Cylindrical Roller Bearing

Full Complement Cylindrical Roller Bearing Specifications

Size range:

- **ID in (metric size):** 28.619 to 981.510 mm
- **OD in (metric size):** 42.672 to 1280.000 mm

Conformity:

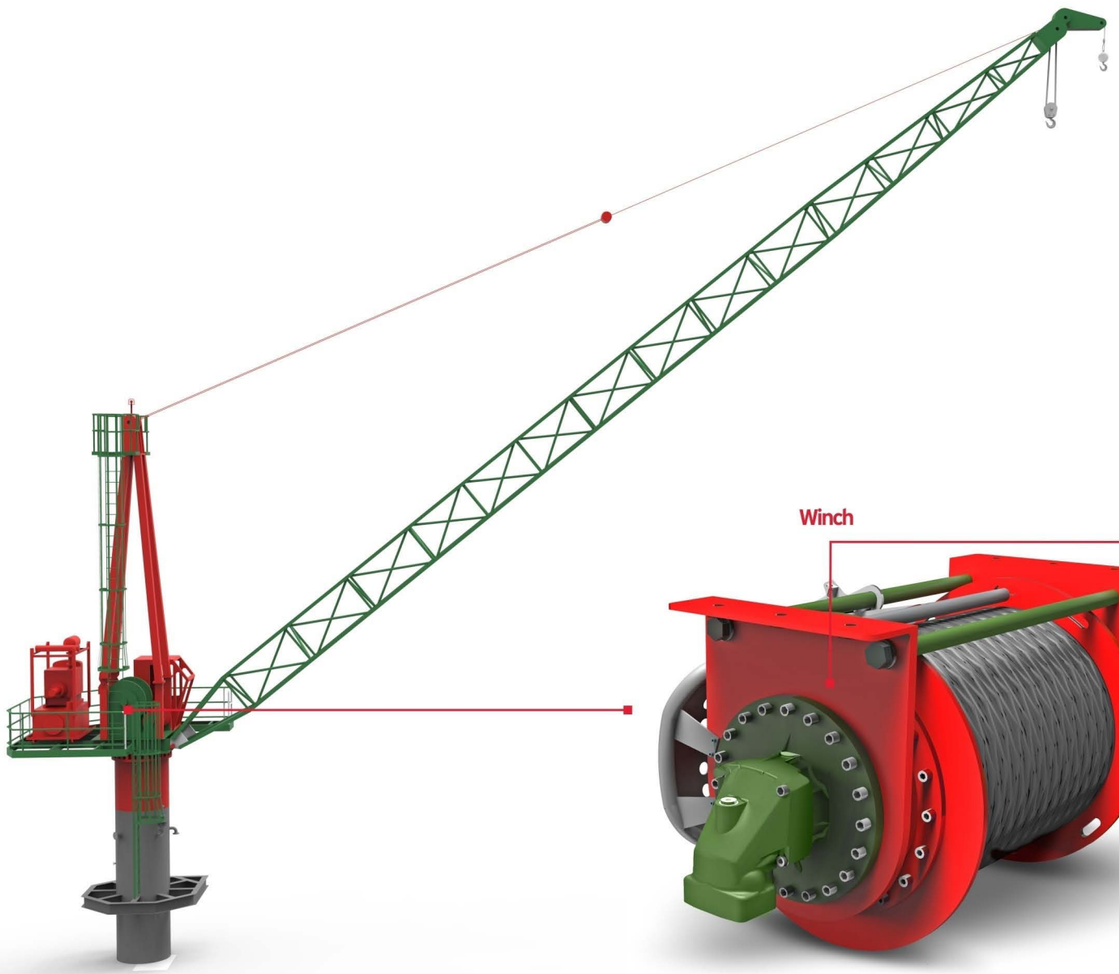
- Dimensions according to ISO 246:2007
- Tolerances according to ISO ISO 1206:2001
- Chamfer dimensions according to ISO 12043:2007
- Dimensions and Tolerances of Rollers according to ISO 12297:2012

Components in production program:

- Outer Ring
- Inner Ring
- Rollers
- Cage

Applications:

- Cranes
- Winches
- Crushers
- Mining
- Industrial equipment
- Gearboxes



Winch

Outer Ring

FirStar cylindrical roller bearings Outer Rings are mainly designed for single row bearings with a cage. The specialty of FirStar in this field is the design of high capacity cylindrical roller bearings, single and double row, full complement without a cage. The complete list of high capacity cylindrical roller bearings are listed below.

