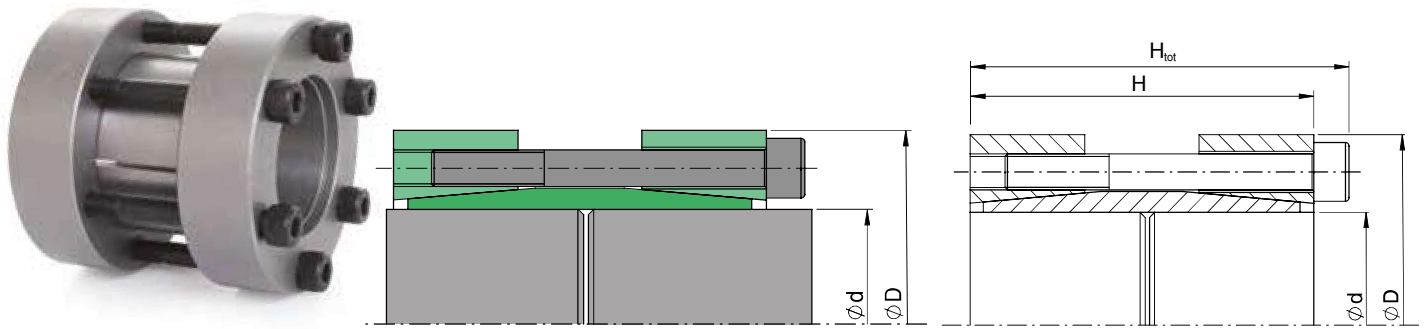


## SIT-LOCK® 10 - rigid joint



### Features

Composed of two tapered rings and a split inner ring. It is particularly suitable for clamping two shafts where medium-high torque transmission is required. The table shows performance data for the following tolerances:

shaft  $d\ h9$

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

### Installation with non-lubricated surfaces (dry)

The SIT-LOCK® 10 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:

$M_t, F_{ax} +25\%$

To get these value, the shaft and rigid joint inner ring contact surfaces must be cleaned with solvent. The shaft contact surfaces must also be completely dry.

### Surface finish

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

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

### Axial displacement

When tightening the screws there is a hub to shaft axial displacement. The axial displacement value depends on the locking device, shaft and hub seat tolerances.

### Installation

The coupling is supplied ready to assemble. Clean the shaft contact surfaces thoroughly and apply oil. Place the rigid joint between the two shafts to be connected, then:

- tighten two opposite screws until the coupling's inner ring surface makes contact with the shafts being joined;

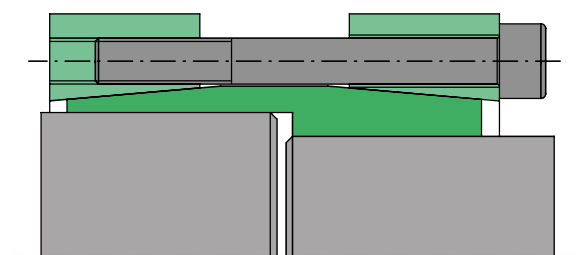
- tighten all screws to 50% of the screw tightening torque value  $M_s$  indicated in the table in a 'criss-cross' sequence;
- repeat to 100% of the  $M_s$  tightening torque indicated in the table;
- in continuous sequence, check that the tightening torque  $M_s$  has been achieved. Installation is complete when all screws are tightened to the  $M_s$  tightening torque indicated in the table.

### Removal

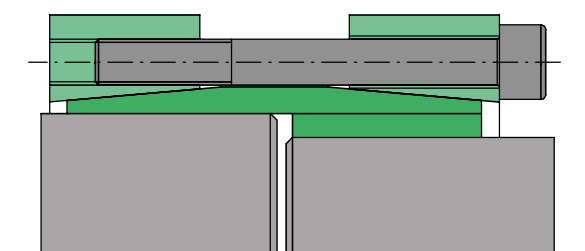
- gradually loosen the clamping screws. This is usually enough to unlock the two tapered outer rings;
- if necessary, lightly tap the tapered rings with a hammer to facilitate removal.

