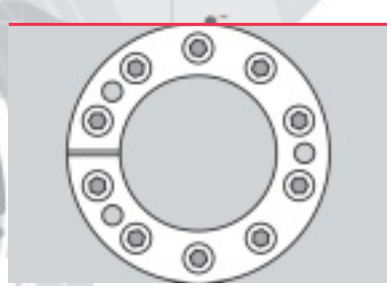
Shaft Clamping Elements



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CROSS+MORSE

Power Transmission Solutions

Cross Shaft Clamping Elements provide the latest technology in drive connection.

Cross Shaft Clamping Elements, by means of frictional forces, provide connection of all types of transmission equipment to their respective shafts, enabling transmission of both torque and axial thrust loads. Precision tapered thrust cones within the clamping elements create high pressure between shaft and hub to securely fasten pulleys, sprockets, gears etc. Stresses in both hub and shaft are similar to heavy press fits, however, the actual stresses are easy to calculate; and the hub can always be easily dismantled without damage to it or the shaft; only a torque wrench being required for both assembly and disassembly.
Precision transmission of torque with no backlash is obtained with shaft clamping elements, without the need of tight manufacturing tolerances of mating components. Simplified designs can enable manufacturing cost reductions, coupled with easy assembly and disassembly.

Cross Shaft Clamping Elements provide an alternative method of connecting hubs to shafts to:-

Tapered Bushes
Hydraulic Clamping Systems
Fine-bored Hubs, with Precision keyways and Locking Setscrews
Heavy Press Fits
Welded Components

Cross Shaft Clamping Elements offer many advantages:-

Easy Assembly - Hub to shaft connection is simple, only a torque wrench being required for correct assembly.

Easy Disassembly - Just release of locking screws is all that is required on some series, others require simple positive release by tightening screws in jacking holes.

Simplified Manufacture - Parallel boring of hubs with H8 tolerance, or up to H11 on some sizes.

Lower Cost Assemblies - Eliminates costly machining of splines, keyways, and setscrews.

Long Fatigue Life - Elimination of keys prevents failure due to fretting, or notch initiated cracking under torsional loads.

No Axial Location Required - Hubs can be positioned anywhere on shaft and locked to withstand high axial loads.

High Torque Transmission - Most series will transmit torques equivalent to shaft capacities, and for higher torques clamping elements can be combined within one shaft/hub connection.

Small Shaft Diameters - Elimination of keyways often enables smaller diameter shafts to be used on many applications.

Freedom from Wear - Lack of moving parts means no wear. Shaft Clamping Elements can be tightened and released as often as required with no wear.

Less Maintenance - Correctly assembled, Shaft Clamping Elements require no maintenance. Self locking action of most designs ensures torque transmission even if locking screws should vibrate loose during use.

True Running - Equally distributed friction locking ensures no play and high concentricity.

Shafts Remain Unmarked - Shaft Clamping Elements do not mark shafting ensuring ability of easy disassembly and assembly of components.

Timing of Drives - Infinitely variable angular positioning with simple clamping and release enables simple timing of drives.

Overload Protection - If design load is exceeded the clamping elements will slip on shaft providing protection to other machine components.

Resistance to Contamination - When fully clamped contact surfaces are tightly pressed together preventing ingress of dirt and moisture.

Sealed Joints - Clamping Elements Series RCK 50 can be used to provide fully Gastight Joints, to seal against passage of liquids or gases.

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Cross Shaft Clamping Elements

In order to make the best selection of a Cross Shaft Clamping Element for your application a number of factors must be taken into consideration. These include the shaft diameter; the outside diameter of the hub of connecting component; the drive torque to be transmitted, and axial thrust loads, and tilting or bending loads, maximum shaft speeds, operating temperature, and general design parameters and space restrictions.

Shaft Diameter:-

The shaft diameter will determine the particular size of clamping element in any series, and by reference to the catalogue details the suitability of that to meet the other parameters can be checked. Also hollow shafts must be checked for any load carrying strength, see below.

Hub Outside Diameter:-

The Hub Diameter has to be sufficient to support the stresses imposed by the shaft clamping element. The catalogue gives maximum hub diameters for medium carbon steel, but for other materials and method of determining refer below. Generally if hub diameter is over 2.5 times shaft diameter all series are suitable, but for smaller ratios consider types RCK 80, ACE 81, CCE 54 and CCE55, for very thin walled hubs use clamping discs type RCK 19.

Determination of Minimum Hub Diameter and Max. Hollow Shaft Bore:-

The following calculations are for static conditions only, considering only stresses imposed by the clamping element. The hub diameter is controlled by the pressure applied by the outer cone of the clamping element; the shape of the hub bore and total length of hub; and yield stress for permanent elongation of 0.2%.

Minimum Hub Dia. $Dm = D\sqrt{\frac{\sigma + PhC}{\sigma - PhC}}$

Where
- D = Clamping element outside diameter mm
- σ = Yield strength of material N/mm²
- Ph = Surface pressure on hub N/mm²
- C = Constant for Hub shape - see drawings

The tables in the catalogue give minimum hub diameters for hubs manufactured in medium carbon steel (080M40 or C45) or other material where σ = 320 N/mm². Values for σ on other commonly used hub materials are:-

220 Grade Cast Iron	σ =	150 N/mm²
260 Grade Cast Iron	σ =	180 N/mm²
Mild Steels	σ =	220 N/mm²
070M55 (En9)	σ =	350 N/mm²
Stainless Steel	σ =	200 N/mm²
Aluminium	σ =	100 N/mm²

For hollow bored Shafting:-

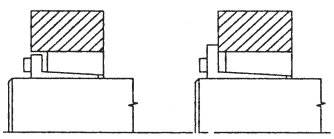
Max. Bore in Shaft $Dm = d\sqrt{\frac{\sigma - 1.6\,Ps}{\sigma}}$

Where
- d = Clamping element bore mm
- Ps = Surface pressure on Shaft N/mm²

For solid shafting yield strength of material σ must be higher than surface pressure Ps.

Hub Assembly Type A

C=1.0



$L_1 \leq Hw < 2L_1$ $L_2 \leq Hw < 2L_2$

Where Hw = Hub Width

For Dimensions L_1 & L_2 ref. Product Pages

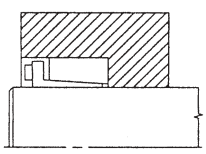
Hub Assembly Type B

C=0.8

$Hw \geq 2L_1$ $Hw \geq 2L_2$

Hub Assembly Type C

C=0.6



$Hw \geq 2L_1$ (All Types)

Maximum Shaft Speed:-

The centrifugal forces generated by high shaft speeds can reduce torque capacity and increase stress loads on hubs. Consult Cross+Morse if speed of shaft results in outer clamping diameter D running above 25M/sec.

Operating Temperature:-

Maximum temperatures should not exceed 100°C. At temperatures above 70°C the locking screws should be rechecked after 1 hour operation, whilst assembly is still warm.

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Shaft Clamping Selection

Drive Torque to be transmitted and Axial Thrust Loads:-

The maximum effective torque Te derived from maximum Drive Torque Tm and maximum Axial Thrust Ft must always be less than the Torque Capacity M shown in tables for selected shaft clamping element.
The maximum Drive Torque Tm must take into consideration any shock loads, and also the maximum starting torque of drive. If the max. torque is not known, it can be estimated by applying the service factor from the table below to the nominal drive torque Td, which can be derived from motor power P and shaft speed N r.p.m.

Drive Torque Td = $\frac{9550\,P}{N}$ Nm Where P = Power kW, N = Shaft Speed rpm

Max. Drive Torque Tm = SF x Td Nm

Selection Factors SF

Type of Motive Power	Type of Load			
	Smooth	Light Shock	Medium Shock	Heavy Shock
a.c. Motor direct start	3	3	3	4
d.c. Motor/a.c. Motor Invertor Control or Soft Start	1.5	2	2.5	3
Hydraulic or pneumatic motors	1.2	1.5	2.5	3
Internal combustion engines	3	3.5	4	5

Axial Thrust loads on shaft clamping elements reduces torque capacity. To determine a clamping elements capability to transmit both maximum torque and axial thrust loads the effective torque must be established if any axial loading exists.

Maximum effective torque $Te = \sqrt{Tm^2 + \left(\frac{Ft.d}{2000}\right)^2}$ Nm

Ft = Max. Axial Load N
d = Shaft Diameter mm

For correct selection
Torque Capacity M > Te (or Tm): and Axial Force Capacity F > Ft

Tilting or Bending Loads:-

Always endeavour to design location of shaft clamping element directly beneath line of driving force on hub, ie chain, vee belt etc. If overhang of load or force occurs the torque capacity of the clamping element can be reduced. Under no circumstances should the resultant couple force on the clamping element exceed 0.25M

General Design Factors:-

Never place a shaft clamping element radically inline with a bearing, as expansion due to clamping could cause bearing seizure. To help final selection refer to table below for series selection.

General Features of Cross Shaft Clamping Elements

SERIES / FEATURE	RCK 11	RCK 13	RCK 15	RCK 16	RCK 19	RCK 40	RCK 45	RCK 50	CCE 54	CCE 55	RCK 61	RCK 70	RCK 71	RCK 80	ACE 81	RCK 95
Torque Capacity	HIGH	MED	MED	MED	HIGH	MED	MED	LOW	LOW	MED	LOW	MED	MED	MED	MED	LOW
Self Centring	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A
Concentricity Accuracy	GOOD	GOOD	GOOD	GOOD	HIGH	LOW	GOOD	LOW	MED	MED	GOOD	HIGH	GOOD	GOOD	GOOD	MED
Axial Movement in Clamping	NO	YES	NO	NO	NO	NO	YES	NO[1]	NO[1]	NO[1]	YES	YES	NO	NO	NO	NO
Hub Surface Pressures	MED	HIGH	MED	MED	N/A	MED	MED	LOW	LOW	LOW	LOW	HIGH	MED	LOW	LOW	N/A
Self Locking When Clamped	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	NO
Suitable for Thin Walled Hub	NO	NO	NO	NO	YES	NO	NO	YES	YES	YES	NO	NO	NO	YES	YES	N/A
Short Overall Length	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
Clamps Outside Hub Dia.	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
Cost of Assembly	HIGH	MED	LOW	MED	HIGH	LOW	LOW	LOW	LOW	LOW	LOW	MED	MED	HIGH	MED	HIGH
Catalogue Page	16	6	5	7	19	14	15	17	13	13	12	8	9	10	11	19

[1] Depends on design.

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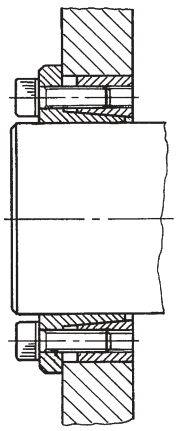
Clamping Elements Type RCK 15

Designed for use with standardised ranges of pulleys, sprockets, and gears, the shaft clamping elements can accommodate a large range of shaft diameters with a hub of constant bore diameter. On clamping precise axial and radial positioning is provided, combined with medium torque transmission capability.



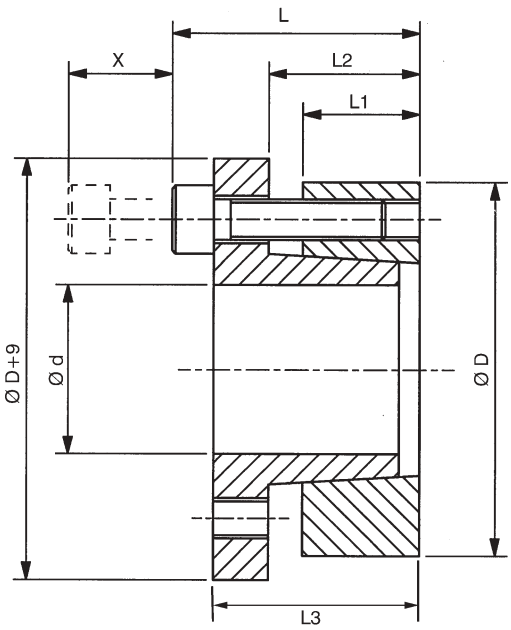
Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

Cross+Morse can provide standard Roller Chain Sprockets finish bored to accommodate RCK 15 shaft clamping elements, with ability to fit to either hub or sprocket end.

X = Distance required to remove screws, additional clearance for alan key may be required.



