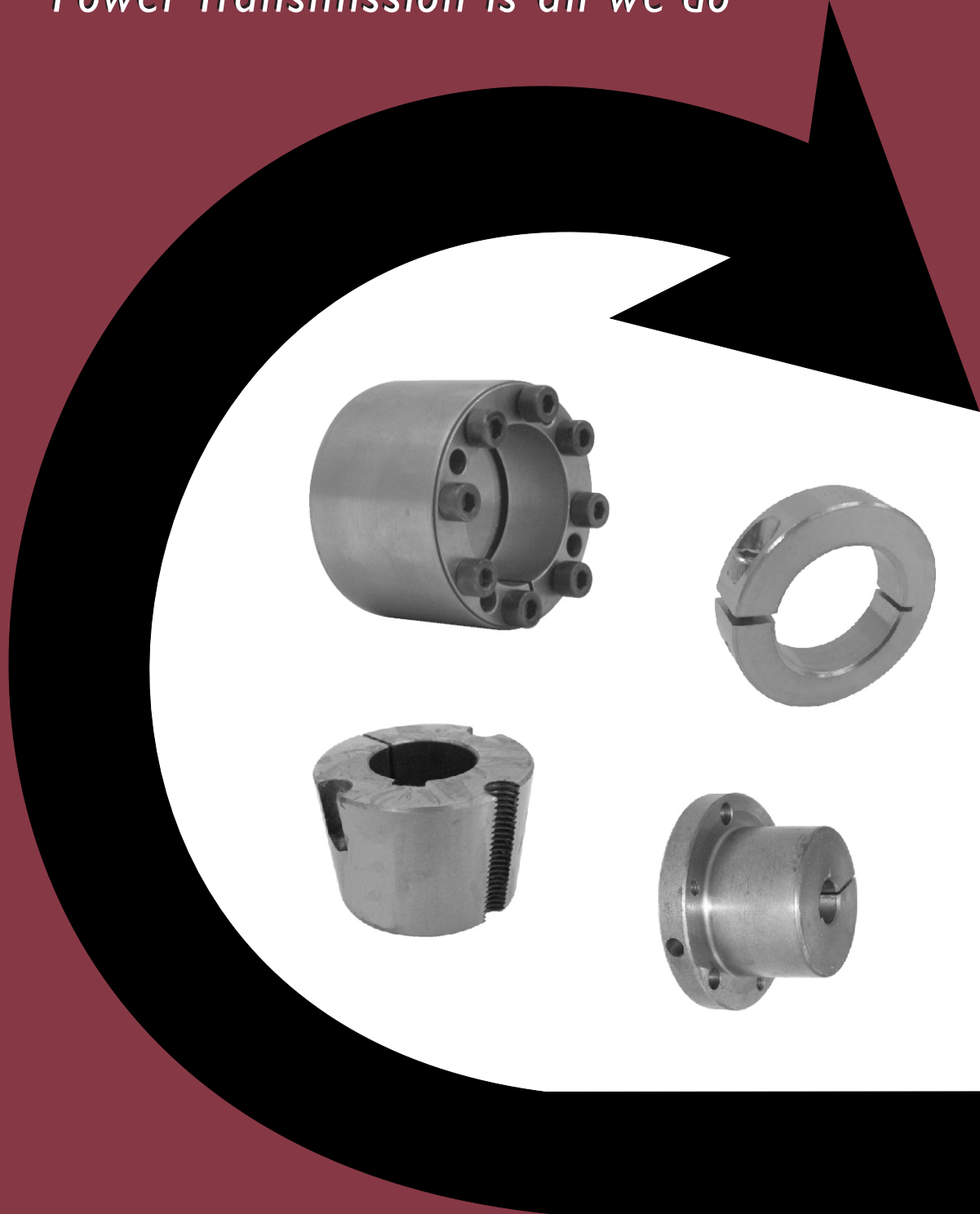




Power Transmission is all we do



**LOCKING BUSHES &
SHAFT COLLARS**

INDEX

TAPER BUSHES Page 3

WELD-ON HUBS Page 4

QD BUSHES Page 5

MECHANICAL LOCKING BUSHES

CAL1 (Not Self-Centering)	Page 6
CAL2 (Not Self-Centering)	Page 7
CAL3 (Self-Centering)	Page 8
CAL4 (Self-Centering)	Page 9
CAL5A (Self-Centering)	Page 10
CAL5B (Self-Centering)	Page 11
CAL6 (Self-Centering)	Page 12
CAL7 (Self-Centering)	Page 13
CAL8 (Self-Centering)	Page 14
CAL9 (Not Self-Centering)	Page 15
CAL10 (Rigid Coupling)	Page 16
CAL11S (Shrink Disc)	Page 17
CAL12S (Self-Centering)	Page 18
CAL13S (Self-Centering)	Page 19
CAL15 (Self-Centering)	Page 20

LOCKING BUSH CONVERSION CHART Page 21

RULAND SHAFT COLLARS

One Piece Solid (Set Screw Type)	Page 22 - 23
One Piece Split (Clamp Type)	Page 24 - 25
Two Piece Split (Clamp Type)	Page 26 - 27
Quick Clamping One Piece Split	Page 28 - 29
Double Wide One Piece Split (Clamp Type)	Page 30
Double Wide Two Piece Split (Clamp Type)	Page 31
Threaded One Piece Split (Clamp Type)	Page 32 - 33
Threaded Two Piece Split (Clamp Type)	Page 34



Taper Bushes

Taper bushes are designed to give the following:-

1. Easy assembly.
2. Rapid dismantling of the pulley and other transmission equipment.
3. No special tool requirement except hexagonal allen key.

A large range of bores are available off the shelf which ensures that an immediate assembly can be made, thus avoiding costly factory down-time.

The bushes are machined with standard keyways. This, in addition to clamping screws is sufficient to meet the required torque.

Part No.	Stock Bore Sizes	OD	L
1008	mm 12, 14, 15, 16, 18, 19, 20, 22, 24, 25 inch 1/2", 5/8", 3/4", 7/8", 1"	35.0	22.2
1108	mm 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28 inch 1/2", 5/8", 3/4", 7/8", 15/16", 1", 1 1/16", 1 1/8"	38.0	22.2
1210	mm 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32 inch 1/2", 5/8", 11/16", 3/4", 13/16", 7/8", 1", 1 1/16", 1 1/8", 1 3/16", 1 1/4"	47.5	25.4
1215	mm 12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32 inch 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1 1/16", 1 1/8", 1 3/16", 1 1/4"	47.5	38.1
1610	mm 12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42 inch 1/2", 5/8", 3/4", 13/16", 7/8", 1", 1 1/8", 1 1/4", 1 5/16", 1 3/8", 1 1/2", 1 5/8"	57.0	25.4
1615	mm 12, 14, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42 inch 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 5/16", 1", 1 1/8", 1 3/16", 1 1/4" 1 5/16", 1 3/8", 1 1/2", 1 5/8"	57.0	38.1
2012	mm 16, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50 inch 3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2"	70.0	31.8
2017	mm 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50 inch 3/4", 13/16", 7/8", 15/16", 1", 1 1/16", 1 1/8", 1 5/16", 1 3/8"	70.0	44.4
2517	mm 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60 inch 3/4", 7/8", 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2"	85.5	44.5
2525	mm 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60 inch 3/4", 7/8", 1", 1 1/8", 1 3/16", 1 3/8", 1 5/8"	85.6	63.5
3020	mm 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75 inch 1", 1 1/8", 1 1/4", 1 3/8", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2", 2 5/8", 2 3/4", 2 7/8", 3"	108.0	50.8
3030	mm 32, 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75 inch 1 1/4", 1 3/8", 1 7/16", 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2", 2 5/8", 2 3/4", 2 7/8", 3"	108.0	76.2
3525	mm 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90	127.0	63.5
3535	mm 35, 38, 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90 inch 1 1/2", 1 5/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 3/8", 2 1/2", 2 5/8", 2 3/4", 2 7/8", 3", 3 1/8", 3 1/4", 3 3/8", 3 1/2"	127.0	88.9
4030	mm 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100	146.0	76.2
4040	mm 40, 42, 45, 48, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100 inch 1 3/8", 1 3/4", 1 7/8", 2", 2 1/8", 2 1/4", 2 1/2", 2 5/8", 2 3/4", 3", 3 1/4", 3 1/2", 3 3/4", 4"	146.0	101.6
4535	mm 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110	162.0	88.9
4545	mm 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110 inch 3", 3 1/8", 3 1/4", 3 3/8", 3 1/2", 3 3/4", 4", 4 1/4", 4 1/2"	162.0	114.3
5040	mm 70, 95, 100, 110, 115, 120, 125	177.5	101.6
5050	mm 70, 95, 100, 110, 115, 120, 125	177.5	127.0

The first 2 digits of the part number are the maximum bore size in inches.

The second 2 digits of the part number are the length through bore in inches.



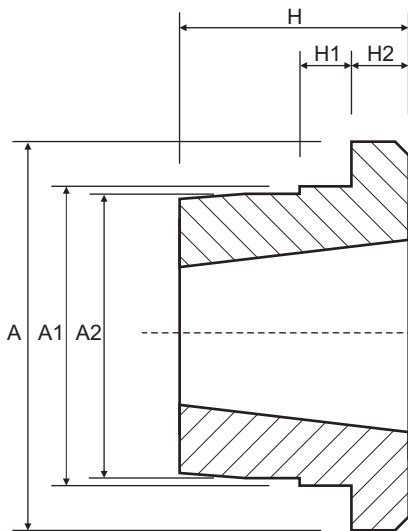
Weld-On Hubs

Weld-On Hubs are made of steel, drilled, tapped and taper bored to receive Tapered Bushings. They are very useful for welding into pulleys, plate sprockets, impellers, agitators and many other devices which must be firmly fastened to the shaft.

Part No.	Bush	A	A1	A2	H	H1	H2
Long Bush Design							
W12	1215	73.0	63.5	62.7	38.1	9.5	15.9
W16	1615	82.6	73.0	72.2	38.1	9.5	15.9
W20	2017	101.6	80.9	88.1	44.5	14.4	19.1
W25	2517	127.0	111.1	110.3	44.5	12.7	19.1
W30	3030	149.9	133.4	132.6	76.2	19.1	25.4
W35	3535	184.2	158.8	158.0	88.9	25.4	31.8
W40	4040	225.4	196.9	196.1	101.6	31.8	31.8
W45	4545	254.0	222.3	221.5	114.3	38.1	38.1

Short Bush Design

WH12	1210	70.0	65.0	64.5	25.0	10.0	9.0
WH16	1610	80.0	75.0	74.5	25.0	10.0	9.0
WH20	2012	95.0	90.0	89.5	32.0	12.0	12.0
WH25	2517	115.0	110.0	109.5	44.0	15.0	19.0
WH30	3020	145.0	140.0	139.5	50.0	15.0	20.0
WH35	3525	190.0	180.0	179.5	65.0	25.0	25.0
WH40	4040	200.0	190.0	189.5	101.0	30.0	32.0
WH45	4545	210.0	200.0	190.5	114.0	30.0	40.0
WH50	5050	230.0	220.0	219.5	127.0	35.0	40.0



All dimensions in mm unless otherwise stated



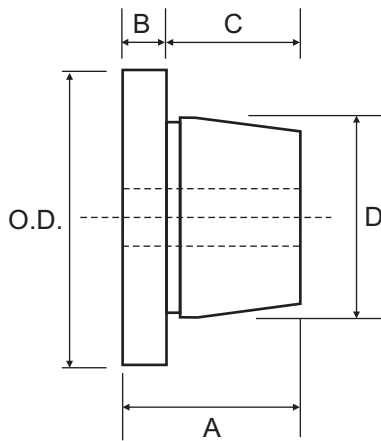
QD Bushes

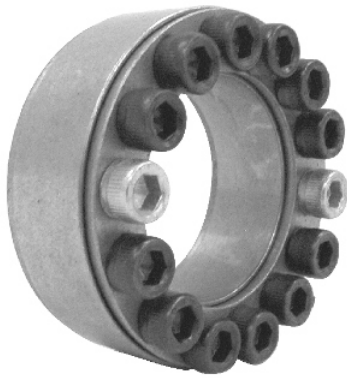
The taper-bored "QD" item easily fits over the tapered bush and tightening of the cap screws produces a tight fit on the shaft. The bush is easily removed from the hub by using the pull-up bolts as jack screws. Sizes available include QH, JA, SH, SDS, SD, SK, SF, E, F, J, M, N. All bushes are available in pilot bore, and can be re bored to suit the shaft requirements.

All bushes "JA" through "N" are drilled for Reverse Mounting.

