

Optimized Long-Life Cylindrical Roller Bearings for Continuous Casting Machines



Bearings for Continuous Casting Machines

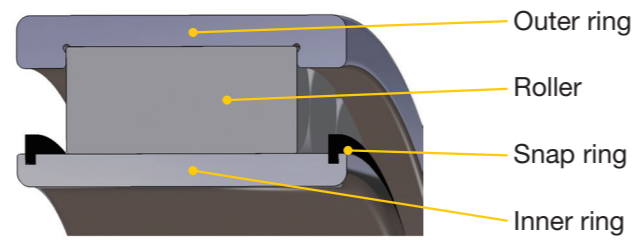
Bearings for Guide Rolls

Bearings used in the guide rolls of continuous casting machines are exposed to harsh conditions such as heavy load at ultra-low-speed in a hot and wet environment. High-performance bearings with longer life and higher reliability are desirable under such circumstances.



NSK has successfully developed innovative cylindrical rolling bearings through our extensive knowledge, decades of experience in production and in the steel industry, cutting-edge analysis technology, and an optimized design figure. Furthermore, these bearings feature improved handling performance that suits the required functions of guide rolls.

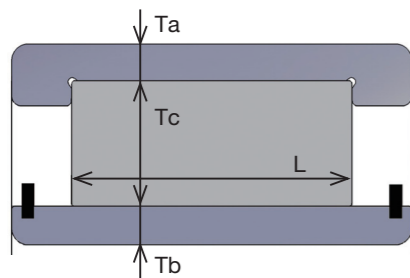
Cutaway View



Features

Long Life & High Reliability

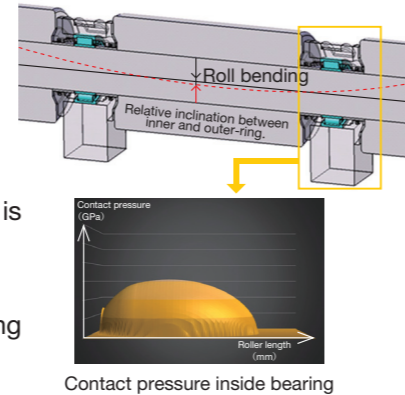
Extremely high capacity through optimized design.



Optimized parameters
 $\propto Ta, Tb, Tc, L \text{ \& } Z$ (Z: number of rollers)

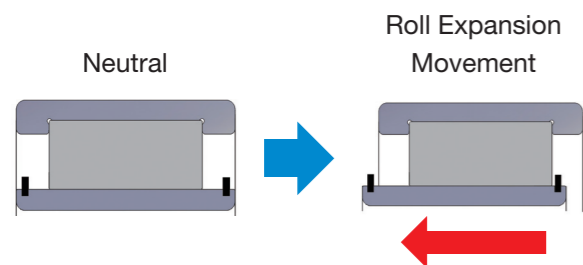
Self-Aligning Functionality

Load distribution is equal across the bearing, even during roll-bending & expansion.



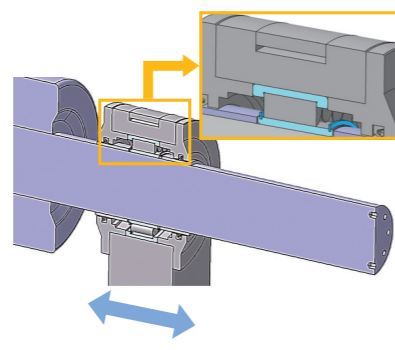
Smooth Relief Roll Expansion

Smooth relief between rollers and inner ring.



Easy Handling

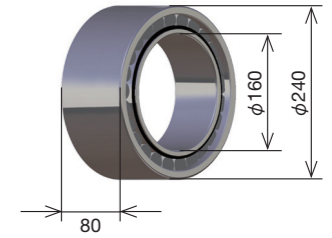
From assembly to housing, these bearing are easy to handle without any special tools. This improves work efficiency and safety.



