



Rotational solutions  
where & when you need them

# ROLLING MILL BEARING



# PROFILE



Founded in 1954  
Headquarters in Luoyang, Henan, China  
Facility Size: 1,733,000 square metres  
Employment: 7,000 total 800 Technical Personal  
Annual Output: 150 million bearings in 10 categories  
Sales in more than 70 countries

## JIANXI PLANT



## NEW PARK PLANT



## NTN-LYC



## YANGZHOU PLANT



## SHANGHAI TIEKE



## JIANGYOU PLANT







## Jianxi Plant **Large bearing factory**



- Mainly produce 0~9 series bearing ID:150~400mm Application: Rolling mill, Petroleum Industry, Mine machines etc.

## New Park Plant **Extra large-size bearing factory**



- Mainly produce 0~9 series bearing ID: 400~2800mm Application: Rolling mill Petroleum industry, Mine , engineering machines, Medical Instruments etc.

- Mine metallurgical bearings are produced at LYC's large bearing factory, in addition to their extra large-size bearing factory.
- LYC have over the years of process development, introduced numerous advancements in their cold and hot process equipment. These technological improvements have greatly improved LYC's specification standard of their rolling mill bearings.
- Today LYC not only produce the Rolling Mill Bearings of general precision, but can also supply high-precision bearings.

# STRENGTHS



## 1 ) EXPERIENCE

Manufactured rolling mill bearings since 1959. Accumulation of 50 years of experience and Know-How for serving the international steel industry in more than 70 countries

## 2 ) ALL-IN-HOUSE

“All -In -House” manufacturing, from raw material, rings, rollers, balls, cages to finished bearings. This provides our customers with the shortest delivery time and the most reliable quality products

## 3 ) R&D

Continually investment, innovation and R&D in this market sector has helped LYC develop sealed rolling mill bearings, Split bearings, CARB bearings, and Sendzimir Bearings.

## 4 ) FULL TRUNKEY SOLUTIONS

Full Turnkey solutions from the storage yard for raw materials to steel making, rolling, and refining processes. LYC cover every step of their customers process with wide range of products.

## 5 ) SERVICE

LYC are approved suppliers for the leaders in the steel industry (100 + companies), in more than 70 countries. Such as Siemens VAI from Austria, SMS-Concast from Switzerland, Corus from Netherlands, Tata, AncelorMittal and so on.

## 6 ) PRODUCTION

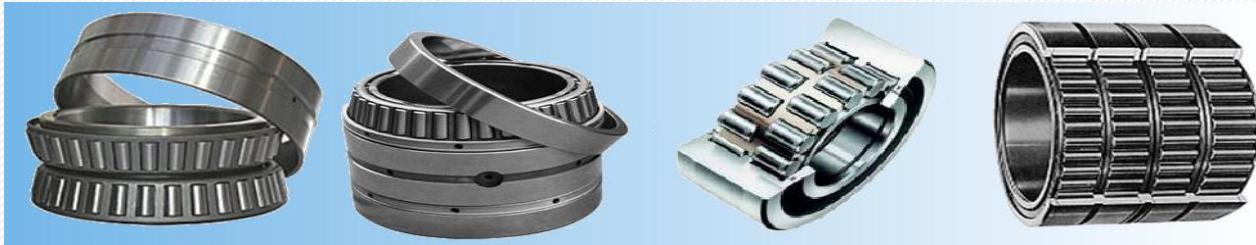
Production availability from ID's of 8 mm to OD 10.94 meters, covering 10 categories over 10,000 different variants of bearings.

## 7 ) QUALITY CERTIFICATE

Quality certificated by ISO9001:2000, ISO14001:2004, ISO/TS16949:2002 ensure LYC's products maintain reliability, quality, and capable of exceeding there life expectancy.



# PRODUCT



Double row taper roller bearing  
Four row taper roller bearing  
Double row cylindrical roller bearing  
Four row cylindrical roller bearing

Slewing bearing  
Thrust spherical roller bearing  
Thrust cylindrical roller bearing



Sealed rolling mill bearing  
Split bearing  
CARB bearing  
Sendzimir Bearing



High-Speed Wire  
Precision Bearings



Angular Contact  
Bearings



Four-point  
Angular Contact  
Bearings



Deep Groove Ball  
Bearings



***Domestic Most complex structure:***

Non-standard roller mill bearing  
OD: 1.7 meters, H;1.9meter,  
WeightL 20tons  
Housing and other ring are one.