Dimensions

Part No.	Dimensions mm							Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Clamping Screws			Approx. Weight	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
RCK15-14X55	14	55	39	17	22	31	25	282	39	458	118	4	M8	41	0.51	81	75	69
RCK15-16X55	16	55	39	17	22	31	25	313	39	400	118	4	M8	41	0.49	81	75	69
RCK15-18X55	18	55	39	17	22	31	25	353	39	356	118	4	M8	41	0.48	81	75	69
RCK15-19X55	19	55	39	17	22	31	25	372	39	337	118	4	M8	41	0.47	81	75	69
RCK15-20X55	20	55	39	17	22	31	25	392	39	320	118	4	M8	41	0.47	81	75	69
RCK15-22X55	22	55	39	17	22	31	25	431	39	290	118	4	M8	41	0.45	81	75	69
RCK15-24X55	24	55	39	17	22	31	25	470	39	265	118	4	M8	41	0.44	81	75	69
RCK15-25X55	25	55	39	17	22	31	25	490	39	255	118	4	M8	41	0.43	81	75	69
RCK15-28X55	28	55	39	17	22	31	25	549	39	228	118	4	M8	41	0.41	81	75	69
RCK15-30X55	30	55	39	17	22	31	25	588	39	213	118	4	M8	41	0.40	81	75	69
RCK15-24X65	24	65	39	17	22	31	25	617	51	332	122	5	M8	41	0.68	97	89	82
RCK15-25X65	25	65	39	17	22	31	25	637	51	320	122	5	M8	41	0.63	97	89	82
RCK15-28X65	28	65	39	17	22	31	25	725	51	285	122	5	M8	41	0.61	97	89	82
RCK15-30X65	30	65	39	17	22	31	25	764	51	267	122	5	M8	41	0.58	97	89	82
RCK15-32X65	32	65	39	17	22	31	25	823	51	250	122	5	M8	41	0.56	97	89	82
RCK15-35X65	35	65	39	17	22	31	25	902	51	228	122	5	M8	41	0.53	97	89	82
RCK15-38X65	38	65	39	17	22	31	25	970	51	210	122	5	M8	41	0.50	97	89	82
RCK15-40X65	40	65	39	17	22	31	25	1029	51	200	122	5	M8	41	0.47	97	89	82
RCK15-30X80	30	80	41	20	25	33	25	1082	72	315	120	7	M8	41	1.04	119	109	101
RCK15-32X80	32	80	41	20	25	33	25	1155	72	298	120	7	M8	41	1.03	119	109	101
RCK15-35X80	35	80	41	20	25	33	25	1260	72	272	120	7	M8	41	0.98	119	109	101
RCK15-38X80	38	80	41	20	25	33	25	1370	72	250	120	7	M8	41	0.94	119	109	101
RCK15-40X80	40	80	41	20	25	33	25	1440	72	238	120	7	M8	41	0.91	119	109	101
RCK15-42X80	42	80	41	20	25	33	25	1510	72	226	120	7	M8	41	0.89	119	109	101
RCK15-45X80	45	80	41	20	25	33	25	1620	72	212	120	7	M8	41	0.83	119	109	101
RCK15-48X80	48	80	41	20	25	33	25	1735	72	198	120	7	M8	41	0.79	119	109	101
RCK15-50X80	50	80	41	20	25	33	25	1806	72	190	120	7	M8	41	0.74	119	109	101
RCK15-40X80H	40	80	41	20	25	33	25	2157	108	340	169	10	M8	41	0.89	144	126	111
RCK15-45X80H	45	80	41	20	25	33	25	2422	108	302	169	10	M8	41	0.85	144	126	111
RCK15-50X80H	50	80	41	20	25	33	25	2700	108	272	169	10	M8	41	0.78	144	126	111

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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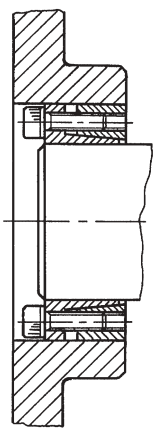
Clamping Elements Type RCK 13

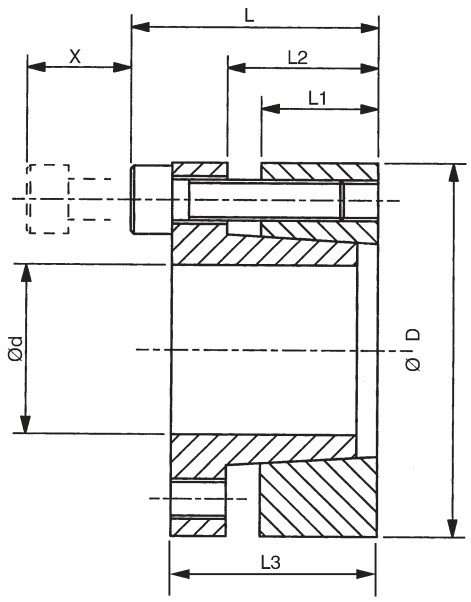
These shaft clamping elements are very compact units capable of transmitting medium torques. Their design ensures good concentricity between hubs and shafts, without any other means of location. A slight axial movement between hub and shaft occurs during clamping. These units can be installed totally within the hub providing optimum safety, and minimal axial length.



Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.



X = Distance required to remove screws, additional clearance for alan key may be required.

Dimensions

Part No.	Dimensions mm							Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Clamping Screws			Approx. Weight kg	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm		Assy Type A	Assy Type B	Assy Type C
RCK13-18X47	18	47	34	17	22	28	20	350	39	280	120	5	M6	14	0.27	70	64	59
RCK13-19X47	19	47	34	17	22	28	20	355	37	280	120	5	M6	14	0.27	70	64	59
RCK13-20X47	20	47	34	17	22	28	20	360	36	280	120	5	M6	14	0.26	70	64	59
RCK13-22X47	22	47	34	17	22	28	20	400	36	268	123	5	M6	14	0.25	70	65	59
RCK13-24X50	24	50	34	17	22	28	20	440	37	243	120	6	M6	14	0.28	74	68	63
RCK13-25X50	25	50	34	17	22	28	20	560	45	280	138	6	M6	14	0.27	79	72	65
RCK13-28X55	28	55	34	17	22	28	20	625	45	250	128	6	M6	14	0.32	84	77	70
RCK13-30X55	30	55	34	17	22	28	20	650	43	235	128	6	M6	14	0.30	84	77	70
RCK13-32X60	32	60	34	17	22	28	20	950	59	290	150	8	M6	14	0.37	100	89	80
RCK13-35X60	35	60	34	17	22	28	20	1050	60	268	150	8	M6	14	0.34	100	89	80
RCK13-38X65	38	65	34	17	22	28	20	1140	60	252	146	8	M6	14	0.41	106	95	86
RCK13-40X65	40	65	34	17	22	28	20	1200	60	232	146	8	M6	14	0.38	106	95	86
RCK13-45X75	45	75	41	20	25	33	25	2180	97	285	168	7	M8	35	0.63	134	117	104
RCK13-50X80	50	80	41	20	25	33	25	2430	97	258	158	7	M8	35	0.68	137	121	109
RCK13-55X85	55	85	41	20	25	33	25	3050	111	268	173	8	M8	35	0.73	156	135	119
RCK13-60X90	60	90	41	20	25	33	25	3350	112	243	163	8	M8	35	0.78	158	139	123
RCK13-65X95	65	95	41	20	25	33	25	4080	126	253	173	9	M8	35	0.83	174	151	133
RCK13-70X110	70	110	50	24	30	40	30	6280	179	278	178	8	M10	70	1.33	206	177	156
RCK13-75X115	75	115	50	24	30	40	30	6680	178	258	168	8	M10	70	1.39	206	180	159
RCK13-80X120	80	120	50	24	30	40	30	7130	178	248	168	8	M10	70	1.48	215	188	166
RCK13-85X125	85	125	50	24	30	40	30	8450	199	258	178	9	M10	70	1.55	234	202	177
RCK13-90X130	90	130	50	24	30	40	30	9080	202	248	168	9	M10	70	1.63	233	203	180
RCK13-95X135	95	135	50	24	30	40	30	10580	223	258	178	10	M10	70	1.70	253	218	191
RCK13-100X145	100	145	56	26	32	44	35	13380	268	268	188	8	M12	125	2.60	284	241	210
RCK13-110X155	110	155	56	26	32	44	35	14580	265	238	178	8	M12	125	2.80	290	250	219
RCK13-120X165	120	165	56	26	32	44	35	17880	298	248	178	9	M12	125	3.00	309	266	233
RCK13-130X180	130	180	64	34	40	52	35	25950	399	238	168	12	M12	125	4.60	323	282	249
RCK13-140X190	140	190	68	34	40	54	40	26950	385	208	148	9	M14	190	4.90	313	280	253
RCK13-150X200	150	200	68	34	40	54	40	32950	439	228	168	10	M14	190	5.20	358	313	277
RCK13-160X210	160	210	68	34	40	54	40	37900	474	228	168	11	M14	190	5.50	376	329	291
RCK13-170X225	170	225	78	44	50	64	40	44900	528	188	128	12	M14	190	7.70	344	313	287
RCK13-180X235	180	235	78	44	50	64	40	46900	521	168	128	12	M14	190	8.10	359	327	300

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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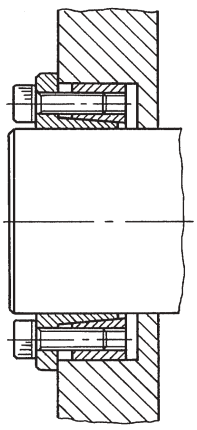
Clamping Elements Type RCK 16

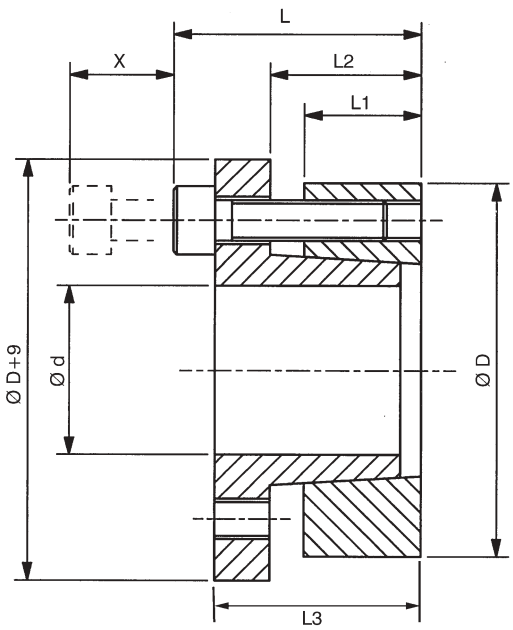
These clamping elements are basically to same design as RCK 13, but with increased diameter flange to locate hub and prevent axial movements, so combining good concentricity with positive axial location. The increase in friction between the cones due to axial restriction results in torque reduction of approx 20%, but this also means reduced surface pressures to both hub and shaft.



Recommended tolerances for full torque transmission are:-

Shaft	h8
Hub	H8

Clamping surfaces to be finished to ≤ 15 μm.



X = Distance required to remove screws, additional clearance for alan key may be required.

Dimensions

Part No.	Dimensions mm							Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Clamping Screws			Approx. Weight	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
RCK16-18X47	18	47	34	17	22	28	20	264	29	215	93	5	M6	17	0.28	63	60	56
RCK16-19X47	19	47	34	17	22	28	20	274	29	215	93	5	M6	17	0.27	63	60	56
RCK16-20X47	20	47	34	17	22	28	20	284	28	215	93	5	M6	17	0.26	63	60	56
RCK16-22X47	22	47	34	17	22	28	20	314	29	196	93	5	M6	17	0.25	63	60	56
RCK16-24X50	24	50	34	17	22	28	20	401	33	215	107	6	M6	17	0.28	71	66	61
RCK16-25X50	25	50	34	17	22	28	20	441	35	210	107	6	M6	17	0.27	71	66	61
RCK16-28X55	28	55	34	17	22	28	20	490	35	196	98	6	M6	17	0.35	75	71	66
RCK16-30X55	30	55	34	17	22	28	20	529	35	186	98	6	M6	17	0.32	75	71	66
RCK16-32X60	32	60	34	17	22	28	20	755	47	210	112	8	M6	17	0.38	86	80	74
RCK16-35X60	35	60	34	17	22	28	20	824	47	186	107	8	M6	17	0.35	85	79	74
RCK16-38X65	38	65	34	17	22	28	20	892	47	191	112	8	M6	17	0.41	94	87	80
RCK16-40X65	40	65	34	17	22	28	20	941	47	186	102	8	M6	17	0.39	90	84	79
RCK16-45X75	45	75	41	20	25	33	25	1716	76	225	132	7	M8	41	0.65	116	106	97
RCK16-50X80	50	80	41	20	25	33	25	1893	76	205	127	7	M8	41	0.69	122	111	102
RCK16-55X85	55	85	41	20	25	33	25	2403	87	210	132	8	M8	41	0.75	132	120	109
RCK16-60X90	60	90	41	20	25	33	25	2648	88	186	122	8	M8	41	0.80	134	123	114
RCK16-65X95	65	95	41	20	25	33	25	3188	98	196	132	9	M8	41	0.85	147	134	122
RCK16-70X110	70	110	50	24	30	40	30	4905	140	215	137	8	M10	83	1.35	174	157	143
RCK16-75X115	75	115	50	24	30	40	30	5150	137	195	127	8	M10	83	1.42	175	160	147
RCK16-80X120	80	120	50	24	30	40	30	5490	137	185	122	8	M10	83	1.51	179	164	151
RCK16-85X125	85	125	50	24	30	40	30	6620	156	195	132	9	M10	83	1.58	194	176	161
RCK16-90X130	90	130	50	24	30	40	30	6960	155	185	127	9	M10	83	1.66	198	181	166
RCK16-95X135	95	135	50	24	30	40	30	8190	172	195	137	10	M10	83	1.73	213	193	176
RCK16-100X145	100	145	56	26	32	44	35	10100	202	205	145	8	M12	145	2.64	236	212	192
RCK16-110X155	110	155	56	26	32	44	35	11030	201	190	135	8	M12	145	2.84	243	220	201
RCK16-120X165	120	165	56	26	32	44	35	13600	227	205	142	9	M12	145	3.05	266	239	217
RCK16-130X180	130	180	64	34	40	52	35	19000	292	186	137	12	M12	145	4.70	284	257	234
RCK16-140X190	140	190	68	34	40	54	40	21800	311	177	127	9	M14	230	4.95	289	264	242
RCK16-150X200	150	200	68	34	40	54	40	25600	341	185	137	10	M14	230	5.30	316	286	260
RCK16-160X210	160	210	68	34	40	54	40	30200	378	185	140	11	M14	230	5.60	336	303	275
RCK16-170X225	170	225	78	44	50	64	40	35000	412	147	110	12	M14	230	7.90	322	298	277
RCK16-180X235	180	235	78	44	50	64	40	37000	411	142	108	12	M14	230	8.30	334	310	289