### Reusing the rigid joint

For applications of considerable quantities, we can make a device with an inner ring that can couple two shafts of different diameters. See figure.



For quantities that do not justify mass production, we recommend making a split bushing to achieve the purpose of a serial joint. See figure.



Recommended split bushing tolerances:  
inner diameter E7 - outer diameter e7

## SIT-LOCK® 10 - rigid joint

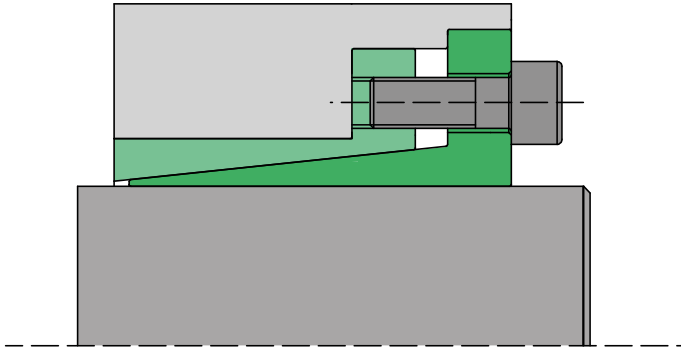
Dimensions [mm]			Clamping screws DIN 912 12.9			Values with tolerances for shaft h8/hub H8	
d x D	H <sub>t</sub>	H	Number	Type	M <sub>s</sub> [Nm]	M <sub>t</sub> [Nm]	F <sub>ax</sub> [kN]
17 x 50	56	50	4	M6	17	196	23
18 x 50	56	50	4	M6	17	207	23
19 x 50	56	50	4	M6	17	219	23
20 x 50	56	50	4	M6	17	231	23
22 x 55	66	60	6	M6	17	380	35
24 x 55	66	60	6	M6	17	415	35
25 x 55	66	60	6	M6	17	432	35
28 x 60	66	60	6	M6	17	484	35
30 x 60	66	60	6	M6	17	519	35
32 x 63	66	60	6	M6	17	553	35
35 x 75	83	75	4	M8	41	764	44
38 x 75	83	75	4	M8	41	829	44
40 x 75	83	75	4	M8	41	873	44
42 x 78	83	75	4	M8	41	916	44
45 x 85	93	85	6	M8	41	1.473	65
48 x 90	93	85	6	M8	41	1.571	65
50 x 90	93	85	6	M8	41	1.636	65
55 x 94	93	85	8	M8	41	2.400	87
60 x 100	93	85	8	M8	41	2.618	87
65 x 105	93	85	8	M8	41	2.836	87
70 x 115	110	100	6	M10	83	3.551	101
75 x 120	110	100	6	M10	83	3.805	101
80 x 125	110	100	8	M10	83	5.411	135

M <sub>s</sub>	Screw tightening torque	Nm
M <sub>t</sub>	Transmissible torque	Nm
F <sub>ax</sub>	Transmissible axial force	kN

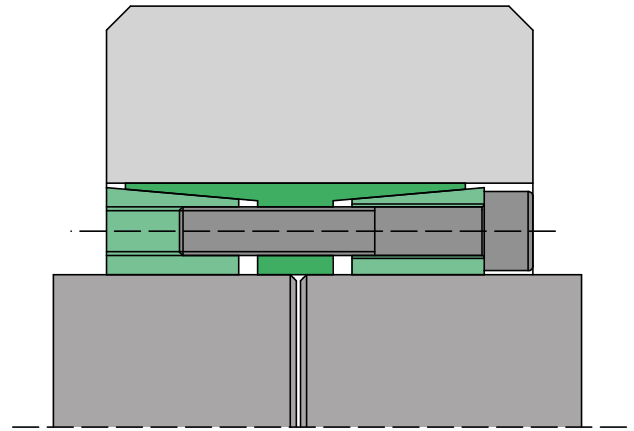
**IMPORTANT:** The screw tightening torque M<sub>s</sub> can be reduced by 40% of the value indicated in the table. M<sub>t</sub>, F<sub>ax</sub>, P<sub>w</sub>, P<sub>n</sub> decrease proportionally. For further information, please contact our Technical Department.

