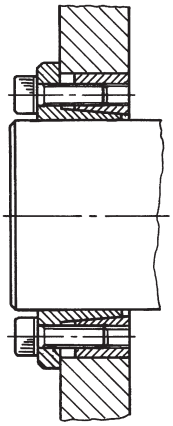
CLAMPING ELEMENTS

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.

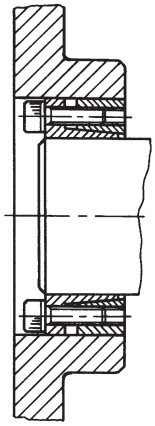
SELF-CENTRING RCK 15 TYPE

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.



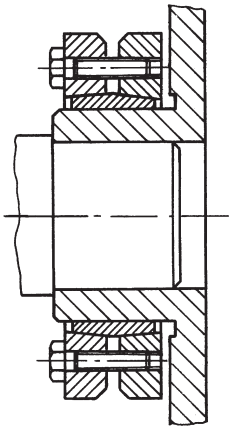
SELF-CENTRING RCK 13 TYPE

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



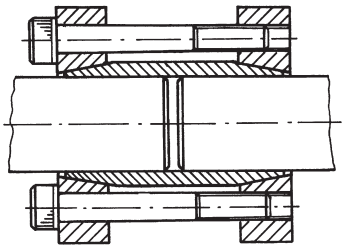
RCK 19 TYPE

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



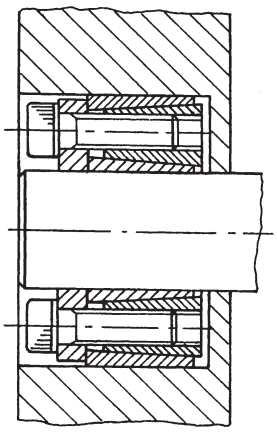
RCK 95 TYPE

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

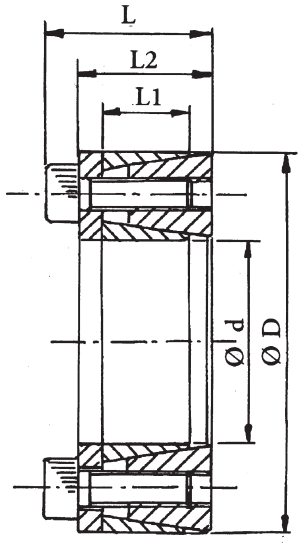


RCK 45 TYPE

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



RCK 45 TYPE
CLAMPING ELEMENTS



N.B. The recommended machining tolerances for the pressure surfaces are as follows:
h 8 for Shaft
H 8 for Hub

ORDERING EXAMPLE:
The following will be ordered with a shaft having Ød 55 with a torque value less than or equal to 2.000 Nm: **RCK 45** - 55x83.

RCK 45

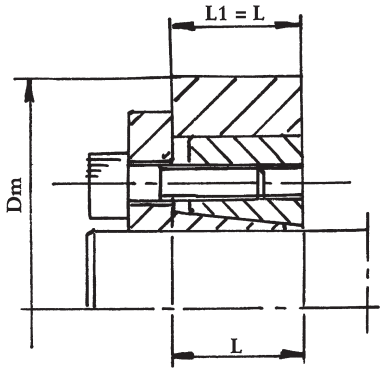
DIMENSIONS					Torque	PRESSURES		Clamping Screws DIN 912 MAT. 12.9			Extraction Thread	
Ød	ØD	L1	L2	L	Mt Nm	Shaft N/mm²	Hub N/mm²	No.	Type	Torque Nm	Type	No.
18	40	12	18.5	24.5	190	260	120	6	M6X15	16	M8	2
19	41	12	18.5	24.5	210	260	120	6	M6X15	16	M8	2
20	42	12	18.5	24.5	240	250	120	6	M6X15	16	M8	2
24	46	12	18.5	24.5	290	250	120	6	M6X15	16	M8	2
25	47	12	18.5	24.5	330	230	120	8	M6X15	16	M8	2
28	50	12	18.5	24.5	370	220	120	8	M6X15	16	M8	2
30	52	12	18.5	24.5	430	210	120	8	M6X15	16	M8	2
35	57	15	22	28	610	170	100	12	M6X15	16	M8	3
38	60	15	22	28	680	170	100	12	M6X15	16	M8	3
40	62	15	22	28	780	170	100	12	M6X15	16	M8	3
42	70	18	28	36	1480	190	110	12	M8X22	41	M10	3
45	73	18	28	36	1500	210	130	12	M8X22	41	M10	3
48	76	18	28	36	1550	210	130	12	M8X22	41	M10	3
50	78	18	28	36	1650	190	120	12	M8X22	41	M10	3
55	83	18	28	36	2000	190	120	16	M8X22	41	M10	4
60	88	18	28	36	2350	190	120	16	M8X22	41	M10	4
70	105	22	35	45	3900	180	120	12	M10X25	70	M12	3
80	115	22	35	45	4800	170	120	16	M10X25	70	M12	4

