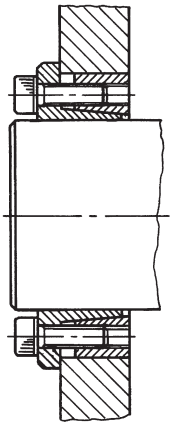
CLAMPING ELEMENTS

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.

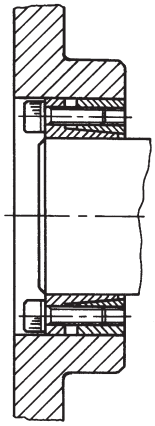
SELF-CENTRING RCK 15 TYPE

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.



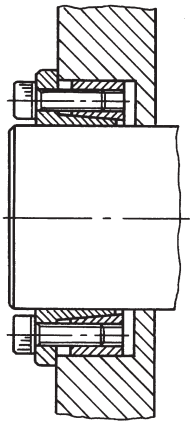
SELF-CENTRING RCK 13 TYPE

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



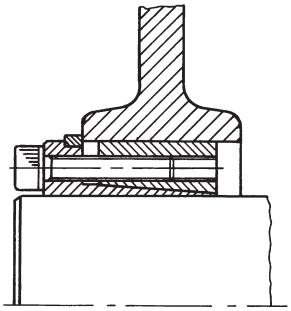
SELF-CENTRING RCK 16 TYPE

Suitable for assemblies where concentricity and positioning accuracy is required. Operates with medium-high torque values.



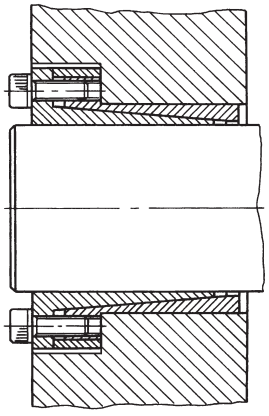
SELF-CENTRING RCK 70/71 TYPE (RCK 70 WITH SPACER)

The RCK 70 version is suitable for assemblies where concentricity and orthogonal positioning of the parts is required.
The RCK 71 version has the same features as RCK 70 with the addition of a spacer ring to completely avoid possible axial displacements.
These components operate with medium-high torque values.

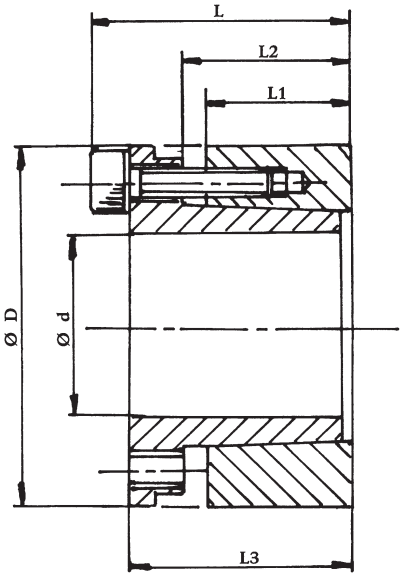


SELF-CENTRING RCK 80 TYPE

Suitable for assemblies on hubs with thin walls guarantees both axial and radial positioning precision with medium transmission torque values.



SELF-CENTRING TYPE CLAMPING ELEMENTS RCK 70



N.B. The recommended machining tolerances for the pressure surfaces are as follows:
h8 for Shaft
H8 for Hub

ORDERING EXAMPLE:
The following will be ordered with a shaft having Ød 48 with a torque value less than or equal to 2.510 Nm: **RCK 70** - 48x80.