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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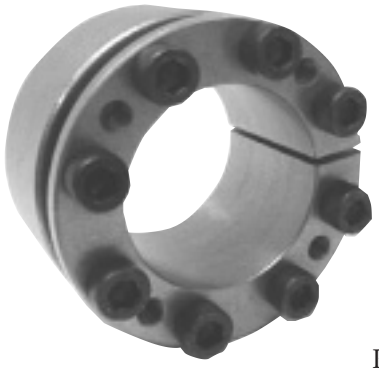
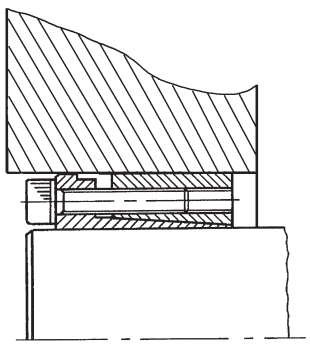
Clamping Elements Type RCK 70



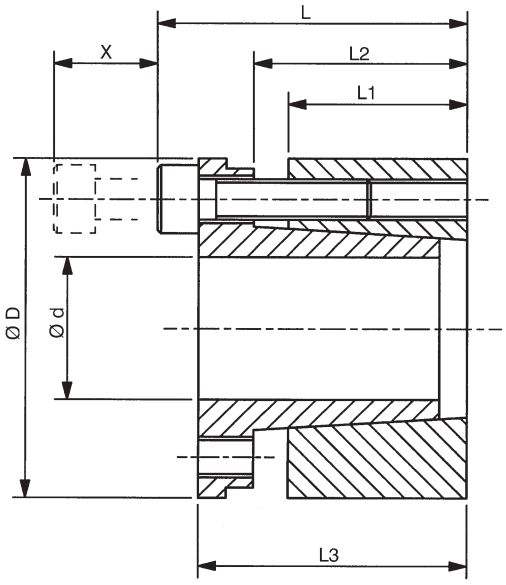
These shaft clamping elements are designed to give optimum concentricity, both radically and axially. Similar in design to the RCK 13, but with increased length to provide improved support, and reduced pressures on both shaft and hub. These units must always be installed inside the hub to ensure optimum concentricity. Axial movement of hub will occur during clamping operation.



Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.



X = Distance required to remove screws, additional clearance for alan key may be required.

Dimensions

Part No.	Dimensions mm							Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Clamping Screws			Approx. Weight	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
RCK70-19X47	19	47	45	26	31	39	25	403	42	228	98	4	M6	17	0.38	64	60	57
RCK70-20X47	20	47	45	26	31	39	25	443	44	226	98	4	M6	17	0.37	64	60	57
RCK70-22X47	22	47	45	26	31	39	25	510	46	215	93	4	M6	17	0.36	63	60	56
RCK70-24X50	24	50	45	26	31	39	25	607	51	215	102	6	M6	17	0.39	70	65	61
RCK70-25X50	25	50	45	26	31	39	25	689	55	225	102	6	M6	17	0.38	70	65	61
RCK70-28X55	28	55	45	26	31	39	25	826	59	215	107	6	M6	17	0.45	78	72	67
RCK70-30X55	30	55	45	26	31	39	25	865	58	196	117	6	M6	17	0.42	81	74	69
RCK70-32X60	32	60	45	26	31	39	25	1129	71	225	111	8	M6	17	0.52	86	80	74
RCK70-35X60	35	60	45	26	31	39	25	1177	67	196	116	8	M6	17	0.48	88	81	75
RCK70-38X65	38	65	45	26	31	39	25	1451	76	205	121	8	M6	17	0.57	97	89	82
RCK70-40X65	40	65	45	26	31	39	25	1537	77	196	122	8	M6	17	0.54	97	89	82
RCK70-42X75	42	75	55	30	36	47	30	2314	110	232	137	6	M8	41	0.91	119	107	98
RCK70-45X75	45	75	55	30	36	47	30	2657	118	232	137	6	M8	41	0.89	119	107	98
RCK70-48X80	48	80	55	30	36	47	30	2775	116	213	132	6	M8	41	1.00	124	113	103
RCK70-50X80	50	80	55	30	36	47	30	3011	120	213	132	6	M8	41	0.95	124	113	103
RCK70-55X85	55	85	55	30	36	47	30	3729	136	218	142	8	M8	41	1.02	137	123	112
RCK70-60X90	60	90	55	30	36	47	30	3949	132	194	153	8	M8	41	1.11	151	135	121
RCK70-65X95	65	95	55	30	36	47	30	4970	153	208	137	8	M8	41	1.19	150	136	124
RCK70-70X110	70	110	67	40	46	57	35	8128	232	220	140	8	M10	83	2.20	176	159	144
RCK70-75X115	75	115	72	40	46	62	35	8694	232	205	135	8	M10	83	2.53	180	163	149
RCK70-80X120	80	120	72	40	46	62	35	9458	236	196	127	8	M10	83	2.66	183	167	153
RCK70-85X125	85	125	72	40	46	62	35	11167	263	205	142	10	M10	83	2.79	201	181	164
RCK70-90X130	90	130	72	40	46	62	35	11970	266	196	135	10	M10	83	2.93	204	185	168
RCK70-95X135	95	135	72	40	46	62	35	13950	294	205	145	10	M10	83	3.06	220	197	178
RCK70-100X145	100	145	89	46	52	77	45	18295	366	211	145	8	M12	145	4.54	236	212	192
RCK70-110X155	110	155	89	46	52	77	45	20144	366	192	136	8	M12	145	4.92	244	221	201
RCK70-120X165	120	165	89	46	52	77	45	26345	439	211	152	10	M12	145	5.28	277	246	221
RCK70-130X180	130	180	89	46	52	77	45	28135	433	192	137	12	M12	145	5.52	284	257	234
RCK70-140X190	140	190	90	51	59	84	45	36177	517	192	142	8	M14	230	7.25	306	275	250
RCK70-150X200	150	200	90	51	59	84	45	43476	580	201	150	10	M14	230	7.65	333	297	267
RCK70-160X210	160	210	90	51	59	84	45	49466	618	201	150	10	M14	230	8.16	349	311	280
RCK70-170X225	170	225	90	51	59	84	45	44452	523	160	120	12	M14	230	8.75	334	307	283
RCK70-180X235	180	235	90	51	59	84	45	48901	543	157	117	12	M14	230	9.35	345	318	294

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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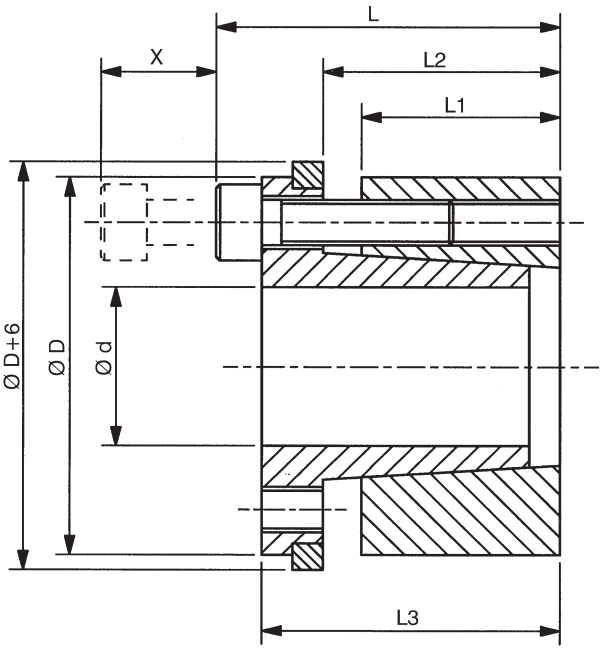
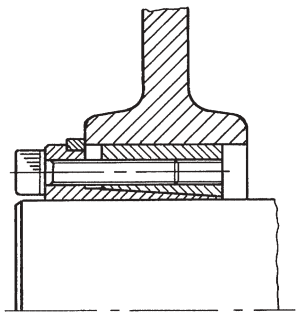
Clamping Elements Type RCK 71

The RCK 71 is a type RCK 70 with addition of a distance ring to prevent axial movement of the hub during clamping. Due to the additional friction between the element and hub during clamping maximum torques are reduced, but with reduction in surface pressures also. This design can be mounted within the confines of a hub providing a stepped bore is provided to accommodate the flange.





Recommended tolerances for full torque transmission are:-

Shaft	h8
Hub	H8

Clamping surfaces to be finished to ≤ 15 μm.

X = Distance required to remove screws, additional clearance for alan key may be required.

Dimensions

Part No.	Dimensions mm							Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Clamping Screws			Approx. Weight	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
RCK71-19X47	19	47	45	26	31	39	25	294	31	228	96	4	M6	17	0.39	64	60	56
RCK71-20X47	20	47	45	26	31	39	25	313	31	226	96	4	M6	17	0.38	64	60	56
RCK71-22X47	22	47	45	26	31	39	25	362	33	206	97	4	M6	17	0.37	64	60	56
RCK71-24X50	24	50	45	26	31	39	25	421	35	206	100	6	M6	17	0.41	69	65	60
RCK71-25X50	25	50	45	26	31	39	25	470	38	221	110	6	M6	17	0.40	72	66	62
RCK71-28X55	28	55	45	26	31	39	25	578	41	202	105	6	M6	17	0.48	77	72	67
RCK71-30X55	30	55	45	26	31	39	25	637	42	221	118	6	M6	17	0.45	81	75	69
RCK71-32X60	32	60	45	26	31	39	25	784	49	197	114	8	M6	17	0.56	87	80	75
RCK71-35X60	35	60	45	26	31	39	25	843	48	202	118	8	M6	17	0.52	88	81	75
RCK71-38X65	38	65	45	26	31	39	25	1010	53	197	121	8	M6	17	0.62	97	89	82
RCK71-40X65	40	65	45	26	31	39	25	1108	55	234	143	8	M6	17	0.59	105	94	86
RCK71-42X75	42	75	55	30	36	47	30	1892	90	216	135	6	M8	41	0.97	118	107	97
RCK71-45X75	45	75	55	30	36	47	30	1912	85	216	135	6	M8	41	0.95	118	107	97
RCK71-48X80	48	80	55	30	36	47	30	2137	89	221	142	6	M8	41	1.07	129	116	105
RCK71-50X80	50	80	55	30	36	47	30	2167	87	221	143	6	M8	41	1.02	129	116	105
RCK71-55X85	55	85	55	30	36	47	30	2677	97	221	143	8	M8	41	1.09	137	124	112
RCK71-60X90	60	90	55	30	36	47	30	2853	95	197	131	8	M8	41	1.19	139	126	116
RCK71-65X95	65	95	55	30	36	47	30	3500	108	206	142	8	M8	41	1.27	153	138	125
RCK71-70X110	70	110	67	40	46	57	35	5717	163	221	142	8	M10	83	2.03	177	159	145
RCK71-75X115	75	115	72	40	46	62	35	6207	166	216	148	8	M10	83	2.65	190	170	153
RCK71-80X120	80	120	72	40	46	62	35	6707	168	198	139	8	M10	83	2.78	191	172	157
RCK71-85X125	85	125	72	40	46	62	35	8002	188	216	157	10	M10	83	2.92	214	189	169
RCK71-90X130	90	130	72	40	46	62	35	8502	189	197	143	10	M10	83	3.07	210	189	171
RCK71-95X135	95	135	72	40	46	62	35	10002	211	187	138	10	M10	83	3.21	214	193	176
RCK71-100X145	100	145	89	46	52	77	45	13336	267	197	148	8	M12	145	4.80	239	214	193
RCK71-110X155	110	155	89	46	52	77	45	14582	265	197	178	8	M12	145	5.20	290	250	219
RCK71-120X165	120	165	89	46	52	77	45	19083	318	216	158	10	M12	145	5.58	283	251	224
RCK71-130X180	130	180	89	46	52	77	45	20417	314	198	143	12	M12	145	5.86	291	262	237
RCK71-140X190	140	190	90	51	59	84	45	24920	356	188	138	8	M14	230	7.62	301	272	248
RCK71-150X200	150	200	90	51	59	84	45	30130	402	198	149	10	M14	230	8.04	331	296	266
RCK71-160X210	160	210	90	51	59	84	45	32520	407	198	149	10	M14	230	8.56	348	311	280
RCK71-170X225	170	225	90	51	59	84	45	33350	392	158	119	12	M14	230	9.19	333	306	282
RCK71-180X235	180	235	90	51	59	84	45	33600	373	154	119	12	M14	230	9.83	347	319	295

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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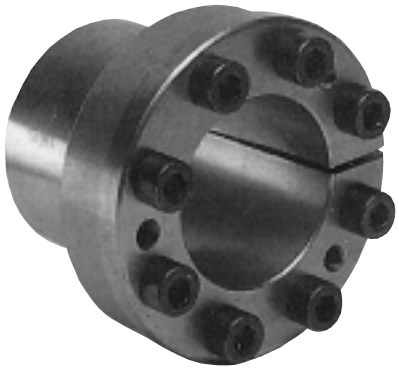
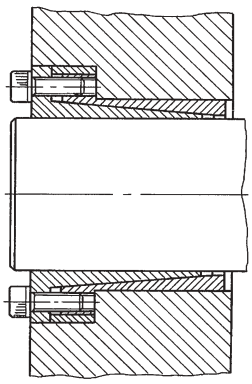
Clamping Elements Type RCK 80



Available for shaft diameters down to 6mm, these shaft clamping elements are designed to fit into small diameter hubs, being particularly suited to light duty, light torque applications. A spacer ring prevents axial movement during clamping; and design ensures good levels of concentricity.
For correct operation of these units, the hub diameter should not be less than the flange diameter D_2, even though with many materials stress limits would allow selection of smaller hub diameters.

