

# Application of Timken bearing on slab caster

According to CISA statistics, as of the end of 2011 China had 669 continuous casting machine (including slab caster, the bloom caster, billet caster, etc.). 2013 China's crude steel

production of 779 million tons, of which more than 50% yield of the plate. Each class is calculated according to the annual output of one million tons slab continuous casting machine, with due consideration to capacity utilization, the preliminary estimate of the current slab

stream number is between 420-500 caster stream.

## [The Timken Company Profile](#)

Timken as an important supplier of bearings and related products and services that drive China's metallurgical industry, the success of its products and services covering the vast majority of the country's advanced production lines,

successfully applied to iron before the process ( metallurgical and mining equipment and a variety of mining vehicles), ironmaking process (bell furnace top), steel making process (ladle turret, the trunnion converter, continuous casting machine)

, steel rolling (hot rolling mill, cold machine, rolling mill roll neck, crimping machine), and a variety of auxiliary equipment, metallurgy gearbox roller case and the like.

## Slab caster bearing

slab caster is one of Timken bearing products very successfully. Slab caster roll casting (including segments, straightening, horizontal section, etc.) for the entire previous shaft bearing arrangements

are used spherical roller bearings. Spherical roller bearings have good self-aligning feature, but there is insufficient capacity axial float. In recent years, with the development of innovative products bearing slab continuous casting rolls

more and more use of spherical roller bearings can absorb more plus axial displacement of the "toroidal roller bearings" in configuration mode.

Timken® ADAPT® bearing the advantages of

Timken in 2011 launched Timken® ADAPT bearing the Chinese market among the few manufacturers capable of providing the full range of slab caster bearing solutions are listed on the market today.

ADAPT bearing advantages:

**1. high load requirements and meet installation requirements of easy disassembly operations. Full roller design ensures that the ADAPT bearings with high load-bearing capacity; special cage design, to achieve full roll**

While the sub-structure, to ensure the convenience of installation and removal operations. When replacing bearings with cage roller designed to avoid spills, improve the efficiency of installation and removal.

**2. The inner ring raceway is straight, so to meet is a maximum amount of axial displacement and the maximum amount of self-aligning. And other similar products on the market today are not designed to meet these two points.**

Prior to the introduction Timken® ADAPT bearing the Chinese market, the product of over a year of testing a large steel company in Austria commercial production line. Until now,

ADAPT bearing caster is still on its smooth operation, the amount of steel had tested two models are more than 1.6 million tons and 2 million tons. After China's listed, Timken® ADAPT bearing

has been a number of leading manufacturers of metallurgical equipment and advanced technology at home and abroad using large steel mills. In all actual customer applications, Timken® ADAPT bearing are met or exceeded by

the user to one million tons over the amount of steel required, and no one is damaged in advance.

A new generation of high-performance [Timken® spherical roller bearings](#).

in the introduction of innovative ADAPT bearing the same time, Timken also introduced to the Chinese market a new generation of high-capacity spherical roller bearings to help customers further optimize caster bearing selected

type. And some users the impression that "just Timken tapered roller bearing manufacturer" The difference this idea that Timken has nearly 70 years of spherical roller bearings production and management

experience. It can be said, Timken spherical roller bearings inherited the essence of tapered roller bearings, also has excellent quality and performance.

Timken previously launched several series of spherical roller bearing products to the market. Then, summing up experience and advantage of the characteristics, improved materials and internal geometry, and optimized

cage design and processing technology, after the measurement and inspection process, we continue to market a new generation of brass cage EM Series aligning roller bearings and steel cage to keep EJ series of

spherical roller bearings.

From the product coverage point of view, a new generation of high-performance Timken spherical roller bearing products cover a variety of series and common sizes, fully meet the market demand. This article will focus

to introduce you to a new generation of steel retainer EJ series spherical roller bearing frame.

From cage design point of view, a new generation of Timken EJ series spherical roller bearings has the following five advantages:

**1. The inner guide cage: the cage inner guidance can reduce the burden of rolling elements, by contrast, rolling element guide cage will bring extra load rolling element.**

Above the pitch circle diameter of the cage

**2. Design: on the one hand to improve the rigidity of the holder, on the other hand to reduce the acceleration state or a high impact load stress applied to the holder.**

**3. cage pockets bear the roller guide function, for guiding the roller bearing out of the region:**

a central guide ring is no longer required, thereby reducing the friction between the roller and the ferrule

more space to accommodate the longer roller belt higher carrying capacity to improve the fluidity of the lubricant

**4. Timken®EJ line type self-aligning roller bearings cage nitriding heat treatment are employed:**

to reduce the degree of wear in the case where the load is increased and the increase in speed has a very high fatigue strength, especially for harsh environments

the slotted retainer end surface:

a better flow of lubricant

to facilitate a more complete removal of contaminants

to reduce the weight of the cage and less centrifugal force

has been tested with respect to the conventional product, a new generation of Timken®EJ series spherical roller bearings have the following performance advantages, praise various industries including metallurgy industry, including:

**1. lower operating temperatures**

**2. higher load rating, the highest increase of 18%**

- 3. more high rated speed, up to 17%**
- 4. 75% increase rated life**