***Domestic largest & heaviest:***

Exported largest & Heaviest Thrust  
spherical roller bearing, net weight  
3973KG, each roller is 51KG.



***Domestic largest:***

Split spherical roller bearing,  
dimension:1320×Φ1850×815mm  
weight: 6021KGS





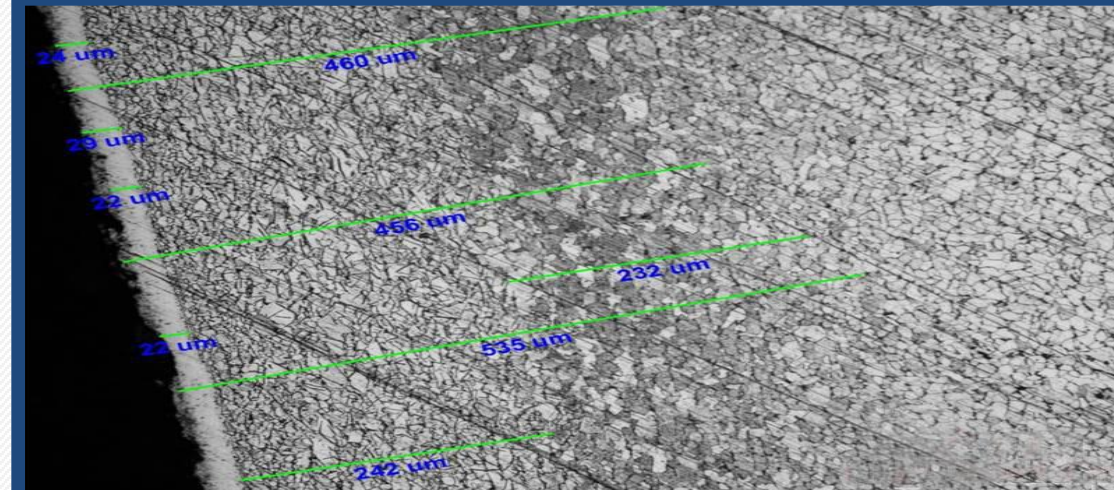
## INCOME MATERIAL INSPECTION

### Steel supplier

- Daye special steel
- Xining special steel
- Xingcheng steel
- Bao steel

### Raw material inspection

- Steel factories provides all inspection reports including chemical composition and mechanical properties.
- LYC re-inspect the steel's chemical composition by metallographic testing, with additional checks carried out with ultrasonic testing.
- All material can be traced.

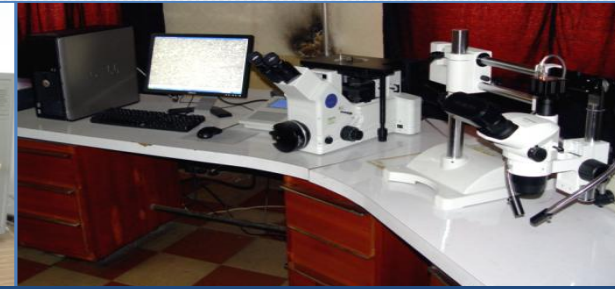




COMPONENT / OPERATION	CHARACTERISTIC	TYPE OF CHECK	QUANTUM OF CHECK	REF. DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD
Material	Chemical / Physical Properties	Material identification	100%	As per Specification	As per Specification	Mfr's T.C / Lab test Report
Forging	Major	Ultrasonic Test	100%	As per GB/T6402-2008	As per GB/T6402-2008	UT Report
Turning	Major	Dimension & surface	100%	As per relevant standard		
Heat Treatment	Carbonizing		Inner ring Outer ring	Specification requirement & relevant standard	Insp. Report	
	Heat treatment chart				Heat Treatment chart	
Grinding	Major	Magnetic Particle Testing	Inner/Outer raceway	As per relevant standard		
Assembly (Final Inspection)	Dimensions & Clearance	Dimensions & Visual	100%	Drawing requirement & relevant standard		Insp. Report
	Surface Finish, Document Review	Visual	100%	As per relevant standard		