Part No.	Max Bore	O.D.	A	B	C	D	No. Bolts	P.C.D
JA	25	50.8	26.9	9.5	17.4	34.9	3	42.2
QH	32	63.5	31.7	7.9	25.4	41.2	2	50.8
SH	35	68.3	33.3	11.1	22.2	47.5	3	57.2
SDS	42	80.9	34.9	12.7	22.2	55.5	3	68.3
SD	42	80.9	46.1	12.7	33.3	55.5	3	68.3
SK	55	98.4	49.2	14.2	34.9	71.4	3	84.1
SF	60	117.4	52.3	14.2	38.1	79.4	3	98.4
E	75	152.4	66.6	19.1	47.6	97.4	3	127.0
F	90	168.2	92.1	20.6	71.4	112.6	3	142.9
J	100	184.2	114.3	25.4	88.9	130.8	3	158.8
M	120	228.6	171.5	31.8	139.7	165.1	4	200.0
N	130	254.0	206.4	38.1	168.3	177.8	4	215.9

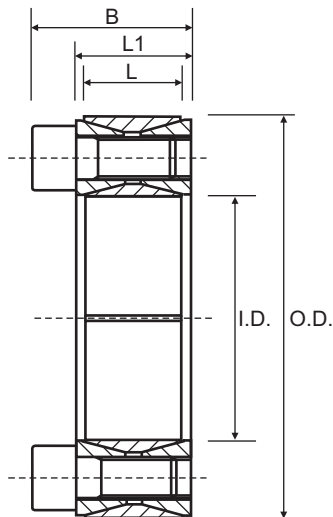
All dimensions in mm unless otherwise stated





Characteristics

Medium-high torque
Wide tolerances
Easy dismantling



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

When using more than one CAL1 unit, the total transmittable torque is as follows:

1 unit: Torque = Torque in table

2 unit: Torque = Torque in table X 1.9

3 unit: Torque = Torque in table X 2.7

For CAL1 use the following tolerances

h11 for the shaft

H11 for the hub

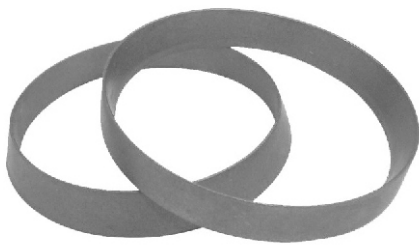
CAL1 (Not Self-Centering)

Cone clamping unit consists of four pieces with two inside double-cone rings joined through a set of tightening screws. It is recommended for medium to high torques and although it is not self-centering, it can be easily assembled and disassembled. Available for shaft diameters from 20 to 900 mm.

Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL1-20/47	20	47	17	20	26	288	29000
CAL1-22/47	22	47	17	20	26	317	29000
CAL1-24/50	24	50	17	20	26	345	29000
CAL1-25/50	25	50	17	20	26	360	29000
CAL1-28/55	28	55	17	20	26	498	36000
CAL1-30/55	30	55	17	20	26	533	36000
CAL1-32/60	32	60	17	20	26	676	42000
CAL1-35/60	35	60	17	20	26	739	42000
CAL1-38/65	38	65	17	20	26	928	49000
CAL1-40/65	40	65	17	20	26	977	49000
CAL1-42/75	42	75	20	24	32	1587	76000
CAL1-45/75	45	75	20	24	32	1701	76000
CAL1-48/80	48	80	20	24	32	1814	76000
CAL1-50/80	50	80	20	24	32	1889	76000
CAL1-55/85	55	85	20	24	32	2397	87000
CAL1-60/90	60	90	20	24	32	2615	87000
CAL1-65/95	65	95	20	24	32	3204	99000
CAL1-70/110	70	110	24	28	38	4589	131000
CAL1-75/115	75	115	24	28	38	4917	131000
CAL1-80/120	80	120	24	28	38	5245	131000
CAL1-85/125	85	125	24	28	38	6290	148000
CAL1-90/130	90	130	24	28	38	6600	148000
CAL1-95/135	95	135	24	28	38	7819	165000
CAL1-100/145	100	145	26	33	45	9703	194000
CAL1-110/155	110	155	26	33	45	10673	194000
CAL1-120/165	120	165	26	33	45	13262	221000
CAL1-130/180	130	180	34	38	50	17850	275000
CAL1-140/190	140	190	34	38	50	21089	301000
CAL1-150/200	150	200	34	38	50	24586	328000
CAL1-160/210	160	210	34	38	50	28343	354000
CAL1-170/225	170	225	38	44	58	33541	395000
CAL1-180/235	180	235	38	44	58	38636	429000
CAL1-190/250	190	250	46	52	66	47337	498000
CAL1-200/260	200	260	46	52	66	53261	533000
CAL1-220/285	220	285	50	56	72	68790	625000
CAL1-240/305	240	305	50	56	72	86127	718000
CAL1-260/325	260	325	50	56	72	105229	809000
CAL1-280/355	280	355	60	66	84	128456	918000
CAL1-300/375	300	375	60	66	84	154066	1027000

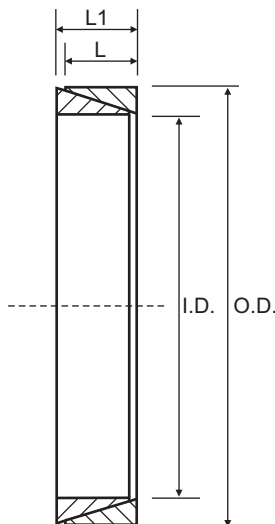
Sizes up to CAL1-900/1010 available on request

All dimensions in mm unless otherwise stated



Characteristics

Medium low torque
Restricted radial encumbrance
Quick installation
Economical



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

When using more than one CAL2 unit, the total transmittable torque is as follows:

- 1 unit: Torque = Torque in table
- 2 unit: Torque = Torque in table X 1.55
- 3 unit: Torque = Torque in table X 1.85
- 4 unit: Torque = Torque in table X 2.02

For CAL2 use the following tolerances

h6 for the shaft - H7 for the hub
(up to 40mm I.D.)
h8 for the shaft - H8 for the hub
(over 42mm I.D.)

CAL2 (Not Self-Centering)

Consists of two cone rings and must be equipped with a fastening flange, usually manufactured by the customer. The number of locking screws depends on the torque to be transmitted. It is not self-centering. CAL2 requires very small axial installation dimensions. Up to 4 units can be arranged behind each other, allowing high torques to be transmitted. Available for shaft diameters from 6 - 320 mm.

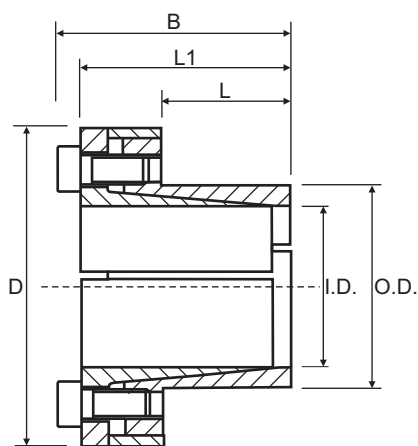
Part No.	I.D.	O.D.	L	L1	Torque Nm	Axial Force N
CAL2-6/9	6	9	3.7	4.5	3	900
CAL2-7/10	7	10	3.7	4.5	4	1100
CAL2-8/11	8	11	3.7	4.5	5	1300
CAL2-9/12	9	12	3.7	4.5	7	1600
CAL2-10/13	10	13	3.7	4.5	10	2000
CAL2-12/15	12	15	3.7	4.5	12	2000
CAL2-13/16	13	16	3.7	4.5	14	2100
CAL2-14/18	14	18	5.3	6.3	23	3300
CAL2-15/19	15	19	5.3	6.3	27	3600
CAL2-16/20	16	20	5.3	6.3	30	3800
CAL2-17/21	17	21	5.3	6.3	33	3900
CAL2-18/22	18	22	5.3	6.3	48	5300
CAL2-19/24	19	24	5.3	6.3	43	4600
CAL2-20/25	20	25	5.3	6.3	47	4700
CAL2-22/26	22	26	5.3	6.3	61	5600
CAL2-24/28	24	28	5.3	6.3	68	6130
CAL2-25/30	25	30	5.3	6.3	75	6000
CAL2-28/32	28	32	5.3	6.3	101	7200
CAL2-30/35	30	35	5.3	6.3	105	7000
CAL2-32/36	32	36	5.3	6.3	128	8000
CAL2-35/40	35	40	6.0	7.0	171	9800
CAL2-36/42	36	42	6.0	7.0	181	10100
CAL2-38/44	38	44	6.0	7.0	207	10900
CAL2-40/45	40	45	6.6	8.0	249	12500
CAL2-42/48	42	48	6.6	8.0	278	13200
CAL2-45/52	45	52	8.6	10.0	409	18200
CAL2-48/55	48	55	8.6	10.0	455	19000
CAL2-50/57	50	57	8.6	10.0	480	19200
CAL2-55/62	55	62	8.6	10.0	601	21800
CAL2-56/64	56	64	10.4	12.0	750	26800
CAL2-60/68	60	68	10.4	12.0	883	29400
CAL2-63/71	63	71	10.4	12.0	1005	31900
CAL2-65/73	65	73	10.4	12.0	1044	32100
CAL2-70/79	70	79	12.2	14.0	1392	39800
CAL2-71/80	71	80	12.2	14.0	1491	42000
CAL2-75/84	75	84	12.2	14.0	1628	43400
CAL2-80/91	80	91	15.0	17.0	2240	56000
CAL2-85/96	85	96	15.0	17.0	2593	61000
CAL2-90/101	90	101	15.0	17.0	2864	63600
CAL2-95/106	95	106	15.0	17.0	3153	66400
CAL2-100/114	100	114	18.7	21.0	4433	88700
CAL2-110/124	110	124	18.7	21.0	4999	90900
CAL2-120/134	120	134	18.7	21.0	5529	92200
CAL2-130/148	130	148	25.3	28.0	8720	134000
CAL2-140/158	140	158	25.3	28.0	10127	145000
CAL2-150/168	150	168	25.3	28.0	11750	157000

Sizes up to CAL2-320/360 available on request.
All dimensions in mm unless otherwise stated



Characteristics

Medium-high torque
Restricted hub diameter
Quick installation
Very low surface pressure



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL3 use the following tolerances

h8 for the shaft
H8 for the hub

CAL3 (Self-Centering)

Consists of two conical pieces and a spacer. It has minimum overall dimensions in virtue of the reduced thickness of the cones; so, CAL3 is suitable for the applications where small hubs are used. It is recommended for medium to high torques and is self-centering. CAL3 guarantees a very precise axial positioning, as no axial displacement of the hub occurs during the assembly operation. Available for shaft diameters from 6 to 130 mm.

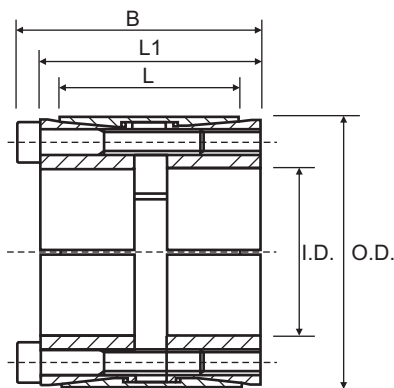
Part No.	I.D.	O.D.	L	L1	B	D	Torque Nm	Axial Force N
CAL3--6/14	6	14	10	21	24	25	12	4000
CAL3--7/15	7	15	12	25	29	27	26	7000
CAL3--8/15	8	15	12	25	29	27	30	7000
CAL3--9/16	9	16	14	26	30	28	44	10000
CAL3--10/16	10	16	14	26	30	28	49	10000
CAL3--11/18	11	18	14	26	30	32	54	10000
CAL3--12/18	12	18	14	26	30	32	59	10000
CAL3--13/23	13	23	14	26	30	38	64	10000
CAL3--14/23	14	23	14	26	30	38	69	10000
CAL3--15/24	15	24	16	36	42	45	128	17000
CAL3--16/24	16	24	16	36	42	45	136	17000
CAL3--17/26	17	26	18	38	44	47	193	23000
CAL3--18/26	18	26	18	38	44	47	205	23000
CAL3--19/27	19	27	18	38	44	49	216	23000
CAL3--20/28	20	28	18	38	44	50	227	23000
CAL3--22/32	22	32	25	45	51	54	250	23000
CAL3--24/34	24	34	25	45	51	56	273	23000
CAL3--25/34	25	34	25	45	51	56	284	23000
CAL3--28/39	28	39	25	45	51	61	478	34000
CAL3--30/41	30	41	25	45	51	62	512	34000
CAL3--32/43	32	43	25	45	51	65	546	34000
CAL3--35/47	35	47	32	52	58	69	796	45000
CAL3--38/50	38	50	32	52	58	72	864	45000
CAL3--40/53	40	53	32	52	58	75	910	45000
CAL3--42/55	42	55	32	52	58	78	955	45000
CAL3--45/59	45	59	45	70	78	86	1891	84000
CAL3--48/62	48	62	45	70	78	87	2017	84000
CAL3--50/65	50	65	45	70	78	92	2101	84000
CAL3--55/71	55	71	55	80	88	98	2600	95000
CAL3--60/77	60	77	55	80	88	104	2836	95000
CAL3--65/84	65	84	55	80	88	111	3073	95000
CAL3--70/90	70	90	65	96	106	119	5254	150000
CAL3--75/95	75	95	65	96	106	126	5630	150000
CAL3--80/100	80	100	65	96	106	131	8006	200000
CAL3--85/106	85	106	65	96	106	137	8507	200000
CAL3--90/112	90	112	65	96	106	144	9007	200000
CAL3--95/120	95	120	65	96	106	149	11092	234000
CAL3--100/125	100	125	65	96	106	154	15012	300000
CAL3--110/140	110	140	90	128	140	180	16029	291000
CAL3--120/155	120	155	90	128	140	198	17486	291000
CAL3--130/165	130	165	90	128	140	208	25257	389000

All dimensions in mm unless otherwise stated



Characteristics

Very high torques
Capacity to withstand bending moments
Standard sizes



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL4 use the following tolerances:

h8 for the shaft
H8 for the hub

CAL4 (Self-Centering)

Consists of one biconic ring and two truncated cone rings. It is suitable for very high torques and is self-centering. Ideal for conveyors and many other machine applications. Available for shaft diameter from 25 to 400 mm.

Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL4-25/50	25	50	41	45	51	830	66000
CAL4-28/55	28	55	41	45	51	1239	89000
CAL4-30/55	30	55	41	45	51	1328	89000
CAL4-35/60	35	60	41	45	51	1549	89000
CAL4-38/65	38	65	41	45	51	1682	89000
CAL4-40/65	40	65	41	45	51	2213	111000
CAL4-42/75	42	75	41	45	53	3435	164000
CAL4-45/75	45	75	41	45	53	3680	164000
CAL4-48/80	48	80	58	62	70	3926	164000
CAL4-50/80	50	80	58	62	70	4089	164000
CAL4-55/85	55	85	58	62	70	4498	164000
CAL4-60/90	60	90	58	62	70	6134	204000
CAL4-65/95	65	95	58	62	70	6645	204000
CAL4-70/110	70	110	70	76	86	11363	325000
CAL4-75/115	75	115	70	76	86	12174	325000
CAL4-80/120	80	120	70	76	86	15583	390000
CAL4-85/125	85	125	70	76	86	16557	390000
CAL4-90/130	90	130	70	76	86	17531	390000
CAL4-95/135	95	135	70	76	86	18505	390000
CAL4-100/145	100	145	92	98	110	28361	567000
CAL4-110/155	110	155	92	98	110	31197	567000
CAL4-120/165	120	165	92	98	110	39706	662000
CAL4-130/180	130	180	108	114	128	50589	778000
CAL4-140/190	140	190	108	114	128	63560	908000
CAL4-150/200	150	200	108	114	128	77829	1038000
CAL4-160/210	160	210	108	114	128	83017	1038000
CAL4-170/225	170	225	136	146	162	107267	1262000
CAL4-180/235	180	235	136	146	162	129802	1442000
CAL4-190/250	190	250	136	146	162	137014	1442000
CAL4-200/260	200	260	136	146	162	144225	1442000
CAL4-220/285	220	285	136	146	162	198309	1803000
CAL4-240/305	240	305	136	146	162	237971	1983000
CAL4-260/325	260	325	136	146	162	257802	1983000
CAL4-280/355	280	355	138	148	168	393980	2814000
CAL4-300/375	300	375	165	177	197	464334	3096000

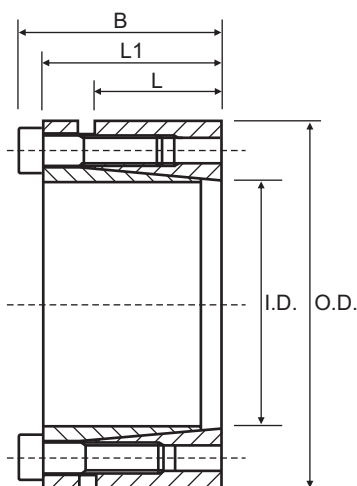
Sizes up to CAL4-400/495 available on request.

All dimensions in mm unless otherwise stated



Characteristics

High torque
Economical
Quick installation



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL5A use the following tolerances

h8 for the shaft

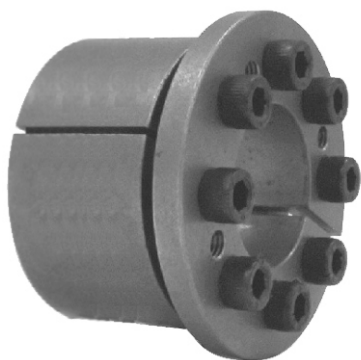
H8 for the hub

CAL5A (Self-Centering)

Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for high torques and is self-centering. Applications which require a very precise axial positioning are not recommended, owing to a small axial displacement of the hub during the assembly operation. Available for shaft diameters from 18 to 220 mm.

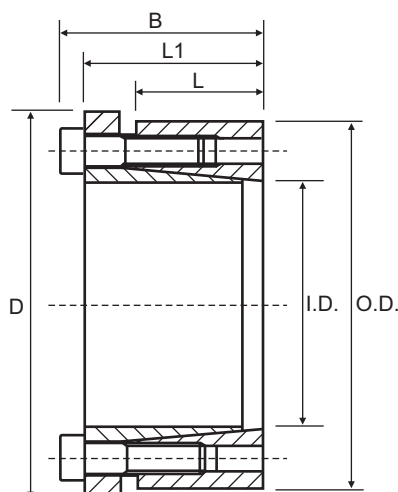
Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL5A-18/47*	18	47	26	41	47	490	54000
CAL5A-19/47*	19	47	26	43	49	510	54000
CAL5A-20/47	20	47	26	43	49	547	55000
CAL5A-22/47	22	47	26	43	49	602	55000
CAL5A-24/50	24	50	26	43	49	657	55000
CAL5A-25/50	25	50	26	43	49	684	55000
CAL5A-28/55	28	55	26	43	49	766	55000
CAL5A-30/55	30	55	26	43	49	821	55000
CAL5A-32/60	32	60	26	43	49	1313	82000
CAL5A-35/60	35	60	26	43	49	1436	82000
CAL5A-38/65	38	65	26	43	49	1559	82000
CAL5A-40/65	40	65	26	43	49	1641	82000
CAL5A-42/75	42	75	30	52	60	2123	101000
CAL5A-45/75	45	75	30	52	60	2275	101000
CAL5A-48/80	48	80	30	52	60	2426	101000
CAL5A-50/80	50	80	30	52	60	2527	101000
CAL5A-55/85	55	85	30	52	60	4170	152000
CAL5A-60/90	60	90	30	52	60	4549	152000
CAL5A-65/95	65	95	30	52	60	4928	152000
CAL5A-70/110	70	110	40	57	67	6555	187000
CAL5A-75/115	75	115	40	57	67	7023	187000
CAL5A-80/120	80	120	40	57	67	7491	187000
CAL5A-85/125	85	125	40	57	67	9096	214000
CAL5A-90/130	90	130	40	57	67	9631	214000
CAL5A-95/135	95	135	40	57	67	12708	268000
CAL5A-100/145	100	145	46	66	78	13634	273000
CAL5A-110/155	110	155	45	68	80	17931	326000
CAL5A-120/165	120	165	45	68	80	24452	408000
CAL5A-130/180	130	180	45	68	80	31787	489000
CAL5A-140/190	140	190	50	76	90	39141	559000
CAL5A-150/200	150	200	50	76	90	50325	671000
CAL5A-160/210	160	210	50	76	90	53680	671000
CAL5A-170/225	170	225	50	76	90	66540	783000
CAL5A-180/235	180	235	50	76	90	70455	783000
CAL5A-190/250*	190	250	50	76	90	76000	802000
CAL5A-200/260*	200	260	50	76	90	80000	802000
CAL5A-220/285*	220	285	64	90	106	98000	891000

* Discontinued size, Limited stock available.
All dimensions in mm unless otherwise stated



Characteristics

High torque
Economical
Quick installation



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL5B use the following tolerances:

h8 for the shaft
H8 for the hub

CAL5B (Self-Centering)

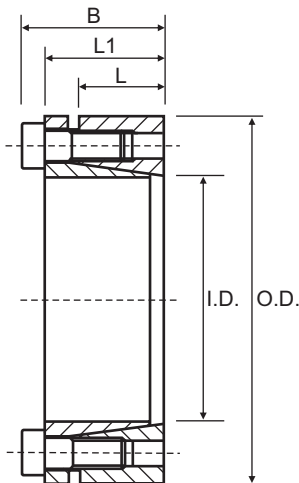
Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for high torques and is self-centering. Applications which require a very precise axial positioning are recommended, owing to no axial displacement of the hub during the assembly operation. Available for shaft diameters from 18 to 180 mm.

Part No.	I.D.	O.D.	L	L1	B	D	Torque Nm	Axial Force N
CAL5B--18/47*	18	47	26	41	47	53	300	34000
CAL5B--19/47*	19	47	26	41	47	53	320	34000
CAL5B--20/47	20	47	26	43	49	53	341	34000
CAL5B--22/47	22	47	26	43	49	53	375	34000
CAL5B--24/50	24	50	26	43	49	56	409	34000
CAL5B--25/50	25	50	26	43	49	56	426	34000
CAL5B--28/55	28	55	26	43	49	61	478	34000
CAL5B--30/55	30	55	26	43	49	61	512	34000
CAL5B--32/60	32	60	26	43	49	66	819	51000
CAL5B--35/60	35	60	26	43	49	66	895	51000
CAL5B--38/65	38	65	26	43	49	71	972	51000
CAL5B--40/65	40	65	26	43	49	71	1023	51000
CAL5B--42/75	42	75	30	52	60	81	1324	63000
CAL5B--45/75	45	75	30	52	60	81	1418	63000
CAL5B--48/80	48	80	30	52	60	86	1513	63000
CAL5B--50/80	50	80	30	52	60	86	1576	63000
CAL5B--55/85	55	85	30	52	60	91	2600	95000
CAL5B--60/90	60	90	30	52	60	96	2836	95000
CAL5B--65/95	65	95	30	52	60	102	3073	95000
CAL5B--70/110	70	110	40	57	67	117	4087	117000
CAL5B--75/115	75	115	40	57	67	122	4379	117000
CAL5B--80/120	80	120	40	57	67	127	4670	117000
CAL5B--85/125	85	125	40	57	67	132	5671	133000
CAL5B--90/130	90	130	40	57	67	137	6005	133000
CAL5B--95/135	95	135	40	57	67	142	7923	167000
CAL5B--100/145	100	145	46	66	78	153	8500	170000
CAL5B--110/155	110	155	46	68	80	165	10988	200000
CAL5B--120/165	120	165	46	68	80	175	14984	250000
CAL5B--130/180	130	180	46	68	80	188	19479	300000
CAL5B--140/190	140	190	51	76	90	199	23986	343000
CAL5B--150/200	150	200	51	76	90	209	30840	411000
CAL5B--160/210	160	210	51	76	90	219	32896	411000
CAL5B--170/225	170	225	51	76	90	234	40777	480000
CAL5B--180/235	180	235	51	76	90	244	43175	480000

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated



Characteristics
Medium-high torque
Economical
Quick installation



Torque = Maximum transmittable torque when axial force is zero.
Axial Force = Maximum axial force when transmittable torque is zero.

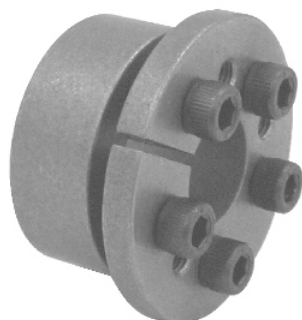
For CAL6 use the following tolerances
h8 for the shaft
H8 for the hub

CAL6 (Self-Centering)

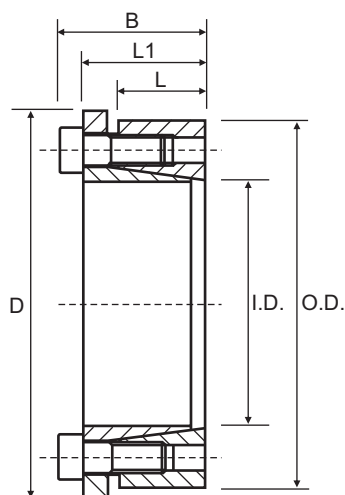
Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for medium to high torques and is self-centering. Applications which require a very precise axial positioning are not recommended, owing to a small axial displacement of the hub during the assembly operation. Available for shaft diameters from 18 to 200 mm.

Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL6-18/47*	18	47	17	28	34	330	38000
CAL6-19/47*	19	47	17	28	34	350	38000
CAL6-20/47	20	47	17	28	34	380	38000
CAL6-22/47	22	47	17	28	34	419	38000
CAL6-24/50	24	50	17	28	34	457	38000
CAL6-25/50	25	50	17	28	34	571	46000
CAL6-28/55	28	55	17	28	34	639	46000
CAL6-30/55	30	55	17	28	34	685	46000
CAL6-32/60	32	60	17	28	34	974	61000
CAL6-35/60	35	60	17	28	34	1065	61000
CAL6-38/65	38	65	17	28	34	1157	61000
CAL6-40/65	40	65	17	28	34	1218	61000
CAL6-42/75	42	75	20	34	42	2060	98000
CAL6-45/75	45	75	20	34	42	2207	98000
CAL6-48/80	48	80	20	34	42	2354	98000
CAL6-50/80	50	80	20	34	42	2452	98000
CAL6-55/85	55	85	20	34	42	3082	112000
CAL6-60/90	60	90	20	34	42	3363	112000
CAL6-65/95	65	95	20	34	42	4098	126000
CAL6-70/110	70	110	24	40	50	6240	178000
CAL6-75/115	75	115	24	40	50	6685	178000
CAL6-80/120	80	120	24	40	50	7131	178000
CAL6-85/125	85	125	24	40	50	8524	201000
CAL6-90/130	90	130	24	40	50	9025	201000
CAL6-95/135	95	135	24	40	50	10585	223000
CAL6-100/145	100	145	26	44	56	13045	261000
CAL6-110/155	110	155	26	44	56	14349	261000
CAL6-120/165	120	165	26	44	56	17610	294000
CAL6-130/180	130	180	34	54	66	25437	391000
CAL6-140/190	140	190	34	54	68	28155	402000
CAL6-150/200	150	200	34	54	68	33518	447000
CAL6-160/210	160	210	34	54	68	38327	492000
CAL6-170/225	170	225	44	64	78	45584	536000
CAL6-180/235	180	235	44	64	78	48265	536000
CAL6-190/250	190	250	44	64	78	63683	670000
CAL6-200/260	200	260	44	64	78	67035	670000

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated



Characteristics
Medium-high torque
Economical
Quick installation



Torque = Maximum transmittable torque when axial force is zero.
Axial Force = Maximum axial force when transmittable torque is zero.

For CAL7 use the following tolerances

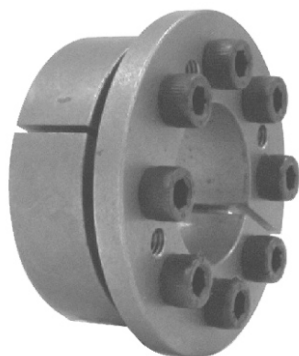
h8 for the shaft
H8 for the hub

CAL7 (Self-Centering)

Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for medium to high torques and is self-centering. Applications which require a very precise axial positioning are not recommended. Available for shaft diameters from 18 to 200 mm.

