

Product news

Gauges for bearing mounting

General

SKF has developed a range of gauges to check tapered shaft journals or the radial internal clearance of cylindrical roller bearings. They exactly meet the requirements of high-precision technology, especially in:

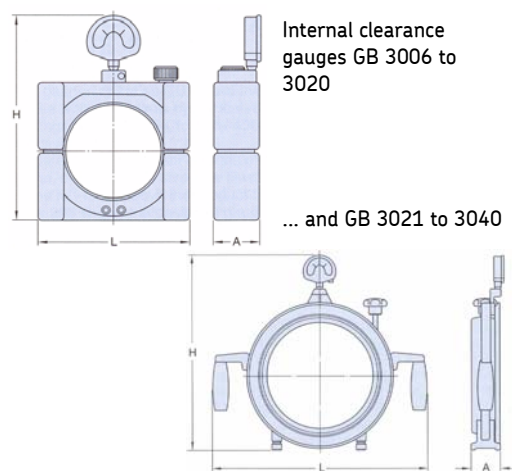
- Machine tool manufacturing
- Spindle manufacturing
- Spindle service & repairs
- Printing industries
- etc.

Internal clearance gauges GB 30 & GB 49

Easy handling - high measuring accuracy. To adjust the radial internal clearance or preload of cylindrical roller bearings with tapered bore when mounting, it is necessary to be able to accurately measure the circumscribed or inscribed circle diameter of the roller set. SKF series GB 30 and GB 49 gauges enable these measurements to be made.

GB 30

For double row cylindrical roller bearings series NN 30..K



GB 30 gauges are made in two different designs, depending on size. The gauges GB 3006 to GB 3020 can be used to measure the envelope diameter of the roller set (i.e. the diameter over the rollers when in contact with the inner ring raceway) to an accuracy of 1 μm . With the gauges GB 3021 to GB 3040 it is possible to reach a measuring accuracy of 2 μm .

Description

The body of the gauges up to and including size GB 3020 is in two parts; that of the larger sizes is slotted. The body of the gauges has two diametrically arranged gauging zones which are ground on its bore diameter. The body can be expanded by means of an adjustment screw. This enables the gauge to be

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Internal clearance gauge GB 3021 to GB 3040

pushed over the inner ring with roller and cage assembly without damaging the rollers and gauging surfaces. The measuring ring which is screwed to one half of the gauging ring transmits the diameter measured by both halves of the gauging ring to the indicator dial.

Application

Using a bore gauge, the raceway diameter of the mounted outer ring is measured and the dimension recorded is transferred to the centres of the gauging zones, taking into consideration the desired radial internal clearance or preload.

The indicator of the GB 30 gauge is then set to zero. The inner ring with roller and cage assembly is pushed on to its tapered journal and driven up until the indicator of the preset gauge again shows zero when the gauge is placed in position around the roller set.

GB 49

For double row cylindrical roller bearings series NNU 49..BK

GB 49 gauges are made in 2 different designs, depending on size. The gauges GB 4920 to GB 4938 can be used to measure the internal diameter of the roller set to an accuracy of 1 μm when the rollers are in contact with the outer ring raceway. With the gauges GB 4940 to GB 4960 it is

possible to reach a measuring accuracy of 2 μm .

Description

The body of GB 49 gauges is slotted so that both gauging ring halves can be brought to rest on the roller set with the appropriate pressure as a result of the inherent resilience of the material.

The outside cylindrical surface of the gauging ring has two ground gauging zones at diametrically opposed positions. An adjustment screw permits the body of the gauge to be compressed so that the gauge can be positioned inside the roller set without damaging the rollers of the gauging surfaces.

Application

After the gauge has been inserted in the roller and cage assembly, the adjustment screw is loosened until the two gauging surfaces are in contact with the roller set.

The indicator of the gauge is then set to zero. The measured diameter inside the roller set is then taken by using a stirrup gauge and the indicator of the stirrup gauge set to zero.

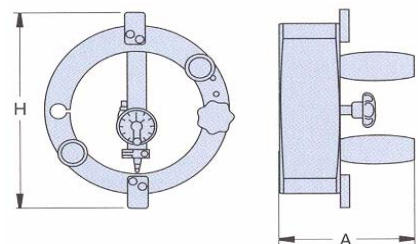
The inner ring is then driven up on its seating on the spindle until the indicator of the stirrup gauge (used to measure the inner ring raceway) shows the deviation from zero corre-



Internal clearance gauge GB 4920 to GB 4938

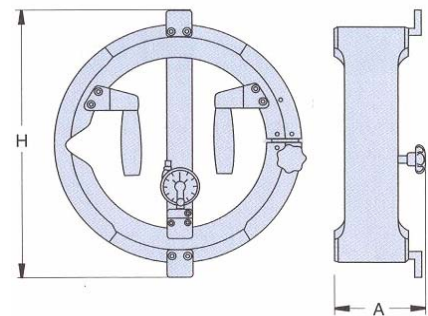
sponding to the desired radial internal clearance or preload.

GB gauges can also be manufactured for other types of cylindrical roller bearings, for example GB 10 series for singular row cylindrical roller bearings.



Internal clearance gauge GB 4920 to 4938

... and GB 4940 to 4960



Radial clearance gauges HKM

Fast exchange of bearings in printing cylinder bearing units (PCU) in as-mounted state.