The design of the FirStar cylindrical roller bearing Outer Ring is most suitable for very heavy radial loads with moderate speed applications such as cranes and winches.

Rollers

FirStar cylindrical roller bearings Rollers profile determines the stress distribution in the roller/raceway contact area. The rollers of FirStar cylindrical roller bearings have a logarithmic profile that distributes loads evenly along the rollers.

This prevents peak stresses at the roller ends and extends the lifetime of the bearing. The logarithmic profile also reduces the possibilities of misalignment and shaft deflection.

Inner Ring

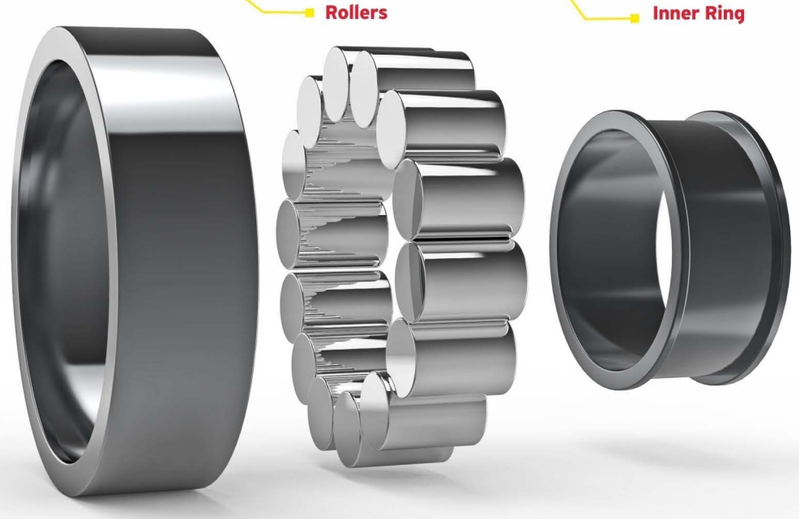
FirStar cylindrical roller bearings Inner Rings and raceway design provides enhanced operational reliability.

The surface finishing optimizes the rolling motion of the rollers by maximizing the formation of a hydrodynamic lubricant film between rollers and raceway.

Outer Ring

Rollers

Inner Ring



Full Complement Cylindrical Roller Bearings

FirStar most common high capacity cylindrical roller bearings

- SL1818 Series Cylindrical Roller Bearings
- SL1829 Series Cylindrical Roller Bearings
- SL1830 Series Cylindrical Roller Bearings
- SL1822 Series Cylindrical Roller Bearings
- SL1923 Series Cylindrical Roller Bearings
- SL0148 Series Cylindrical Roller Bearings
- SL0149 Series Cylindrical Roller Bearings
- SL0248 Series Cylindrical Roller Bearings
- SL04...PP Series Cylindrical Roller Bearings
- SL0450 Series Cylindrical Roller Bearings

thepowerformotion

Deep Groove Ball Bearing

FirStar Deep Groove Ball Bearing Specifications

Size range:

- **ID in (metric size):** 15.025 to 635.710 mm
- **OD in (metric size):** 28.276 to 945.000 mm

Conformity:

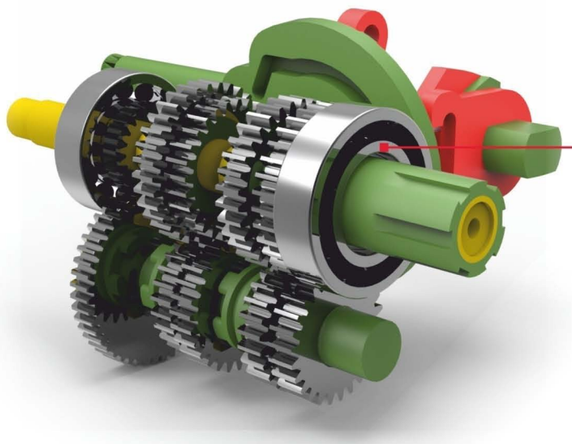
- Dimensions according to ISO 15:1988
- Tolerances according to ISO 20515:2012
- Chamfer dimensions according to ISO 12044:1995
- Dimensions and Tolerances of Balls according to ISO 3290-1:2008

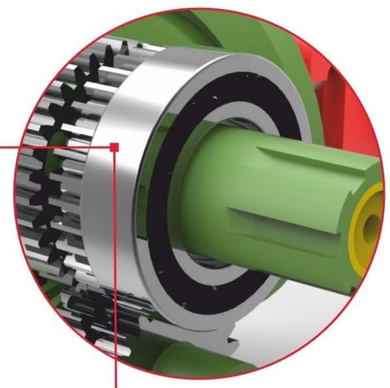
Components in production program:

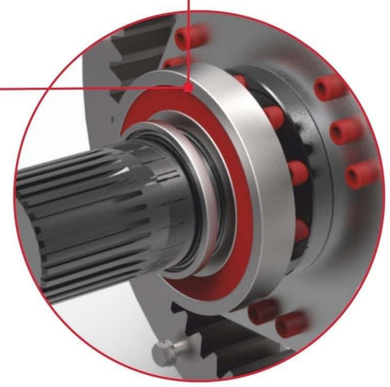
- Outer Ring
- Inner Ring
- Balls
- Cage

Applications:

- General Industry
- Motors
- Conveyors
- Machine tool spindles
- Washing Machines
- Fans
- General Machinery







Bearings Mounting

Outer Ring

FirStar ball bearings Outer Rings are made of high quality clean steel which extends the bearing life by up to 80%.

A deep groove is formed on each outer ring of the bearing enabling them to sustain radial and axial loads in either direction as well as well as the complex loads which result from the combination of these forces.

Balls

FirStar ball bearings Balls are produced from high grade steel and ensures quiet and smooth operation at high speed applications.

All our balls are checked on surface integrity, smoothness, hardness, and defects, such as flats, pits, soft spots, and cuts. The surface smoothness is measured by surface roughness and waviness. Our balls production program also includes ball diameter variation and deviation from spherical form checks which refers to how much the ball deviates from a true spherical form (out of roundness).

Cage

FirStar ball bearings Cages depends on the bearing series and size. Our single row deep groove ball bearings are supplied with ribbon type cages of steel or brass sheet, riveted type of steel or brass sheet and machined brass type centered on balls, inner ring or outer ring.

Large size bearings are also available in special design such as lubrication grooves in the guiding surfaces of machined brass cage and one notch in the outer ring side face to prevent ring from rotating.

Inner Ring

FirStar ball bearings Inner Rings have carefully super finished raceways - Specially honed to minimise noise and improve lubricant distribution and life.