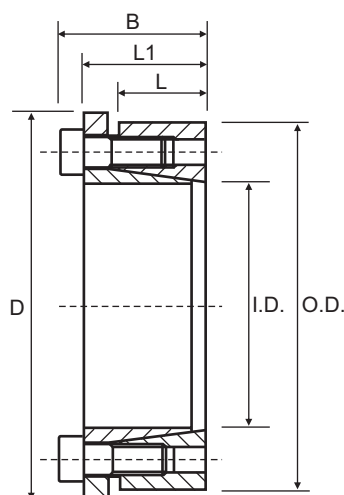
Part No.	I.D.	O.D.	L	L1	B	D	Torque Nm	Axial Force N
CAL7-18/47*	18	47	17	28	34	54	250	28000
CAL7-20/47	20	47	17	28	34	56	284	28000
CAL7-22/47	22	47	17	28	34	56	313	28000
CAL7-24/50	24	50	17	28	34	59	341	28000
CAL7-25/50	25	50	17	28	34	59	426	34000
CAL7-28/55	28	55	17	28	34	64	478	34000
CAL7-30/55	30	55	17	28	34	64	512	34000
CAL7-32/60	32	60	17	28	34	69	728	45000
CAL7-35/60	35	60	17	28	34	69	796	45000
CAL7-38/65	38	65	17	28	34	74	864	45000
CAL7-40/65	40	65	17	28	34	74	910	45000
CAL7-42/75	42	75	20	33	42	84	1544	74000
CAL7-45/75	45	75	20	33	42	84	1655	74000
CAL7-48/80	48	80	20	33	42	89	1765	74000
CAL7-50/80	50	80	20	33	42	89	1838	74000
CAL7-55/85	55	85	20	33	42	94	2311	84000
CAL7-60/90	60	90	20	33	42	99	2521	84000
CAL7-65/95	65	95	20	33	42	104	3093	95000
CAL7-70/110	70	110	24	40	50	119	4670	133000
CAL7-75/115	75	115	24	40	50	124	5004	133000
CAL7-80/120	80	120	24	40	50	129	5338	133000
CAL7-85/125	85	125	24	40	50	134	6380	150000
CAL7-90/130	90	130	24	40	50	139	6755	150000
CAL7-95/135	95	135	24	40	50	144	7923	167000
CAL7-100/145	100	145	26	44	56	154	9714	194000
CAL7-110/155	110	155	26	44	56	164	10686	194000
CAL7-120/165	120	165	26	44	56	174	13114	219000
CAL7-130/180	130	180	34	54	66	189	18943	291000
CAL7-140/190	140	190	34	54	68	199	20993	300000
CAL7-150/200	150	200	34	54	68	209	24992	333000
CAL7-160/210	160	210	34	54	68	219	29324	367000
CAL7-170/225	170	225	44	64	78	234	33989	400000
CAL7-180/235	180	235	44	64	78	244	35989	400000
CAL7-190/250	190	250	44	64	78	259	47485	500000
CAL7-200/260	200	260	44	64	78	269	49984	500000

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated



Characteristics

Medium-low torque
Economical
Quick installation



CAL8 (Self-Centering)

Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for medium torques and is self-centering. Applications which require a very precise axial positioning are recommended. Available for shaft diameters from 14 to 50 mm.

Part No.	I.D.	O.D.	L	L1	B	D	Torque Nm	Axial Force N
Diam -55 (O.D.)								
CAL8--14/55	14	55	17	30	38	62	130	19000
CAL8--16/55	16	55	17	30	38	62	149	19000
CAL8--18/55	18	55	17	30	38	62	168	19000
CAL8--19/55	19	55	17	30	38	62	177	19000
CAL8--20/55	20	55	17	30	38	62	186	19000
CAL8--22/55	22	55	17	30	38	62	288	26000
CAL8--24/55	24	55	17	30	38	62	314	26000
CAL8--25/55	25	55	17	30	38	62	328	26000
CAL8--28/55	28	55	17	30	38	62	441	32000
CAL8--30/55	30	55	17	30	38	62	473	32000
Diam -65 (O.D.)								
CAL8--24/65	24	65	17	31	39	72	448	37000
CAL8--25/65	25	65	17	31	39	72	467	37000
CAL8--28/65	28	65	17	31	39	72	611	44000
CAL8--30/65	30	65	17	31	39	72	655	44000
CAL8--32/65	32	65	17	31	39	72	699	44000
CAL8--35/65	35	65	17	31	39	72	919	53000
CAL8--38/65	38	65	17	31	39	72	998	53000
CAL8--40/65	40	65	17	31	39	72	1051	53000
Diam -80 (O.D.)								
CAL8--30/80	30	80	20	34	42	87	785	52000
CAL8--32/80	32	80	20	34	42	87	837	52000
CAL8--33/80	33	80	20	34	42	87	863	52000
CAL8--35/80	35	80	20	34	42	87	1070	61000
CAL8--38/80	38	80	20	34	42	87	1162	61000
CAL8--40/80	40	80	20	34	42	87	1223	61000
CAL8--42/80	42	80	20	34	42	87	1544	74000
CAL8--45/80	45	80	20	34	42	87	1655	74000
CAL8--48/80	48	80	20	34	42	87	1765	74000
CAL8--50/80	50	80	20	34	42	87	1838	74000

Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL8 use the following tolerances

h8 for the shaft

H8 for the hub

All dimensions in mm unless otherwise stated

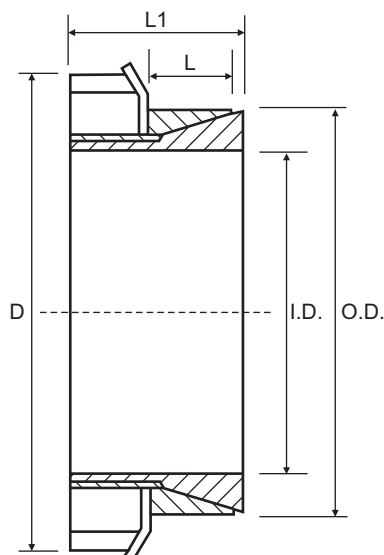


CAL9 (Not Self-Centering)

Consists of two cone rings, joined through a lock nut and a tab washer. In virtue of the simple design, very fast assembly/disassembly is possible. CAL9 is suitable for applications with medium to low torques. Available for shaft diameters from 14 to 70mm.

Characteristics

Medium-low torque
Restricted hub diameter
Quick installation
Economical



Part No.	I.D.	O.D.	L	L1	D	Torque Nm	Axial Force N
CAL9-14/25	14	25	9	17.0	32	52	7000
CAL9-15/25	15	25	9	17.0	32	56	7000
CAL9-16/25	16	25	9	17.0	32	60	7000
CAL9-17/26	17	26	9	18.0	38	86	10000
CAL9-18/26	18	26	9	18.0	38	91	10000
CAL9-18/30	18	30	9	17.5	38	91	10000
CAL9-19/30	19	30	9	18.0	38	96	10000
CAL9-20/30	20	30	9	18.0	38	102	10000
CAL9-22/32	22	32	9	18.0	45	127	12000
CAL9-24/35	24	35	9	18.0	45	139	12000
CAL9-25/35	25	35	9	18.0	45	144	12000
CAL9-28/36	28	36	10	18.0	52	215	15000
CAL9-28/40	28	40	9	18.0	52	215	15000
CAL9-30/40	30	40	11	20.0	52	230	15000
CAL9-32/42	32	42	11	22.0	58	302	19000
CAL9-35/45	35	45	11	22.0	58	331	19000
CAL9-36/45	36	45	11	22.0	58	340	19000
CAL9-38/48	38	48	14	25.0	65	453	24000
CAL9-40/50	40	50	14	25.0	65	477	24000
CAL9-42/55	42	55	14	26.0	70	576	27000
CAL9-42/57*	42	57	10	25.5	70	370	17000
CAL9-45/55	42	55	14	26.0	70	617	27000
CAL9-45/57*	45	57	10	25.5	70	400	18000
CAL9-48/62	48	62	14	26.0	75	669	28000
CAL9-50/60	50	60	14	26.0	75	697	28000
CAL9-50/62	50	62	14	26.0	75	697	28000
CAL-55/65	55	65	15	27.0	80	796	29000
CAL9-55/68	55	68	15	27.0	80	796	29000
CAL9-56/68	56	68	15	27.0	80	810	29000
CAL9-60/70	60	70	15	29.0	85	946	32000
CAL9-60/73	60	73	15	29.0	85	946	32000
CAL9-63/79	63	79	17	31.0	92	1136	36000
CAL9-65/79	65	79	17	31.0	92	1172	36000
CAL9-70/84	70	84	17	31.0	98	1470	42000

Torque = Maximum transmittable torque when axial force is zero.

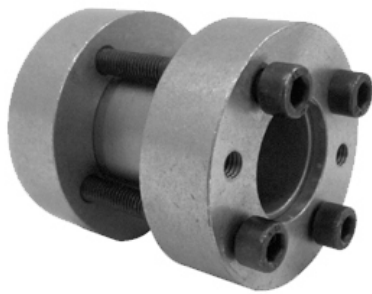
Axial Force = Maximum axial force when transmittable torque is zero.

For CAL9 use the following tolerances

h8 for the shaft

H8 for the hub

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated

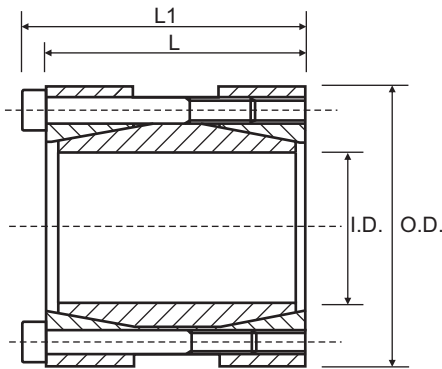


CAL10 (Rigid Coupling)

Consists of one inside and two outside cone rings, which are joined by a set of screws. This locking device is designed as a rigid coupling to join the shafts of the same size. CAL10 is also available to suit shafts of different sizes on request. Available for shaft diameters from 16 to 80 mm.

Characteristics

Medium high torque
Few tightening screws
Easy installation
Economical



Part No.	I.D.	O.D.	L	L1	Torque Nm	Axial Force N
CAL10-16/45*	16	45	50	56	190	24000
CAL10-17/50	17	50	50	56	179	21000
CAL10-18/50	18	50	50	56	190	21000
CAL10-19/50	19	50	50	56	200	21000
CAL10-20/50	20	50	50	56	211	21000
CAL10-22/55	22	55	60	66	347	32000
CAL10-24/55	24	55	60	66	379	32000
CAL10-25/55	25	55	60	66	394	32000
CAL10-28/60	28	60	60	66	442	32000
CAL10-30/60	30	60	60	66	473	32000
CAL10-32/63	32	63	60	66	505	32000
CAL10-32/75*	32	75	60	68	720	45000
CAL10-35/75	35	75	75	83	682	39000
CAL10-38/75	38	75	75	83	741	39000
CAL10-40/75	40	75	75	83	780	39000
CAL10-42/78	42	78	75	83	819	39000
CAL10-42/90*	42	90	75	83	1400	67000
CAL10-45/85	45	85	75	83	819	39000
CAL10-48/90	48	90	85	93	1405	59000
CAL10-50/90	50	90	85	93	1463	59000
CAL10-55/94	55	94	85	93	2147	78000
CAL10-55/105*	55	105	85	93	2470	90000
CAL10-60/100	60	100	85	93	2343	78000
CAL10-65/105	65	105	85	93	2538	78000
CAL10-70/115	70	115	100	110	3239	93000
CAL10-70/125*	70	125	100	110	3770	107000
CAL10-75/120	75	120	100	110	3471	93000
CAL10-80/125	80	125	100	110	4938	123000

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated

Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL10 use the following tolerances
h8 for the shaft

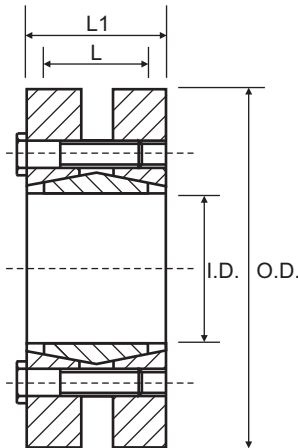


CAL11S (Shrink Disc)

Consists of one inside and two outside cone rings, which are joined by a set of screws. It is suitable for medium high torques. CAL11S shrink disc is used for clamping a hollow shaft to a standard shaft. Available for hollow shaft diameters from 14 to 480 mm.

Characteristics

Medium-high torque
No shaft-hub axial movement
Quick installation
Quick dismantling



Part No.	I.D.	O.D.	S.D.	L	L1	Torque Nm	Axial Force N
CAL11S--14/38*	14	38	12	7	11	50	9000
CAL11S--16/41*	16	41	14	11	15	90	13000
CAL11S--18/43*	18	43	15	11	15	90	13000
CAL11S--24/50	24	50	21	14	19.5	250	30000
CAL11S--30/60	30	60	26	16	21.5	380	30000
CAL11S--36/72	36	72	31	18	23.5	630	60000
CAL11S--44/80	44	80	36	20	25.5	860	80000
CAL11S--50/90	50	90	42	22	27.5	1380	90000
CAL11S--55/100	55	100	48	23	30.5	1880	100000
CAL11S--62/110	62	110	52	23	30.5	2250	120000
CAL11S--68/115	68	115	60	23	30.5	3150	120000
CAL11S--75/138	75	138	65	25	32.5	3950	160000
CAL11S--80/145	80	145	70	25	32.5	4600	160000
CAL11S--85/155*	85	155	75	30	39	7400	216000
CAL11S--90/155	90	155	75	30	39	7250	210000
CAL11S-100/170	100	170	80	34	44	9000	240000
CAL11S-110/185	110	185	85	39	50	10800	260000
CAL11S-125/215	125	215	95	42	54	15000	350000
CAL11S-140/230	140	230	105	46	60.5	20100	430000
CAL11S-155/265	155	265	115	50	64.5	28000	510000
CAL11S-165/290	165	290	125	56	71	39000	660000
CAL11S-175/300	175	300	135	56	71	45000	680000
CAL11S-185/330	185	330	145	71	86	62000	860000
CAL11S-195/350	195	350	155	71	86	81500	1070000
CAL11S-200/350	200	350	160	71	86	86000	1080000
CAL11S-220/370	220	370	170	88	104	110000	1290000
CAL11S-240-405	240	405	190	92	109	156000	1680000
CAL11S-260/430	260	430	210	103	120	205000	2010000
CAL11S-280/460	280	460	230	114	134	270000	2350000
CAL11S-300/485	300	485	245	122	142	315000	2640000

S.D.: The maximum shaft diameter. Smaller shaft diameters can be used at reduced Torque and Axial Force.