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

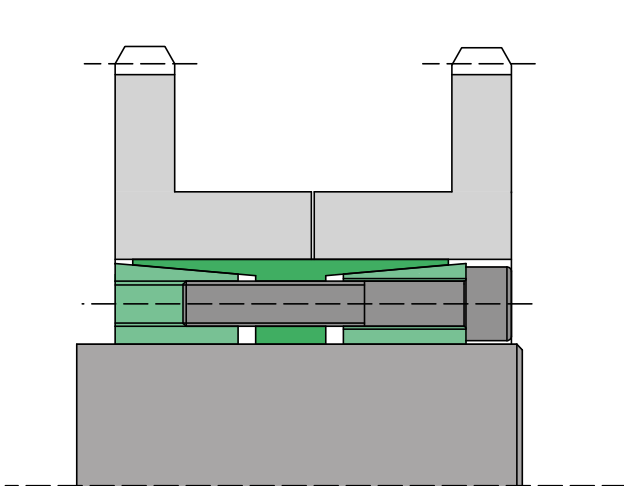
## Application examples



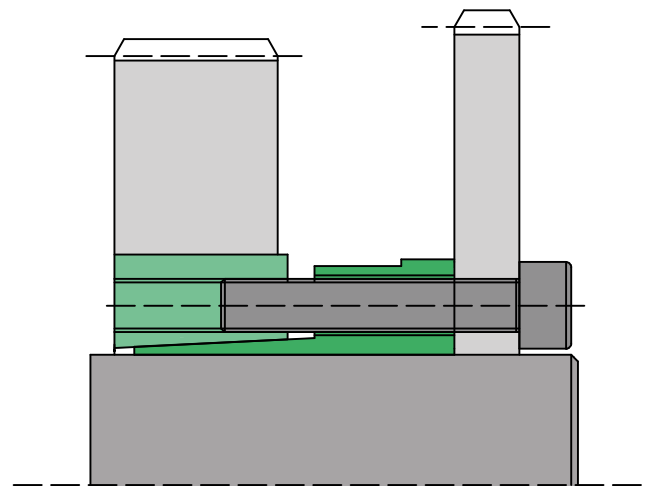
SIT-LOCK® 3 hub applications without spacer. Recommended for high rotation speeds.



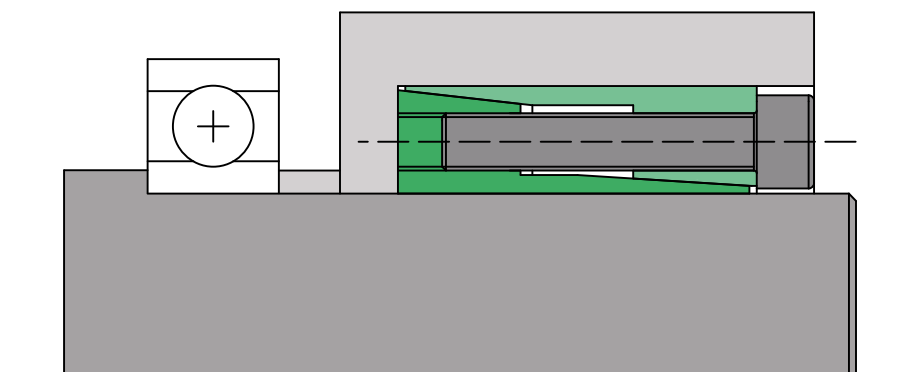
Locking two shafts and a hub using SIT-LOCK® 4. Only one locking device is used for locking 3 components.



Simultaneously locking two sprockets using SIT-LOCK® 4.



Joining a timing belt pulley and a brake disc with SIT-LOCK® 5A.