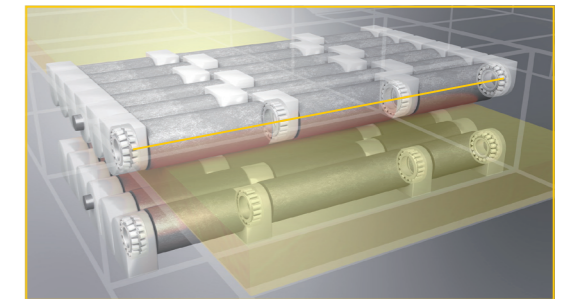
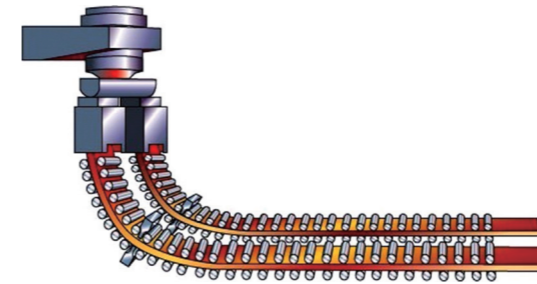
NSK installed one of these bearings for continuous casting machines at a customer site to perform a real-world test. They fulfilled all the specifications required and yielded good results for operation stability, earning high praise from the client.

Field Test

Bearing number: 160NUB40VC4
 Boundary dimensions: $\phi d160 \text{ mm} \times \phi D240 \text{ mm} \times B80 \text{ mm}$
 Basic load ratings $Cr: 765 \text{ (kN)}, Cor: 1,360 \text{ (kN)}$

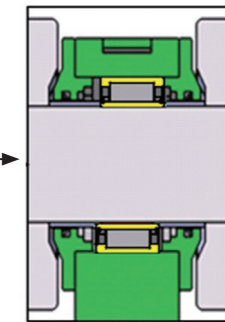
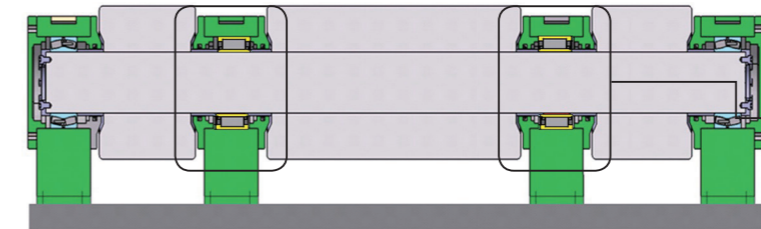


Continuous Casting Machine (for Heavy Plates)



Roll Segment Unit

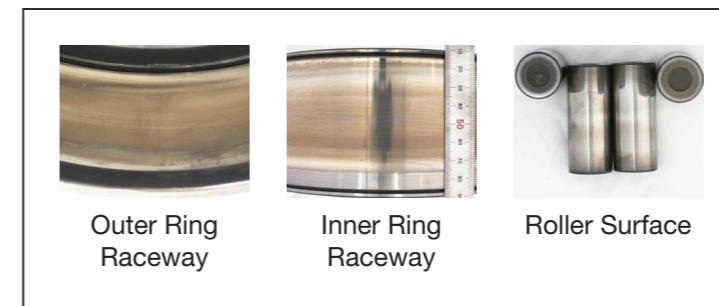
Roll Arrangement



Arrangement of Top & Bottom Roll

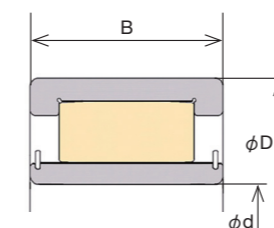
Axle Box Structure

Test Results



Test period: 9 months
 Production amount: Approx. 1.0M tons
 Appearance: No abnormalities detected
 (Possible for continuous use)

Bearing Number List



Dimensions (mm)			Bearing No.	Basic Load Ratings (kN)	
d	D	B		Cr	Cor
120	180	60	120NUB40V	450	740
130	200	69	130NUB40V	570	950
140	210	69	140NUB40V	560	960
150	225	75	150NUB40V	665	1160
160	240	80	160NUB40V	765	1360

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