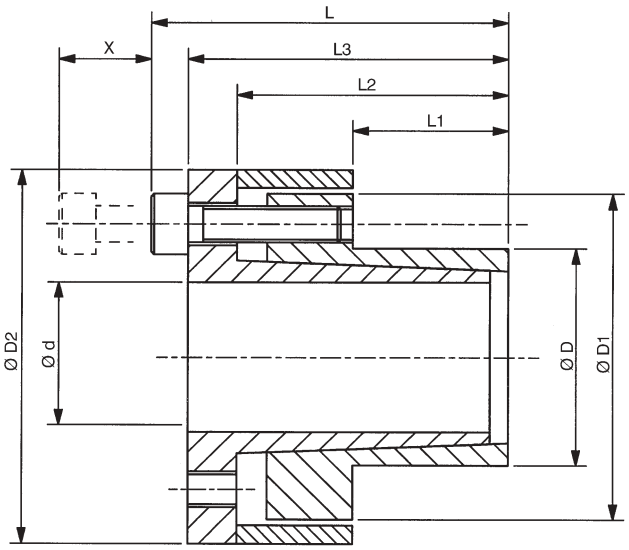


Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

X = Distance required to remove screws, additional clearance for alan key may be required.



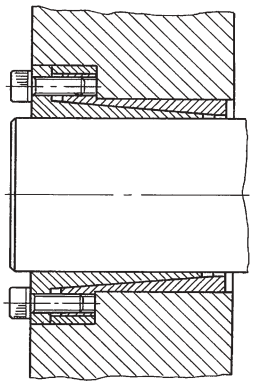
Dimensions

Part No.	Dimensions mm									Torque Cap. M Nm	Axial Force F kN	Surface Press.		Clamping Screws			Approx Weight	Min. Hub Dia* mm		
	d	D	D_1	D_2	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
RCK80-6X14	6	14	23	25	25.5	10.0	18.5	22.5	10	12	4	187	80	3	M3	2.2	0.04	18	18	17
RCK80-8X15	8	15	24	27	29.5	12.0	21.5	25.5	12	28	7	206	110	3	M4	5	0.05	22	20	19
RCK80-9X16	9	16	25	28	31.5	14.0	23.5	27.5	12	31	7	151	85	3	M4	5	0.07	21	20	19
RCK80-10X16	10	16	25	28	31.5	14.0	23.5	27.5	12	35	7	136	85	3	M4	5	0.06	21	20	19
RCK80-11X18	11	18	28	32	31.5	14.0	23.5	27.5	12	51	9	172	105	4	M4	5	0.09	26	24	22
RCK80-12X18	12	18	28	32	31.5	14.0	23.5	27.5	12	56	9	150	100	4	M4	5	0.08	25	24	22
RCK80-14X23	14	23	35	39	31.5	14.0	23.5	27.5	12	69	10	131	80	4	M4	5	0.18	30	29	27
RCK80-15X24	15	24	40	45	42.5	16.0	29.5	36.5	18	170	23	157	98	4	M6	17	0.22	33	31	29
RCK80-16X24	16	24	40	45	42.5	16.0	29.5	36.5	18	180	23	147	98	4	M6	17	0.21	33	31	29
RCK80-17X26	17	26	42	47	45.5	19.0	32.5	39.5	18	200	24	191	125	4	M6	17	0.21	40	36	33
RCK80-18X26	18	26	42	47	45.5	19.0	32.5	39.5	18	200	22	181	125	4	M6	17	0.24	40	36	33
RCK80-19X27	19	27	43	49	45.5	19.0	32.5	39.5	18	210	22	171	120	4	M6	17	0.25	40	37	34
RCK80-20X28	20	28	44	50	45.5	19.0	32.5	39.5	18	219	22	161	115	4	M6	17	0.26	41	38	35
RCK80-22X32	22	32	48	54	52.5	26.0	39.5	46.5	18	250	23	116	80	4	M6	17	0.35	42	40	38
RCK80-24X34	24	34	50	56	52.5	26.0	39.5	46.5	18	392	33	145	102	6	M6	17	0.36	48	45	42
RCK80-25X34	25	34	50	56	52.5	26.0	39.5	46.5	18	411	33	139	102	6	M6	17	0.40	48	45	42
RCK80-28X39	28	39	55	61	52.5	25.5	39.5	46.5	18	460	33	137	98	6	M6	17	0.42	54	50	47
RCK80-30X41	30	41	57	62	52.5	25.5	39.5	46.5	18	510	34	123	90	6	M6	17	0.44	55	52	49
RCK80-32X43	32	43	59	65	52.5	25.5	39.5	46.5	18	701	44	145	108	8	M6	17	0.46	61	57	53
RCK80-35X47	35	47	62	69	58.5	31.5	45.5	52.5	18	720	41	107	80	8	M6	17	0.57	61	58	55
RCK80-38X50	38	50	66	72	58.5	31.5	45.5	52.5	18	781	41	100	76	8	M6	17	0.60	64	61	58
RCK80-40X53	40	53	69	75	58.5	31.5	45.5	52.5	18	768	38	95	72	8	M6	17	0.66	67	64	61
RCK80-42X55	42	55	71	78	58.5	31.5	45.5	52.5	18	863	41	92	70	8	M6	17	0.71	69	66	63
RCK80-45X59	45	59	80	86	79.0	45.0	62.5	71.0	22	1711	76	111	85	8	M8	41	1.14	78	74	70
RCK80-48X62	48	62	81	87	79.0	45.0	62.5	71.0	22	1824	76	103	80	8	M8	41	1.40	80	76	73
RCK80-50X65	50	65	86	92	79.0	45.0	62.5	71.0	22	1902	76	98	75	8	M8	41	1.58	83	79	75
RCK80-55X71	55	71	92	98	89.0	55.0	72.5	81.0	22	2353	86	84	65	9	M8	41	2.00	88	84	81
RCK80-60X77	60	77	98	104	89.0	55.0	72.5	81.0	22	2569	86	77	60	9	M8	41	2.30	93	90	87
RCK80-65X84	65	84	105	111	89.0	55.0	72.5	81.0	22	2786	86	71	55	9	M8	41	2.50	100	97	94
RCK80-70X90	70	90	113	119	106.5	65.0	86.5	96.5	25	4755	136	90	70	9	M10	83	2.83	113	108	103
RCK80-75X95	75	95	119	126	106.5	65.0	86.5	96.5	25	5100	136	82	65	9	M10	83	3.10	117	112	108
RCK80-80X100	80	100	125	131	106.5	65.0	86.5	96.5	25	7250	181	100	80	12	M10	83	3.27	129	123	117
RCK80-85X106	85	106	131	137	106.5	65.0	86.5	96.5	25	7700	181	94	75	12	M10	83	3.50	135	129	123
RCK80-90X112	90	112	137	144	106.5	65.0	86.5	96.5	25	8160	181	93	75	12	M10	83	3.80	143	136	129
RCK80-95X120	95	120	142	149	106.5	65.0	86.5	96.5	25	10800	227	101	80	14	M10	83	4.20	155	147	140
RCK80-100X125	100	125	147	154	106.5	65.0	86.5	96.5	25	14800	296	119	95	18	M10	83	4.90	170	160	150
RCK80-110X140	110	140	172	180	140.0	90.0	86.5	128	30	16000	291	118	93	12	M12	145	5.80	189	178	167
RCK80-120X155	120	155	190	198	140.0	90.0	86.5	128	30	17400	290	120	93	12	M12	145	6.60	209	197	185

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3. For unit to function correctly hub diameter should not be less than flange outside diameter D_2.
For assembly and disassembly instructions refer to page 20.

Clamping Elements Type ACE 81

Available for shaft diameters down to 11mm, these shaft clamping elements are designed to fit into very small diameter hubs, being particularly suited to Timing pulley and overload clutch applications. A spacer ring prevents axial movement during clamping; and design ensures good levels of concentricity. For correct operation of these units, the hub diameter should not be less than the flange diameter D_2, even though with many materials stress limits would allow selection of smaller hub diameters.

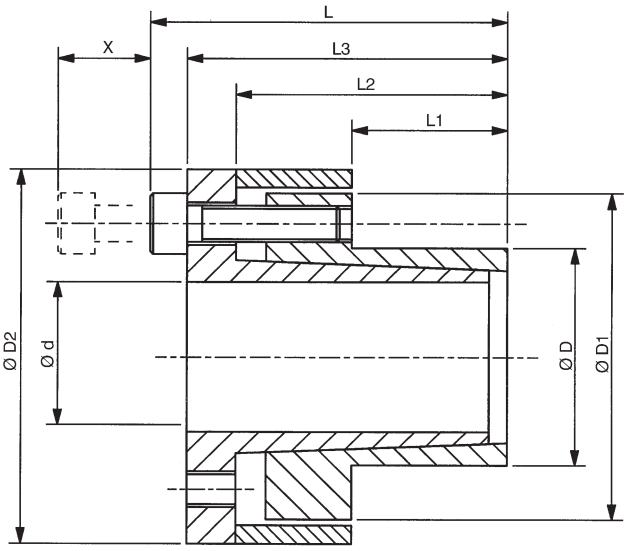


Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

X = Distance required to remove screws, additional clearance for alan key may be required.



