

What Are Needle Roller Bearing Used For?

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Fasteners/Bearings & Bushings Needle Roller Bearing — ISO / DIN (Series 133) Applications

Bearings & Bushings · ISO / DIN — Application guide

Typical applications, the industries that specify needle roller bearing, and how to choose the right size, material and finish for the joint.

Needle Roller Bearings are used for supporting a rotating shaft and carrying its radial and axial loads with low friction. They are manufactured to ISO / DIN, and selection is driven by the bore diameter, the fit and tolerance the assembly requires, and the service environment.

Primary duty

Supporting a rotating shaft and carrying its radial and axial loads with low friction

Governing standard

ISO / DIN

Bore diameter range

8 mm to 40 mm

Category

Bearings & Bushings

Application notes are general engineering guidance. Verify the property class and any approval requirement against your own design calculation.



Needle Roller Bearings (ISO / DIN) are specified where the joint requires supporting a rotating shaft and carrying its radial and axial loads with low friction. The sections below cover the typical end-uses by industry, the size and material decisions for each, assembly practice, and the applications this fastener type is not suited to. Stocked across roughly 8 mm to 40 mm, they cover general to heavy-duty work.

Typical Applications for Needle Roller Bearing — ISO / DIN (Series 133)

The most common settings where these are specified:

- **General machine building:** fastening covers, brackets, motors and sub-assemblies on production equipment.
- **Maintenance & repair (MRO):** a stocked size for servicing existing plant where the original fastener spec must be matched.
- **Fabrication & metalwork:** bench and on-site assembly of steel frames, enclosures and weldments.

How to Specify Needle Roller Bearing — ISO / DIN (Series 133) for Your Application

- **Size:** Select on bore diameter, and confirm it against the mating feature in the assembly. This product spans 8 mm–40 mm; check the full table below for the exact dimensions of each size.

- **Material:** Choose the material and finish for the service environment — plated steel for general use, stainless for corrosion resistance.
- **Environment:** For damp, coastal or chemical exposure prefer A4/316 stainless or a suitable coating; indoors, plated steel or A2 is usually sufficient.
- **Standard:** This product is supplied to ISO / DIN. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Where Needle Roller Bearing — ISO / DIN (Series 133) Are Not the Right Choice

Match the fastener to the load, environment and whether the joint must be reopened; the wrong class or style is the usual cause of joint failure.

Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose.

Changing the size will snap the other fields to that size's standard values; you can then override any individual value.

Sends the selected values to the quote form below.

Request a Quote

The form below follows the current technical drawing configuration. Change the drawing values above and the request details update automatically.

Dimensions & Specifications (ISO / DIN)

Bore d (mm)	Outer diameter D (mm)	Width B (mm)	Dynamic load C (kN)	Reference standard
8	15	12	7.2	ISO 1206 / GB/T 309
10	17	12	8.3	ISO 1206 / GB/T 309
12	19	12	9.65	ISO 1206 / GB/T 309
15	23	12	12.5	ISO 1206 / GB/T 309
20	28	16	18.7	ISO 1206 / GB/T 309
25	33	16	22.8	ISO 1206 / GB/T 309
30	40	20	33.0	ISO 1206 / GB/T 309
40	50	20	42.5	ISO 1206 / GB/T 309

Video: What Are Needle Roller Bearing Used For? in use



► Watch video: <https://www.youtube.com/watch?v=rcJhkKGvPtY>

Third-party video, selected automatically for this topic. It is not produced by Engineering Hardware and is not a specification source — use the tables on this page for dimensional data.

Inside the plant

Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.

1.



01

Cold heading

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.



2.

02

Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.

3.



03

Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.

4.



04

Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

Frequently Asked Questions

What are Needle Roller Bearing — ISO / DIN (Series 133) used for?

Supporting a rotating shaft and carrying its radial and axial loads with low friction. They are supplied to ISO / DIN.

Which industries use Needle Roller Bearing — ISO / DIN (Series 133)?

They are commonly specified in general machine building, maintenance & repair (mro) and fabrication & metalwork, among other sectors.

How do I choose the right size of Needle Roller Bearing — ISO / DIN (Series 133)?

Select on bore diameter and on the fit the assembly requires. This product is available from 8 mm to 40 mm; the full dimension table on this page lists each size.

Are Needle Roller Bearing — ISO / DIN (Series 133) made to a recognized standard?

Yes — they are manufactured to ISO / DIN, so dimensions are interchangeable between suppliers when you quote the standard on your order.

Can I get a quote for Needle Roller Bearing — ISO / DIN (Series 133) in the size and material I need?

Yes. Use the technical drawing and quote form on this page to set the size and options, then send the exact configuration to our team for pricing and lead time.

Related Pages

Product page: [Needle Roller Bearing — ISO / DIN \(Series 133\) — specifications & sizes](#)

Needle Roller Bearing — ISO / DIN (Series 133) Specification Guides

- [A4 stainless Needle Roller Bearing — ISO / DIN \(Series 133\)](#)

Related Fastener Applications

- [Angular Contact Ball Bearing — ISO / DIN \(Series 109\) applications](#)
- [Angular Contact Ball Bearing — ISO / DIN \(Series 111\) applications](#)
- [Angular Contact Ball Bearing — ISO / DIN \(Series 136\) applications](#)
- [Angular Contact Ball Bearing — ISO / DIN \(Series 137\) applications](#)
- [Angular Contact Ball Bearing — ISO / DIN \(Series 138\) applications](#)
- [Cylindrical Roller Bearing — ISO / DIN \(Series 112\) applications](#)