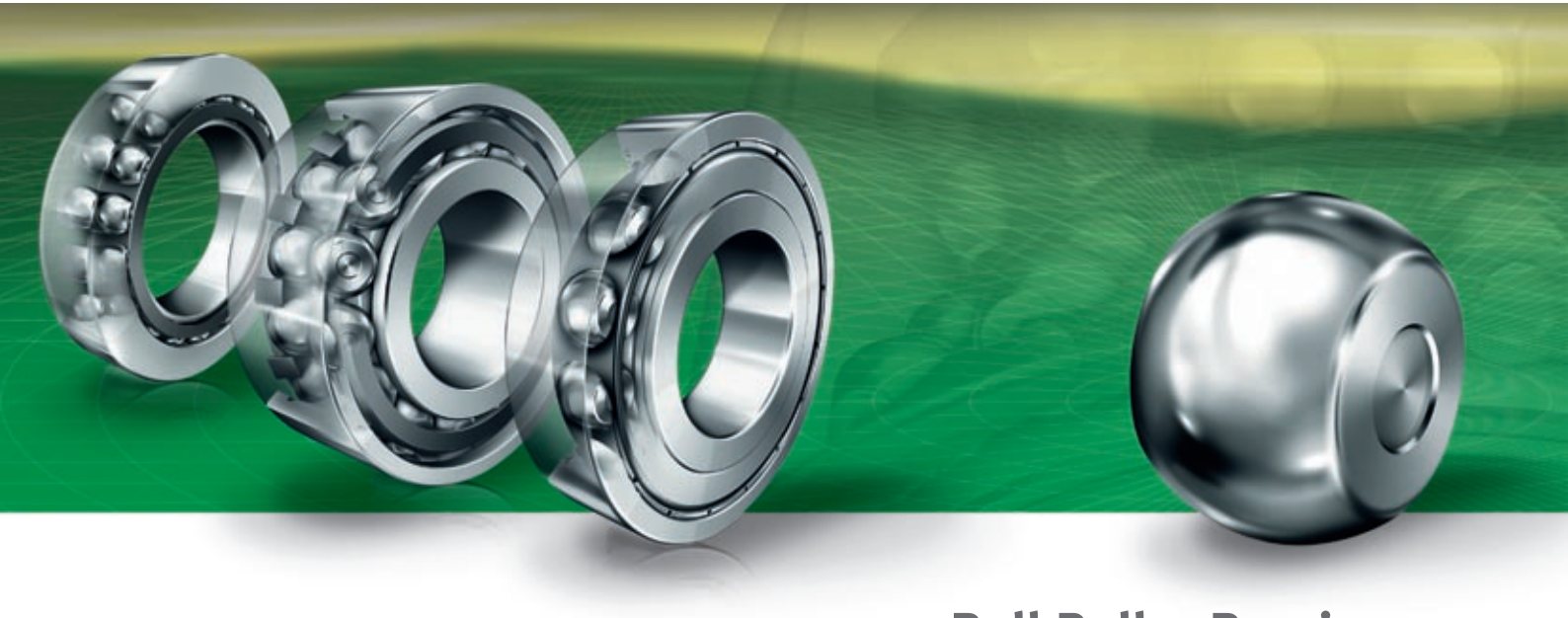


Ball Roller Bearings

An Innovation in Four Dimensions

SCHAEFFLER GROUP
INDUSTRIAL

We've Slimmed the Ball Down. What is the Streamlined Ball Roller Capable of?

The ball roller bearing, a new and promising rolling bearing series, has been developed 100 years after the invention of the ball bearing and 50 years after volume production readiness of the needle roller bearing.

This innovation is based on a simple "slimming plan", which consists of just removing all areas of the ball not under load. 15 % is cut off on both sides of the ball, producing a "flattened" ball that is, of course, now 30 % narrower. This produces a new rolling element with new technical characteristics and advantages in completely new dimensions.

We've developed these advantages in four different directions matched to applications, while always keeping the requirements of our customers in mind.

You require more energy efficiency and improved performance? You're thinking of downsizing? You place your trust in the INA brand?

You should take a closer look at our four new bearing series.

Volume production with the highest precision: The Schaeffler Group has unique manufacturing know-how for ball rollers

Single Row: Series BXRE

- High load rating, dimensions in accordance with DIN 625-1
- Long rating life
- Downsizing possible

Double Row in O Arrangement: Series BXRO

- Increase in performance compared with series 32 ball bearing because of up to 50 % more rolling elements
- Increased rating life

Special Series: Wheel Bearings

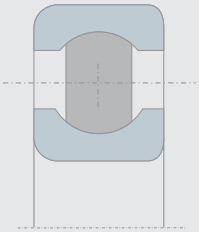
- High performance density – less space
- High axial and radial load carrying capacity
- High moment support

Double row ⇒ BXRO3
Four row ⇒ BXR4

Double Row in Tandem Arrangement: BXRT

- Less space required
- Lower friction
- Alternative to tapered roller bearings

Downsizing? Or Significantly Higher Load Carrying Capacity? It's Your Choice!