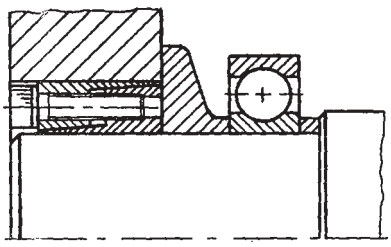
Dimensions

Part No.	Dimensions mm									Torque Cap. M Nm	Axial Force F kN	Surface Press.		Clamping Screws			Approx Weight	Min. Hub Dia* mm		
	d	D	D_1	D_2	L	L_1	L_2	L_3	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	kg	Assy Type A	Assy Type B	Assy Type C
ACE81-11X26	11	26	37.5	40.5	31.5	14.0	22.5	27.5	12	80	14.5	236.4	100	6	M4	5	0.22	36	34	32
ACE81-12X26	12	26	37.5	40.5	31.5	14.0	22.5	27.5	12	87	14.5	216.7	100	6	M4	5	0.22	36	34	32
ACE81-14X26	14	26	37.5	40.5	31.5	14.0	22.5	27.5	12	102	14.5	185.7	100	6	M4	5	0.22	36	34	32
ACE81-15X26	15	26	37.5	40.5	31.5	14.0	22.5	27.5	12	109	14.5	173.3	100	6	M4	5	0.22	36	34	32
ACE81-16X26	16	26	37.5	40.5	31.5	14.0	22.5	27.5	12	116	14.5	162.5	100	6	M4	5	0.22	36	34	32
ACE81-18X26	18	26	37.5	40.5	31.5	14.0	22.5	27.5	12	131	14.5	144.4	100	6	M4	5	0.22	36	34	32
ACE81-19X26	19	26	37.5	40.5	31.5	14.0	22.5	27.5	12	138	14.5	136.8	100	6	M4	5	0.22	36	34	32
ACE81-20X26	20	26	37.5	40.5	31.5	14.0	22.5	27.5	12	145	14.5	130	100	6	M4	5	0.22	36	34	32
ACE81-19X38	19	38	53.0	57	39	14.0	26.0	33	18	210	22	208	104	4	M6	17	0.32	54	50	47
ACE81-20X38	20	38	53.0	57	39	14.0	26.0	33	18	220	22	197.6	104	4	M6	17	0.32	54	50	47
ACE81-22X38	22	38	53.0	57	39	14.0	26.0	33	18	242	22	179.6	104	4	M6	17	0.32	54	50	47
ACE81-24X38	24	38	53.0	57	39	14.0	26.0	33	18	265	22	164.7	104	4	M6	17	0.32	54	50	47
ACE81-25X38	25	38	53.0	57	39	14.0	26.0	33	18	276	22	158.1	104	4	M6	17	0.32	54	50	47
ACE81-28X38	28	38	53.0	57	39	14.0	26.0	33	18	309	22	141.1	104	4	M6	17	0.32	54	50	47
ACE81-30X38	30	38	53.0	57	39	14.0	26.0	33	18	331	22	131.7	104	4	M6	17	0.32	54	50	47
ACE81-19X38H	19	38	53.0	57	52	27	39.0	46	18	314	33	162	81	6	M6	17	0.40	50	47	45
ACE81-20X38H	20	38	53.0	57	52	27	39.0	46	18	331	33	153.9	81	6	M6	17	0.40	50	47	45
ACE81-22X38H	22	38	53.0	57	52	27	39.0	46	18	364	33	139.9	81	6	M6	17	0.40	50	47	45
ACE81-24X38H	24	38	53.0	57	52	27	39.0	46	18	397	33	128.3	81	6	M6	17	0.40	50	47	45
ACE81-25X38H	25	38	53.0	57	52	27	39.0	46	18	413	33	123.1	81	6	M6	17	0.40	50	47	45
ACE81-28X38H	28	38	53.0	57	52	27	39.0	46	18	465	33	109.9	81	6	M6	17	0.40	50	47	45
ACE81-30X38H	30	38	53.0	57	52	27	39.0	46	18	497	33	102.6	81	6	M6	17	0.40	50	47	45
ACE81-24X52	24	52	66.5	70.5	52	27	39.0	46	18	529	44	171.2	79	8	M6	17	0.60	67	64	61
ACE81-25X52	25	52	66.5	70.5	52	27	39.0	46	18	552	44	164.3	79	8	M6	17	0.60	67	64	61
ACE81-28X52	28	52	66.5	70.5	52	27	39.0	46	18	618	44	146.7	79	8	M6	17	0.60	67	64	61
ACE81-30X52	30	52	66.5	70.5	52	27	39.0	46	18	662	44	136.9	79	8	M6	17	0.60	67	64	61
ACE81-32X52	32	52	66.5	70.5	52	27	39.0	46	18	706	44	128.4	79	8	M6	17	0.60	67	64	61
ACE81-35X52	35	52	66.5	70.5	52	27	39.0	46	18	772	44	117.4	79	8	M6	17	0.60	67	64	61
ACE81-38X52	38	52	66.5	70.5	52	27	39.0	46	18	839	44	108.1	79	8	M6	17	0.60	67	64	61
ACE81-40X52	40	52	66.5	70.5	52	27	39.0	46	18	883	44	102.7	79	8	M6	17	0.60	67	64	61
ACE81-42X52	42	52	66.5	70.5	52	27	39.0	46	18	926	44	97.81	79	8	M6	17	0.60	67	64	61
ACE81-28X72	28	72	91.5	96.5	68.0	37.0	52	60	22	1462	104	254.6	99	10	M8	41	1.50	100	93	87
ACE81-30X72	30	72	91.5	96.5	68.0	37.0	52	60	22	1567	104	237.6	99	10	M8	41	1.50	100	93	87
ACE81-32X72	32	72	91.5	96.5	68.0	37.0	52	60	22	1671	104	222.8	99	10	M8	41	1.50	100	93	87
ACE81-35X72	35	72	91.5	96.5	68.0	37.0	52	60	22	1828	104	203.7	99	10	M8	41	1.50	100	93	87
ACE81-38X72	38	72	91.5	96.5	68.0	37.0	52	60	22	1985	104	187.6	99	10	M8	41	1.50	100	93	87
ACE81-40X72	40	72	91.5	96.5	68.0	37.0	52	60	22	2089	104	178.2	99	10	M8	41	1.50	100	93	87
ACE81-42X72	42	72	91.5	96.5	68.0	37.0	52	60	22	2194	104	169.7	99	10	M8	41	1.50	100	93	87
ACE81-45X72	45	72	91.5	96.5	68.0	37.0	52	60	22	2350	104	158.4	99	10	M8	41	1.50	100	93	87
ACE81-48X72	48	72	91.5	96.5	68.0	37.0	52	60	22	2506	104	148.5	99	10	M8	41	1.50	100	93	87
ACE81-50X72	50	72	91.5	96.5	68.0	37.0	52	60	22	2611	104	142.6	99	10	M8	41	1.50	100	93	87
ACE81-55X72	55	72	91.5	96.5	68.0	37.0	52	60	22	2872	104	129.6	99	10	M8	41	1.50	100	93	87
ACE81-60X72	60	72	91.5	96.5	68.0	37.0	52	60	22	3133	104	118.8	99	10	M8	41	1.50	100	93	87

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3. For unit to function correctly hub diameter should not be less than flange outside diameter D_2.
For assembly and disassembly instructions refer to page 20.

Clamping Elements Type RCK 61

Available for shaft diameters from 10mm, these clamping elements are designed for small low torque applications, providing concentric connection of components to shafting. The thin wall design combined with low hub pressures enable use within small hub diameters. The design is intended that the units fit totally within the hub bore to provide safe surface. Some axial movement will occur when the units are clamped.

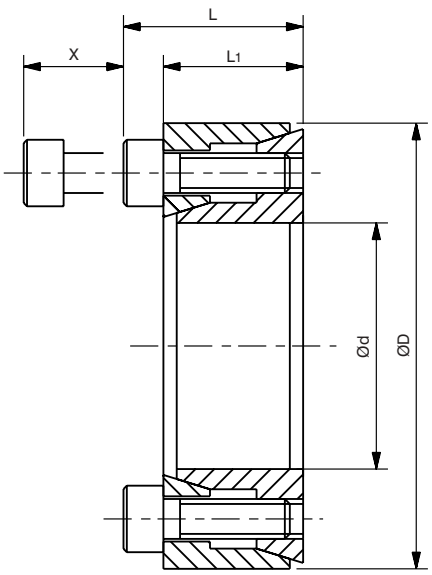


Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

X = Distance required to remove screws, additional clearance for alan key may be required.



Dimensions

Part No.	Dimensions mm					Torque Cap. M Nm	Axial Force F kN	Surface Press.		Clamping Screws			Extraction Screws		Approx Weight	Min. Hub Dia* mm		
	d	D	L	L_1	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	Size	No.	kg	Assy Type A	Assy Type B	Assy Type C
RCK61-10X20	10	20	15.5	13	12	15	3	110	55	4	M2.5	1.2	M2.5	2	0.08	24	23	22
RCK61-12X22	12	22	15.5	13	12	20	3	92	50	4	M2.5	1.2	M2.5	2	0.09	26	25	24
RCK61-14X26	14	26	20	17	16	35	5	102	55	4	M3	2.1	M3	2	0.12	31	30	29
RCK61-15X28	15	28	20	17	16	40	5	93	50	4	M3	2.1	M3	2	0.13	33	32	31
RCK61-16X32	16	32	21	17	16	70	9	130	65	4	M4	4.9	M4	2	0.15	39	38	36
RCK61-18X35	18	35	25	21	20	80	9	117	60	4	M4	4.9	M4	2	0.20	42	41	39
RCK61-19X35	19	35	25	21	20	85	9	111	60	4	M4	4.9	M4	2	0.19	42	41	39
RCK61-20X38	20	38	26	21	20	220	22	219	115	6	M5	9.7	M5	3	0.21	55	51	47
RCK61-22X40	22	40	26	21	20	240	22	200	110	6	M5	9.7	M5	3	0.22	57	53	49
RCK61-24X47	24	47	32	26	25	380	32	215	110	6	M6	16.2	M6	3	0.31	67	62	58
RCK61-25X47	25	47	32	26	25	390	31	207	110	6	M6	16.2	M6	3	0.30	67	62	58

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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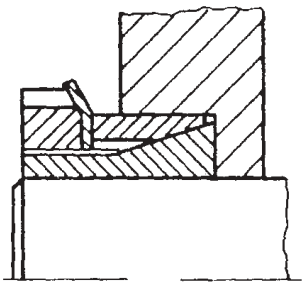
Clamping Elements Types CCE 54 and CCE 55



These clamping elements use a single lock nut to apply the clamping pressure, thereby enabling quick assembly and removal. The lock nut can be secured in postition by bending over a tab of lock washer. The thin walls of the clamping cones, combined with low hub pressures enables use with soft materials, such as aluminium, and small hub diameters.

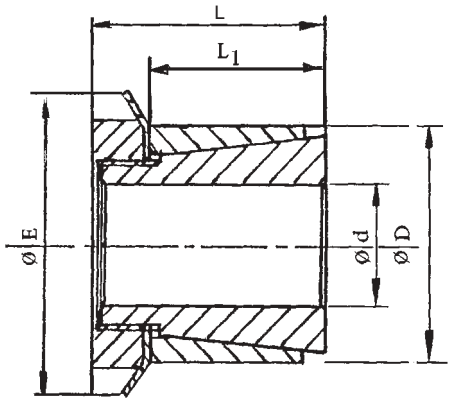
Use type CCE 54 where axial space is restricted and torque is low.

Type CCE 55 is for higher torque transmission.

Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.



Dimensions

Part No.	Dimensions mm					Torque Cap. M Nm	Axial Force F kN	Surface Press.		Locking Nut			Min. Hub Dia* mm		
	d	D	E	L	L_1			Shaft Ps N/mm²	Hub Ph N/mm²	Type	Thread	Torque Nm	Assy Type A	Assy Type B	Assy Type C
CCE54-14X25	14	25	32	16.5	6.5	37	5	130	73	KM4	M20	65	32	30	29
CCE54-15X25	15	25	32	16.5	6.5	40	5	122	73	KM4	M20	65	32	30	29
CCE54-16X25	16	25	32	16.5	6.5	42	5	114	73	KM4	M20	65	32	30	29
CCE54-18X30	18	30	38	17.0	7.0	65	7	133	80	KM5	M25	85	39	37	35
CCE54-19X30	19	30	38	17.0	7.0	60	6	111	70	KM5	M25	95	37	36	34
CCE54-20X30	20	30	38	17.0	7.0	70	7	120	80	KM5	M25	110	39	37	35
CCE54-24X35	24	35	45	17.0	7.0	100	8	117	80	KM6	M30	155	45	43	41
CCE54-25X35	25	35	45	17.0	7.0	110	9	126	90	KM6	M30	160	47	44	42
CCE54-28X40	28	40	52	20.0	8.0	140	10	100	70	KM7	M35	200	50	48	46
CCE54-30X40	30	40	52	20.0	8.0	170	11	107	80	KM7	M35	240	52	49	47
CCE54-32X45	32	45	58	22.0	9.0	210	13	113	80	KM8	M40	320	58	55	52
CCE54-35X45	35	45	58	22.0	9.0	230	13	103	80	KM8	M40	320	58	55	52
CCE54-40X50	40	50	65	23.0	9.0	330	17	113	90	KM9	M45	440	67	63	59
CCE54-45X55	45	55	70	25.5	10.0	440	20	110	90	KM10	M50	550	73	69	65
CCE54-50X60	50	60	75	25.5	10.0	530	21	108	90	KM11	M55	660	80	75	71
CCE54-60X70	60	70	85	29.5	12.0	830	28	93	80	KM13	M65	900	90	86	81
CCE55-14X25	14	25	32	29	17	90	13	143	80	KM4	M20	90	32	31	29
CCE55-15X25	15	25	32	29	17	100	13	133	80	KM4	M20	90	32	31	29
CCE55-16X25	16	25	32	29	17	80	10	94	60	KM4	M20	70	30	29	28
CCE55-18X30	18	30	38	31	18	200	22	183	110	KM5	M25	190	43	40	37
CCE55-19X30	19	30	38	31	18	170	18	142	90	KM5	M25	150	40	38	36
CCE55-20X30	20	30	38	31	18	130	13	90	60	KM5	M25	110	36	35	34
CCE55-24X35	24	35	45	35	22	270	23	117	80	KM6	M30	230	45	43	41
CCE55-25X35	25	35	45	35	22	200	16	84	60	KM6	M30	170	42	41	39
CCE55-28X40	28	40	52	35	22	460	33	157	110	KM7	M35	390	57	53	49
CCE55-30X40	30	40	52	35	22	300	20	93	70	KM7	M35	240	50	48	46
CCE55-32X45	32	45	58	42	28	420	26	98	70	KM8	M40	320	56	54	51
CCE55-35X45	35	45	58	42	28	460	26	77	60	KM8	M40	320	54	52	50
CCE55-40X50	40	50	65	44	28	640	32	88	70	KM9	M45	440	62	60	57
CCE55-45X55	45	55	70	45	28	760	34	73	60	KM10	M50	550	66	64	62
CCE55-50X60	50	60	75	46	28	930	37	72	60	KM11	M55	660	73	70	67
CCE55-60X70	60	70	85	52	28	1500	50	82	70	KM13	M65	1050	87	84	80

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm².
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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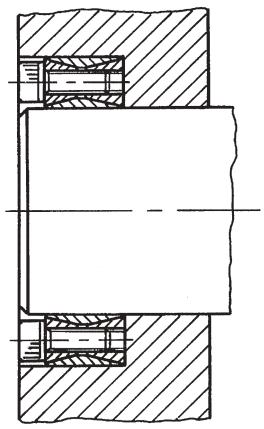
Clamping Elements Type RCK 40



These are the original type of shaft clamping elements, proven in a wide range of applications for more than 20 years. Suited to more general applications, this series provides medium torque transmission, which can be increased by mounting the unit in series. This type does not provide self centring, and therefore other methods of centring the hub to the shaft are required. The units do not move axially during clamping and generally self-release when clamping screws are relaxed.

