

CLAMPING ELEMENTS

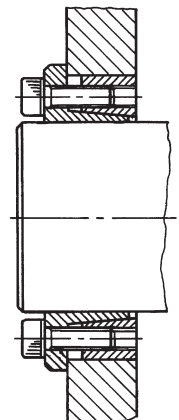
The clamping system connects one or two component parts solidly to the drive shaft, which allow motion to be transmitted or to withstand an axial thrust. Friction connection enables gaps to be eliminated, thereby ensuring greater precision of the keyed components without requiring strict processing tolerances. The thrust cones develop a pressure between the shaft and the hub, which enables pulleys, gears, chain sprockets, drums, flywheels, etc. to be anchored securely. The easy assembly and disassembly features give users many advantages leading to a further cost saving.

Chiaravalli Trasmissioni S.p.A. provides its Customers with different types of clamping elements, which are designed to cover a broad range of applications.

SELF-CENTRING RCK 15 TYPE



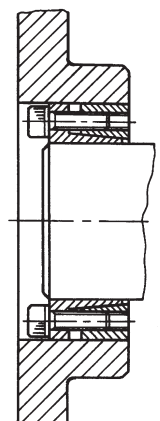
Suitable for assemblies where axial and radial positioning accuracy is required with medium-high torque values. The main feature is the possibility of varying the internal bores while maintaining the external dimensions constant at only three diameters.



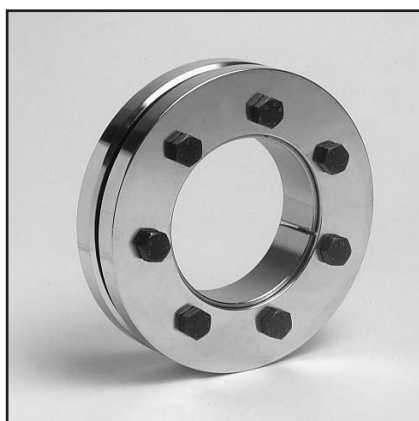
SELF-CENTRING RCK 13 TYPE



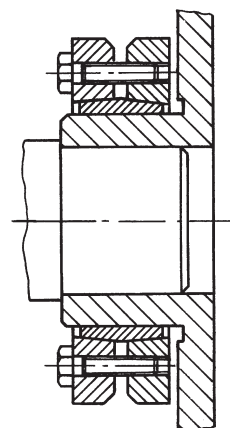
Suitable for assemblies where good concentricity is required in small spaces with medium-high torque values. Can substitute RCK 40 in some cases.



RCK 19 TYPE



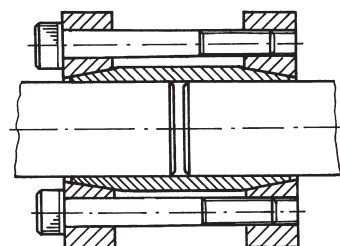
Suitable for hollow shafts, operates by compressing the hollow shafts on the solid shaft enabling transmission of medium-high twisting moments to be achieved.



RCK 95 TYPE



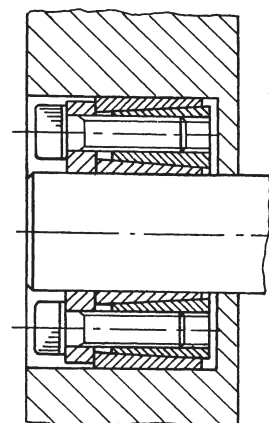
Enables rigid connection between two aligned shafts. Transmits medium-high twisting moments with the advantage of enabling rapid assembly and disassembly.



RCK 45 TYPE



Suitable for applications where medium-low twisting moments are required, with easy rapid assembly and disassembly. Not self-centring.



RCK 19 STANDARD TYPE CLAMPING ELEMENTS

N.B. The recommended machining tolerances for the pressure surfaces are as follows:

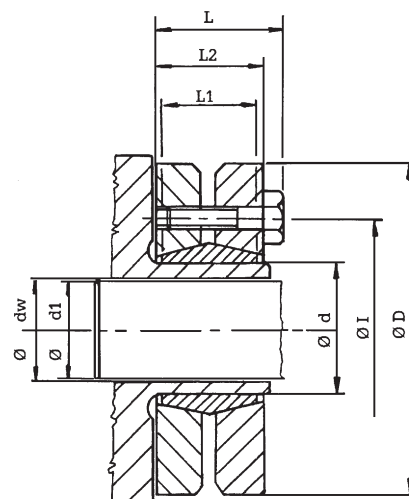
Diameter d h 8

IMPORTANT:

The internal cones are lubricated using products based on Molybdenum Bisulphide.

ORDERING EXAMPLE:

The following will be ordered with a shaft having Ød 36 with a torque value less than or equal to 440 Nm: RCK 19 - 36x72.