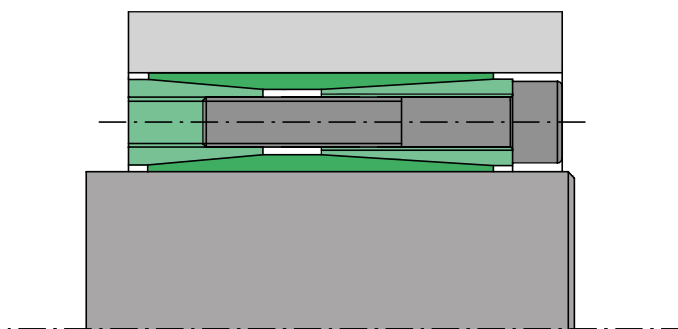


Locking a hub while also generating an axial force to axially lock a bearing.

## Customised versions available on request

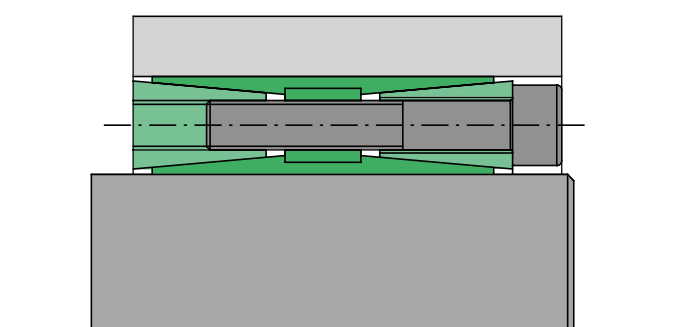
### SIT-LOCK® 19

- Not self-centering
- High transmissible torques
- Available on request for shaft diameters of 70 to 320 mm
- No axial displacement when tightening the screws
- Quick installation and removal
- Outer diameter larger than SIT-LOCK® 4 - 4A



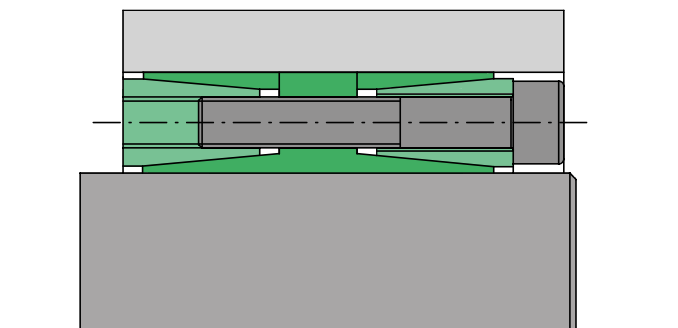
### SIT-LOCK® 20

- Self-centering
- Available on request for shaft diameters of 45 to 600 mm
- No axial displacement during assembly
- Good concentricity and perpendicularity
- High transmissible torques
- **Interchangeable with SIT-LOCK® 4 - 4A in terms of both dimensions and features**



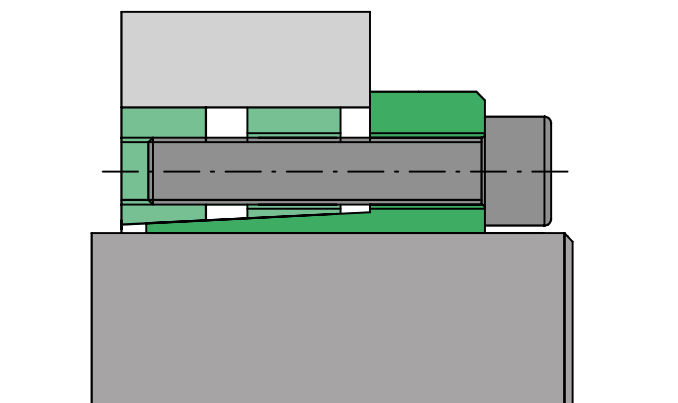
### SIT-LOCK® 21

- Self-centering
- Available on request for shaft diameters of 100 to 600 mm
- No axial displacement when tightening the screws
- High transmissible torques
- Easy to remove
- **Interchangeable with SIT-LOCK® 4 - 4A in terms of both dimensions and features**



