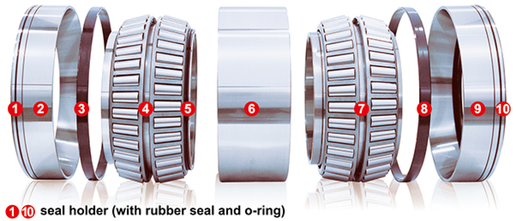
Bearings for Steel Mill Solutions

Sealed Four Row Tapered Roller Bearing



1 10 seal holder (with rubber seal and o-ring)
2 9 single-cup
3 8 cup spacer
4 7 double-cone assembly with extended inner ring and helical groove in bore
5 seal
6 double-cup

This type of bearing is basically the same as four-row tapered roller bearings only that it comes with compact seals. Modified seals between the double cones go over the cone spacer enabling easier handling.

Sealed type four-row tapered roller bearings are especially designed for work rolls and intermediate roll necks of rolling mills. The special seal design is built into the bearing to eliminate contamination from the bearing envelope as well as extend the useful life of the bearing.

These bearings are extremely beneficial for the user as they exhibitlonger life, use lesser grease, and generally require lesser maintenance.

There is no such thing as a typical steel mill; each one has its own way of doing things. In the same way, there is no such thing as a typical UBC Steel Mill bearing; each one is a specially engineered solution designed to provide its users with the best value for their money.

UBC is proud to be the preferred alternative brand for many top players in the steel industry. It's been proven over and over again, that UBC is the superior choice of companies who are looking for the best combination of price, quality, and service.

Right from the start, UBC will be helping you assess your company's needs, making sure that you will be able to fully appreciate the value and superior advantage of having UBC as a new link in your supply chain.

With our team of professional bearing production engineers, with customers in over 30 countries around the globe, and a host of travelling technical representatives, UBC will not only be able to provide you with exceptional after-sales technical support but can also ensure that our service, like our products, are tailored to fit your individual requirements.

Be it reducing your operational costs, increasing the service life of each bearing, or providing you with fast and reliable delivery times, UBC is up to the challenge.

So, what else can our bearings do for you? Come, discover UBC.

Network
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Global Brand, Global Strategy

UBC®
An IKO Company

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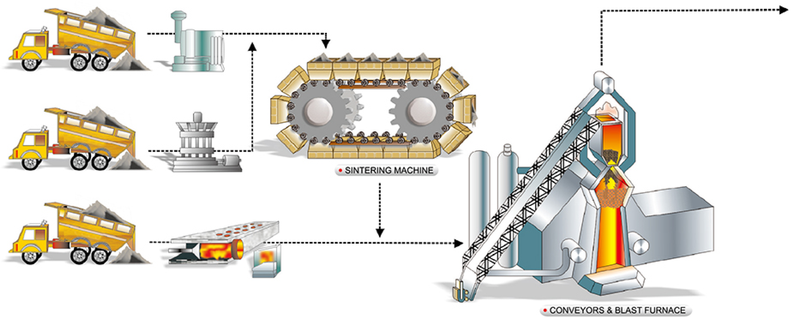
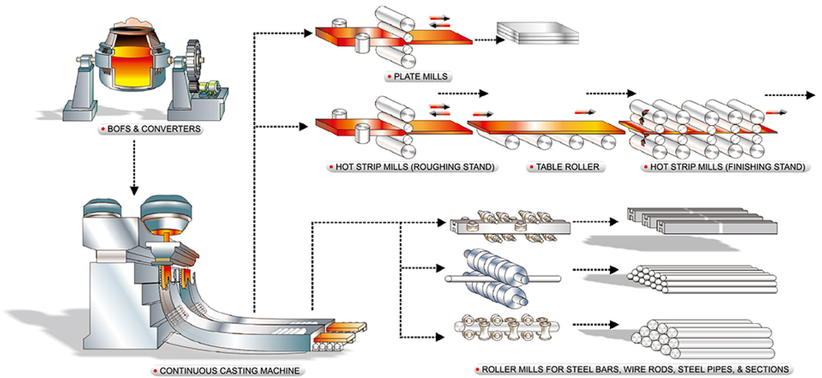
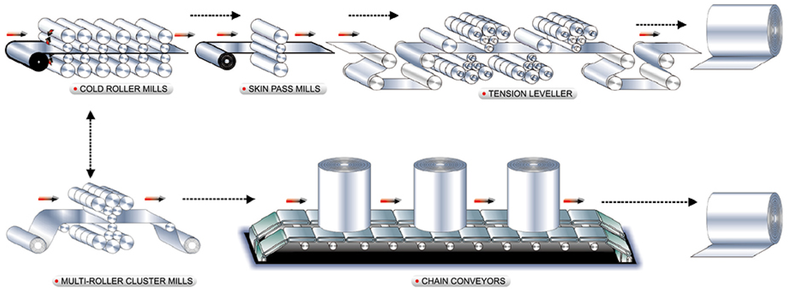
Steel Mill Production Line