* Discontinued size, Limited stock available

All dimensions in mm unless otherwise stated

Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL11S use the following tolerances

From 18 - 30 mm dw H6/j6
From 30 - 50 mm dw H6/h6
From 50 - 80 mm dw H6/g6
From 80 - 500 mm dw H7/g6

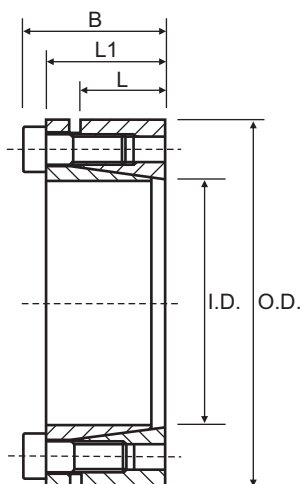


CAL12S (Self-Centering)

Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for medium to low torques and is self-centering. Available for shaft diameters from 18 to 90 mm.

Characteristics

Medium-low torque
Economical
Quick installation



Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL12S-18/40	18	40	12	20	24	210	24000
CAL12S-19/41	19	41	12	20	24	220	24000
CAL12S-20/42	20	42	12	20	24	270	28000
CAL12S-22/44	22	44	12	20	24	300	28000
CAL12S-24/46	24	46	12	20	24	330	28000
CAL12S-25/47	25	47	12	20	24	340	28000
CAL12S-28/50	28	50	12	20	24	500	36000
CAL12S-30/52	30	52	12	20	24	530	36000
CAL12S-32/54	32	54	12	20	24	570	36000
CAL12S-35/57	35	57	16	24	28	690	40000
CAL12S-36/58	36	58	16	24	28	710	40000
CAL12S-38/60	38	60	16	24	28	830	44000
CAL12S-40/62	40	62	16	24	28	870	44000
CAL12S-42/70	42	70	19	30	36	1530	73000
CAL12S-45/73	45	73	19	30	36	1640	73000
CAL12S-48/76	48	76	19	30	36	1750	73000
CAL12S-50/78	50	78	19	30	36	1820	73000
CAL12S-55/83	55	83	19	30	36	2000	73000
CAL12S-56/84	56	84	19	30	36	2040	73000
CAL12S-60/88	60	88	19	30	36	2460	82000
CAL12S-63/91	63	91	19	30	36	2580	82000
CAL12S-65/93	65	93	19	30	36	2660	82000
CAL12S-70/105	70	105	23	37	45	4720	135000
CAL12S-75/110	75	110	23	37	45	5050	135000
CAL12S-80/115	80	115	23	37	45	5390	135000
CAL12S-85/120	85	120	23	37	45	5730	135000
CAL12S-90/125	90	125	23	37	45	7580	169000

All dimensions in mm unless otherwise stated

Torque = Maximum transmittable torque
when axial force is zero.

Axial Force = Maximum axial force
when transmittable torque is zero.

**For CAL12S use the following
tolerances**

h8 for the shaft

H8 for the hub

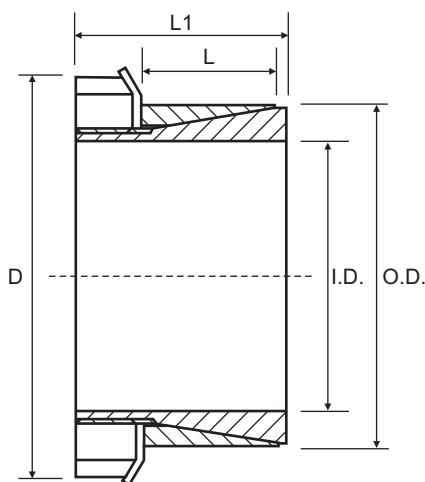


CAL13S (Self-Centering)

Consists of two cone rings, joined through a lock nut and a tab washer. In virtue of the simple design, very fast assembly/disassembly is possible. CAL13S is suitable for applications with medium to low torques. CAL13S is very similar to the standard CAL9, but is manufactured in a longer execution. Available for shaft diameters from 14 to 60 mm.

Characteristics

Medium-low torque
Restricted hub diameter
Quick installation
Economical



Part No.	I.D.	O.D.	L	L1	D	Torque Nm	Axial Force N
CAL13S-14/25	14	25	23	31	32	72	9000
CAL13S-15/25	15	25	23	31	32	77	9000
CAL13S-16/25*	16	25	20	30	32	73	9000
CAL13S-18/30	18	30	24	33	38	125	13000
CAL13S-19/30	19	30	24	33	38	132	13000
CAL13S-20/30	20	30	24	33	38	139	13000
CAL13S-24/35	24	35	29	38	45	202	15000
CAL13S-25/35	25	35	29	38	45	210	15000
CAL13S-28/40	28	40	34	40	52	312	20000
CAL13S-30/40	30	40	34	40	52	335	20000
CAL13S-32/45	32	45	34	45	58	442	25000
CAL13S-35/45	35	45	34	45	58	483	25000
CAL13S-40/50	40	50	35	46	65	696	31000
CAL13S-45/55	45	55	35	47	70	902	36000
CAL13S-48/60	48	60	35	47	75	991	37000
CAL13S-50/60	50	60	35	47	75	1014	37000
CAL13S-55/65	55	65	36	48	80	1158	38000
CAL13S-60/70	60	70	36	50	85	1379	41000

* Discontinued size, Limited stock available
All dimensions in mm unless otherwise stated

Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL13S use the following tolerances

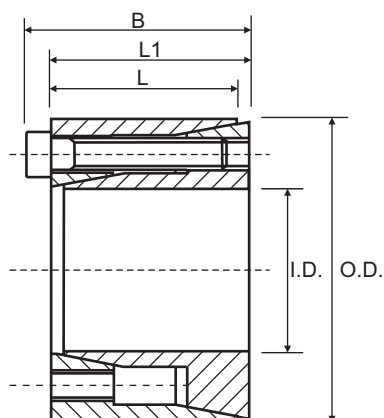
h8 for the shaft

H8 for the hub



Characteristics

Medium torque
Easy mounting
Very quick installation
Few clamping screws



Torque = Maximum transmittable torque when axial force is zero.

Axial Force = Maximum axial force when transmittable torque is zero.

For CAL15 use the following tolerances

h8 for the shaft

H8 for the hub

CAL15 (Self-Centering)

Consists of one inside and one outside cone ring, which are joined by a set of screws. It is suitable for medium torques and is self-centering. The CAL15 is a very small and light weight design. Applications which require a very precise axial positioning are not recommended, owing to a small axial displacement of the hub during the assembly operation. Available for shaft diameters from 5 to 50 mm.

Part No.	I.D.	O.D.	L	L1	B	Torque Nm	Axial Force N
CAL15--5/16	5	16	10.5	11.0	13.5	7	3000
CAL15--6/16	6	16	10.5	11.0	13.5	9	3000
CAL15--6.35/16	6.35	16	10.5	11.0	13.5	9	3000
CAL15--7/17	7	17	10.5	11.0	13.5	10	3000
CAL15--8/18	8	18	10.5	11.0	13.5	11	3000
CAL15--9/20	9	20	12.5	13.0	15.0	17	3000
CAL15--9.53/20	9.53	20	12.5	13.0	15.0	17	3000
CAL15-10/20	10	20	12.5	13.0	15.5	19	3000
CAL15-11/22	11	22	12.5	13.0	15.5	21	3000
CAL15-12/22	12	22	12.5	13.0	15.5	23	3000
CAL15-14/26	14	26	16.5	17.0	20.0	40	6000
CAL15-15/28	15	28	16.5	17.0	20.0	43	6000
CAL15-16/32	16	32	16.5	17.0	21.0	80	10000
CAL15-17/35	17	35	20.5	21.0	25.0	85	10000
CAL15-18/35	18	35	20.5	21.0	25.0	90	10000
CAL15-19/35	19	35	20.5	21.0	25.0	95	10000
CAL15-20/38	20	38	20.5	21.0	26.0	165	16000
CAL15-22/40	22	40	20.5	21.0	26.0	180	16000
CAL15-24/47	24	47	25.0	26.0	32.0	280	23000
CAL15-25/47	25	47	25.0	26.0	32.0	290	23000
CAL15-25.4/47*	25.4	47	25.0	26.0	32.0	304	24000
CAL15-28/50	28	50	25.0	26.0	32.0	485	35000
CAL15-30/55	30	55	25.0	26.0	32.0	520	35000
CAL15-32/55	32	55	25.0	26.0	32.0	555	35000
CAL15-35/60	35	60	30.0	31.0	37.0	810	46000
CAL15-38/65	38	65	30.0	31.0	37.0	880	46000
CAL15-40/65	40	65	30.0	31.0	37.0	925	46000
CAL15-42/75	42	75	35.0	36.0	44.0	1350	64000
CAL15-45/75	45	75	35.0	36.0	44.0	1450	64000
CAL15-48/80	48	80	35.0	36.0	44.0	2050	85000
CAL15-50/80	50	80	35.0	36.0	44.0	2140	85000

* Discontinued size, Limited stock available.

All dimensions in mm unless otherwise stated

Locking Bush Conversion Chart

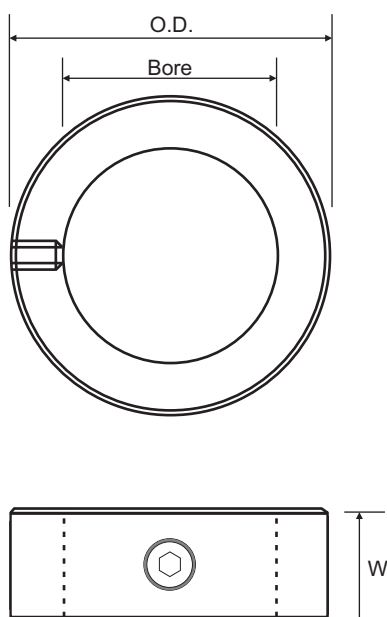
SIT (CAL)	TOLLOK (TLK)	Lovejoy (SLD)	MAV	RINGFEDER (RFN)	RINGBLOK	BIKON	COMPOMAC (Conex)	KTR (Clampex)
CAL1	200	1500	2005	7012	1120	4000	A	100
CAL2	300	350	3003	8006	1060	5000	C	150
CAL3	110	1900	5061	7110.1	1100	8000	B	250
CAL4	450	2600	4061	7005	1800	1012	F	400
CAL5A	130		6901	7004	1300.1	7000A	D	200
CAL5B	131		6902	7007	1300.2	7000B	E	201
CAL6	132	1850 1350	1062	7013.0 7003	1710	1003	DS	203
CAL7	133	1750 1450	1061	7013.1 7006	1720	1006	ES	206
CAL8	134		3061		2400	1506	EP	225
CAL9	250		3505		1500C	5500SP	H	125
CAL10	500		1004	7020	1600	9500	M	700
CAL11S	603	900	2008	4071	2200.01	1029.71	SD	603
CAL12S	139		4005	9009	1000	4500	L	90
CAL13S	250L		3705		1500	5500S	I	125.1
CAL15	350			7061				105

External diameters and torque ratings may vary between suppliers



One Piece Solid (Set Screw Type) Metric

Set screw collars are most effective when used on a shaft made of a material that is softer than the set screw. Ruland set screw collars are furnished exclusively with forged socket set screws for greater torque capacity and improved holding power. Forging of the stainless steel set screws has the additional benefit of work hardening, which results in stainless steel with elevated hardness and performance.



Part No.	Bore (mm)	O.D. (mm)	W (mm)	F	SS
MSC-4	4.0	8.0	5.0	✓	✓
MSC-5	5.0	10.0	6.0	✓	✓
MSC-6	6.0	12.0	8.0	✓	✓
MSC-8	8.0	16.0	8.0	✓	✓
MSC-10	10.0	20.0	10.0	✓	✓
MSC-12	12.0	22.0	12.0	✓	✓
MSC-14	14.0	25.0	12.0	✓	✓
MSC-15	15.0	25.0	12.0	✓	✓
MSC-16	16.0	28.0	12.0	✓	✓
MSC-18	18.0	32.0	14.0	^	^
MSC-20	20.0	32.0	14.0	✓	✓
MSC-22	22.0	36.0	14.0	✓	✓
MSC-25	25.0	40.0	16.0	✓	✓
MSC-28	28.0	45.0	16.0	✓	✓
MSC-30	30.0	45.0	16.0	✓	✓
MSC-32	32.0	50.0	16.0	✓	✓
MSC-35	35.0	56.0	16.0	✓	✓
MSC-38	38.0	56.0	16.0	✓	✓
MSC-40	40.0	63.0	18.0	✓	✓
MSC-45	45.0	70.0	18.0	✓	✓
MSC-50	50.0	80.0	18.0	✓	✓

✓ Stocked Size

^ Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

- Forged socket set screws.
- Additional sizes available.