### SIT-LOCK® 22

- Self-centering
- Available on request for shaft diameters of 50 to 600 mm
- No axial displacement when tightening the screws
- High transmissible torques
- Easy to remove
- Recommended for applications subject to high bending moments

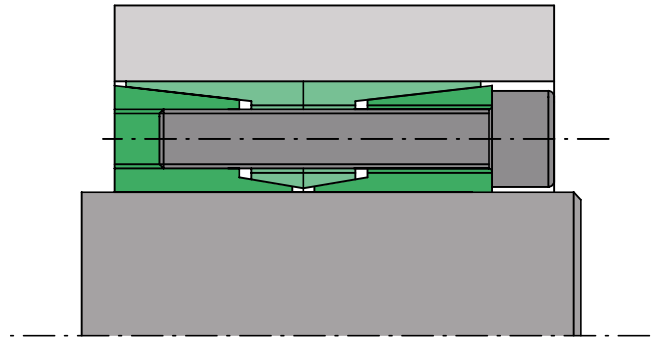


Internal - not self-centering

## Customised versions available on request

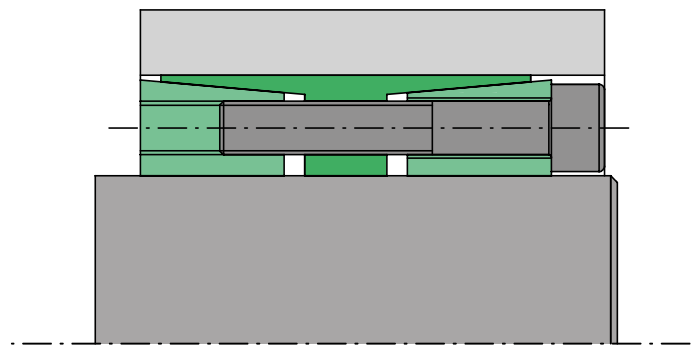
### SIT-LOCK® 15 special

- Excellent concentricity and perpendicularity
- Available on request for shaft diameters of 5 to 50 mm
- No axial displacement during assembly
- Low surface pressures
- Reduced axial dimensions
- Medium to high transmissible torques
- Easy to remove



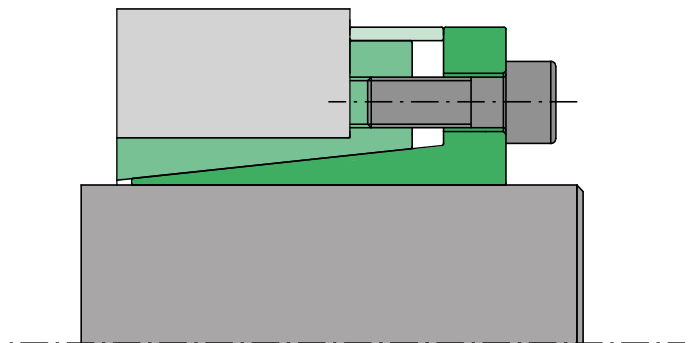
### SIT-LOCK® 4 COMPACT

- For applications with high bending moments
- Quick installation and removal
- Available on request for shaft diameters of 70 to 600 mm
- No axial displacement when tightening the screws
- Excellent concentricity and perpendicularity
- Medium to high transmissible torques



### SIT-LOCK® with electroless nickel plating

- All SIT-LOCK® locking devices are available with electroless nickel plating
- $M_t$ ,  $F_{ax}$ ,  $P_w$  and  $P_n$  values remain unchanged
- Excellent oxidation protection
- The screws are also supplied with electroless nickel plating
- Particularly recommended for applications in high humidity environments



### SIT-LOCK® stainless steel

- Almost all SIT-LOCK® locking devices can be manufactured and supplied in stainless steel. The screws are also supplied in stainless steel
- The values  $M_t$ ,  $F_{ax}$ ,  $P_w$  and  $P_n$  differ from the values in the table
- Excellent, effective oxidation protection
- Highly recommended for applications in the food industry or aggressive environments