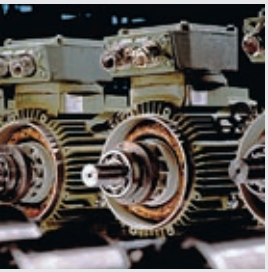


Do you have applications where particularly heavy loads are involved?

Our BXRE bearing offers a higher load carrying capacity (C) than a standard ball bearing in the same space. This increase is attributed to 50 % more rolling elements (Z) that are fitted by means of innovative assembly methods. Thanks to the achieved rolling element filling capacity of more than 90 %, the BXRE bearing withstands even the most extreme loads.

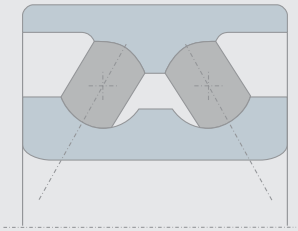
BXRE bearings open up new opportunities for downsizing, which means less radial space with the same shaft diameter and the same basic load rating.

Bearing designation	d	D	B	ØRE	Z	C	C_0
Ball bearing 6207	35	72	17	11,112	9	25 500 N	15 300 N
Ball roller bearing BXRE207	35	72	17	11,112	14	34 500 N	23 800 N



Application examples: Electric motors, washing machines, chainsaws, ABS pumps, and industrial gearboxes

Improved Performance and Higher Bearing Accuracy: Competition for Bearings with Split Inner Rings



Ball roller bearings series BXRO are double row bearings whose rows of rolling elements are in an O arrangement. They can thus support both radial and axial forces.

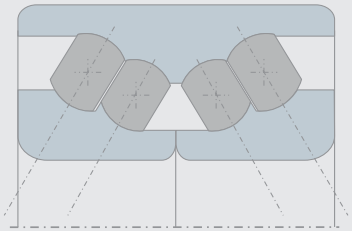
In comparison to series 32 ball bearings, up to 50 % more rolling elements can be fitted in these ball roller bearings due to the innovative assembly method, which enables higher basic load ratings in the same space.

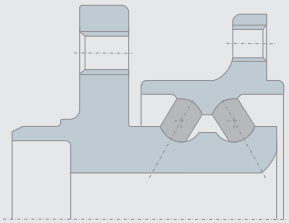
The advantages of the BXRO compared with the 33 series (three ring bearings) lie in the simplified assembly as well as the increased bearing accuracy due to the optimized raceway geometry and the single-piece inner ring.

Bearing designation	d	D	B	ØRE	Z	C	C_0
Ball bearing 3207	35	72	27	11,112	9	39 000 N	28 500 N
Ball roller bearing BXRO207	35	72	27	11,112	14	52 000 N	44 500 N

Application examples: Manual transmissions, textile machinery

Energy Efficiency Class A in Vehicles: Wheel Bearings with Reduced Weight and Friction

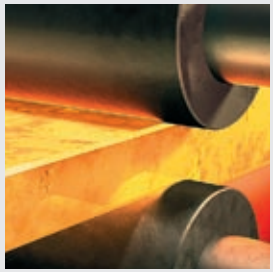




Lower mass and less friction mean lower fuel consumption, improved energy efficiency and an enhanced environmental performance evaluation. Good reasons to keep our new INA ball roller bearings in mind.

For example, four-row wheel bearings BXR4:

- are particularly robust components, since they are highly-insensitive to radial and axial forces,
- are low friction and
- are particularly attractive for use in driven axles.



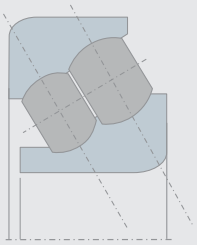
Application examples: Especially suitable for wheel bearings in passenger cars and commercial vehicles. Industrial applications are also feasible.

The Tandem Design: A Low-Friction Alternative to Tapered Roller Bearings

The tandem design of the INA ball roller bearing is a double-row bearing whose ball roller rows are in a tandem arrangement. The rolling elements can be guided using one or two cages.

Our two cage design enables us to set both raceways independently of each other to perfectly match your application. This ensures maximum load support with minimum size and lower friction.

Substituting the line contact with two point contacts lowers the friction by around 30 % in comparison with tapered roller bearings. This means that the energy consumption can be significantly reduced.



Applications: Differentials and manual transmissions, hydraulic motors and pumps

Together Towards More Innovation

Test our innovative ball roller bearings! Send us your design data for your application and we will calculate a customized solution for you.

Of course, using only the most up-to-date design tools, such as BEARINX®.

If required, we can produce sample bearings that we can test either on our test stands or at your premises.

Increase your competitiveness with our new ball roller bearing. Our BXR team is looking forward to your plans!

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You can also contact our regional engineering services in the usual manner for information.
(See reverse page for address).

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