

Drawn cup needle roller bearings Slimline

Features

Drawn cup needle roller bearings of the series Slimline are needle roller bearings that have a section height of 1,5 mm. They comprise thin-walled, drawn cup outer rings and needle roller and cage assemblies which together form a complete unit. They allow highly energy-efficient bearing arrangements within a very small design envelope. They can be used as a direct replacement for conventional plain bearings without any modification to the adjacent construction.



Figure 1
Drawn cup needle roller bearing Slimline

Advantages

The replacement of plain bearings gives the following advantages:

- minimised energy losses and less heat generation
- higher accuracy due to reduced operating clearance
- simpler and more economical design of the bearing arrangement (without costly, complex oil feed holes)
- sufficient lubrication even with minimal quantity lubrication.

Dimensions and accuracies

The drawn cup needle roller bearing Slimline is suitable for the following mounting situations:

- shaft diameter up to 50 mm
- bearing widths from 10 mm to 15 mm
- very low to moderate loads
- accuracies corresponding to drawn cup needle roller bearings in accordance with Catalogue HR 1, Rolling Bearings
- operating temperatures from -40 °C to $+140\text{ °C}$.

Performance data Example

| Designation | Basic load ratings | |
|-------------------|--------------------|------------------------|
| | dyn. C_r N | stat. C_{0r} N |
| HK35×38×12 | 5 600 | 13 700 |

Availability

Drawn cup needle roller bearings Slimline are special bearings and are available by agreement only.

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Design and safety guidelines

Some design and safety guidelines for drawn cup needle roller bearings Slimline are given here. Further guidelines valid for drawn cup needle roller bearings can be found in Catalogue HR 1, Rolling Bearings, chapter Drawn cup needle roller bearings.

Design of bearing arrangements

The shaft must be designed as a rolling bearing raceway. In order to fully utilise the load carrying capacity of the bearings, sufficient rigid support must be provided for the thin-walled outer rings.

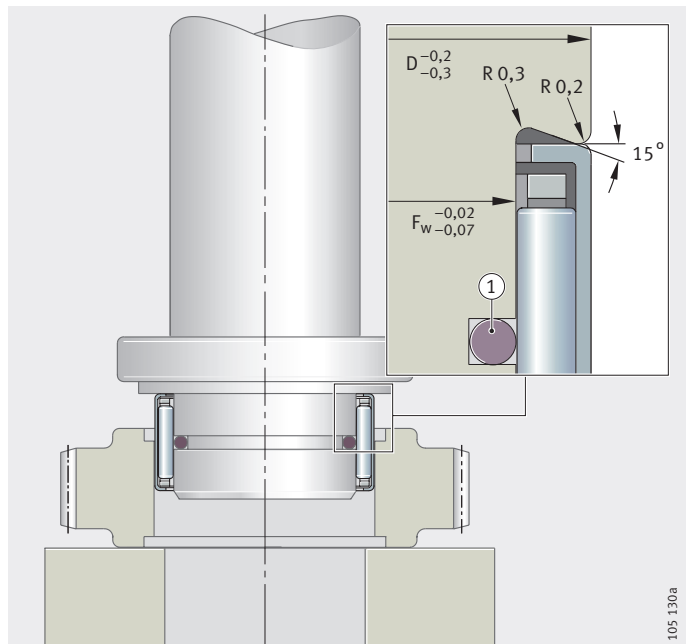
The bearing outer rings may become slightly out of round due to the manufacturing process. They will adopt their final dimensional and geometrical accuracy only once they are pressed into the housing bore.

Mounting

The bearings should be mounted using a special fitting mandrel, *Figure 2*. They must not be tilted while they are being pressed in. A toroidal ring should be used to retain the bearing.

① Toroidal ring

Figure 2
Mounting using a fitting mandrel



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