	1.1	21900	2260
1460-18	18	17	+0.00 -0.13	1.6		1.5	0.5	1.5		16.5		28.7	27.2	5.1	2.7	2	1.56	26300	4070
1460-20	20	19		1.85		1.5	0.5	1.75	+0.00 -0.07	18.5	+0.13 -0.42	31.5	30	5.5	3	2	2.19	34100	4150
1460-25	25	23.9	+0.00 -0.21	2.15		1.7	0.55	2		23.2		38.3	36.7	6.4	3.4	2	3.59	48700	6130
1460-28	28	26.6		2.15		2.1	0.7	2		25.9		41.5	39.6	6.5	3.5	2	4.25	54500	8440
1460-30	30	28.6	+0.00 -0.25	2.15		2.1	0.7	2	+0.00 -0.07	27.9	+0.25 -0.50	43.5	41.6	6.5	4.1	2	5.35	58400	9610
1460-32	32	30.3		2.15		2.6	0.85	2		29.6		45.5	43.3	6.5	4.1	2.5	5.85	62300	10200
1460-35	35	33		2.65		3	1	2.5		32.2		48.9	46.4	6.7	4.2	2.5	7.2	85200	13200
1460-38	38	36		2.65		3	1	2.5	+0.00 -0.08	35.2	+0.39 -0.90	52.1	49.6	6.8	4.3	2.5	8.3	92500	15800
1460-40	40	37.5		2.65		3.8	1.25	2.5		36.5		55	51.5	7	4.4	2.5	8.6	80900	18800
1460-42	42	39.5		2.65		3.8	1.25	2.5		38.5		57.4	53.9	7.2	4.5	2.5	9.3	84900	19800
1460-45	45	42.5		2.65		3.8	1.25	2.5	+0.00 -0.10	41.5	+0.46 -1.10	61	57.5	7.5	4.7	2.5	10.7	91000	21200
1460-48	48	45.5		2.65		3.8	1.25	2.5		4.5		64.6	61.1	7.8	5	2.5	11.3	97100	22600
1460-50	50	47		3.15		4.5	1.5	3		45.8		67	63	8	5.1	2.5	15.3	121000	28300
1460-55	55	52	+0.00 -0.30	3.15		4.5	1.5	3	+0.00 -0.08	50.8	+0.54 -1.30	73	69	8.5	5.4	2.5	17.1	133000	31100
1460-58	58	55		3.15		4.5	1.5	3		53.8		76.6	72.6	8.8	5.6	2.5	18.9	141000	32800
1460-60	60	57		3.15		4.5	1.5	3		55.8		79	75	9	5.8	2.5	19.4	146000	33900
1460-65	65	62		4.15		4.5	1.5	4	+0.00 -0.10	60.8		84.6	80.6	9.3	6.3	3	29.1	210000	36800
1460-70	70	67		4.15		4.5	1.5	4		65.5		90	86	9.5	6.6	3	35.3	226000	39600
1460-75	75	72		4.15		4.5	1.5	4		70.5		95.4	91.4	9.7	7	3	39.3	243000	424000
1460-80	80	76.5		4.15		5.3	1.75	4	+0.00 -0.10	74.5		100.6	96.1	9.8	7.4	3	43.7	259000	52800
1460-85	85	81.5		4.15		5.3	1.75	4		79.5		106	101.5	10	7.8	3.5	48.5	275000	56100
1460-90	90	86.5		4.15		5.3	1.75	4		84.5	+0.54 -1.30	111.4	106.9	10.2	8.2	3.5	59.4	291000	59400
1460-95	95	91.5		4.15		5.3	1.75	4		89.5		116.6	112.1	10.3	8.6	3.5	61.2	307000	62700
1460-100	100	96.5		4.15		5.3	1.75	4		94.5		122	117.5	10.5	9	3.5	71.6	324000	66000

Key Steel

Zinc Plated and Stainless Steel

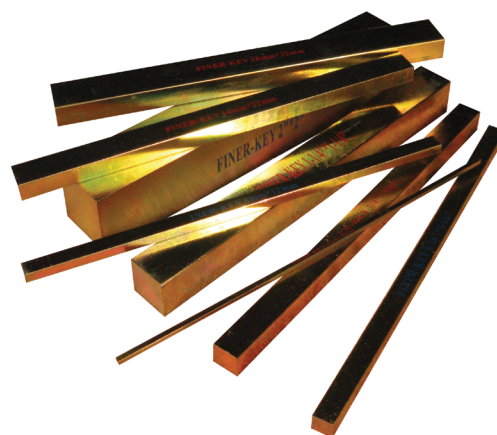
Finer Power Transmissions carries a wide range of Key Steel in both Metric and Imperial Sizes. Individual pieces are clearly marked for quick identification. Specifically manufactured from steel designed for keyways, it can be used in situations where a shaft has a keyed drive running of it. Finer stocks both Zinc Coated and Stainless Steel Key Steel.

