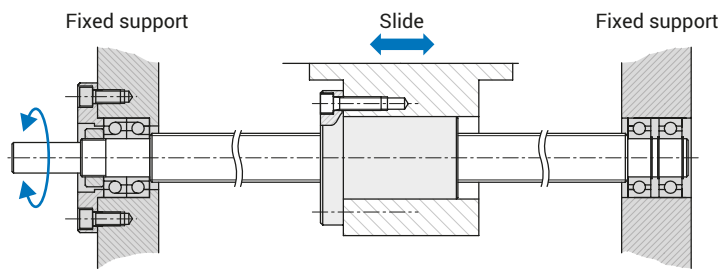


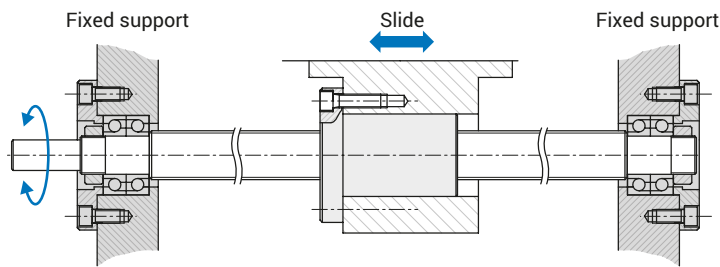
## MOUNTING METHODS

The mounting method and the unsupported length of the screw shaft affect the critical speed and the buckling load. In the following the most common mounting methods for the screw drives are presented.

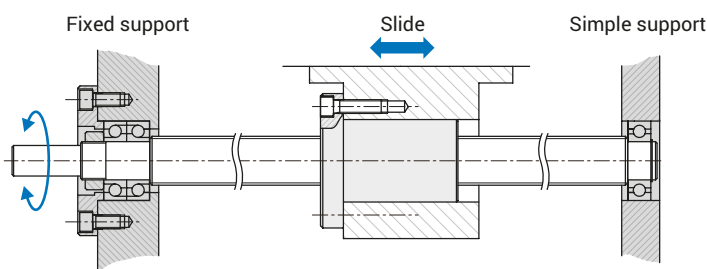
### Fixed – fixed method



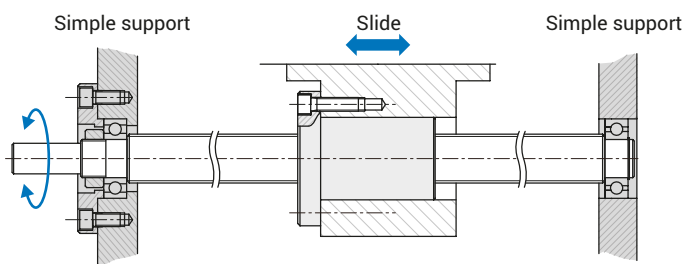
Axially fixed bearings on both sides:



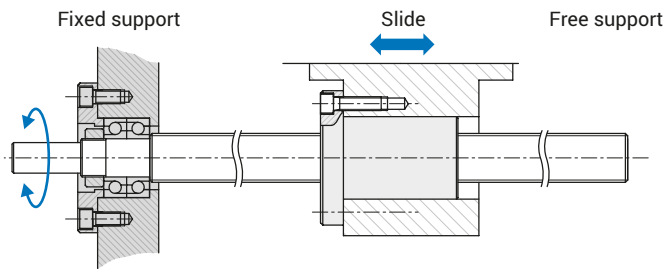
### Fixed – simple method



### Simple – simple method



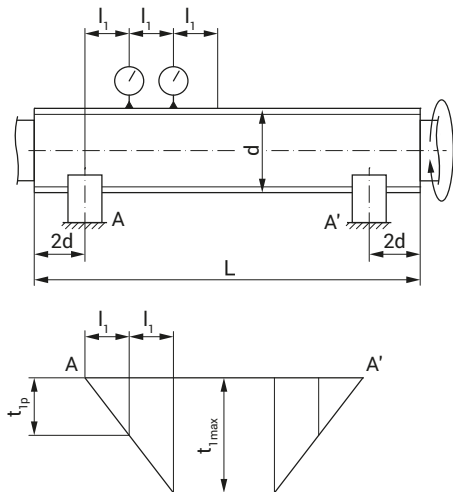
**Fixed – free method**



**GEOMETRICAL TOLERANCE AND ACCEPTANCE CONDITIONS OF THE BALL SCREWS**

**1. Radial run-out  $t_1$  of the outer diameter of the screw shaft over the length  $l_1$  relative to AA'**

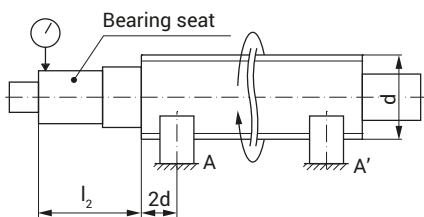
**i** According to DIN 69051 and JIS B 1192



d [mm]		$l_1$ [mm]	$t_{1p}$ [μm] for $l_1$ for accuracy grade	
Over	Up to		5	7
6	12	80	32	40
12	25	160		
25	50	315		