Description

The principle is similar to that of the GB 30 series. The only difference is in the position of the adjustment screw, which is accessible from the front (see description, GB 49 series).

Application

The radial clearance gauge HKM is used to define the correct radial clearance of printing cylinder bearing units. With the assistance of HKM the disassembly of the whole printing cylinder will be obsolete in the future. Quick troubleshooting means substantial reductions in cost for the user.

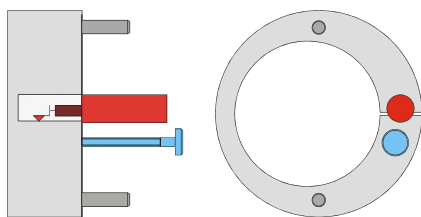
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Radial clearance gauges HKM

Additionally an exact reproduction of the necessary radial clearance or preload is possible.



Measuring principle HKM

Ring gauges GRA 30

For cylindrical roller bearings series NN 30..K and NNU 49..BK



Ring gauges GRA 30

GRA 30 ring gauges are practical aids for checking the tapered shaft seat-

ings. Furthermore they can be used for checking tapered seatings for bearings series N 10..AK and N 19..AK.

The ring gauges are available for tapered seatings up to 200 mm diameter. For seatings larger than 200 mm, we recommend you use taper gauge series 9205 (00).

Taper gauges 9205 (00)

For external tapers, diameter range 100 to approx. 1400 mm, tapers 1:12/1:30

The width of external taper which can be gauged is just under 400 mm. For wider seatings, suitably modified ta-



Taper gauges series 9205 (00) can be delivered as set or single device

per gauges can be supplied on request. The series 9205 (00) gauges enable the position and taper angle of external tapers to be very accurately determined. They are therefore particularly suitable for checking tapered seatings for bearings on shafts and journals.

Taper gauges DMB

For checks of diameter and angle of external tapers

Taper gauges of series DMB are designed so they may also be used in the workshop when machining the shaft seatings. They are available for diameters of 40 to 360 mm and are primarily intended for measuring tapers of 1:12 and 1:30, although they can be used to measure any taper with an angle between 0° and 6°. Measuring accuracy is within 1 µm for diameters up to and including 280 mm, and within 1,5 µm for diameters larger than 280 mm.



Taper gauge DMB

Calibration

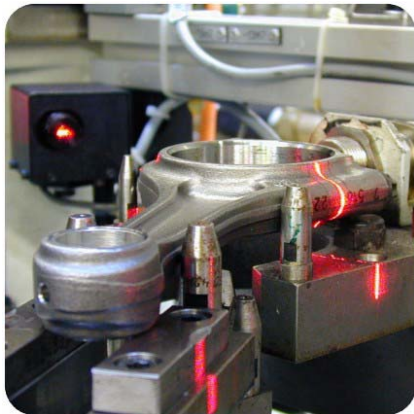
As for all of our products for quality control, SKF QTC offers calibration services for this product line. We recommend yearly calibration by our specialists.

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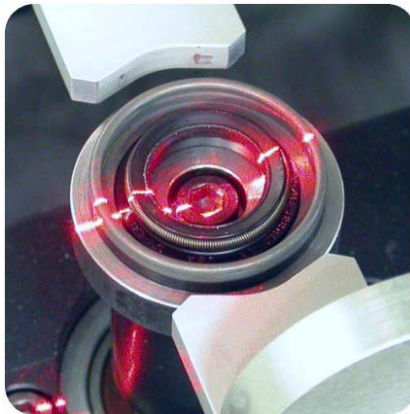
Optical inspection system

to detect imperfect breaking with missing material, chips, etc. – for example con-rod crack lines.



Optical inspection system

to detect faulty shaft seals.



Optical inspection system

for surface inspection and to detect missing parts.



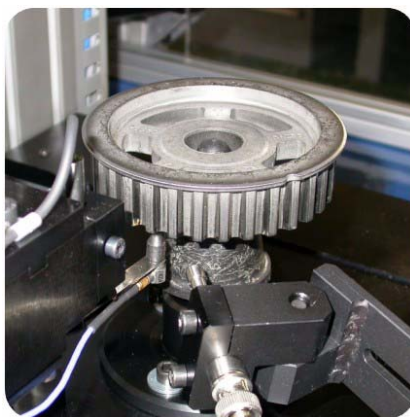
Resonant inspection

to identify cracks in sintered components – for example sintered con-rods.



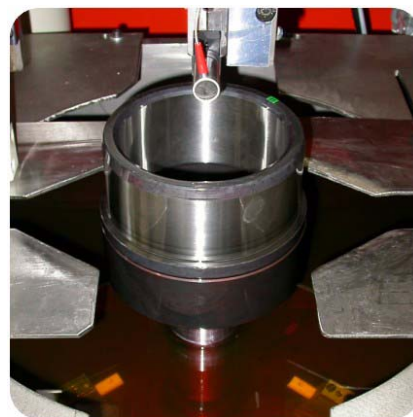
Resonant inspection

to identify cracks. Fully automatic 100 % check of sintered parts, e.g. bedplates for crankshafts, sprocket wheels, toothed wheels.



Ultrasonic inspection

of parts with respect to internal and surface material imperfections, such as cracks, porosity, flakes, etc.



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