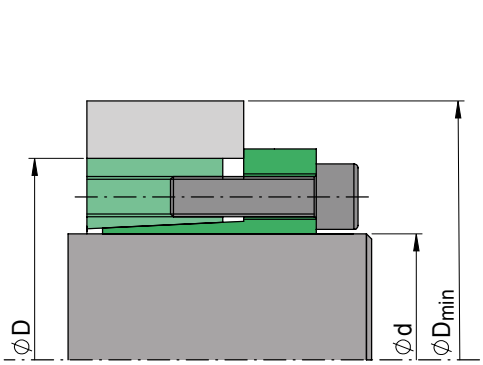
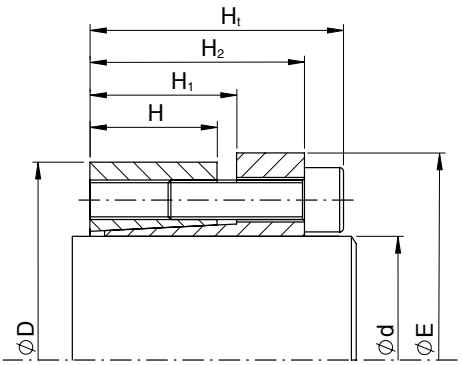
SIT-LOCK® 5B internal locking device - self-centering





Features

Composed of an inner ring and outer ring both with splits. This type of locking device is particularly suitable for applications that require excellent hub-to-shaft concentricity and perpendicularity. It is also used for locking hubs with lower mechanical properties. 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® 5B 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® 5B 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 its component surfaces must be cleaned with solvent. The shaft and hub contact surfaces must also be completely clean and oil-free.

Axial displacement

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

Radial loads

SIT-LOCK® 5B is suitable for use with applications subject to high radial loads. For further information, please contact our Technical Department.

Surface finish

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

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

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 two diametrically opposed screws 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 Ms tightening torque indicated in the table;
- in continuous sequence, check that the tightening torque M_s has been achieved.

Removal

Gradually loosen the clamping screws. Remove the clamping screws and insert them into the special removal threads on the inner ring flange.
Tighten the screws in a 'criss-cross' sequence until the locking device is released.

Reusing the locking device

When reusing the locking device, check all the surfaces are clean and show no obvious signs of deformation or seizing. Clean and oil all surfaces and threads. Check the screws have not been deformed. Oil the screws and as-semble the locking device as originally supplied.

SIT-LOCK® 5B stop ring

The stop ring, which prevents the hub from moving, is also available in different widths or integrated with the inner ring flange. The locking device is guaranteed to function in either case.

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Dimensions [mm]						Clamping screws DIN 912 12.9			Values with tolerances for shaft h8/hub H8			
d x D	H_t	H_2	H_1	H	E	Number	Type	M_s [Nm]	M_t [Nm]	F_{ax} [kN]	P_w [N/mm²]	P_n [N/mm²]
18 x 47	48	42	29	26	53	6	M6	17	307	34	193	75
19 x 47	48	42	29	26	53	6	M6	17	324	34	183	75
20 x 47	48	42	29	26	53	6	M6	17	341	34	174	75
22 x 47	48	42	29	26	53	6	M6	17	375	34	158	75
24 x 50	48	42	29	26	56	6	M6	17	409	34	145	70
25 x 50	48	42	29	26	56	6	M6	17	426	34	139	70
28 x 55	48	42	29	26	61	6	M6	17	478	34	124	65
30 x 55	48	42	29	26	61	6	M6	17	512	34	116	65
32 x 60	48	42	29	26	66	9	M6	17	819	51	163	87
35 x 60	48	42	29	26	66	9	M6	17	895	51	149	85
38 x 65	48	42	29	26	71	9	M6	17	972	51	137	80
40 x 65	48	42	29	26	71	9	M6	17	1.023	51	131	80
42 x 75	59	51	34	30	81	6	M8	41	1.324	63	133	75
45 x 75	59	51	34	30	81	6	M8	41	1.418	63	124	75
48 x 80	59	51	34	30	86	6	M8	41	1.513	63	116	70
50 x 80	59	51	34	30	86	6	M8	41	1.576	63	111	70
55 x 85	59	51	34	30	91	9	M8	41	2.600	95	152	100
60 x 90	59	51	34	30	96	9	M8	41	2.836	95	139	95
65 x 95	59	51	34	30	102	9	M8	41	3.073	95	129	90
70 x 110	66	56	45	40	117	7	M10	83	4.087	117	111	70
75 x 115	66	56	45	40	122	7	M10	83	4.379	117	103	65
80 x 120	66	56	45	40	127	7	M10	83	4.670	117	97	65
85 x 125	66	56	45	40	132	8	M10	83	5.671	133	104	70
90 x 130	66	56	45	40	137	8	M10	83	6.005	133	98	70
95 x 135	66	56	45	40	142	10	M10	83	7.923	167	116	80
100 x 145	77	65	52	46	153	7	M12	145	8.500	170	98	70
110 x 155	77	65	52	46	163	8	M12	145	1.0990	200	105	75
120 x 165	77	65	52	46	173	10	M12	145	14.984	250	120	85
130 x 180	77	65	52	46	188	12	M12	145	19.479	300	135	95
140 x 190	88	74	59	51	199	10	M14	230	23.986	343	127	95
150 x 200	88	74	59	51	209	12	M14	230	30.840	411	143	105
160 x 210	88	74	59	51	219	12	M14	230	32.896	441	134	100
170 x 225	88	74	59	51	234	14	M14	230	40.777	480	147	110
180 x 235	88	74	59	51	244	14	M14	230	43.175	480	139	105
190 x 250	88	74	59	51	234	15	M14	230	48.829	514	141	105
200 x 260	88	74	59	51	244	15	M14	230	51.399	514	134	105

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.