L/d		$t_{1max}$ [μm] for $L \geq 4 \cdot l_1$ for accuracy grade	
Over	Up to	5	7
	40	64	80
40	60	96	120
60	80	160	200
80	100	256	320

**2. Radial run-out  $t_2$  of the bearing journal in relation to AA'**

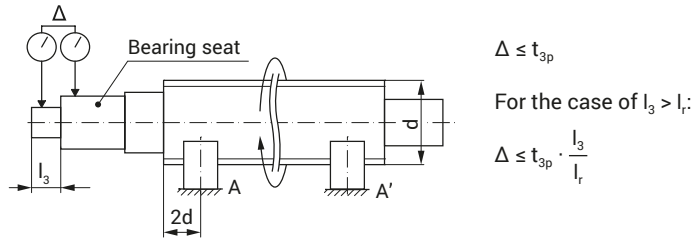


For the case of  $l_2 > l_r$ :

$$t_{2a} \leq t_{2p} \cdot \frac{l_2}{l_r}$$

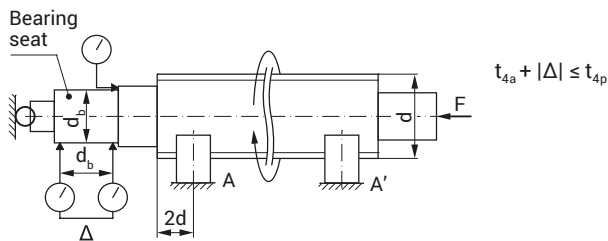
d [mm]		Reference length $l_r$ [mm]	$t_{2p}$ [μm] for $l_2 \leq l_r$ for accuracy grade	
Over	Up to		5	7
6	20	80	20	40
20	50	125	25	50

**3. Radial run-out deviation  $t_3$  between the journal diameter of the ball screw and the bearing diameter in relation to AA'**



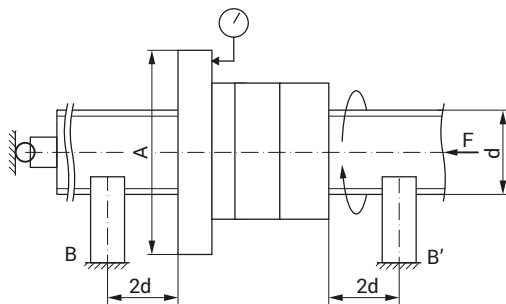
d [mm]		Reference length $l_r$ [mm]	$t_{3p}$ [μm] for $l_3 \leq l_r$ for accuracy grade	
Over	Up to		5	7
6	20	80	8	12
20	50	125	10	16

**4. Axial run-out  $t_4$  of the bearing end shoulder in relation to AA'**



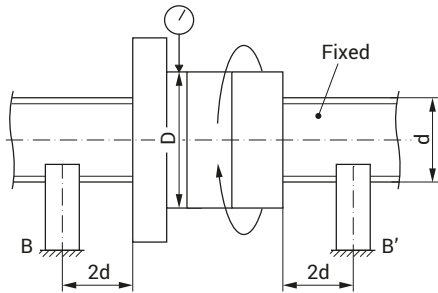
d [mm]		$t_{4p}$ [μm] for accuracy grade	
Over	Up to	5	7
6	63	5	6

**5. Axial run-out  $t_5$  of the ball nut mounting face in relation to BB'**



A [mm]	$t_{5p}$ [μm] for accuracy grade		
Over	Up to	5	7
16	32	16	20
32	63	20	25
63	125	25	32

**6. Radial run-out  $t_{ep}$  of the ball nut outer diameter in relation to BB'**



D [mm]		$t_{ep}$ [μm] for accuracy grade	
Over	Up to	5	7
16	32	16	20
32	63	20	25
63	125	25	32

**ASSEMBLING THE BALL NUT ONTO THE SCREW SHAFT**

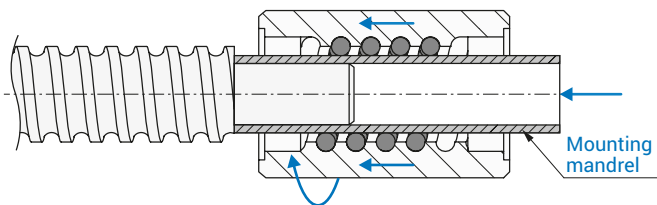
**Assembling procedure**

1. Ball nut together with the mounting mandrel must be pushed to the start of the thread.

**i** It should be noted that the mounting mandrel must be axially in contact with the face of the start of the thread.

2. The nut should be carefully turned onto the thread using slightly axial load.

3. During the assembling process (until the ball nut is not located completely on the screw thread) the mounting mandrel must not be removed to prevent the balls from falling off the nut.



In the case, when the ball nut must be removed from the ball screw shaft, the mounting mandrel must to be used again to prevent the balls from falling off the nut.