- Bore tolerances:

Bore	Tolerances
All	+ .01mm
	+ .05mm

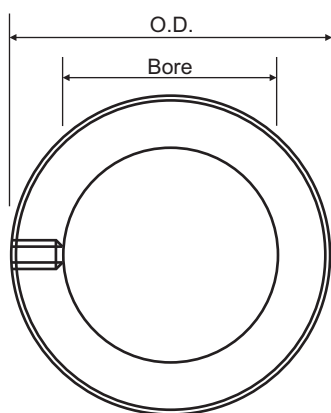
- Width tolerance

All	+ .08mm
	- .25mm



One Piece Solid (Set Screw Type) Inch

Set screw collars are most effective when used on a shaft made of a material that is softer than the set screw. Ruland set screw collars are furnished exclusively with forged socket set screws for greater torque capacity and improved holding power. Forging of the stainless steel set screws has the additional benefit of work hardening, which results in stainless steel with elevated hardness and performance.



Part No.	Bore (in)	O.D. (in)	W (in)	F	A	SS	P
SC-3	0.1875	0.438	0.250	✓	✓	✓	✓
SC-4	0.2500	0.500	0.281	✓	✓	✓	✓
SC-5	0.3125	0.625	0.344	✓	✓	✓	✓
SC-6	0.3750	0.750	0.375	✓	✓	✓	✓
SC-7	0.4375	0.875	0.438	✓	✓	✓	✓
SC-8	0.5000	1.000	0.438	✓	✓	✓	✓
SC-10	0.6250	1.125	0.500	✓	✓	✓	✓
SC-12	0.7500	1.250	0.563	✓	✓	✓	✓
SC-14	0.8750	1.500	0.563	✓		✓	✓*
SC-16	1.0000	1.625	0.625	✓		✓	✓*
SC-18	1.1250	1.750	0.625	✓		✓	✓*
SC-20	1.2500	2.000	0.688	✓		✓	✓*
SC-22	1.3750	2.125	0.750	✓		✓	
SC-24	1.5000	2.250	0.750	✓		✓	✓*
SC-26	1.6250	2.500	0.813	✓		✓	
SC-28	1.7500	2.750	0.875	✓		✓	
SC-32	2.0000	3.000	0.875	✓		✓	

✓ Stocked Size

* Discontinued size, Limited stock available

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

Acetal (P)

Delrin 150E (White) with a plain finish

- Forged socket set screws.
- Additional sizes available.

- Bore tolerances:

Bore	Tolerance
Up to 1"	+ .0005"
	+ .002"

1.1/8" to 2"	+ .0005"
	+ .003"

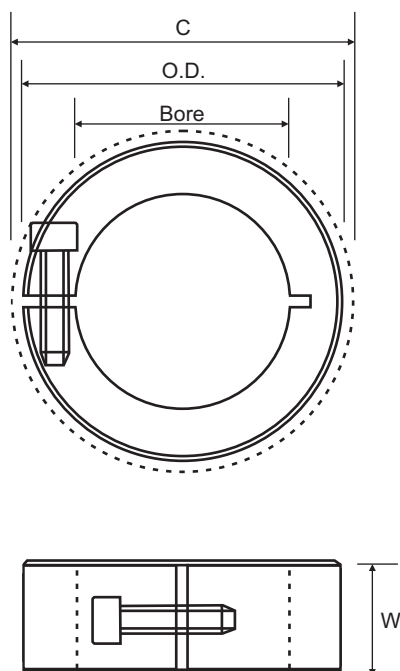
-Width tolerance:

All	+ .003"
	- .010"



One Piece Split (Clamp Type) Metric

One-piece clamp style collars wrap around the shaft for even greater distribution of clamping forces. This results in a tight fit and greater holding power, without the shaft damage caused by set screws. Ruland uses carefully selected materials and proprietary processes to ensure that the clamping gap remains open for simpler and more precise adjustment.



- Does not mar the shaft.
- Single point faced.
- Balanced versions available.
- Additional sizes available.

-Width tolerance:

All +.08 mm
 -.25 mm

Part No.	Bore (mm)	O.D. (mm)	C (mm)	W (mm)	F	A	SS	P
MCL-4	4.0	16.0	20.8	9.0	✓	✓	✓	✓
MCL-5	5.0	16.0	20.8	9.0	✓	✓	✓	✓
MCL-6	6.0	16.0	20.8	9.0	✓	✓	✓	✓
MCL-8	8.0	18.0	22.4	9.0	✓	✓	✓	✓
MCL-10	10.0	24.0	26.3	9.0	✓	✓	✓	✓
MCL-12	12.0	28.0	32.0	11.0	✓	✓	✓	✓
MCL-14	14.0	30.0	33.7	11.0	✓	✓	✓	
MCL-15	15.0	34.0	39.3	13.0	✓	✓	✓	✓
MCL-16	16.0	34.0	39.3	13.0	✓	✓	✓	✓
MCL-19	19.0	40.0	47.4	15.0	✓	✓	✓	
MCL-20	20.0	40.0	47.4	15.0	✓	✓	✓	✓
MCL-22	22.0	42.0	49.5	15.0	✓	✓	✓	✓
MCL-24	24.0	45.0	52.1	15.0	✓	✓	✓	
MCL-25	25.0	45.0	52.1	15.0	✓	✓	✓	✓
MCL-28	28.0	48.0	54.7	15.0	✓	✓	✓	✓
MCL-30	30.0	54.0	59.2	15.0	✓	✓	✓	✓
MCL-32	32.0	54.0	59.2	15.0	✓	✓	✓	
MCL-35	35.0	57.0	62.4	15.0	✓	✓	✓	
MCL-38	38.0	60.0	65.6	15.0	✓	✓	✓	
MCL-40	40.0	60.0	65.6	15.0	✓	✓	✓	
MCL-42	42.0	73.0	80.1	19.0	✓	✓	✓	
MCL-45	45.0	73.0	80.1	19.0	✓	✓	✓	
MCL-48	48.0	78.0	84.7	19.0	✓	✓	✓	
MCL-50	50.0	78.0	84.7	19.0	✓	✓	✓	
MCL-55	55.0	82.0	88.8	19.0	✓		^	
MCL-60	60.0	88.0	94.0	19.0	✓		^	
MCL-65	65.0	93.0	99.8	19.0	✓		^	
MCL-70	70.0	98.0	104.5	19.0	✓		^	
MCL-75	75.0	103.0	109.1	19.0	✓		^	
MCL-80	80.0	108.0	113.8	19.0	✓		^	

✓

Stocked Size

^

Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

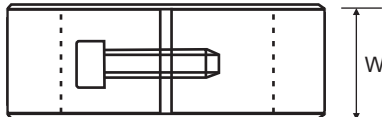
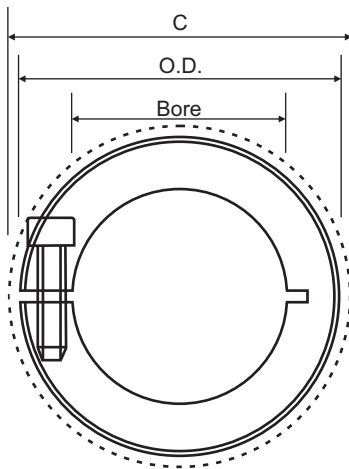
Acetal (P)

Delrin 150E (White) with a plain finish



One Piece Split (Clamp Type) Inch

One-piece clamp style collars wrap around the shaft for even greater distribution of clamping forces. This results in a tight fit and greater holding power, without the shaft damage caused by set screws. Ruland uses carefully selected materials and proprietary processes to ensure that the clamping gap remains open for simpler and more precise adjustment.



Part No.	Bore (in)	O.D. (in)	C (in)	W (in)	F	A	SS	P
CL-2	0.1250	0.625	0.773	0.281	✓	✓	✓	
CL-3	0.1875	0.625	0.773	0.281	✓	✓	✓	✓
CL-4	0.2500	0.625	0.773	0.281	✓	✓	✓	✓
CL-5	0.3125	0.688	0.838	0.281	✓	✓	✓	✓
CL-6	0.3750	0.875	1.027	0.343	✓	✓	✓	✓
CL-7	0.4375	0.938	1.080	0.343	✓	✓	✓	✓
CL-8	0.5000	1.125	1.281	0.406	✓	✓	✓	✓
CL-10	0.6250	1.313	1.500	0.437	✓	✓	✓	✓
CL-12	0.7500	1.500	1.808	0.500	✓	✓	✓	✓
CL-14	0.8750	1.625	1.916	0.500	✓	✓	✓	✓
CL-16	1.0000	1.750	2.032	0.500	✓	✓	✓	✓
CL-18	1.1250	1.875	2.140	0.500	✓	✓	✓	✓
CL-20	1.2500	2.063	2.295	0.500	✓	✓	✓	✓
CL-22	1.3750	2.250	2.465	0.563	✓	✓	✓	^
CL-24	1.5000	2.375	2.578	0.563	✓	✓	✓	✓
CL-26	1.6250	2.625	2.935	0.688	✓	✓	✓	^
CL-28	1.7500	2.750	3.046	0.688	✓	✓	✓	✓
CL-30	1.8750	2.875	3.160	0.688	✓	✓	✓	✓
CL-32	2.0000	3.000	3.273	0.688	✓	✓	✓	✓

✓

Stocked Size

^

Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

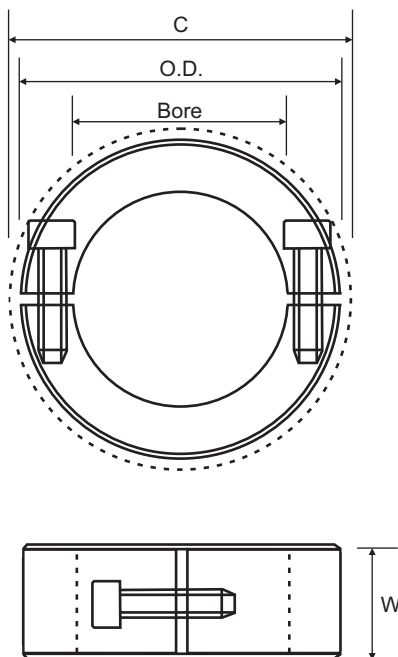
Acetal (P)

Delrin 150E (White) with a plain finish

- Does not mar the shaft.
- Single point faced.
- Balanced versions available.
- Additional sizes available.

-Width tolerance:

All +.003"
 -.010"



- Does not mar the shaft.
- Single point faced.
- Available with keyways.
- Opposing screws available.
- Additional sizes available.

-Width tolerance:

All +.08 mm
 -.25 mm

Two Piece Split (Clamp Type) Metric

Two-piece clamp style collars offer the same benefits of the one-piece collars with additional versatility and convenience. They are easily disassembled, reducing labour and downtime when adjustment, removal or replacement is necessary. Ruland keeps both halves of its two-piece collars together throughout the manufacturing process to assure a perfect match, proper fit, holding power and alignment.

Part No.	Bore (mm)	O.D. (mm)	C (mm)	W (mm)	F	A	SS	P
MSP-4	4.0	16.0	20.8	9.0	✓	✓	✓	✓
MSP-5	5.0	16.0	20.8	9.0	✓	✓	✓	✓
MSP-6	6.0	16.0	20.8	9.0	✓	✓	✓	✓
MSP-8	8.0	18.0	22.4	9.0	✓	✓	✓	✓
MSP-10	10.0	24.0	26.3	9.0	✓	✓	✓	✓
MSP-12	12.0	28.0	32.0	11.0	✓	✓	✓	✓
MSP-14	14.0	30.0	33.7	11.0	✓	✓	✓	
MSP-15	15.0	34.0	39.3	13.0	✓	✓	✓	✓
MSP-16	16.0	34.0	39.3	13.0	✓	✓	✓	✓
MSP-19	19.0	40.0	47.4	15.0	✓	✓	✓	
MSP-20	20.0	40.0	47.4	15.0	✓	✓	✓	✓
MSP-22	22.0	42.0	49.5	15.0	✓	✓	✓	✓
MSP-25	25.0	45.0	52.1	15.0	✓	✓	✓	✓
MSP-28	28.0	48.0	54.7	15.0	✓	✓	✓	✓
MSP-30	30.0	54.0	59.2	15.0	✓	✓	✓	✓
MSP-32	32.0	54.0	59.2	15.0	✓	✓	✓	
MSP-35	35.0	57.0	62.4	15.0	✓	✓	✓	
MSP-38	38.0	60.0	65.6	15.0	✓	✓	✓	
MSP-40	40.0	60.0	65.6	15.0	✓	✓	✓	
MSP-42	42.0	73.0	80.1	19.0	✓	✓	✓	
MSP-45	45.0	73.0	80.1	19.0	✓	✓	✓	
MSP-48	48.0	78.0	84.7	19.0	✓	✓	✓	
MSP-50	50.0	78.0	84.7	19.0	✓	✓	✓	
MSP-55	55.0	82.0	88.8	19.0	✓		^	
MSP-60	60.0	88.0	94.0	19.0	✓		^	
MSP-65	65.0	93.0	99.8	19.0	✓		^	
MSP-70	70.0	98.0	104.5	19.0	✓		^	
MSP-75	75.0	103.0	109.1	19.0	✓		^	
MSP-80	80.0	108.0	113.8	19.0	✓		^	

✓ Stocked Size

^ Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

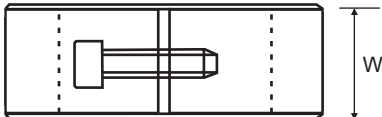
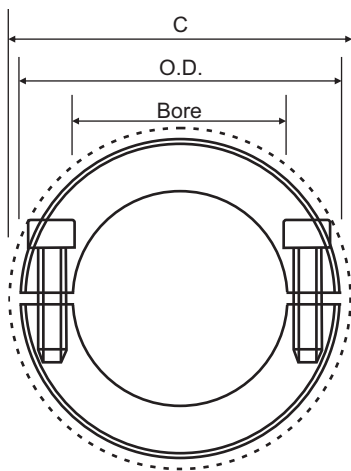
Acetal (P)

Delrin 150E (White) with a plain finish



Two Piece Split (Clamp Type) Inch

Two-piece clamp style collars offer the same benefits of the one-piece collars with additional versatility and convenience. They are easily disassembled, reducing labour and downtime when adjustment, removal or replacement is necessary. Ruland keeps both halves of its two-piece collars together throughout the manufacturing process to assure a perfect match, proper fit, holding power and alignment.