RCK 70

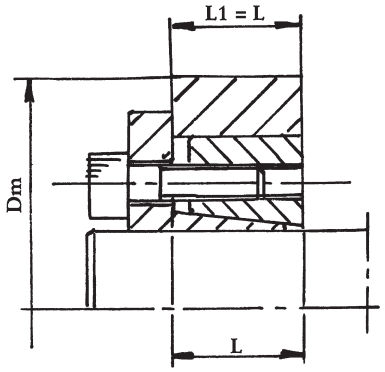
DIMENSIONS						Torque	PRESSURES		Clamping Screws DIN 912 MAT. 12.9			Extraction Thread	
Ød	ØD	L1	L2	L3	L	Mt Nm	Shaft N/mm²	Hub N/mm²	No.	Type	Torque Nm	Type	No.
19	47	26	31	39	45	350	228	98	4	M6x25	17	M6	2
20	47	26	31	39	45	390	231	100	4	M6x25	17	M6	2
22	47	26	31	39	45	440	220	95	4	M6x25	17	M6	2
24	50	26	31	39	45	519	215	102	6	M6x25	17	M6	3
25	50	26	31	39	45	590	230	105	6	M6x25	17	M6	3
28	55	26	31	39	45	700	220	110	6	M6x25	17	M6	3
30	55	26	31	39	45	760	200	120	6	M6x25	17	M6	3
32	60	26	31	39	45	930	230	114	8	M6x25	17	M6	4
35	60	26	31	39	45	1030	200	119	8	M6x25	17	M6	4
38	65	26	31	39	45	1240	210	124	8	M6x25	17	M6	4
40	65	26	31	39	45	1350	200	125	8	M6x25	17	M6	4
42	75	30	36	47	55	2170	236	140	6	M8x30	41	M8	3
45	75	30	36	47	55	2350	236	140	6	M8x30	41	M8	3
48	80	30	36	47	55	2510	218	135	6	M8x30	41	M8	3
50	80	30	36	47	55	2580	218	135	6	M8x30	41	M8	3
55	85	30	36	47	55	3200	223	145	8	M8x30	41	M8	4
60	90	30	36	47	55	3380	198	157	8	M8x30	41	M8	4
65	95	30	36	47	55	4160	213	140	8	M8x30	41	M8	4
70	110	40	46	57	67	6840	225	143	8	M10x35	83	M10	4
75	115	40	46	62	72	7500	210	138	8	M10x35	83	M10	4
80	120	40	46	62	72	8100	200	130	8	M10x35	83	M10	4
85	125	40	46	62	72	9700	210	145	10	M10x35	83	M10	4
90	130	40	46	62	72	10300	200	138	10	M10x35	83	M10	4
95	135	40	46	62	72	12100	210	148	10	M10x35	83	M10	4
100	145	46	52	77	89	15700	216	148	8	M12x45	145	M12	4
110	155	46	52	77	89	17200	196	139	8	M12x45	145	M12	4
120	165	46	52	77	89	22500	216	156	10	M12x45	145	M12	4
130	180	46	52	77	89	24000	196	140	12	M12x45	145	M12	4
140	190	51	59	84	90	30800	196	145	8	M14x45	230	M14	4
150	200	51	59	84	90	37150	205	153	10	M14x45	230	M14	5
160	210	51	59	84	90	40500	205	155	10	M14x45	230	M14	5
170	225	51	59	84	90	40900	163	123	12	M14x45	230	M14	6
180	235	51	59	84	90	41300	160	120	12	M14x45	230	M14	6

Checking minimum hub diameter Dm

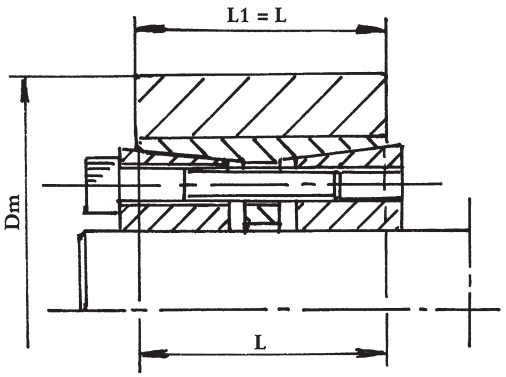
The minimum external hub diameter (Dm) must be checked after the type of clamping element with the required features has been selected, since the hub must withstand the stresses produced by the high pressures developed by the clamping element.
The check is merely static and only refers to the stresses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

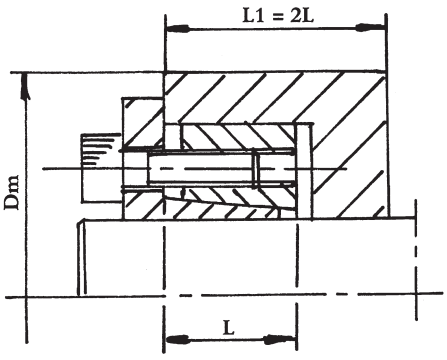
$$Dm \geq D \times \sqrt{\frac{Rs_{0.2} + (Pm \times C)}{Rs_{0.2} - (Pm \times C)}}$$

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).

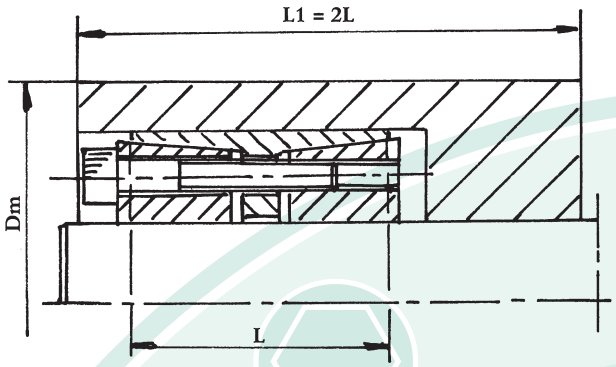


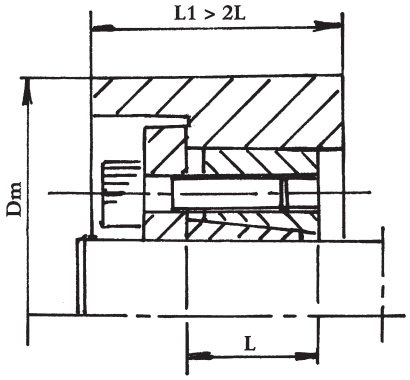
C = 1





C = 0.8





C = 0.6