IMPERIAL (Zinc Coated)

Size	To Suit Shafts Between		App. kg
	Min	Max	
1/8 x 1/8	1/4	1/2	0.02
1/8 x 1/4	-	-	0.05
1/8 x 3/16	-	-	0.04
5/32 x 5/32	-	-	0.04
3/16 x 3/16	1/2	3/4	0.05
3/16 x 1/4	-	-	0.07
1/4 x 1/4	3/4	1	0.1
1/4 x 5/16	-	-	0.12
1/4 x 1/2	-	-	0.19
1/4 x 3/8	1 1/4	1 1/2	0.14
5/16 x 5/16	1	1 1/4	0.15
5/16 x 3/8	-	-	0.18
5/16 x 7/16	1 1/2	1 3/4	0.21
5/16 x 1/2	1 3/4	2	0.24
3/8 x 3/8	1 1/4	1 1/2	0.22
3/8 x 1/2	-	-	0.29
3/8 x 7/16	-	-	0.3
7/16 x 7/16	1 1/2	1 3/4	0.3
7/16 x 1/2	-	-	0.34
7/16 x 5/8	2	2 1/2	0.42
1/2 x 1/2	1 3/4	2	0.39
1/2 x 5/8	-	-	0.48
1/2 x 3/4	-	-	0.58
9/16 x 5/8	-	-	0.55
9/16 x 9/16	2	2 1/4	0.49
5/8 x 5/8	2	2 1/2	0.6
5/8 x 3/4	2 1/2	3	0.72
5/8 x 7/8	3	3 1/2	0.84
3/4 x 3/4	2 1/2	3	0.87
3/4 x 1	3 1/2	4	1.16
7/8 x 7/8	3	3 1/2	1.18
7/8 x 1 1/4	4	5	1.69
1 x 1	-	-	1
1 1/8 x 1 1/8	4	4 1/2	1.95
1 x 1 1/2	5	6	2.32
1 1/4 x 1 1/4	4	5	2.41
1 1/2 x 1 1/2	5	6	3.47
1 3/4 x 1 3/4	6 1/2	7	4.73
2 x 2	-	-	6.17

METRIC (Zinc Coated)

Size	To Suit Shafts Between		App. kg
	Min	Max	
3 x 3mm	-	-	0.03
4 x 4mm	10	12	0.04
5 x 5mm	12	17	0.06
6 x 6mm	17	22	0.08
6 x 8mm	-	-	0.12
6 x 10mm	-	-	0.14
7 x 7mm	-	-	0.13
7 x 8mm	22	30	0.13
8 x 8mm	-	-	0.15
8 x 10mm	30	38	0.19
8 x 12mm	38	44	0.23
9 x 14mm	44	50	0.3
10 x 10mm	-	-	0.24
10 x 12mm	-	-	0.28
10 x 16mm	50	58	0.38
11 x 18mm	58	65	0.47
12 x 12mm	-	-	0.34
12 x 20mm	65	75	0.57
14 x 14mm	-	-	0.46
14 x 22mm	75	85	0.73
14 x 25mm	85	95	0.82
16 x 16mm	-	-	0.6
16 x 28mm	95	110	1.06
18 x 18mm	-	-	0.76
18 x 32mm	110	130	1.36
20 x 20mm	-	-	0.94
20 x 36mm	130	150	1.7
22 x 22mm	-	-	1.14
22 x 40mm	150	170	2.07
25 x 25mm	-	-	1.5



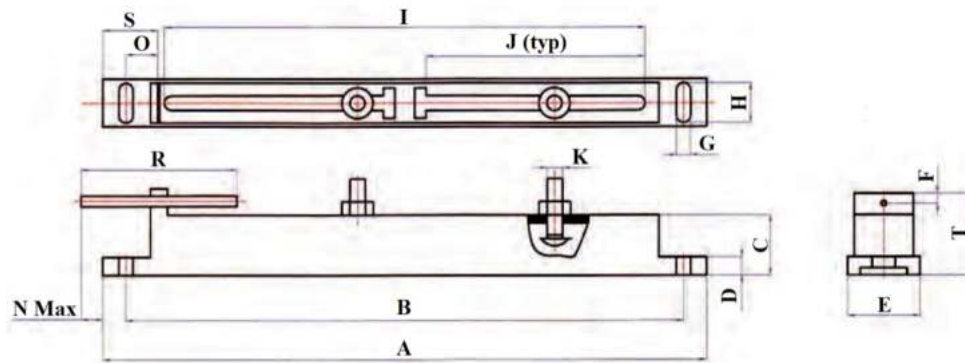
IMPERIAL STAINLESS

Size	To Suit Shafts Between		App. kg
	Min	Max	
1/8x1/8SS	1/4	1/2	0.03
3/16x3/16SS	1/2	3/4	0.05
1/4x1/4SS	3/4	1	0.10
5/16x5/16SS	1	1 1/4	0.15
3/8x3/8SS	1 1/4	1 1/2	0.22
7/16x7/16SS	1 1/2	1 3/4	0.30
1/2x1/2SS	1 3/4	2	0.39
9/16x9/16SS	2	2 1/4	0.49
5/8x5/8SS	2	2 1/2	0.60
3/4x3/4SS	2 1/2	3	0.87
7/8x7/8SS	3	3 1/2	1.19
1x1SS	-	-	1.55