Part No.	Bore (in)	O.D. (in)	C (in)	W (in)	F	A	SS	P
SP-2	0.1250	0.625	0.773	0.281	✓	✓	✓	
SP-3	0.1875	0.625	0.773	0.281	✓	✓	✓	✓
SP-4	0.2500	0.625	0.773	0.281	✓	✓	✓	✓
SP-5	0.3125	0.688	0.838	0.281	✓	✓	✓	✓
SP-6	0.3750	0.875	1.027	0.343	✓	✓	✓	✓
SP-7	0.4375	0.938	1.080	0.343	✓	✓	✓	✓
SP-8	0.5000	1.125	1.281	0.406	✓	✓	✓	✓
SP-10	0.6250	1.313	1.500	0.437	✓	✓	✓	✓
SP-12	0.7500	1.500	1.808	0.500	✓	✓	✓	✓
SP-14	0.8750	1.625	1.916	0.500	✓	✓	✓	✓
SP-16	1.0000	1.750	2.032	0.500	✓	✓	✓	✓
SP-18	1.1250	1.875	2.140	0.500	✓	✓	✓	✓
SP-20	1.2500	2.063	2.295	0.500	✓	✓	✓	✓
SP-22	1.3750	2.250	2.465	0.563	✓	✓	✓	✓
SP-24	1.5000	2.375	2.578	0.563	✓	✓	✓	✓
SP-26	1.6250	2.625	2.935	0.688	✓	✓	✓	
SP-28	1.7500	2.750	3.046	0.688	✓	✓	✓	✓*
SP-30	1.8750	2.875	3.160	0.688	✓	✓	✓	✓*
SP-32	2.0000	3.000	3.273	0.688	✓	✓	✓	✓*

✓ Stocked Size

* Discontinued size, Limited stock available

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

Acetal (P)

Delrin 150E (White) with a plain finish

- Does not mar the shaft.
- Single point faced.
- Available with keyways.
- Opposing screws available.
- Additional sizes available.

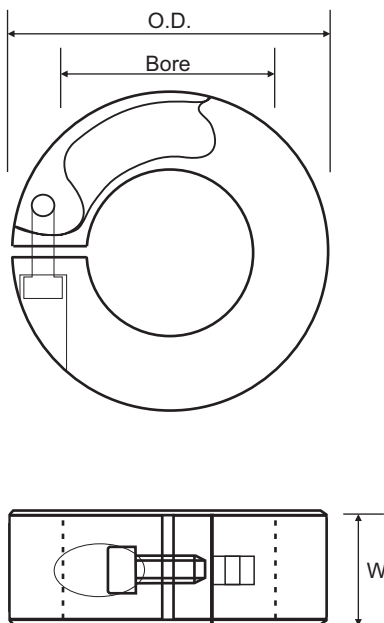
-Width tolerance:

All +.003"
 -.010"



Quick Clamping One Piece Split Metric

Ruland's Quick clamp style collars are designed for fast assembly and disassembly of the collar. They are ideal for applications where the collar must be moved or adjusted on a regular basis. No tools are required to connect and disconnect the collar. This style of collar wraps around the shaft for greater distribution of clamping forces. This results in a tight fit and greater holding power, without the shaft damage caused by set screws. Ruland uses carefully selected materials and proprietary processes to ensure that the clamping gap remains open for simpler and more precise adjustment.



Part No.	Bore (mm)	O.D. (mm)	W (mm)	A
MQCL-6	6.0	38.0	10.0	^
MQCL-8	8.0	38.0	10.0	^
MQCL-10	10.0	38.0	10.0	^
MQCL-12	12.0	38.0	10.0	^
MQCL-14	14.0	38.0	10.0	^
MQCL-15	15.0	38.0	10.0	^
MQCL-16	16.0	38.0	10.0	^
MQCL20	20.0	50.0	13.0	^
MQCL-25	25.0	50.0	13.0	^
MQCL-28	28.0	50.0	13.0	^
MQCL-30	30.0	50.0	13.0	^
MQCL-32	32.0	75.0	15.0	^
MQCL-35	35.0	75.0	15.0	^
MQCL-38	38.0	75.0	15.0	^
MQCL-40	40.0	100.0	19.0	^
MQCL-42	42.0	100.0	19.0	^
MQCL-45	45.0	100.0	19.0	^
MQCL-48	48.0	100.0	19.0	^
MQCL-50	50.0	100.0	19.0	^
MQCL-54	54.0	120.0	19.0	^
MQCL-55	55.0	120.0	19.0	^
MQCL-60	60.0	120.0	19.0	^
MQCL-65	65.0	120.0	19.0	^
MQCL-70	70.0	120.0	19.0	^
MQCL-75	75.0	120.0	19.0	^

^ Available on request

- Does not mar the shaft.
- No tools required.
- Designed for quick adjustments
- Quick release
- Made from high quality aluminium.

-Width tolerance:

All

+ .076mm

- .254mm

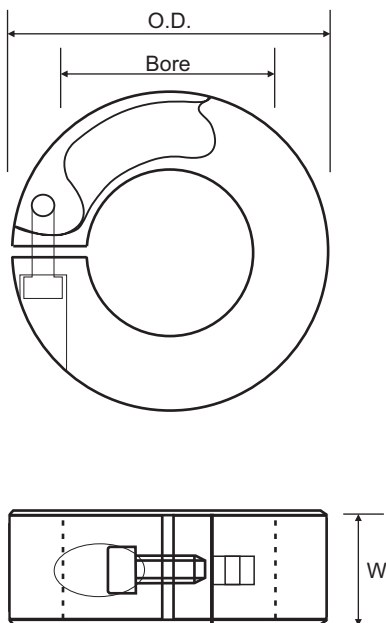
Aluminium (A)

2024-T351 bar with a bright finish.



Quick Clamping One Piece Split Inch

Ruland's Quick clamp style collars are designed for fast assembly and disassembly of the collar. They are ideal for applications where the collar must be moved or adjusted on a regular basis. No tools are required to connect and disconnect the collar. This style of collar wraps around the shaft for greater distribution of clamping forces. This results in a tight fit and greater holding power, without the shaft damage caused by set screws. Ruland uses carefully selected materials and proprietary processes to ensure that the clamping gap remains open for simpler and more precise adjustment.



Part No.	Bore (in)	O.D. (in)	W (in)	A
QCL-4	0.25	1.50	0.39	^
QCL-5	0.31	1.50	0.39	^
QCL-6	0.38	1.50	0.39	^
QCL-8	0.50	1.50	0.39	^
QCL-10	0.63	1.50	0.39	^
QCL-12	0.75	1.97	0.51	^
QCL-16	1.00	1.97	0.51	^
QCL-18	1.13	1.97	0.51	^
QCL-20	1.25	2.95	0.59	^
QCL-22	1.38	2.95	0.59	^
QCL-24	1.50	2.95	0.59	^
QCL-26	1.63	3.94	0.75	^
QCL-28	1.75	3.94	0.75	^
QCL-30	1.88	3.94	0.75	^
QCL-32	2.00	3.94	0.75	^
QCL-34	2.13	4.72	0.75	^
QCL-36	2.25	4.72	0.75	^
QCL-38	2.38	4.72	0.75	^
QCL-40	2.50	4.72	0.75	^
QCL-42	2.63	4.72	0.75	^
QCL-44	2.75	4.72	0.75	^
QCL-46	2.88	4.72	0.75	^
QCL-48	3.00	4.72	0.75	^

^ Available on request

- Does not mar the shaft.
- No tools required.
- Designed for quick adjustments
- Quick release
- Made from high quality aluminium.

-Width tolerance:

All

+ .003"
- .010"

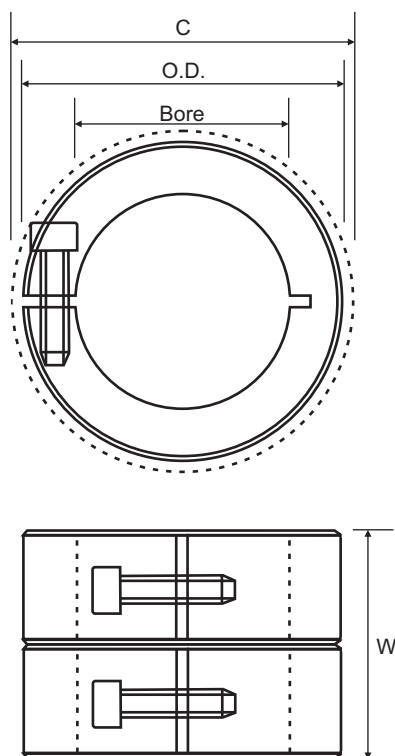
Aluminium (A)

2024-T351 bar with a bright finish.



Double Wide One Piece Split (Clamp Type) Metric & Inch

Ruland's double width collars in one piece clamp design in are available in steel and stainless steel. Clamp style collars wrap around the shaft, providing high torsional holding power without the shaft damage and fretting that occurs when set screw style collars are used.



Part No.	Bore (mm)	O.D. (mm)	C (mm)	W (mm)	F	A	SS
MWCL-6	6.00	16.00	20.80	20.00	✓	^	^
MWCL-8	8.00	18.00	22.40	20.00	✓	^	^
MWCL-10	10.00	24.00	26.30	20.00	✓	^	^
MWCL-12	12.00	28.00	32.00	24.00	✓	^	^
MWCL-16	16.00	34.00	39.30	28.00	✓		^
MWCL-20	20.00	40.00	47.40	33.00	✓		^
MWCL-25	25.00	45.00	52.10	33.00	✓		^
WCL-2	3.18	15.88	19.63	15.88	✓	^	^
WCL-3	4.78	15.88	19.63	15.88	✓	^	^
WCL-4	6.35	15.88	19.63	15.88	✓	^	^
WCL-5	7.95	17.46	21.29	15.88	✓	^	^
WCL-6	9.53	22.23	26.09	19.05	✓	^	^
WCL-8	12.70	28.58	32.54	22.23	✓	^	^
WCL-10	15.88	33.34	38.10	23.81	✓		^
WCL-12	19.05	38.10	45.92	26.99	✓		^
WCL-14	22.23	41.28	48.67	26.99	✓		^
WCL-16	25.40	44.45	51.61	26.99	✓		^
WCL-18	28.58	47.63	54.36	26.99	✓		^
WCL-20	31.75	52.39	58.29	26.99	✓		^
WCL-24	38.10	60.33	65.48	30.16	✓		^
WCL-28	44.45	69.85	77.37	37.31	✓		^
WCL-32	50.80	76.20	85.34	37.31	✓		^

✓

Stocked Size

^

Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

Aluminium (A)

2024-T351 bar with a bright finish.

Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

- Does not mar the shaft.
- Single point faced.
- Balanced versions available.
- Additional sizes available.

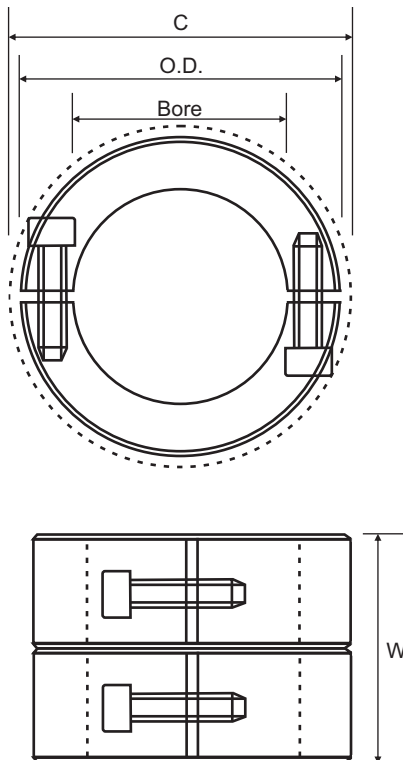
-Width tolerance:

All +.076mm
 -.254mm



Double Wide Two Piece Split (Clamp Type) Metric & Inch

Ruland's double width collars in two piece clamp design are available in steel and stainless steel. Clamp style collars wrap around the shaft, providing high torsional holding power without the shaft damage and fretting that occurs when set screw style collars are used. Two-piece clamp styles also allow for disassembly and maintenance without removal of other machine components and feature opposing hardware from a balanced design.



Part No.	Bore (mm)	O.D. (mm)	C (mm)	W (mm)	F	SS
MWSP-6	6.00	16.00	20.80	20.00	✓	^
MWSP-8	8.00	18.00	22.40	20.00	✓	^
MWSP-10	10.00	24.00	26.30	20.00	✓	^
MWSP-12	12.00	28.00	32.00	24.00	✓	^
MWSP-16	16.00	34.00	39.30	28.00	✓	^
MWSP-20	20.00	40.00	47.40	33.00	✓	^
MWSP-25	25.00	45.00	52.10	33.00	✓	^
WSP-2	3.18	15.88	19.63	15.88	✓	^
WSP-3	4.78	15.88	19.63	15.88	✓	^
WSP-4	6.35	15.88	19.63	15.88	✓	^
WSP-5	7.95	17.46	21.29	15.88	✓	^
WSP-6	9.53	22.23	26.09	19.05	✓	^
WSP-8	12.70	28.58	32.54	22.23	✓	^
WSP-10	15.88	33.34	38.10	23.81	✓	^
WSP-12	19.05	38.10	45.92	26.99	✓	^
WSP-14	22.23	41.28	48.67	26.99	✓	^
WSP-16	25.40	44.45	51.61	26.99	✓	^
WSP-18	28.58	47.63	54.36	26.99	✓	^
WSP-20	31.75	52.39	58.29	26.99	✓	^
WSP-24	38.10	60.33	65.48	30.16	✓	^
WSP-28	44.45	69.85	77.37	37.31	✓	^
WSP-32	50.80	76.20	85.34	37.31	✓	^

✓ Stocked Size ^ Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

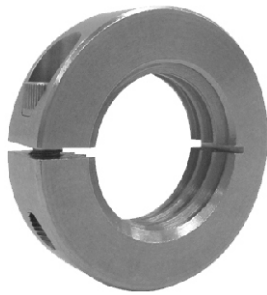
Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

- Does not mar the shaft.
- Single point faced.
- Balanced versions available.
- Additional sizes available.