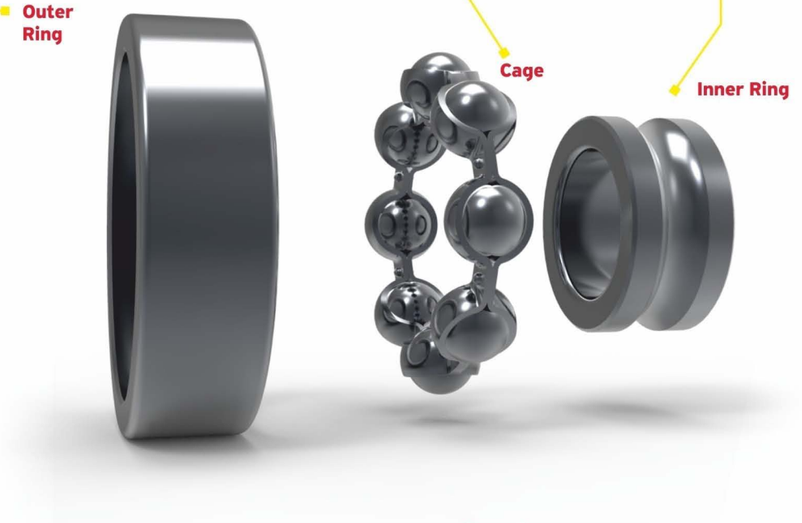
Bearings sealed and shielded on both sides manufactured in series are delivered filled with normal lithium base grease of consistency NLGI 2 or with special grease suitable for specific applications. FirStar ball bearings with shields have been designed first of all for those cases where the inner ring rotates.

Outer Ring

Balls

Cage

Inner Ring



Deep Groove Ball Bearings

FirStar most common deep groove ball bearings

6202 ZZ	608 ZZ
6302 2RS	628/9 2RS
6405 ZZ	629 2RS
61806 NR	16100
6006 2RS	6300 2RS
6008 2RS	6314 2RS
6308 ZZ	63314 ZZ
6209	6414
61808 2RS	6315
61909 2RS	6416

thepowerformotion

Spherical Roller Bearing

FirStar Spherical Roller Bearing Specifications

Size range:

- **ID in (metric size):** 20.032 to 635.710 mm
- **OD in (metric size):** 1180.100 to 1540.000 mm

Conformity:

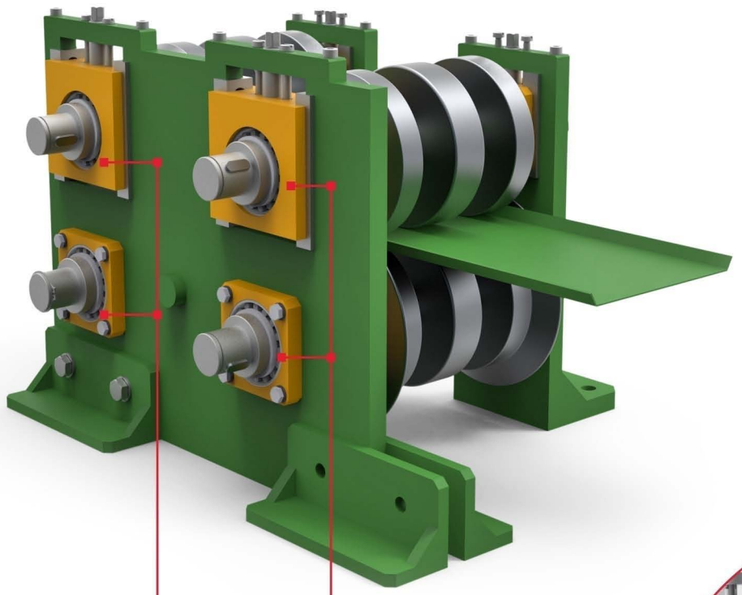
- Dimensions according to ISO 15
- Tolerances according to ISO 5753
- Chamfer dimensions according to ISO 12044
- Dimensions and Tolerances of Rollers according to ISO 3290

Components in production program:

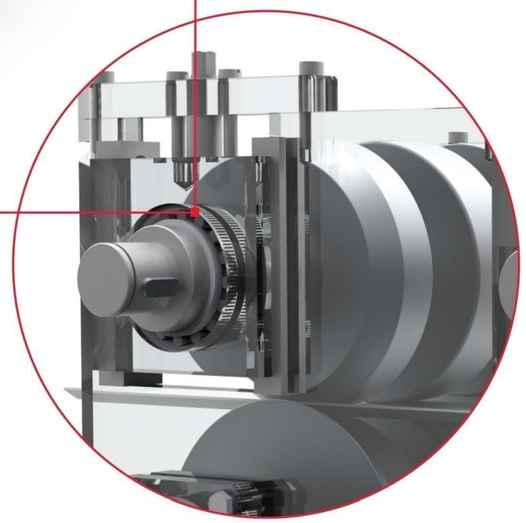
- Outer Ring
- Inner Ring
- Rollers
- Cage

