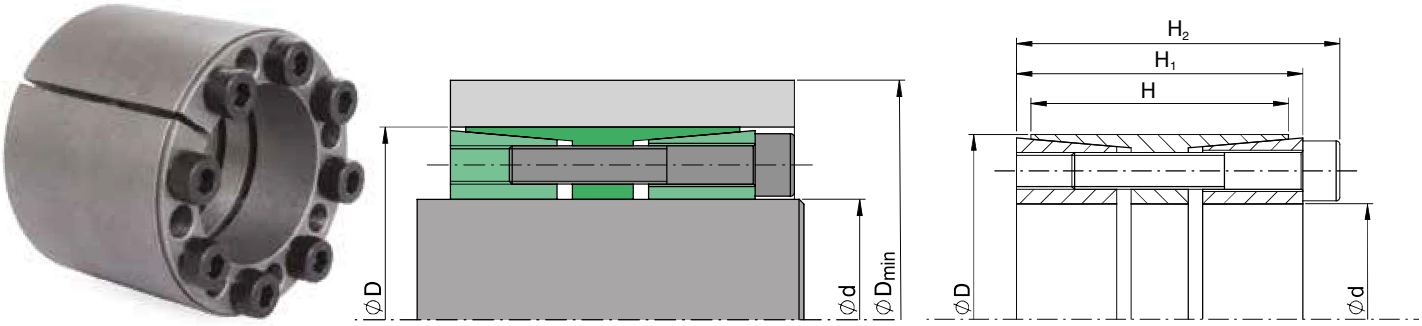
SIT-LOCK® 4 internal locking device - self-centering



Features

Composed of two tapered rings and one outer ring with a split. It is particularly suitable for applications that require high torque transmission. The table shows performance data for the following tolerances:

shaft d h8 - coupling seat on hub H8

Do not use molybdenum disulphide-based oils or greases that reduce the coefficient of friction μ. The values in the table are calculated with μ 0.12.

Hub to shaft centering

The SIT-LOCK® 4 locking device is self-centering so it does not require a centering base between the shaft and hub. This allows for hubs with reduced widths which saves on materials and leads to reduced costs.

Installation with non-lubricated surfaces (dry)

The SIT-LOCK® 4 locking device is lubricated with oil before delivery to protect it from oxidation during storage. The values shown in the table have been calculated for applications with oiled contact surfaces. For dry installation, the values are:

M_t, F_{ax} +5%

P_w, P_n -16%

To get these values, the locking device must be completely disassembled and all component surfaces must be cleaned with solvent. The shaft and hub contact surfaces must also be completely dry.

Axial displacement

When tightening the screws there is no hub to shaft axial displacement.

Radial loads

The SIT-LOCK® 4 locking device is suitable for high radial loads. For further information, please contact our Technical Department.

Surface finish

Normal surface finish is sufficient. The following values are recommended:

$R_a \leq 3{,}2\ \mu m$ - $R_t \leq 16\ \mu m$

Applications with more than one SIT-LOCK® 4 device

Where two SIT-LOCK® 4 locking devices are mounted in a row, the total transmissible torque M_t is:

1 device $M_t = M_t$ indicated in catalogue
2 devices $M_t = M_t$ indicated in catalogue · 1.9

Installation

The locking device is supplied ready to assemble. Clean the shaft contact surfaces thoroughly and apply oil. Mount the shaft, hub and locking device in the desired position.

Screw tightening sequence:

- tighten four screws crosswise until the locking device surfaces make contact with the shaft and hub;
- tighten all screws to 50% of the screw tightening torque value M_s indicated in the table in a 'criss-cross' sequence;
- repeat to 100% of the M_s tightening torque indicated in the table;
- in continuous sequence, check that the tightening torque M_s has been achieved. Installation is complete when all screws are tightened to the M_s tightening torque indicated in the table.

Removal

- gradually loosen the clamping screws and remove them from the locking device;
- insert the screws into the front tapered bush removal threads and tighten them in a 'criss-cross' sequence until the front cone is completely removed. Do not tighten the screws to a value greater than the M_s tightening torque indicated in the table;
- insert the screws into the extraction threads of the outer ring's central flange and tighten them in a 'criss-cross' sequence until the rear tapered bush is fully removed. Do not tighten the screws to a value greater than the M_s tightening torque indicated in the table.