Checking minimum hub diameter Dm

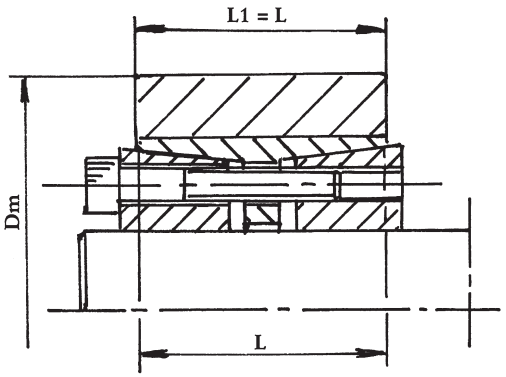
The minimum external hub diameter (Dm) must be checked after the type of clamping element with the required features has been selected, since the hub must withstand the stresses produced by the high pressures developed by the clamping element.
The check is merely static and only refers to the stresses generated by the clamping element:

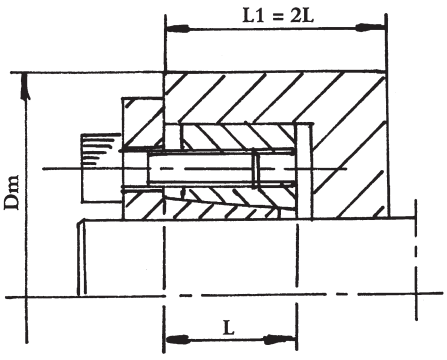
$$Dm \geq D \times \sqrt{\frac{Rs_{0.2} + (Pm \times C)}{Rs_{0.2} - (Pm \times C)}}$$

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/mm^2)
- Pm = specific pressure exerted on the hub by the clamping element (N/mm^2)
- C = Utilisation coefficient depending on the hub profile (refer to the figures below).

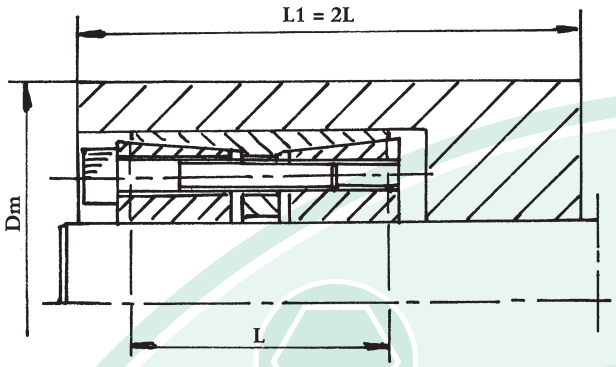


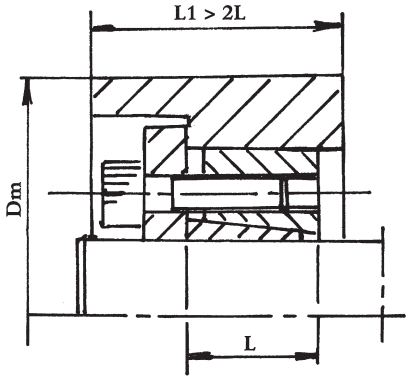
C = 1





C = 0.8





C = 0.6