Applications:

- Heavy Industry
- Steel Rolling Mills
- Mining
- Continuous Casters
- Cement Industry
- Paper Mills
- Injection Molding achiness
- Wind Turbines
- Pump & Compressors
- General Machinery
- Construction Machinery



Bearings Mounting



Outer Ring

FirStar spherical roller bearings Outer Rings are produced with high quality steels and special designed oil holes and groove, in order to improve the smooth operation by maximum oil/grease feeding.

Thanks to the optimised design of the internal specifications, the load capacity and lifetime of the FirStar spherical roller bearings are higher than standard bearings from the same type.

Rollers

FirStar spherical roller bearings have a higher fatigue life because of the extra rollers in comparison with the standard spherical roller bearings.

Using fewer rollers in spherical roller bearings causes stresses in rollers and raceways by increasing the number of stress cycles that the loaded bearing surfaces experience in one bearing revolution.

Cage

FirStar spherical roller bearings Cages are depending on the bearing series, size and/or application.

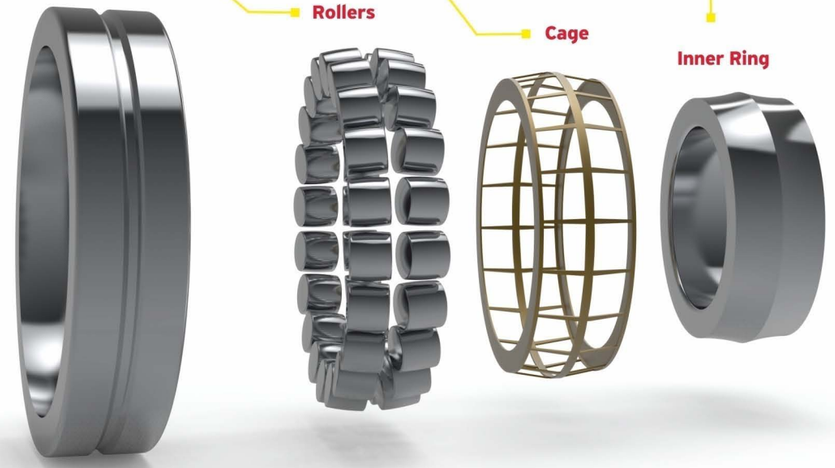
FirStar small and medium size spherical roller bearings are usually fitted with pressed steel cage or one-piece machined brass cage where the bearings have a central guide rib on the inner ring and symmetrical rollers with large dimensions for increased carrying capacity. The bearings of normal design, with a central fixed rib, are fitted with machined brass or steel cage guided on the rollers or on the inner ring or outer ring raceway.

Inner Ring

FirStar spherical roller bearings Inner Rings allows higher limiting speed because of the additional production processes for special raceway treatment.

Minimum noise, improved lubrica-tion distribution, reducing wear heat and friction between all the components is assured.

FirStar spherical roller bearings program includes the spherical roller bearings with both cylindrical and tapered bore. Tapered bore bearings can either be mounted on tapered shaft seats or with sleeve on cylindrical shafts.



Spherical Roller Bearings

FirStar most common spherical roller bearings

22220CCW33
23320CCW33
24122K30CCW33
24024CCW33
24124CCW33
22324MBW33
24128MBW33
24032MBW33
24036CCW33
24144CCW33

thepowerformotion

Tapered Roller Bearings

FirStar Tapered Roller Bearing Specifications

Size range:

- **ID in (metric size):** 7.937 to 863.600 mm
- **OD in (metric size):** 31.991 to 1060.000 mm
- **ID (inch size):** 0.31225 to 34.0000 inch
- **OD (inch size):** 1.2595 to 41.7323 inch

Conformity:

- Dimensions according to ISO 355:1977
- Tolerances according to ISO 492:1986
- Designated with prefix J, conform to American AFBMA 19.1/1987
- Inch size bearings, conform to American AFBMA 19/1974

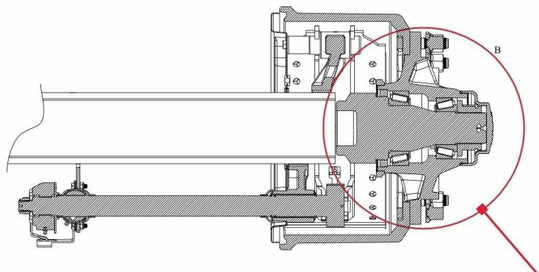
Components in production program:

- Cup
- Cone
- Rollers
- Steel Cage

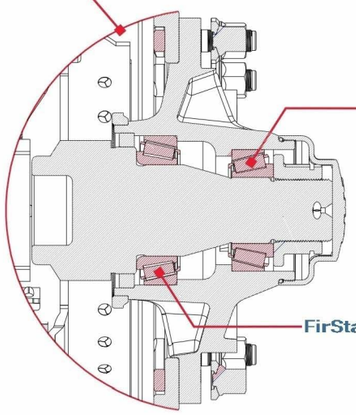
Applications:

- Trailer axles
- Conveyor rolls
- Machine tool spindles
- Heavy Industries
- Industrial equipment
- Gearboxes

Axle Details



Bearings Mounting



Cup
FirStar tapered roller bearings Cups are made of high quality steel and are interchangeable with all other component assemblies. The Cups can also be produced with a rip on the outer cup as a flange to be used when the housing cannot be manufactured with the shoulder.

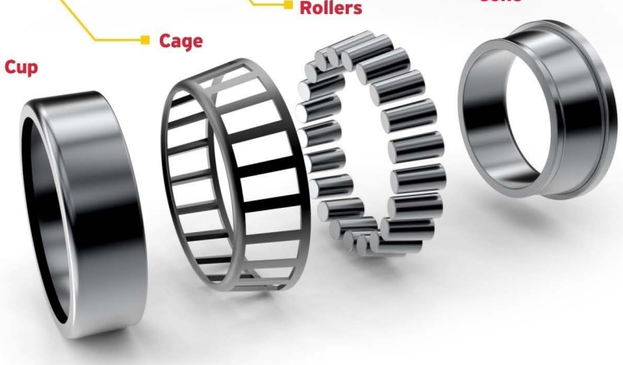
Cage
FirStar taper roller bearings Cages are produced from pressed steel. For large size and heavy engineering applications, the steel pin-type cage with more and longer rollers and case hardened carburizing alloy steels will be considered.

Rollers
FirStar tapered roller bearings Rollers convexity and alignment with the cone ensures smooth rolling motion, created by the "seating force" that pushes the rollers against the cone. This seating force prevents the rollers and the cone from wear and flaking during operation.

Cone
FirStar tapered roller bearings Cones are made of high quality steel and are interchangeable with all other component assemblies.
When the load carrying capacity of a single row tapered roller bearing is inadequate or where the load has to be located in both directions, FirStar produces the single row taper roller bearings as **ready-to-mount sets**.

The Cones will be in "O" back-to-back or "X" face-to-face arrangements, locate the shaft in both axial directions and the optimum axial play in the two bearings is adjusted and guaranteed after mounting.

Cup
Cage
Rollers
Cone



Tapered Roller Bearings

FirStar most common ready-to-mount set bearings

HM212044 / HM212011	33213 + 33118
HM212047 / HM212011	32219 + 33215
HM212049 / HM212011	32222 + 32314
H212749 / H212710	32310 + 33116
H212749 / H212711	33019 + 33215
HM215249 / HM215210	580 / 572
LL217849 / LL217810	594 / 592A
LM603049 / LM603011	HM518445 / HM518410
LM603049 / LM603014	
LM603049 / LM603012	
33213 + LM603049 / LM603011	
33213 + HM218248 / HM218210	

thepowerformotion