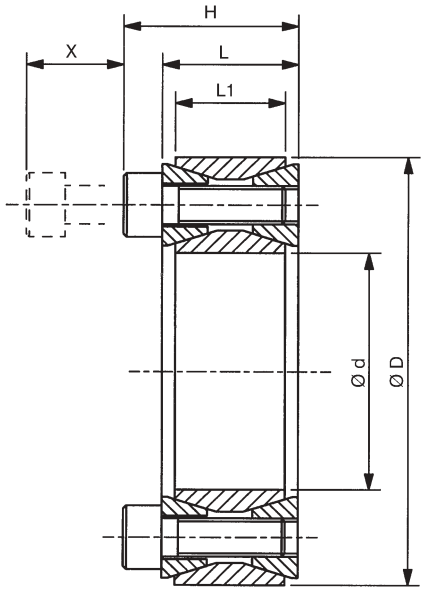
Recommended tolerances for full torque transmission are:-

Shaft h9
Hub H9

As both cones are split larger tolerances, up to h11/H11 can be accommodated, but with a reduction in torque capacity. Clamping surfaces to be finished to ≤ 15 μm.

If two or more elements are used in series the resultant torque will be proportionally increased. However the minimum hub dia. must be increased to accommodate the extra stress.

X = Distance required to remove screws, additional clearance for alan key may be required.



Dimensions

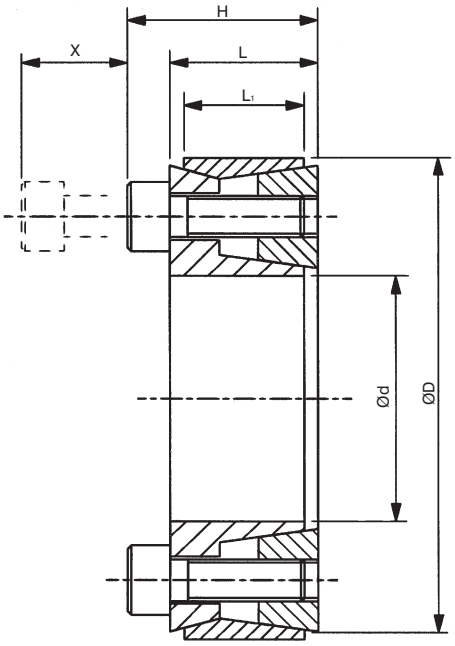
Part No. †	Dimensions mm						Torque Cap. M Nm	Axial Force F kN	Surface Press. Shaft Ps N/mm²	Surface Press. Hub Ph N/mm²	Clamping Screws No.	Clamping Screws Size	Clamping Screws Torque Nm	Extraction Screws Size	Extraction Screws No.	Approx Weight kg	Min. Hub Dia* mm Assy Type A	Min. Hub Dia* mm Assy Type B	Min. Hub Dia* mm Assy Type C
	d	D	L	L_1	H	X													
RCK40-18X47	18	47	20	17	28	18	250	28	235	92	8	M5	15	M8	2	0.26	63	59	56
RCK40-19X47	19	47	20	17	28	18	265	28	235	92	8	M6	15	M8	2	0.25	63	59	56
RCK40-20X47	20	47	20	17	28	18	280	28	208	92	8	M6	15	M8	2	0.24	63	59	56
RCK40-22X47	22	47	20	17	28	18	310	28	192	92	8	M6	15	M8	2	0.23	63	59	56
RCK40-24X50	24	50	20	17	28	18	370	31	192	94	9	M6	15	M8	3	0.26	68	64	60
RCK40-25X50	25	50	20	17	28	18	390	31	187	94	9	M6	15	M8	3	0.25	68	64	60
RCK40-28X55	28	55	20	17	28	18	490	35	153	94	10	M6	15	M8	4	0.30	74	70	66
RCK40-30X55	30	55	20	17	28	18	520	35	173	94	10	M6	15	M8	4	0.29	74	70	66
RCK40-32X60	32	60	20	17	28	18	680	43	205	105	12	M6	15	M8	4	0.34	84	79	73
RCK40-35X60	35	60	20	17	28	18	710	41	180	105	12	M6	15	M8	4	0.32	84	79	73
RCK40-38X65	38	65	20	17	28	18	880	46	176	108	14	M6	15	M8	4	0.36	92	86	80
RCK40-40X65	40	65	20	17	28	18	930	47	176	108	14	M6	15	M8	4	0.34	92	86	80
RCK40-42X75	42	75	20	17	28	18	1580	75	235	123	12	M8	15	M8	4	0.60	112	103	95
RCK40-45X75	45	75	24	20	34	22	1620	72	206	123	12	M8	37	M10	4	0.57	112	103	95
RCK40-48X80	48	80	24	20	34	22	1690	70	186	108	12	M8	37	M10	4	0.63	114	106	98
RCK40-50X80	50	80	24	20	34	22	1770	71	187	113	12	M8	37	M10	4	0.60	116	107	99
RCK40-55X85	55	85	24	20	34	22	2260	82	196	127	14	M8	37	M10	4	0.63	129	118	108
RCK40-60X90	60	90	24	20	34	22	2450	82	177	120	14	M8	37	M10	4	0.69	133	123	113
RCK40-65X95	65	95	24	20	34	22	3040	94	188	128	16	M8	37	M10	4	0.73	145	132	121
RCK40-70X110	70	110	28	24	40	25	4560	130	206	127	14	M10	70	M12	4	1.26	167	153	140
RCK40-75X115	75	115	28	24	40	25	4820	129	191	124	14	M10	70	M12	4	1.33	173	158	146
RCK40-80X120	80	120	28	24	40	25	5130	128	177	120	14	M10	70	M12	4	1.40	178	164	151
RCK40-85X125	85	125	28	24	40	25	6230	147	191	127	16	M10	70	M12	4	1.49	190	174	159
RCK40-90X130	90	130	28	24	40	25	6520	145	176	122	16	M10	70	M12	4	1.53	194	178	164
RCK40-95X135	95	135	28	24	40	25	7770	164	191	133	18	M10	70	M12	4	1.62	210	191	174
RCK40-100X145	100	145	33	26	47	30	9460	189	193	133	14	M12	127	M14	4	2.01	226	205	187
RCK40-110X155	110	155	33	26	47	30	10490	191	176	122	14	M12	127	M14	4	2.15	232	212	196
RCK40-120X165	120	165	33	26	47	30	12945	216	182	133	16	M12	127	M14	4	2.35	257	233	213
RCK40-130X180	130	180	38	34	52	35	17360	267	163	113	20	M12	127	M14	4	3.51	260	241	223
RCK40-140X190	140	190	38	34	52	35	20650	295	163	123	22	M12	127	M14	4	3.85	285	261	240
RCK40-150X200	150	200	38	34	52	35	23815	318	166	122	24	M12	127	M14	4	4.07	299	274	252
RCK40-160X210	160	210	38	34	52	35	27615	345	166	127	26	M12	127	M14	4	4.30	320	292	268
RCK40-170X225	170	225	44	38	60	40	32370	381	157	118	22	M14	195	M16	4	5.78	331	305	282
RCK40-180X235	180	235	44	38	60	40	37270	414	163	123	24	M14	195	M16	4	6.05	352	323	297
RCK40-190X250	190	250	52	46	68	45	45810	482	148	113	28	M14	195	M16	4	8.25	362	334	310
RCK40-200X260	200	260	52	46	68	45	51600	516	148	113	30	M14	195	M16	5	8.65	376	348	322
RCK40-220X285	220	285	56	50	74	50	66800	607	148	113	26	M16	290	M18	4	11.25	412	381	353
RCK40-240X305	240	305	56	50	74	50	93200	777	178	140	28	M16	290	M18	4	12.25	488	440	399
RCK40-260X325	260	325	56	50	74	50	114500	881	188	150	30	M16	290	M18	4	13.25	540	482	434
RCK40-280X355	280	355	66	60	89	60	141000	1007	165	130	26	M18	410	M20	4	17.00	546	497	455

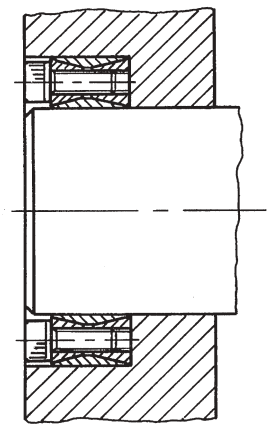
*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3. For assembly and disassembly instructions refer to page 20.

† Clamping Rings for shafts diameters up to 400mm available to order.

Clamping Elements Type RCK 45

These clamping elements provide good torque transmission from a compact, low cost assembly. These units must always be installed inside the hub, and will then provide a reasonable level of concentricity.
A small axial movement of the hub occurs during clamping.





Recommended tolerances for full torque transmission are:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

X = Distance required to remove screws, additional clearance for alan key may be required.

Dimensions

Part No.	Dimensions mm						Torque Cap. M Nm	Axial Force F kN	Surface Press.		Clamping Screws			Extraction Screws		Approx Weight	Min. Hub Dia* mm		
	d	D	L	L_1	H	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	Size	No.	kg	Assy Type A	Assy Type B	Assy Type C
RCK45-16X32	16	32	17	11	22	12	80	10	260	120	6	M4	5	M4	2	0.15	47	44	40
RCK45-18X40	18	40	18	12	24	15	180	20	260	120	6	M6	16	M6	2	0.18	59	55	50
RCK45-19X41	19	41	18.5	12	24.5	15	210	22	260	120	6	M6	16	M8	2	0.20	61	56	52
RCK45-20X42	20	42	18.5	12	24.5	15	240	24	250	120	6	M6	16	M8	2	0.20	62	57	53
RCK45-24X46	24	46	18.5	12	24.5	15	290	24	250	120	6	M6	16	M8	2	0.23	68	63	58
RCK45-25X47	25	47	18.5	12	24.5	15	330	26	230	120	8	M6	16	M8	2	0.24	70	64	59
RCK45-28X50	28	50	18.5	12	24.5	15	370	26	220	120	8	M6	16	M8	2	0.24	74	68	63
RCK45-30X52	30	52	18.5	12	24.5	15	430	29	210	120	8	M6	16	M8	2	0.27	77	71	65
RCK45-35X57	35	57	22	15	28	15	610	35	170	100	12	M6	16	M8	3	0.28	79	74	69
RCK45-38X60	38	60	22	15	28	15	680	36	170	100	12	M6	16	M8	3	0.30	83	77	73
RCK45-40X62	40	62	22	15	28	15	780	39	170	100	12	M6	16	M8	3	0.31	86	80	75
RCK45-42X70	42	70	28	18	36	22	1480	70	190	110	12	M8	41	M10	3	0.50	100	93	86
RCK45-45X73	45	73	28	18	36	22	1500	67	210	130	12	M8	41	M10	3	0.53	112	102	94
RCK45-48X76	48	76	28	18	36	22	1550	65	210	130	12	M8	41	M10	3	0.59	117	106	97
RCK45-50X78	50	78	28	18	36	22	1650	66	190	120	12	M8	41	M10	3	0.62	116	106	98
RCK45-55X83	55	83	28	18	36	22	2000	73	190	120	16	M8	41	M10	4	0.64	123	113	104
RCK45-60X88	60	88	28	18	36	22	2350	78	190	120	16	M8	41	M10	4	0.69	131	120	111
RCK45-70X105	70	105	35	22	45	25	3900	111	180	120	12	M10	70	M12	3	1.25	156	143	132
RCK45-80X115	80	115	35	22	45	25	4800	120	170	120	16	M10	70	M12	4	1.40	171	157	145

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

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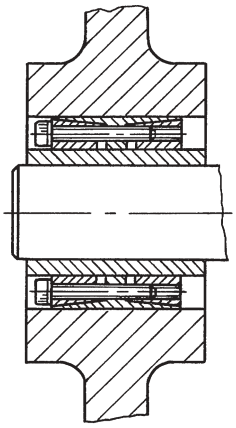
Clamping Elements Type RCK 11

These shaft clamping elements provide maximum torque transmission from a single unit, but, due to their large clamping surfaces clamping pressures are kept to reasonable levels. The design enables automatic centring between shaft and hub, and axial positioning of the hub does not change during clamping. Suitable for applications with high bending loads.



