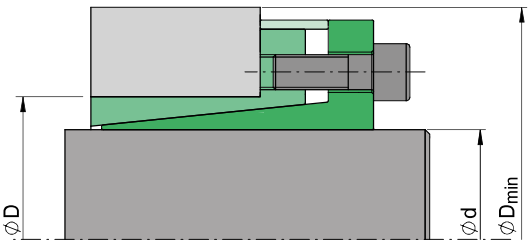
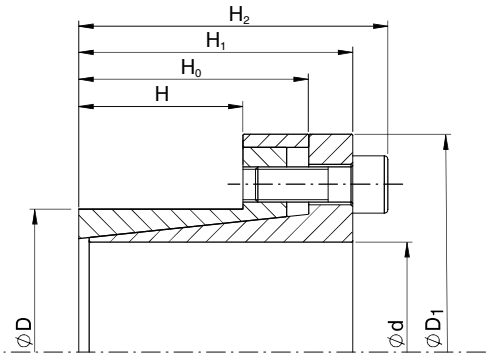
SIT-LOCK® 3 internal locking device - self-centering





Features

Comprised of a split inner ring and outer ring, and a spacer which prevents the hub from moving relative to the shaft when tightening the screws. This locking device is particularly suitable for applications which require low hub pressures. Recommended for use with aluminium hubs or 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® 3 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® 3 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 clean and oil-free.

Axial displacement

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

Radial loads

The SIT-LOCK® 3 locking device is suitable for applications subject to high radial loads. For further information, please contact our Technical Department.

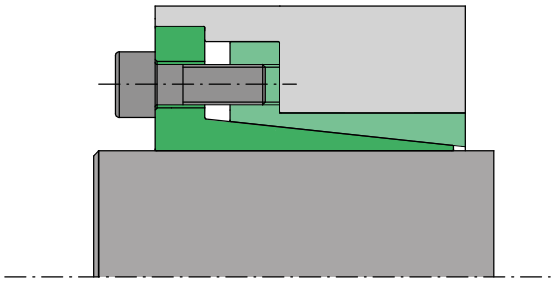
Surface finish

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

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

SIT-LOCK® 3 applications without spacer

Using SIT-LOCK® 3 without a flange is not recommended because when the screws are being tightened, there would be a hub to shaft axial displacement. For spacer-free applications, the following installation type is recommended:



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 M_s 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.

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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_0	H_1	H_2	D_1	Number	Type	M_s [Nm]	M_t [Nm]	F_{ax} [kN]	P_w [N/mm²]	P_n [N/mm²]
6 x 14	10	18,5	21	24	25	3	M3	2	11	4	154	65
7 x 15	12	22	25	29	27	3	M4	5	26	8	238	110
8 x 15	12	22	25	29	27	3	M4	5	30	8	209	110
9 x 16	14	23	26	30	28	4	M4	5	45	10	212	120
10 x 16	14	23	26	30	28	4	M4	5	50	10	191	120
11 x 18	14	23	26	30	32	4	M4	5	55	10	173	106
12 x 18	14	23	26	30	32	4	M4	5	60	10	159	105
13 x 23	14	23	26	30	38	4	M4	5	65	10	147	85
14 x 23	14	23	26	30	38	4	M4	5	70	10	136	85
15 x 24	16	29	36	42	45	3	M6	17	128	17	189	120
16 x 24	16	29	36	42	45	3	M6	17	136	17	177	120
17 x 26	18	31	38	44	47	4	M6	17	193	23	197	130
18 x 26	18	31	38	44	47	4	M6	17	205	23	186	130
19 x 27	18	31	38	44	49	4	M6	17	216	23	176	125
20 x 28	18	31	38	44	50	4	M6	17	227	23	168	120
22 x 32	25	38	45	51	54	4	M6	17	250	23	110	75
24 x 34	25	38	45	51	56	4	M6	17	273	23	101	70
25 x 34	25	38	45	51	56	4	M6	17	284	23	97	70
28 x 39	25	38	45	51	61	6	M6	17	478	34	129	95
30 x 41	25	38	45	51	62	6	M6	17	512	34	121	90
32 x 43	25	38	45	51	65	6	M6	17	546	34	113	85
35 x 47	32	45	52	58	69	8	M6	17	796	45	108	80
38 x 50	32	45	52	58	72	8	M6	17	864	45	99	75
40 x 53	32	45	52	58	75	8	M6	17	910	45	94	70
42 x 55	32	45	52	58	78	8	M6	17	955	45	90	70
45 x 59	45	62	70	78	86	8	M8	41	1.891	84	110	85
48 x 62	45	62	70	78	87	8	M8	41	2.017	84	103	80
50 x 65	45	62	70	78	92	8	M8	41	2.101	84	99	75
55 x 71	55	72	80	88	98	9	M8	41	2.600	95	83	65
60 x 77	55	72	80	88	104	9	M8	41	2.836	95	76	60
65 x 84	55	72	80	88	111	9	M8	41	3.073	95	70	55
70 x 90	65	86	96	106	119	9	M10	83	5.254	150	88	70
75 x 95	65	86	96	106	126	9	M10	83	5.630	150	82	65
80 x 100	65	86	96	106	131	12	M10	83	8.006	200	102	80
85 x 106	65	86	96	106	137	12	M10	83	8.507	200	96	80
90 x 112	65	86	96	106	144	12	M10	83	9.007	200	91	75
95 x 120	65	86	96	106	149	14	M10	83	11.092	234	100	80
100 x 125	65	86	96	106	154	18	M10	83	15.012	300	123	100
110 x 140	90	114	128	140	180	12	M12	145	16.029	291	78	60
120 x 155	90	114	128	140	198	12	M12	145	17.486	291	72	55
130 x 165	90	114	128	140	208	16	M12	145	25.257	389	88	70

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.