RCK 19

DIMENSIONS								PRESSURES		Clamping Screws DIN 912 MAT. 12.9		
Ød	ØD	Ø dw	L1	L2	L	ØI	Δ dw (dw-d1)	Torque Mt Nm	Shaft N/mm²	No.	Type	Torque Nm
24	50	19	14	19.5	23	36	0.017	170	286	6	M5x18 DIN 912 Mat. 12.9	4
		20						210				
		21						250				
30	60	24	16	21.5	25	44	0.017	300	233	7	M5x18 DIN 912 Mat. 12.9	4
		25						340				
		26						380				
36	72	28	18	23.5	27.5	52	0.032	440	307	5	M6x20	12
		30						570				
		31						630				
44	80	32	20	25.5	29.5	61	0.032	620	317	7	M6x20	12
		35						780				
		36						860				
50	90	38	22	27.5	31.5	70	0.032	940	289	8	M6x25	12
		40						1160				
		42						1380				
55	100	42	23	30.5	34.5	75	0.032	1160	252	8	M6x25	12
		45						1520				
		48						1880				
62	110	48	23	30.5	34.5	86	0.048	1850	279	10	M6x25	12
		50						2200				
		52						2400				
68	115	50	23	30.5	34.5	86	0.048	2000	255	10	M6x25	12
		55						2500				
		60						3150				
75	138	55	25	32.5	37.8	100	0.048	2500	273	7	M8x30	30
		60						3200				
		65						3950				
80	145	60	25	32.5	37.8	100	0.048	3200	256	7	M8x30	30
		65						3900				
		70						4600				
90	155	65	30	39	44.3	114	0.048	4750	271	10	M8x35	30
		70						6000				
		75						7250				
100	170	70	34	44	49.3	124	0.048	6900	258	12	M8x35	30
		75						7500				
		80						9000				
110	185	75	39	50	56.4	136	0.048	7200	244	9	M10x40	59
		80						9000				
		85						10800				
125	215	85	42	54	60.4	160	0.069	11000	266	12	M10x40	59
		90						13000				
		95						15000				
140	230	95	46	60.5	68	175	0.069	15100	264	10	M12x45	100
		100						17600				
		105						20100				
155	265	105	50	64.5	72	192	0.069	22000	263	12	M12x50	100
		110						25000				
		115						28000				
165	290	115	56	71	81	210	0.069	31000	277	8	M16x55	250
		120						35000				
		125						39000				
175	300	125	56	71	81	220	0.079	36000	261	8	M16x55	250
		130						41000				
		135						45000				
185	330	135	71	86	96	236	0.090	52000	237	10	M16x70	250
		140						57000				
		145						62000				

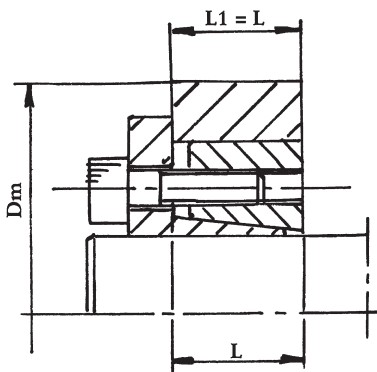
Checking minimum hub diameter Dm

The minimum external hub diameter (Dm) must be checked after the type of clamping element with the required features has been selected, since the hub must withstand the stresses produced by the high pressures developed by the clamping element.

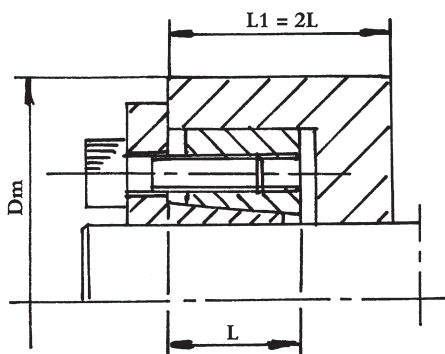
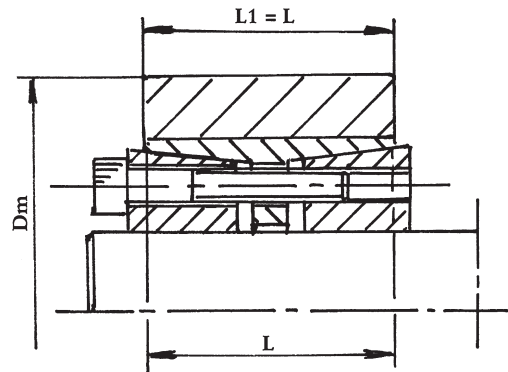
The check is merely static and only refers to the stresses generated by the clamping element:

$$D_m \geq D \times \sqrt{\frac{R_{s\ 0.2} + (P_m \times C)}{R_{s\ 0.2} - (P_m \times C)}}$$

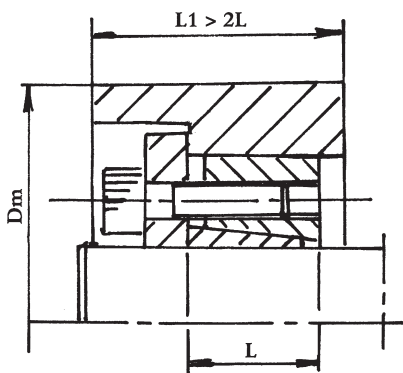
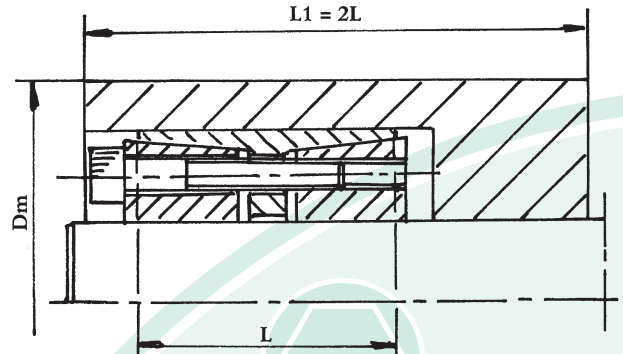
- Dove: Dm = external hub diameter (mm)
 D = external diameter of clamping element (mm)
 Rs 0.2 = yield strength for a permanent elongation of 0.2% (N/mm²)
 Pm = specific pressure exerted on the hub by the clamping element (N/mm²)
 C = Utilisation coefficient depending on the hub profile (refer to the figures below).



C = 1



C = 0.8



C = 0.6