METRIC STAINLESS

Size	To Suit Shafts Between		App. kg
	Min	Max	
3 x 3MMSS	-	-	0.02
4 x 4MMSS	10	12	0.04
5 x 5MMSS	12	17	0.06
6 x 6MMSS	17	22	0.08
7 x 8MMSS	22	30	0.12
8 x 8MMSS	-	-	0.15
8 x 10MMSS	30	38	0.19
8 x 12MMSS	38	44	0.23
9 x 14MMSS	44	50	0.30
10 x 10MMSS	-	-	0.24
10 x 16MMSS	50	58	0.38
11 x 18MMSS	58	65	0.48
12x12MMSS	-	-	0.35
12x20MMSS	65	75	0.58
14x14MMSS	-	-	0.47
16 x16MMSS	-	-	0.61
20 x 20MMSS	-	-	0.96

NB. All stock in 12in length



Frame Size	MR08090	MR100132	MR160180	MR220225	MR250280	MR315355
A	380	475	567	790	945	1220
B	328	425	515	780	870	1115
C	30	37	48	60	70	125
D	15	19	19	32	38	40
E	48	70	72	92	105	122
F	10	10	11	18	16	22
G	15	14	18	20	21	30
H	25	35	35	20	21	30
I	245	340	380	610	725	920
J	95	150	162	285	305	420
K	8	10	12	16	20	24
M	75	135	115	200	240	285
N	25	26	28	30	35	50
O	40	42	57	60	70	105
R	145	200	200	290	380	450
S	65	68	85	90	105	155
T	50	62	70	92	110	170
Weight KGS	3	8.5	10	22	40	105

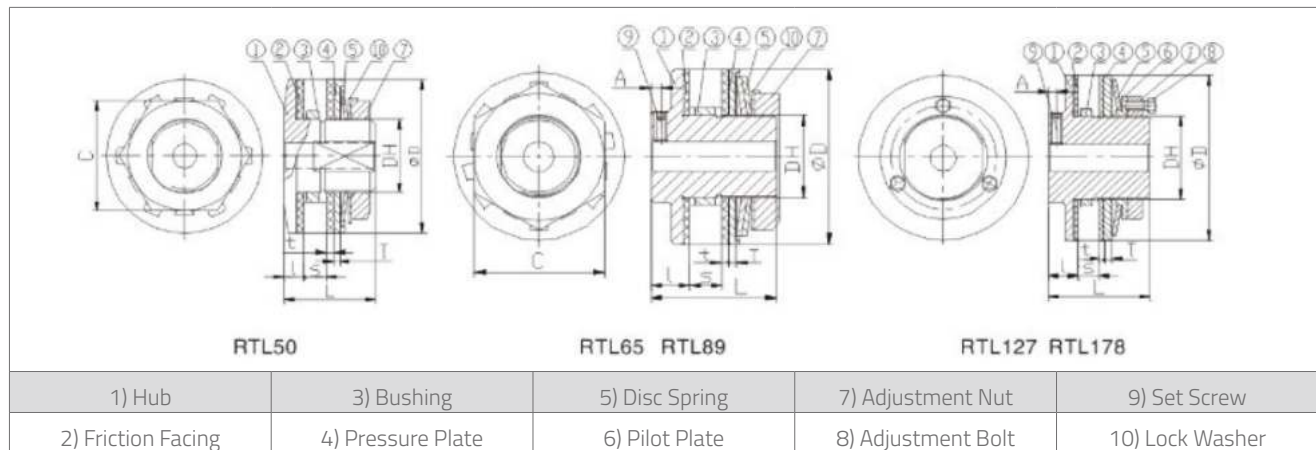


The Finer Torque Limiter has been designed to protect drive systems from unnecessary overload. When too much torque is transmitted through a drive, the Torque Limiter automatically slips on its shaft when a predetermined torque level is reached.

This device is suitable in situations where there is excessive and unpredictable shock loads, overloads or machine jams. When the problem in the system is overcome or removed, the Torque Limiter automatically re-engages, unlike other devices such as those with shear pin mechanisms, which have to be manually reset.