-Width tolerance:

All +.076mm
 - .254mm

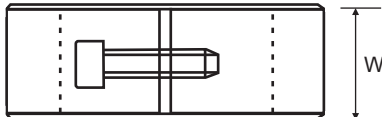
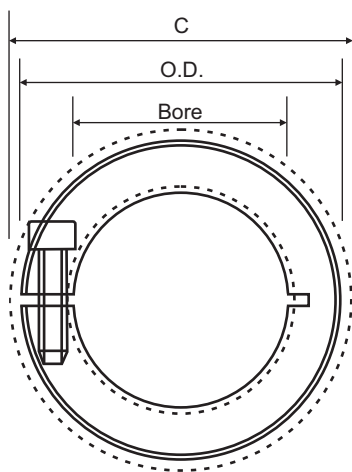


Threaded One Piece Split (Clamp Type) Metric

Clamp style collars with threaded bores are also available. Threaded collars provide axial holding power superior to smooth bore collars, while offering easier installation and adjustment than solid ring locking devices.

Part No.	Thread	Pitch (mm)	O.D. (mm)	C (mm)	W (mm)	F	SS
MTCL-4-0.7	M4	0.7	16.0	20.8	9.0	✓	✓
MTCL-5-0.8	M5	0.8	16.0	20.8	9.0	✓	✓
MTCL-6-1	M6	1.0	16.0	20.8	9.0	✓	✓
MTCL-8-1.25	M8	1.3	18.0	22.4	9.0	✓	✓
MTCL-10-1.5	M10	1.5	24.0	26.3	9.0	✓	✓
MTCL-12-1.75	M12	1.8	28.0	32.0	11.0	✓	✓
MTCL-16-2	M16	2.0	34.0	39.3	13.0	✓	✓
MTCL-20-2.5	M20	2.5	40.0	47.4	15.0	✓	✓
MTCL-24-3	M24	3.0	45.0	52.1	15.0	✓	✓
MTCL-30-3.5	M30	3.5	54.0	59.2	15.0	✓	✓

✓ Stocked Size

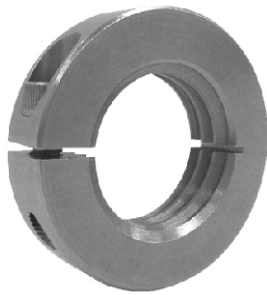


- Does not mar the shaft.
- Single point faced.
- Acme and Left-hand threads available.
- Additional sizes available.

-Width tolerance:

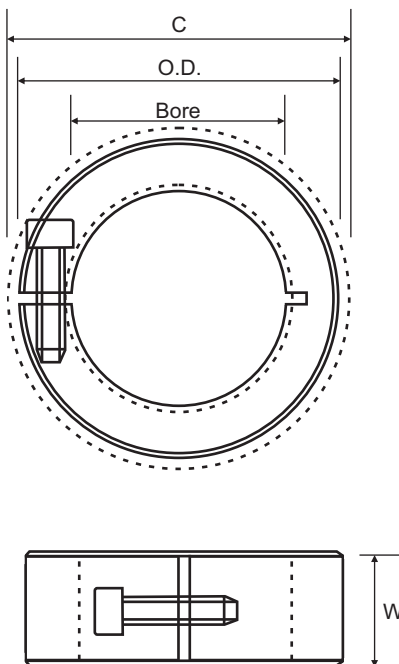
All

- + .08 mm
- .25 mm



Threaded One Piece Split (Clamp Type) Inch

Clamp style collars with threaded bores are also available. Threaded collars provide axial holding power superior to smooth bore collars, while offering easier installation and adjustment than solid ring locking devices.



- Does not mar the shaft.
- Single point faced.
- Acme and Left-hand threads available.
- Additional sizes available.

-Width tolerance:

All

+ .003"
- .010"

Part No.	Bore (in)	T.P.I.	O.D. (in)	C (in)	W (in)	F	SS
TCL-2-32	#8 UNC	32	0.6250	0.773	0.281	✓	✓
TCL-3-24	#10 UNC	24	0.6250	0.773	0.281	✓	✓
TCL-3-32	#10 UNF	32	0.6250	0.773	0.281	✓	✓
TCL-4-20	0.2500 UNC	20	0.6250	0.773	0.281	✓	✓
TCL-4-28	0.2500 UNF	28	0.6250	0.773	0.281	✓	✓
TCL-5-18	0.3125 UNC	18	0.6875	0.838	0.281	✓	✓
TCL-5-24	0.3125 UNF	24	0.6875	0.838	0.281	✓	✓
TCL-6-16	0.3750 UNC	16	0.8750	1.027	0.343	✓	✓
TCL-6-24	0.3750 UNF	24	0.8750	1.027	0.343	✓	✓
TCL-7-14	0.4375 UNC	14	0.9375	1.080	0.343	✓	✓
TCL-7-20	0.4375 UNF	20	0.9375	1.080	0.343	✓	✓
TCL-8-13	0.5000 UNC	13	1.1250	1.281	0.406	✓	✓
TCL-8-20	0.5000 UNF	20	1.1250	1.281	0.406	✓	✓
TCL-10-11	0.6250 UNC	11	1.3125	1.500	0.437	✓	✓
TCL-10-18	0.6250 UNF	18	1.3125	1.500	0.437	✓	✓
TCL-12-10	0.7500 UNC	10	1.5000	1.808	0.500	✓	✓
TCL-12-16	0.7500 UNF	16	1.5000	1.808	0.500	✓	✓
TCL-14-9	0.8750 UNC	09	1.6250	1.916	0.500	✓	✓
TCL-14-14	0.8750 UNF	14	1.6250	1.916	0.500	✓	✓
TCL-16-8	1.0000 UNC	08	1.7500	2.032	0.500	✓	✓
TCL-16-12	1.0000 UNF	12	1.7500	2.032	0.500	✓	✓
TCL-16-14	1.0000 UNS	14	1.7500	2.032	0.500	✓	✓
TCL-18-7	1.1250 UNC	07	1.8750	2.140	0.500	✓	✓
TCL-18-12	1.1250 UNF	12	1.8750	2.140	0.500	✓	✓
TCL-20-7	1.2500 UNC	07	2.0625	2.295	0.500	✓	✓
TCL-20-12	1.2500 UNF	12	2.0625	2.295	0.500	✓	✓
TCL-22-6	1.3750 UNC	06	2.2500	2.465	0.563	✓	✓
TCL-22-12	1.3750 UNF	12	2.2500	2.465	0.563	✓	✓
TCL-24-6	1.5000 UNC	06	2.3750	2.578	0.563	✓	✓
TCL-24-12	1.5000 UNF	12	2.3750	2.578	0.563	✓	✓
TCL-28-16	1.7500 UNS	16	2.7500	3.046	0.688	✓	✓
TCL-32-12	2.0000 UN	12	3.0000	3.273	0.688	✓	✓
TCL-36-12	2.2500 UN	12	3.2500	3.504	0.750	✓	✓

✓

Stock Size

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with napthenic oil, centrifugal dried.

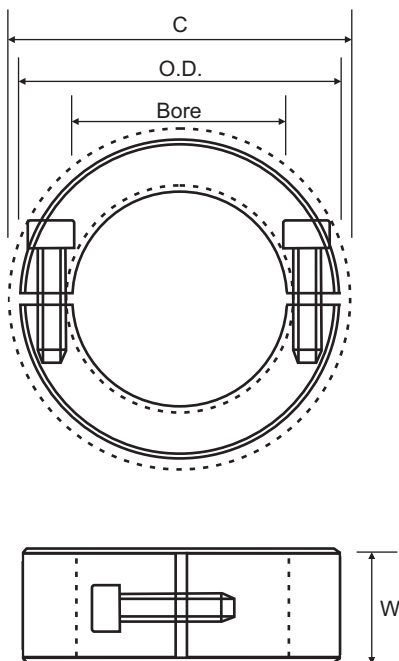
Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.



Threaded Two Piece Split (Clamp Type) Inch

Clamp style collars with threaded bores are also available. Threaded collars provide axial holding power superior to smooth bore collars, while offering easier installation and adjustment than solid ring locking devices.



- Does not mar the shaft.
- Single point faced.
- Acme and Left-hand threads available.
- Opposing screws available.
- Additional sizes available.

-Width tolerance:

All

+ .003"
- .010"

Part No.	Thread (in)	T.P.I.	O.D. (in)	C (in)	W (in)	F	SS
TSP-2-32	#8 UNC	32	0.625	0.773	0.281	^	^
TSP-3-24	#10 UNC	24	0.625	0.773	0.281	^	^
TSP-3-32	#10 UNF	32	0.625	0.773	0.281	^	^
TSP-4-20	0.2500 UNC	20	0.625	0.773	0.281	^	^
TSP-4-28	0.2500 UNF	28	0.625	0.773	0.281	^	^
TSP-5-18	0.3125 UNC	18	0.688	0.838	0.281	^	^
TSP-5-24	0.3125 UNF	24	0.688	0.838	0.281	^	^
TSP-6-16	0.3750 UNC	16	0.875	1.027	0.343	^	^
TSP-6-24	0.3750 UNF	24	0.875	1.027	0.343	^	^
TSP-7-14	0.4375 UNC	14	0.938	1.080	0.343	^	^
TSP-7-20	0.4375 UNF	20	0.938	1.080	0.343	^	^
TSP-8-13	0.5000 UNC	13	1.125	1.281	0.406	^	^
TSP-8-20	0.5000 UNF	20	1.125	1.281	0.406	^	^
TSP-10-11	0.6250 UNC	11	1.313	1.500	0.437	^	^
TSP-10-18	0.6250 UNF	18	1.313	1.500	0.437	^	^
TSP-12-10	0.7500 UNC	10	1.500	1.808	0.500	^	^
TSP-12-16	0.7500 UNF	16	1.500	1.808	0.500	^	^
TSP-14-9	0.8750 UNC	09	1.625	1.916	0.500	^	^
TSP-14-14	0.8750 UNF	14	1.625	1.916	0.500	^	^
TSP-16-8	1.0000 UNC	08	1.750	2.032	0.500	^	^
TSP-16-12	1.0000 UNF	12	1.750	2.032	0.500	^	^
TSP-16-14	1.0000 UNS	14	1.750	2.032	0.500	^	^
TSP-18-7	1.1250 UNC	07	1.875	2.140	0.500	^	^
TSP-18-12	1.1250 UNF	12	1.875	2.140	0.500	^	^
TSP-20-7	1.2500 UNC	07	2.063	2.295	0.500	^	^
TSP-20-12	1.2500 UNF	12	2.063	2.295	0.500	^	^
TSP-22-6	1.3750 UNC	06	2.250	2.465	0.563	^	^
TSP-22-12	1.3750 UNF	12	2.250	2.465	0.563	^	^
TSP-24-6	1.5000 UNC	06	2.375	2.578	0.563	^	^
TSP-24-12	1.5000 UNF	12	2.375	2.578	0.563	^	^
TSP-28-16	1.7500 UNS	16	2.750	3.046	0.688	^	^
TSP-32-12	2.0000 UN	12	3.000	3.273	0.688	^	^
TSP-36-12	2.2500 UN	12	3.250	3.504	0.750	^	^

^ Available on request

Steel - Black Oxide (F)

Cold drawn bar. Hot process black oxide, impregnated with naphthenic oil, centrifugal dried.

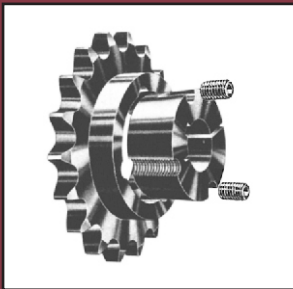
Stainless Steel (SS)

Stainless Steel Grade 303 austenitic, non-magnetic bar with a bright finish.

Notes

NAISMITH

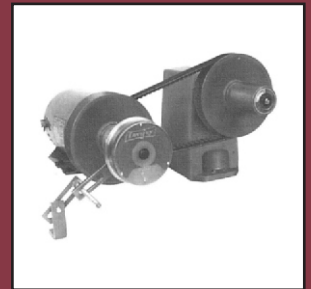
Power Transmission is all we do



Sprocket in both B.S. A.S.A. - Plates, Simplex, Duplex & Triplex. Chain in B.S. A.S.A. Conveyor & Special chains.



We can supply more than 40 different types of coupling from 9 different suppliers.



Variable speed pulleys.
Zero-Max variable speed drives.



Winsmith gear boxes, Zero-max Crown Gear Drives & Tol-O-Matic Float-A-Shafts.



Timing pulleys Classical, HTD, Metric T & AT & Poly Chain G.T. With belts to suit.



A full range of Poly-V Pulleys, V-pulleys with belts to suit.

Naismith Eng & Mfg Co Pty.Ltd
A.B.N. 25 004 284 388

149 Heidelberg Rd
Northcote, Victoria
Australia, 3070

Ph (03) 9489 9811
Fax (03) 9482 1474

1/29 Bearing Rd
Seven Hills, New South Wales
Australia, 2147

Ph (02) 9838 0050
Fax (02) 9838 4577