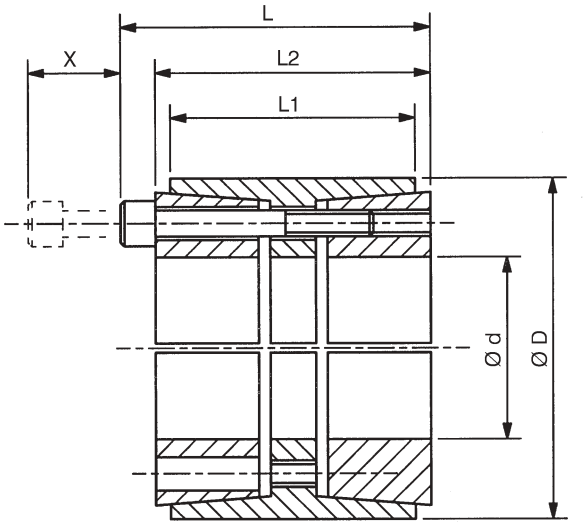
Recommended tolerances for full torque transmission both shaft and hub should be within the following tolerances:-

Shaft h8
Hub H8

Clamping surfaces to be finished to ≤ 15 μm.

These units ideal for mounting of wheels and belt conveyor pulleys.

X = Distance required to remove screws, additional clearance for alan key may be required.



Dimensions

Part No.	Dimensions mm						Torque Cap. M Nm	Axial Force F kN	Surface Press.		Clamping Screws			Extraction Screws		Approx Weight	Min. Hub Dia* mm		
	d	D	L	L_1	L_2	X			Shaft Ps N/mm²	Hub Ph N/mm²	No.	Size	Torque Nm	Size	No.	kg	Assy Type A	Assy Type B	Assy Type C
RCK11-25X55	25	55	46	32	40	35	784	63	291	99	6	M6	17	M6	3	0.39	76	71	66
RCK11-28X55	28	55	46	32	40	35	882	63	259	99	6	M6	17	M6	3	0.37	76	71	66
RCK11-30X55	30	55	46	32	40	35	931	62	243	99	6	M6	17	M6	3	0.35	76	71	66
RCK11-35X60	35	60	60	44	54	45	1274	73	161	85	7	M6	17	M6	3	0.62	79	74	70
RCK11-38X75	38	75	62	44	54	50	2696	142	289	113	7	M8	41	M8	3	1.02	108	100	93
RCK11-40X75	40	75	62	44	54	50	2843	142	276	113	7	M8	41	M8	3	0.96	108	100	93
RCK11-42X75	42	75	62	44	54	50	2981	142	262	113	7	M8	41	M8	3	0.91	108	100	93
RCK11-45X75	45	75	62	44	54	50	3196	142	246	113	7	M8	41	M8	3	0.89	108	100	93
RCK11-48X80	48	80	62	44	54	50	3873	161	203	96	8	M8	41	M8	3	1.10	109	102	96
RCK11-50X80	50	80	72	56	64	50	4069	163	196	96	8	M8	41	M8	3	1.30	109	102	96
RCK11-55X85	55	85	72	56	64	50	5050	184	201	101	9	M8	41	M8	3	1.40	118	110	103
RCK11-60X90	60	90	72	56	64	50	6080	203	198	103	10	M8	41	M8	4	1.50	126	117	109
RCK11-65X95	65	95	72	56	64	50	6619	204	183	98	10	M8	41	M8	4	1.60	130	122	114
RCK11-70X110	70	110	88	70	78	60	11277	322	218	111	10	M10	83	M10	4	3.00	158	146	136
RCK11-75X115	75	115	88	70	78	60	12062	322	218	111	10	M10	83	M10	4	3.20	165	153	142
RCK11-80X120	80	120	88	70	78	60	14219	355	210	112	11	M10	83	M10	4	3.50	173	160	149
RCK11-85X125	85	125	88	70	78	60	15102	355	210	112	12	M10	83	M10	5	3.70	180	167	155
RCK11-90X130	90	130	88	70	78	60	17455	388	203	112	12	M10	83	M10	5	3.90	187	173	161
RCK11-95X135	95	135	88	70	78	60	18338	386	203	112	12	M10	83	M10	5	4.10	195	180	167
RCK11-100X145	100	145	112	90	100	80	25791	516	196	104	11	M12	145	M12	4	6.00	203	189	177
RCK11-110X155	110	155	112	90	100	80	31184	567	194	107	12	M12	145	M12	5	7.00	219	204	190
RCK11-120X165	120	165	112	90	100	80	39618	660	207	117	14	M12	145	M12	5	7.80	242	223	206
RCK11-130X180	130	180	130	104	116	90	50503	777	188	109	12	M14	230	M14	5	10.00	257	238	221
RCK11-140X190	140	190	130	104	116	90	63470	907	204	121	14	M14	230	M14	7	11.00	283	260	239
RCK11-150X200	150	200	130	104	116	90	72790	971	204	124	15	M14	230	M14	6	12.00	301	276	253
RCK11-160X210	160	210	130	104	116	90	82890	1036	204	125	16	M14	230	M14	7	13.00	317	290	267
RCK11-170X225	170	225	164	134	148	110	106000	1247	178	110	14	M16	355	M16	6	18.00	322	298	277
RCK11-180X235	180	235	164	134	148	110	120900	1343	180	112	15	M16	355	M16	7	20.00	339	313	291
RCK11-190X250	190	250	164	134	148	110	131250	1382	182	113	16	M16	355	M16	7	22.00	362	334	310
RCK11-200X260	200	260	164	134	148	110	143220	1432	173	110	16	M16	355	M16	7	24.00	372	345	321
RCK11-220X285	220	285	164	134	148	110	177560	1614	184	112	18	M16	355	M16	8	27.00	411	380	353
RCK11-240X305	240	305	164	134	148	110	213850	1782	180	116	20	M16	355	M16	9	30.00	446	411	380
RCK11-260X325	260	325	164	134	148	110	245250	1887	174	114	21	M16	355	M16	10	33.00	472	436	404
RCK11-280X355	280	355	197	165	177	130	353160	2523	181	115	18	M20	690	M20	8	48.00	517	477	442
RCK11-300X375	300	375	197	165	177	130	419860	2799	188	120	20	M20	690	M20	9	52.00	556	511	471

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
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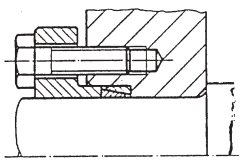
Clamping Elements Type RCK 50

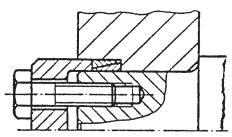
These shaft clamping elements consist of just two conical rings which require the minimum of radial space, so providing compact assemblies, and enabling use within small hub diameters. The design offers the maximum versatility of design, but does require the customer to provide their own thrust ring assembly. Whilst only providing low torque transmission per unit they can be combined (up to 4 units) to increase torque capacity. When fully clamped these units provide excellent gastight sealing. Many designs of thrust rings are possible and sketches to the left are two typical designs. These units do not self centre, so require external means of centring the hub.



Recommended tolerances for full torque transmission are:-

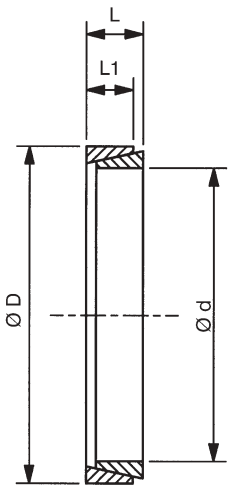
Up to 38m shaft Ø:-	Shaft	h6
	Hub	H7
40mm and above shaft Ø:-	Shaft	h8
	Hub	H8

Clamping surfaces to be finished to ≤ 15 μm.



Factor for combining elements in one assembly.

Number of Elements	Torque Capacity
2	1.55M Nm
3	1.86M Nm
4	2.03M Nm



Dimensions

Part No. †	Dimensions mm				Torque Cap. M Nm	Axial Force F kN	Surface Pressure		Axial Force necessary to clamp kN	Approx. Weight gms	Min. Hub Dia* mm		
	d	D	L	L_1			Shaft Ps N/mm²	Hub Ph N/mm²			Assy Type A	Assy Type B	Assy Type C
RCK50-6X9	6	9	4.5	3.7	2.4	0.8	115	75	3.8	1.2	11.5	10.9	10.4
RCK50-7X10	7	10	4.5	3.7	3.0	0.9	105	70	3.9	1.4	12.5	12.0	11.5
RCK50-8X11	8	11	4.5	3.7	4.7	1.2	120	90	5.3	1.5	14.7	13.9	13.1
RCK50-9X12	9	12	4.5	3.7	7.9	1.8	140	105	15.6	1.7	16.9	15.8	14.7
RCK50-10X13	10	13	4.5	3.7	9.5	1.9	135	105	15.6	1.8	18.3	17.1	15.9
RCK50-12X15	12	15	4.5	3.7	11.4	1.9	115	90	15.6	2.2	20.1	18.9	17.8
RCK50-13X16	13	16	4.5	3.7	13.1	2.0	110	90	15.6	2.3	21.4	20.2	19.0
RCK50-14X18	14	18	6.3	5.3	22.3	3.2	115	90	25.4	4.9	24.1	22.7	21.4
RCK50-15X19	15	19	6.3	5.3	24.3	3.2	110	85	25.4	5.3	25.0	23.6	22.4
RCK50-16X20	16	20	6.3	5.3	27.3	3.4	105	85	25.4	5.5	26.3	24.9	23.5
RCK50-17X21	17	21	6.3	5.3	29.8	3.5	105	85	25.4	5.8	27.6	26.1	24.7
RCK50-18X22	18	22	6.3	5.3	32.4	3.6	100	80	25.4	6.1	28.5	27.1	25.6
RCK50-19X24	19	24	6.3	5.3	49.0	5.2	140	110	36.0	7.8	34.4	31.9	29.6
RCK50-20X25	20	25	6.3	5.3	53.0	5.3	135	105	36.0	8.2	35.2	32.8	30.6
RCK50-22X26	22	26	6.3	5.3	66.0	6.0	135	115	36.0	7.3	37.9	35.0	32.4
RCK50-24X28	24	28	6.3	5.3	73.0	6.1	130	110	36.0	8.0	40.1	37.2	34.6
RCK50-25X30	25	30	6.3	5.3	72.0	5.8	115	95	36.0	10.1	40.8	38.3	36.0
RCK50-28X32	28	32	6.3	5.3	86.0	6.1	115	100	36.0	9.2	44.3	41.4	38.7
RCK50-30X35	30	35	6.3	5.3	91.0	6.1	100	85	36.0	12.0	46.0	43.5	41.2
RCK50-32X36	32	36	6.3	5.3	131.0	8.2	130	115	45.0	10.0	52.5	48.4	44.9
RCK50-35X40	35	40	7	6.0	171.0	9.8	125	110	54.0	17.0	57.3	53.1	49.4
RCK50-36X42	36	42	7	6.0	169.0	9.4	115	100	54.0	20.0	58.1	54.3	50.8
RCK50-38X44	38	44	7	6.0	181.0	9.5	110	95	54.0	21.0	59.8	56.1	52.7
RCK50-40X45	40	45	8	6.6	231.0	11.6	115	105	66.0	23.0	63.3	58.9	55.0
RCK50-42X48	42	48	8	6.6	235.0	11.2	110	95	66.0	28.0	65.2	61.2	57.5
RCK50-45X52	45	52	10	8.6	390.0	19.0	116	105	110.0	42.0	73.2	68.1	63.5
RCK50-48X55	48	55	10	8.6	572.0	23.8	155	135	132.0	45.0	86.3	78.2	71.3
RCK50-50X57	50	57	10	8.6	602.0	24.1	150	130	132.0	47.0	87.8	79.9	73.1
RCK50-55X62	55	62	10	8.6	670.0	24.4	140	125	132.0	50.0	93.7	85.7	78.8
RCK50-56X24	56	64	12	10.4	790.0	28.2	130	115	158.0	67.0	93.3	86.1	79.7
RCK50-60X68	60	68	12	10.4	860.0	28.7	125	110	158.0	72.0	97.4	90.2	83.9
RCK50-63X71	63	71	12	10.4	945.0	30.0	125	110	160.0	76.0	101.6	94.2	87.6
RCK50-65X73	65	73	12	10.4	1000	30.8	125	110	160	78	104.5	96.9	90.0
RCK50-70X79	70	79	14	12.2	1300	37.1	125	110	200	110	113.1	104.8	97.4
RCK50-71X80	71	80	14	12.2	1340	37.7	125	110	200	114	114.5	106.1	98.7
RCK50-75X84	75	84	14	12.2	1500	40.0	125	110	220	118	120.2	111.4	103.6
RCK50-80X91	80	91	17	14.8	2100	52.5	125	110	300	187	130.3	120.7	112.2

*Minimum outside diameter of hubs manufactured in medium carbon steels with yield strength ≥ 320 N/mm^2.
For hub types, and other materials, refer to page 3.
For assembly and disassembly instructions refer to page 20.

† Clamping Rings for shafts diameters up to 150mm available to order.