Steel Mill Production Line



Steel Mill Production Line



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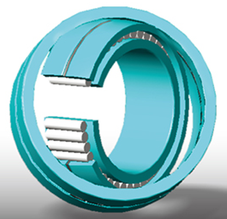
Single Row Deep Groove Ball Bearing

The single-row deep groove ball bearings consist of four basic components. These are the inner ring, the outer ring, balls and a retaining cage. They are the most common type of roller bearing. Radial loads and axial loads can be applied in either direction.
Large-sized ball bearings that with machined brass cages are suitable for high-speed applications.
They are typically found in wire rod rolling mills to support guide rollers.
***UBC's Engineered Bearings are usually manufactured from alloy or carbon steels which are electric furnace melted, and ladle refined. For UBC's engineered steel mill solutions, low-carbon carburizing grades are used to give each part a hard, fatigue-resistant surface together with a ductile core. However, on some occasions, case-hardened or through-hardened high-carbon bearing-quality steel may also be used.

Spherical Roller Bearing

Spherical Roller Bearings have two rows of barrel-shaped rolling elements between the double-raced inner ring and the spherical race of the outer ring. These bearings are known for their self-aligning capability. The center of the outer ring's raceway aligns with the center of the bearing. If there is a deflection of the shaft housing or misalignment of their axles, it is automatically corrected to prevent any excessive force from being applied on the bearing. In addition to this, spherical roller bearings can accommodate high radial loads as well as high axial loads acting on both directions.
Various types of spherical roller bearings have been introduced, including the CC and CA types. More recently a range of sealed spherical roller bearings has been added to the assortment. Split spherical roller bearings are usually based on standard bearings but can be customized as required.

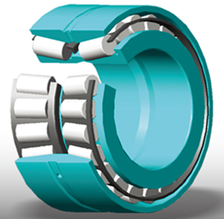


Cylindrical Roller Bearing with Aligning Rings

The cylindrical roller bearings consist of one inner ring, one sphered outer ring, cylindrical rolling elements, and aligning ring. Cylindrical roller bearings with an aligning ring practically are full-complement cylindrical roller bearings which give maximum load capacity. This bearing is also coupled with an aligning ring shaft providing aligning functions to prevent any wear problems caused by sliding and enabling the smooth relief of roll expansion rather than axial movement. In addition, this type of bearing can also be provided with cage design.
Cylindrical roller bearings with aligning rings are designed to support the guide rollers of continuous casting machines.
Cylindrical roller bearings with aligning rings reduce unexpected breakdowns and lower maintenance cost to a minimum by using rolls to the full extent of operating life.

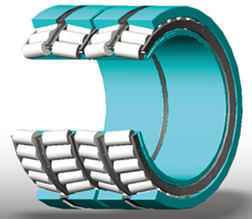
Double Row Tapered Roller Bearing (TDI Assembly)

The double-row TDI type bearings consist of one double cone, two single cups and tapered rolling elements. TDI type bearings are normally supplied complete with a cup spacer in a pre-set assembly (cups and cones are normally mounted loose).
They are applied to edgers and 2-hi mill work rolls with low to medium loads, revamp from plain bearings or spherical roller bearings, heavy-duty gear reduction units, cranes and other applications. These bearings can be used in either fixed or floating positions.
TDI type bearings can be used either with a window-type cage or a pin-type cage.
***TDIT type bearings are similar to TDI type bearings except for the double cone with tapered bore.
They are applied on Bar and rod mills (running condition can be greater than 600 m/min). These bearings are commonly designed for large adapter-type pillow blocks and rolling mills.



