

KS PERMAGLIDE® plain bearings

Test methods: Testing wrapped bushes

Unlike a cylindrical pipe section, wrapped bushes are produced from a level section of material through shaping. They therefore feature a joint that may be open when free. The wrapped bush only has a closed joint and the required dimensional and contouring accuracy after it has been pressed into the bearing housing. Before mounting, the outside diameter D_o and inside diameter D_i of wrapped bushes can only be measured using special test methods and testing devices.

Bush outside diameter D_o

Test A, DIN ISO 3547 Part 2

Here, the wrapped bush is placed into a two-piece test holder with defined test diameter d_{ch} , with the joint facing upwards. The test holder is subjected to a test force F_{ch} . The distance z between the dies changes under the test force. The bush diameter D_o is then calculated from this measured value Δz .

Test D, DIN ISO 3547 Part 2

Wrapped bushes with an outside diameter $D_o > 180$ mm are tested using a precision tape measure. Here, the tape measure is placed around the centre of the bush, and sufficient tension applied to close the joint. The measured circumference Δz indicates the difference between the adjusting mandrel and the bush. From this value, the bush outside diameter D_o is calculated.

Bush inside diameter D_i

Test C with gauge, DIN ISO 3547 Part 2

The wrapped bush is pressed into a gauge ring with a test diameter defined according to DIN ISO 3547 Part 1, Tab. 5. The bush inside diameter D_i is checked using a go/no go plug gauge or a 3-point touch probe.

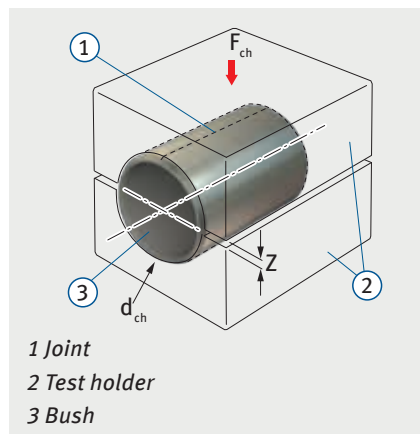


Fig. 1: Test of bush outside diameter D_o

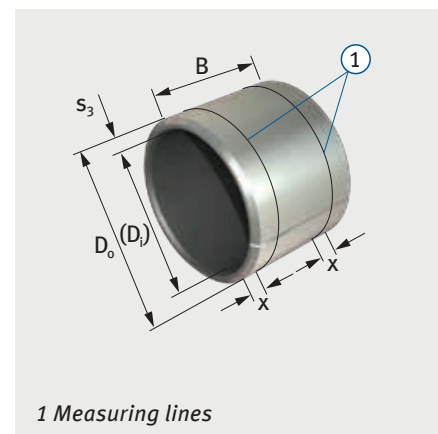


Fig. 2: Measuring lines for the wall thickness test (example)

Wall thickness test of the wrapped bush (following agreement)

The wall thickness test is set out in DIN ISO 12036. The bush wall thickness s_3 is tested on one, two or three measuring lines, depending on the bush width B . Following agreement, the test can be performed in accordance with the aforementioned standard:



Important:

The wall thickness s_3 and bush inside diameter must not be given simultaneously as a test dimension.

Important note:

The section on the testing of wrapped bushes describes the most important processes in a generalised fashion. It is to be used purely for the purpose of information. The exact procedure is set out in the respective current standards. These standards alone must be used to determine the dimensional and functional quality of wrapped bushes.