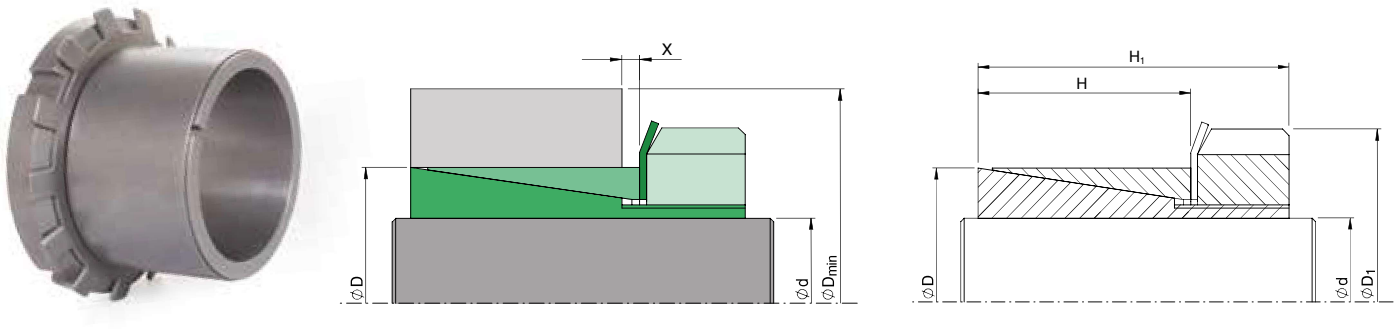
SIT-LOCK® 13 internal locking device - self-centering



Features

Composed of two tapered rings, an inner ring, a splits outer ring and a ring nut with locking washer. It is suitable for applications that require reduced radial and axial dimensions. Particularly suitable for applications without screw tightening space. The ring nut can actually be tightened from above using a special key of very reduced size. 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® 13 locking device is self-centering so it does not require a centering base between the shaft and hub.

Axial displacement

Application 1: When tightening the ring nut, there is no hub to shaft axial displacement. The values in the table are valid for application 1.

Application 2: When tightening the ring nut, there is hub to shaft axial displacement. M_t, F_{ax}, P_w and P_n values increase by 55% compared to the values shown in the table.

Surface finish

The following values are recommended:

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

Considering that using the SIT-LOCK® 2 model requires: tight tolerances, precise surface finishes, and additional accessory costs (flange, screw threads), we recommend using SIT-LOCK® 13.

Installation

Clean the shaft and hub contact surfaces thoroughly. Insert the shaft, the hub and SIT-LOCK® 13 locking device in the desired position.

Nut tightening sequence:

- tighten the ring nut to the tightening torque M_s indicated in the table;
- lock the ring nut using the appropriate locking washer as shown in the figure.

Removal

Unlock the ring nut from the locking washer. Loosen the ring nut until the clamping set is fully removed.

CAUTION: *The SIT-LOCK® 13 taper angle is approximately 4°. As the angle is less than the friction angle, removal may not be guaranteed. For applications that require removal, SIT-LOCK® 9 is recommended.*

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 ring nut and washer have not been deformed. Oil the screws and assemble the locking device as originally supplied.

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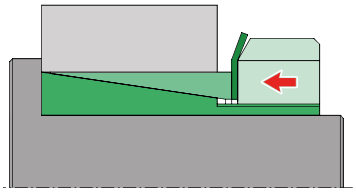
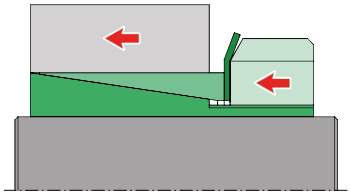


Application 1
M_t, F_{ax}, P_w, P_n
values as indicated in the table



Application 2
M_t, F_{ax}, P_w, P_n
55% greater than the values indicated in the table

Dimensions [mm]					Ring nut		Ring nut tightening torque	Values with tolerances for shaft h8/hub H8			
d x D	D_1	H	H_1	X	Type	Thread	M_s [Nm]	M_t [Nm]	F_{ax} [kN]	P_w [N/mm²]	P_n [N/mm²]
14 x 25	32	23	31	3	KM4	M20x1	95	66	9,2	87	50
15 x 25	32	23	31	3	KM4	M20x1	95	72	9,2	82	50
17 x 25	32	23	31	3	KM4	M20x1	95	81	9,2	74	50
18 x 30	38	24	33	3	KM5	M25x1,5	160	103	11,4	82	50
19 x 30	38	24	33	3	KM5	M25x1,5	160	108	11,4	77	50
20 x 30	38	24	33	3	KM5	M25x1,5	160	115	11,4	73	50
24 x 35	45	29	38	4	KM6	M30x1,5	220	183	15,2	67	45
25 x 35	45	29	38	4	KM6	M30x1,5	220	190	15,2	62	45
28 x 40	52	34	44	4	KM7	M35x1,5	340	257	18,3	57	40
30 x 40	52	34	44	4	KM7	M35x1,5	340	275	18,3	53	40
32 x 45	58	34	45	4	KM8	M40x1.5	480	360	22,5	62	45
35 x 45	58	34	45	4	KM8	M40x1,5	480	393	22,5	57	45
36 x 45	58	34	45	4	KM8	M40x1,5	480	404	22,5	56	45
38 x 50	65	35	46	5	KM9	M45x1,5	680	507	26,7	59	45
40 x 50	65	35	46	5	KM9	M45x1,5	680	534	26,7	57	45
45 x 55	70	35	47	5	KM10	M50x1,5	870	700	31	62	50
48 x 60	75	35	47	5	KM11	M55x2	970	863	36	62	50
50 x 60	75	35	47	5	KM11	M55x2	970	898	36	60	50
55 x 65	80	36	48	5	KM12	M60x2	1.100	1.055	38,5	62	\55
60 x 70	85	36	50	5	KM13	M65x2	1.300	1.398	46,6	67	60

M_s	Screw tightening torque	Nm
M_t	Transmissible torque	Nm
F_{ax}	Transmissible axial force	kN
P_w	Pressure on shaft	N/mm^2
P_n	Pressure on hub	N/mm^2

For larger diameters or dimensions different to those in the table, please contact our Technical Department.