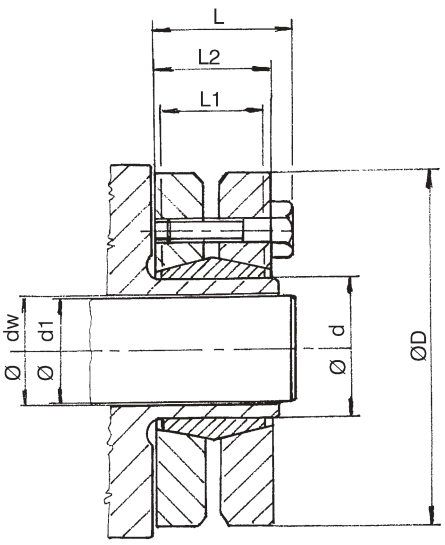
Clamping Elements Type RCK 19

Type RCK 19 are normally referred to as Clamping Discs, used to clamp externally onto thin walled hubs to lock them to the shaft. The design permits the use of large diameter shafts with small hub sizes, and is popular for connection of large sprocket and pulleys. The design provides for optimum concentricity, with high torque transmission. A number of shaft diameters can be accommodated by one size of unit, max., min. and an intermediate being shown in table.

Recommended tolerances

Hub Outside Ø:-	h8
*Hub Bore:-	H6
*Shaft Ø:-	j6 below 30mm h6 30mm plus

*Clearance between hub bore and shaft must not exceed figures in table.



Dimensions

Part No.	Dimensions mm								Torque Cap. M Nm	Axial Force F kN	Surface Pressure Shaft Ps N/mm²	Clamping Screws			Approx Weight
	dw	Max* Clearance	d	D	L_1	L_2	L	X †				No.	Size	Torque Nm	kg
RCK19-24X50	19 20 21	0.017	24	50	14	19.5	23.0	18	170 210 250	18 21 24	286	6	M5	4	0.2
RCK19-30X60	24 25 26	0.017	30	60	16	21.5	25.0	18	300 340 380	25 27 29	233	7	M5	4	0.3
RCK19-36X72	28 30 31	0.032	36	72	18	23.5	27.5	20	440 570 630	31 38 41	307	5	M6	12	0.4
RCK19-44X80	32 35 36	0.032	44	80	20	25.5	29.5	20	620 780 860	39 45 48	317	7	M6	12	0.6
RCK19-50X90	38 40 42	0.032	50	90	22	27.5	31.5	25	940 1160 1380	49 58 66	289	8	M6	12	0.8
RCK19-55X100	42 45 48	0.032	55	100	23	30.5	34.5	25	1160 1520 1880	55 68 78	252	8	M6	12	1.1
RCK19-62X110	48 50 52	0.048	62	110	23	30.5	34.5	25	1850 2200 2400	77 88 92	279	10	M6	12	1.3
RCK19-68X115	50 55 60	0.048	68	115	23	30.5	34.5	25	2000 2500 3150	80 91 105	255	10	M6	12	1.4
RCK19-75X138	55 60 65	0.048	75	138	25	32.5	37.8	30	2500 3200 3950	91 107 122	273	7	M8	30	1.7
RCK19-80X145	60 65 70	0.048	80	145	25	32.5	37.8	30	3200 3900 4600	107 120 131	256	7	M8	30	1.9
RCK19-90X155	65 70 75	0.048	90	155	30	39.0	44.3	35	4750 6000 7250	146 171 193	271	10	M8	30	3.3
RCK19-100X170	70 75 80	0.048	100	170	34	44.0	49.3	35	6900 7500 9000	197 200 225	258	12	M8	30	4.7
RCK19-110X185	75 80 85	0.048	110	185	39	50.0	56.4	40	7200 9000 10800	192 225 254	244	9	M10	59	5.9
RCK19-125X215	85 90 95	0.069	125	215	42	54.0	60.4	40	11000 13000 15000	259 289 316	266	12	M10	59	8.5
RCK19-140X230	95 100 105	0.069	140	230	46	60.5	68.0	45	15100 17600 20100	318 352 383	264	10	M12	100	9.0
RCK19-155X265	105 110 115	0.069	155	265	50	64.5	72.0	50	22000 25000 28000	419 455 487	263	12	M12	100	11.0
RCK19-165X290	115 120 125	0.069	165	290	56	71.0	81.0	55	31000 35000 39000	539 583 624	277	8	M16	250	15.0
RCK19-175X300	125 130 135	0.079	175	300	56	71.0	81.0	55	36000 41000 45000	576 631 667	261	8	M16	250	15.8
RCK19-185X330	135 140 145	0.090	185	330	71	86.0	96.0	70	52000 57000 62000	770 814 855	237	10	M16	250	21.0

† X = min. clearance required to totally remove bolt.
For assembly and disassembly instructions refer to page 20.
* Max Clearance = dw-di.

Units for shaft diameters up to 240mm available to order.

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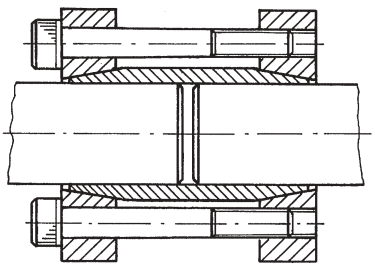
Clamping Elements Type RCK 95

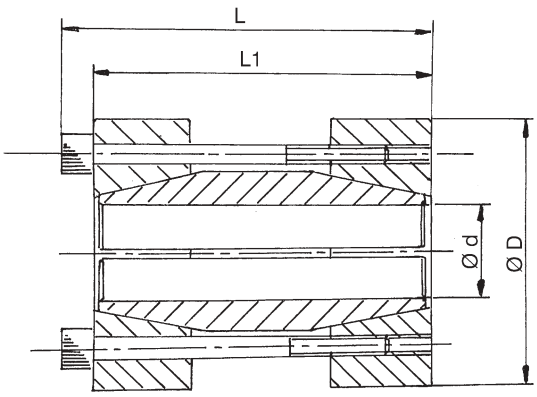
Similar in design to the Clamping Discs, type RCK 19, but with the discs spaced further apart to enable connection to more than one shaft, enabling use as a rigid shaft coupling. These units can be used to connect two identical diameter shafts which are perfectly aligned, or to produce a longer shaft which is only mounted in two bearings. Torque capacities are suitable for standard shafting. These units provide zero backlash shaft connection with advantage of fast assembly and disassembly. The design makes the unit equally suitable for horizontal and vertical shafts, capable of withstanding high axial loads.

Recommended tolerances for full torque transmission shafts should be to h8 tolerance with surface finish ≤ 15 μm.



Warning

The units are not flexible couplings, and must never be used as such. Any radial loads on shafts must be adequately supported by bearing assemblies.



Dimensions

Part No.	Dimensions mm				Torque Cap. M Nm	Axial Force F kN	Surface Pressure Shaft Ps N/mm²		Clamping Screws No.	Size	Torque Nm	Approx Weight gms
	d	D	L	L_1								
RCK95-17X50	17	50	56	50	200	24	110		4	M6	17	0.46
RCK95-18X50	18	50	56	50	220	24	110		4	M6	17	0.45
RCK95-19X50	19	50	56	50	230	24	110		4	M6	17	0.44
RCK95-20X50	20	50	56	50	240	24	105		4	M6	17	0.44
RCK95-24X55	24	55	66	60	290	24	120		4	M6	17	0.65
RCK95-25X55	25	55	66	60	450	36	110		6	M6	17	0.63
RCK95-28X60	28	60	66	60	510	36	110		6	M6	17	0.75
RCK95-30X60	30	60	66	60	550	37	105		6	M6	17	0.71
RCK95-32X63	32	63	66	60	580	36	90		6	M6	17	0.73
RCK95-35X75	35	75	83	75	760	43	105		4	M8	41	1.33
RCK95-38X75	38	75	83	75	850	45	100		4	M8	41	1.20
RCK95-40X75	40	75	83	75	900	45	95		4	M8	41	1.19
RCK95-42X78	42	78	83	75	930	44	90		4	M8	41	1.28
RCK95-45X85	45	85	93	85	1520	68	110		6	M8	41	1.72
RCK95-48X90	48	90	93	85	1600	67	100		6	M8	41	1.90
RCK95-50X90	50	90	93	85	1690	68	95		6	M8	41	1.88
RCK95-55X94	55	94	93	85	2430	88	110		8	M8	41	2.00
RCK95-60X100	60	100	93	85	2680	89	95		8	M8	41	2.17
RCK95-65X105	65	105	93	85	2900	89	90		8	M8	41	3.95
RCK95-70X115	70	115	110	100	3720	106	90		6	M10	83	5.25
RCK95-75X125	75	125	110	100	3970	106	80		6	M10	83	5.46
RCK95-80X125	80	125	110	100	4280	107	70		6	M10	83	5.30

For assembly and disassembly instructions refer to page 20.

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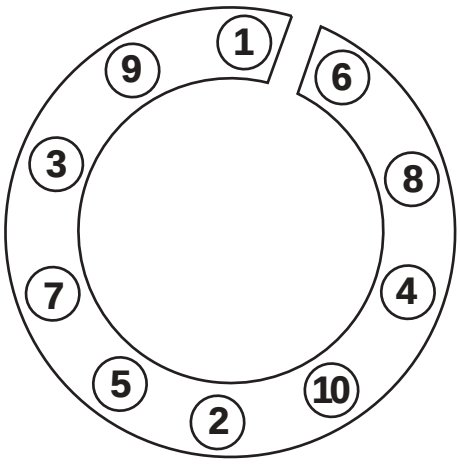
Installation Instructions

Installation and Removal of Cross Shaft Clamping Elements

Types RCK 11, 13, 15, 16, 61,70,71,80 and ACE81



Installation:-

1. Slacken all screws in element by approx. two turns.
2. Remove two or three screws completely, and fit into equally spaced sempty release thread holes. Tighten these screws lightly so as to ensure inner and outer cones are kept apart.
3. Clean all contact surfaces including screw threads, and lightly oil with clean thin unmodified oil.*
4. Insert clamping element into hub and push onto shaft and locate.
5. Remove screws from release holes and replace in original holes.
6. Tighten all screws finger tight and align hub.
7. Tighten all screws evenly in a diametrically opposite sequence (see typical progression in sketch) using a torque wrench, initially at half screw catalogue torque, then 3/4 value, and finally full torque. Check all screws at full torque until no further rotation of screws occurs.

Disassembly:-

1. Slacken all clamping screws by couple of turns, completely removing as many as release holes in element.
2. Fit screws in release holes and tighten in sequence as clamping to force inner and outer cones apart.
3. Carefully remove hub and clamping element from shaft, and take element from hub.

Types RCK 40 and 45

Installation:-

1. Clean all contact surfaces, and lightly oil with clean thin unmodified mineral oil.*
2. Fit hub to shaft and insert clamping element.
3. Tighten all screws finger tight and align hub.
4. Tighten all screws evenly in a diametrically opposite sequence (see typical progression in sketch) using a torque wrench, initially at half catalogue torque for screw, then at 3/4 value, and finally at full torque. Check all screws are at full torque until no further rotation of screws can be achieved.

Disassembly:-

1. Release clamping screws in same sequence as for clamping. Element should now self release. If required lightly tap clamping screws to aid release. If still not released remove light coloured screws completely and replace with next larger metric size and tighten these screws to jack the cones apart.

Type RCK 50

Installation procedure depends detailed design, but following is typical:-

1. Clean all contact surfaces, and lightly oil with clean thin unmodified mineral oil.*
2. Push hub onto shaft and insert spacer sleeves and clamping ring sets according to application drawing.
3. Insert distance ring if fitted and attach clamping flange lightly tightening screws. Align hub.
4. Tighten all screws in a diametrically opposite sequence, in several stages up to max. torque for screw size.

Disassembly:-

The taper of the individual rings is such that the assembly should automatically release when the locking screws are slackened. If not light tapping on the hub circumference should release them.

Types CCE 54 and 55

Installation:-

1. Clean all contact surfaces, and lightly oil with clean unmodified mineral oil.*
2. Turn locking nut anticlockwise until outer sleeve loose on inner cone.
3. Position hub on shaft and insert clamping element.
4. Align hub and tighten locking nut to catalogue torque value, and bend suitable tab on lock washer to prevent further rotation.

Disassembly:-

1. Release bent washertab and undo nut until sleeve loose.
2. Remove clamping element, If tight give end of tab gentle tap to release.

Types RCK 19 and 95

Installation:-

1. Clean all contact surfaces, and lightly oil with clean thin unmodified mineral oil.*
2. Slacken all clamping bolts by a couple of turns.
3. (RCK 19 only) Fit clamping element on outer diameter of hub, and slide assembly onto shaft and position.
   (RCK 95 only) Fit shaft ends equally into clamping element ensuring small clearance between shafts.
4. Tighten all bolts in a diametrically opposite sequence, in several stages up to max. specified torque.

Disassembly:-

Slacken all bolts and gently tap on bolts to release clamping element.

*WARNING: Never use, lubricant containing Molydenum or E.P. additives, synthetic lubricant, or grease.

END

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