

Tolerances for tapered journal seatings

When a bearing is mounted directly onto a tapered shaft seating, the seating diameter tolerance can be wider than in the case of cylindrical seatings. Fig 13 shows a grade 9 diameter tolerance, while the form tolerance stipulations are the same as for a cylindrical shaft seating. SKF recommendations for tapered shaft seatings for rolling bearings are as follows.

- The permissible taper deviation for machining the taper seatings is \pm tolerance in accordance with IT7/2 based on the bearing width. The value is determined according to the formula shown in fig 13, where

k = factor for the taper

12 for taper 1 : 12

30 for taper 1 : 30

B = bearing width

- The straightness tolerance is IT5/2, based on the diameter d and is defined as:

"In each axial plane through the tapered surface of the shaft, the tolerance zone is limited by two parallel lines a distance " t " apart."

- The radial deviation from circularity is IT5/2, based on the diameter d and is defined as:

"In each radial plane along the tapered surface of the shaft, the tolerance zone is limited by two concentric circles a distance " t " apart."

When particularly stringent running accuracy requirements are stipulated, IT4/2 is to apply instead.

The best way to check that the taper is within the recommended tolerances is to measure with dial gauges. A more practical method, but less accurate, is to use ring gauges, special taper gauges or sine bars.

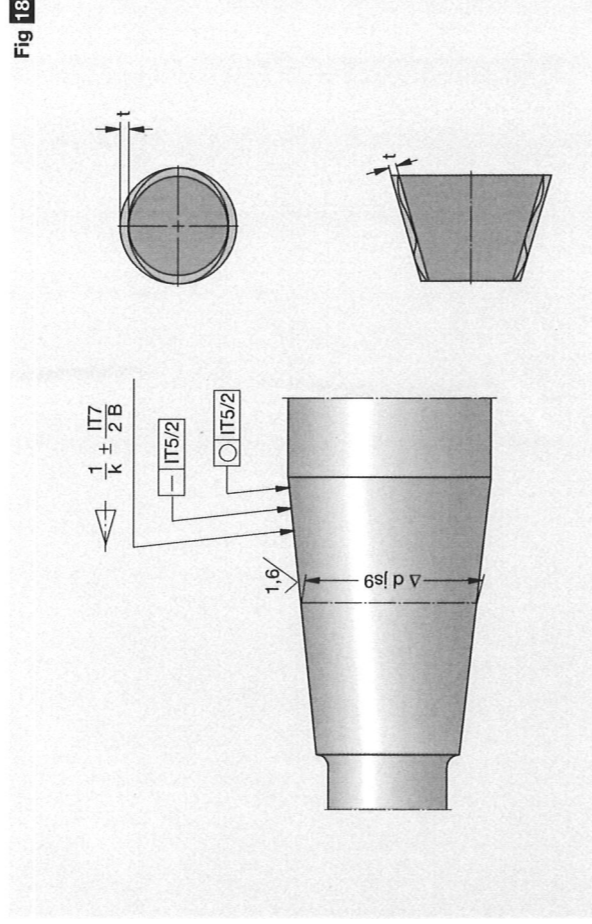


Fig 13