Torque Limiters not only prevent damage to drive systems but also eliminates unnecessary downtime due to system resets.

The Torque Limiter utilizes spring loaded friction surfaces, the slip torque is preset by the adjustment of the spring force which is as simple tightening or loosening the appropriate nut or bolt.



Size	Torque Range (kgf~m)	Plain Bore	Max Bore	Bush Length	OD of Bush		Bore for Centre Member		D	DH	L	I	T	t	S (Max)	A	C	Adjust. Nut	Adjust. Bolt	Set Screw	(kg)
RTL50-1	0.3 ~ 1.0	8	14	3.8 6	30	-0.020 -0.041	30	+0.033 0	50	24	29	6.5	1.6	2.5	7	-	36	M24 P1.0	-	-	0.248
RTL50-2	0.7 ~ 2.0			0.256																	
RTL65-1	0.7 ~ 2.8	10	22	6 8	41	-0.025 -0.050	41	+0.039 0	65	35	48	16	4	3.2	9	4	50	M35 P1.5	-	M5	0.721
RTL65-2	1.4 ~ 5.5			0.739																	
RTL89-1	2.0 ~ 7.6	17	25	6 8 9.5 14.5	49	-0.025 -0.050	49	+0.039 0	89	42	62	19	4	3.2	16	5	65	M42 P1.5	-	M6	2.417
RTL89-2	3.5 ~ 15.2			2.477																	
RTL127-1	4.8 ~ 21.4	20	42	6 8 9.5 14.5	74	-0.030 -0.060	74	+0.046 0	127	65	76	22	6	3.2	16	6	-	M65 P1.5	M8 P1.0 3pcs	M8	3.692
RTL127-2	9.0 ~ 42.9			3.858																	
RTL178-1	11.8 ~ 58.1	30	64	8 9.5 14.5 17 22	105	-0.036 -0.071	105	+0.054 0	178	95	98	24	7	3.2	29	6.5	-	M95 P1.5	M10 P1.25 3pcs	M10	9.033
RTL178-2	22.8 ~ 111			9.436																	

Selection

Determine the required slip torque from the loading conditions or from the design strength of the machine. If the loading conditions of the machine are unknown, set the required slip torque of the torque limiter to 1.5~2 times the torque that the motor produces on the shaft where the torque limiter is mounted.

Select a Torque Limiter that has enough torque range and bore range.

Determine the proper bushing length from the thickness of the centre member to be inserted between the friction facings. Always choose the largest bushing which does not exceed the width of the centre member, shown as S Max in the dimension table.

Torque Limiters

Centre Member

The centre member should be machined on its rubbing surface to obtain the rated torque and be flat, parallel and square with the bore and free from rust, scale and oil. Surface finish recommended is Ra1.6. If the centre member is not in accordance with these specifications, the slip torque will be erratic.

The Max. Bore of the centre member is listed below. Also shown is the Min. number of sprocket teeth to be used and the bushing length.

Size	Bore of Centre Member (mm)	9.525-06B		12.7-08B		15.875-10B		19.05-12B		25.4-16B		31.75-20B		38.1-24B	
		Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)	Spr. Min. Teeth	Bush Length (mm)
RTL50	30	20	3.8	16	6	-	-	-	-	-	-	-	-	-	-
RTL65	41	-	-	20	6	17	8	-	-	-	-	-	-	-	-
RTL89	49	-	-	26	6	21	8	18	9.5	15	14.5	-	-	-	-
RTL127	74	-	-	35	6	29	8	25	9.5	19	14.5	-	-	-	-
RTL178	105	-	-	-	-	39	8	33	9.5	26	14.5	21	17	18	22

Torque Settings

The torque setting of the Torque Limiter is manipulated by tightening or loosening the adjustment nut and/or the adjustment bolts. RTL 50 – RTL 89 use an adjustment nut, RTL 127 – RTL 178 use adjustment bolts.

The torque setting is adjusted after the Torque Limiter is mounted on the shaft, once the Torque Limiter is mounted:

RTL 50 – RTL 89

First, rotate the adjustment nut tightly by hand so that the disk spring fits the plate. Then tentatively tighten the nut by about 60 degrees with a wrench.

RTL 127 – RTL 178

First, rotate the nut for fixing the disk spring to the plate, and then tighten each adjustment bolt by about 60 degrees. Then, if the Torque Limiter slips under normal loading conditions, tighten the bolts gradually until the Torque Limiter stops slipping. Always tighten or loosen the bolts evenly. You may have to make several adjustments to find the appropriate setting for the machine. For your guidance the below chart shows the relation between the effective rotated angle and preset torque.

For precise torque setting, run-in of the Torque Limiter is recommended, eg: 500 revolution at 50~60rpm with a rotated angle of 45 degrees of the adjustment bolts.