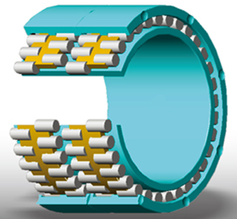
Double Row Tapered Roller Bearing (TDO Assembly)

The double-row TDO type bearings consist of two single cones, one double cup, and tapered rolling elements. TDO type bearings are normally supplied complete with a cone spacer in a pre-set assembly (double cup mounted fitted tightly in rotating and vertical rolls).
They are applied to slabbing mill feed rolls, bar and rod mills where the chocks are pre-stressed. They are suitable for heavy duty applications such as gear drives. These bearings can be used in either fixed or floating positions.
TDO type bearings can be used either with a window-type cage or a pin-type cage.
***TDODC and TDOCD type cups are also available in most sizes. These cups (outer ring) have holes in the center portion of outside diameter that permit the use of pins to prevent cup rotation in the housing.



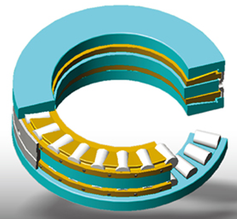
Four Row Tapered Roller Bearing (TQO Assembly)

The four-row TQO type tapered roller bearings consist of two double cones, one cone spacer, two single cups, two cup spacers, one double cup and tapered rolling elements. They are specially designed to combine the high-load, radial and thrust carrying capacity as well as the direct and indirect mounting variations of tapered roller bearings into assemblies that can attain the highest possible load rating in a limited space.
They are mainly applied to the roll necks of rolling mill equipments (running conditions ranging from approx. 600 to 1000 m/min in accordance to the work loads.)
TQO type bearings can be used either with a window-type cage or a pin-type. In addition, roll neck bearings can be provided with helical grooves cut into the cone bore.
***TQOW type bearings are similar to TQO type bearings except for the lubrication slots in the faces of bearing cones.



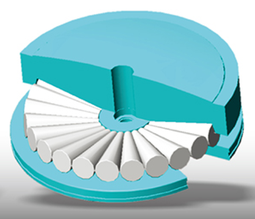
Four Row Cylindrical Roller Bearing

The four-row cylindrical roller bearings mainly consist of two outer rings, one inner ring, pronged-machined-brass cage and cylindrical rolling elements. These bearings are available in many designs adapted to the specific application or maintenance consideration. The various designs differ basically in the number of inner and outer rings as well as in the number of loose or integral flanges on the outer ring. In addition, the bore design may be cylindrical or tapered.
They can support the back-up roll necks of both hot and cold rolling mills used in forming blooms plates and other stock. These large bearings are suitable for excessive loads, therefore they must be mounted together with deep groove or angular contact ball bearings, or paired with tapered roller bearings which can take up the axial load.
Four-row cylindrical roller bearings can be used either with a pronged-machined-brass-type cages or a pin-type cages.



Double-Direction Tapered Roller Thrust Bearing

The double-direction tapered roller thrust bearings mainly consist of two oustside tapered thrust rings, one double central tapered thrust ring, and tapered rolling elements. These type of bearings are normally supplied complete with a spacer in a pre-set assembly (axial clearance or pre-load of the bearings is adjusted using spacers).
They are used in high-medium speed applications and where axial loads are present such as in beam mills, piercing mills. They are mounted together with radial bearings to accommodate axial load.
They are mainly used together with multi-row cylindrical roller beaings in rolling mill applications.
Double-direction tapered roller thrust bearings are usually mounted with a loose fit on the roll neck as well as in the chock. To prevent the shaft washer from rotating, locating keys are installed at the slot of shaft washer.



Heavy-Duty Tapered Roller Thrust Bearing

The heavy-duty tapered roller thrust bearings or better known as Screw-down Thrust Bearings consist of one lower race (housing washer), one upper race (shaft washer) provided with profile (concave or convex) to match the end of the adjusting screw or the adaptor between screw and tapered rolling elements. Holes or threads are provided in the inner or outer ring for lifting purposes.
This type of bearings can accommodate extremely heavy axial loads and also permit angular movement of the screw spindle.
They are mainly used at the ends of the adjusting screws of rolling mill stands. Screw-down systems are used to adjust the thickness of the rolled product. These bearings are basically static, support relatively high rolling loads.
Heavy-duty tapered roller thrust bearing are mounted on a concave or convex adaptor to match the end of screw.