Reusing the locking device

When reusing the locking device, check all the surfaces are clean and show no obvious signs of deformation or seizing. Oil all surfaces and threads. Check the screws have not been deformed. Oil the screws and reinstall the components in their original places.

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Dimensions [mm]				Clamping screws DIN 912 12.9			Values with tolerances for shaft h8/hub H8			
d x D	H	H_1	H_2	Number	Type	M_s [Nm]	M_t [Nm]	F_{ax} [kN]	P_w [N/mm²]	P_n [N/mm²]
25 x 50	41	45	51	6	M6	17	849	68	176	85
28 x 55	41	45	51	8	M6	17	1.268	90	209	105
30 x 55	41	45	51	8	M6	17	1.358	90	195	105
35 x 60	41	45	51	8	M6	17	1.585	90	167	95
38 x 65	41	45	51	8	M6	17	1.721	90	154	90
40 x 65	41	45	51	10	M6	17	2.264	113	183	110
42 x 75	41	45	53	8	M8	41	3.514	167	258	140
45 x 75	41	45	53	8	M8	41	3.888	167	130	150
48 x 80	58	62	70	8	M8	41	4.016	167	159	95
50 x 80	58	62	70	8	M8	41	4.183	167	153	95
55 x 85	58	62	70	8	M8	41	4.602	167	139	90
60 x 90	58	62	70	10	M8	41	6.275	209	159	105
65 x 95	58	62	70	10	M8	41	6.798	209	147	100
70 x 110	70	76	86	10	M10	83	11.624	332	180	110
75 x 115	70	76	86	10	M10	83	12.455	332	168	105
80 x 120	70	76	86	12	M10	83	15.942	399	189	125
85 x 125	70	76	86	12	M10	83	16.938	399	178	120
90 x 130	70	76	86	12	M10	83	17.935	399	168	115
95 x 135	70	76	86	12	M10	83	18.931	399	159	110
100 x 145	92	98	110	12	M12	145	29.014	580	167	115
110 x 155	92	98	110	12	M12	145	34.575	629	165	115
120 x 165	92	98	110	14	M12	145	40.620	677	163	115
130 x 180	108	114	128	12	M14	230	51.753	796	150	105
140 x 190	108	114	128	14	M14	230	65.023	929	163	115
150 x 200	108	114	128	16	M14	230	79.620	1.062	174	125
160 x 210	108	146	162	16	M14	230	84.928	1.062	163	120
170 x 225	136	146	162	14	M16	355	109.736	1.291	148	110
180 x 235	136	146	162	16	M16	355	132.790	1.475	160	120
190 x 250	136	146	162	16	M16	355	140.167	1.475	151	115
200 x 260	136	146	162	16	M16	355	147.544	1.475	144	110
220 x 285	136	146	162	20	M16	355	202.873	1.844	164	125
240 x 305	136	146	162	22	M16	355	243.448	2.028	165	125
260 x 325	136	146	162	22	M16	355	263.735	2.028	152	120
280 x 355	138	148	168	20	M20	690	403.047	2.878	198	125
300 x 375	165	177	197	22	M20	690	475.020	3.166	170	135
320 x 405	165	177	197	22	M20	690	506.688	3.166	159	125
340 x 425	165	177	197	24	M20	690	587.297	3.454	163	130
360 x 455	188	202	224	22	M22	930	709.561	3.492	154	120
380 x 475	188	202	224	26	M22	930	885.159	4.658	173	135
400 x 495	188	202	224	26	M22	930	931.746	4.658	164	130

M_s	Screw tightening torque	Nm
M_t	Transmissible torque	Nm
F_{ax}	Transmissible axial force	kN
P_w	Pressure on shaft	N/mm²
P_n	Pressure on hub	N/mm²

IMPORTANT: The screw tightening torque M_s can be reduced by 40% of the value indicated in the table. M_t, F_{ax}, P_w, P_n decrease proportionally. For further information, please contact our Technical Department.

For larger diameters or dimensions different to those in the table, please contact us.