# DETECTION



## Raw material inspection

Spectrometer

OLYMPUS Phased array detector

Oxygen and nitrogen hydrogen analyzer

OLYMPUS GX51 inverted metallurgical microscope and image analysis system

## In process inspection



Surface hardness depth tester

Impact testing machine

Universal tester

X-ray stress tester



## Dimensional inspection

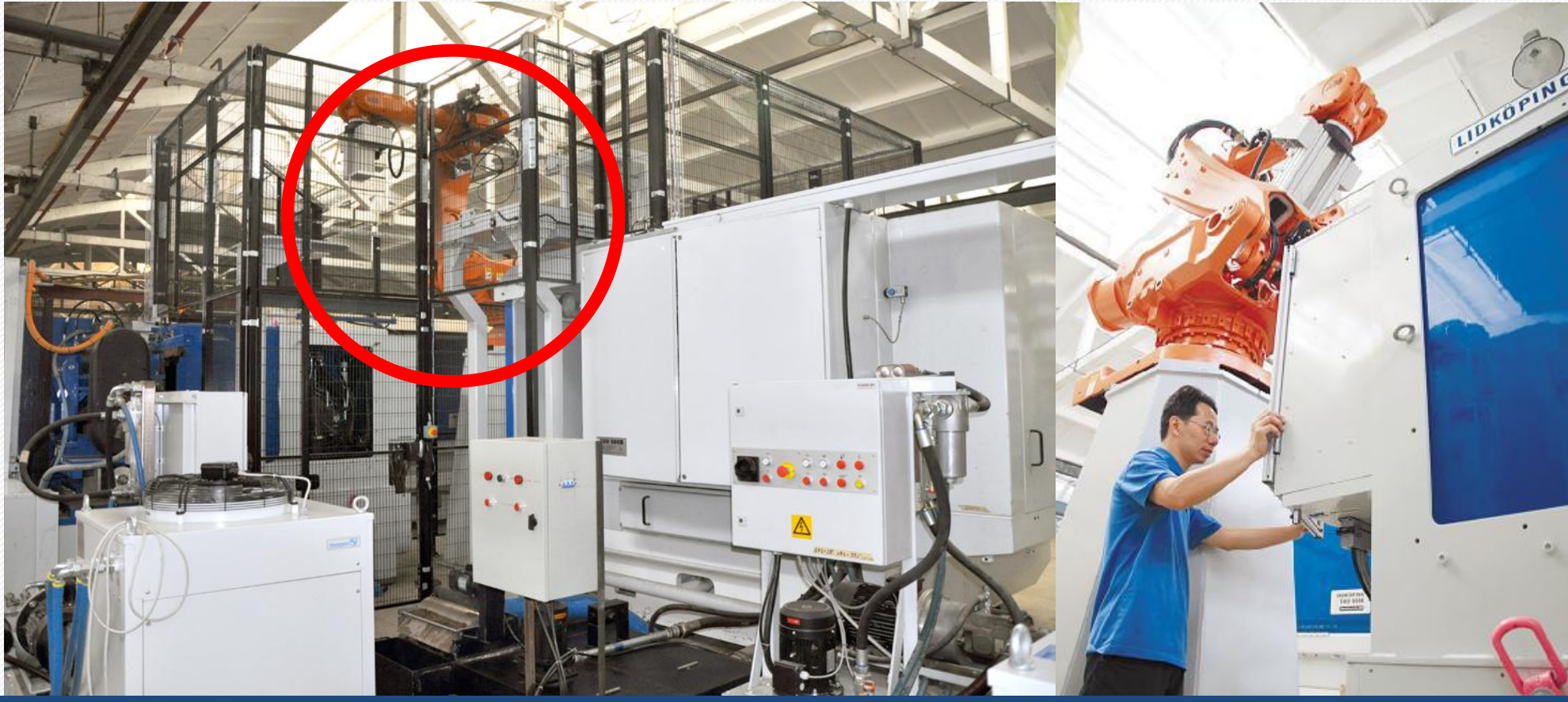
Length measuring instrument

Model 73 Taylor Roundness Meter

Trilinear coordinates measuring instrument

Hommel roundness instrument

# INDUSTRIAL UPGRADING



**Robot Equipment**  
**Origin : Sweden**  
**Bran : KMT**





## INDUSTRIAL UPGRADING

**Automatic grinding  
production line  
Origin: Germany+  
Japan**





## INDUSTRIAL UPGRADING

Heat Treatment  
Production Line  
Origin : Austria  
Brand : Aichelin







## INDUSTRIAL UPGRADING

**Machining Center**  
**Origin : Switherland**  
**Brand : Magerle**



# PRODUCTION



## STEEL PLANT EQUIPMENT



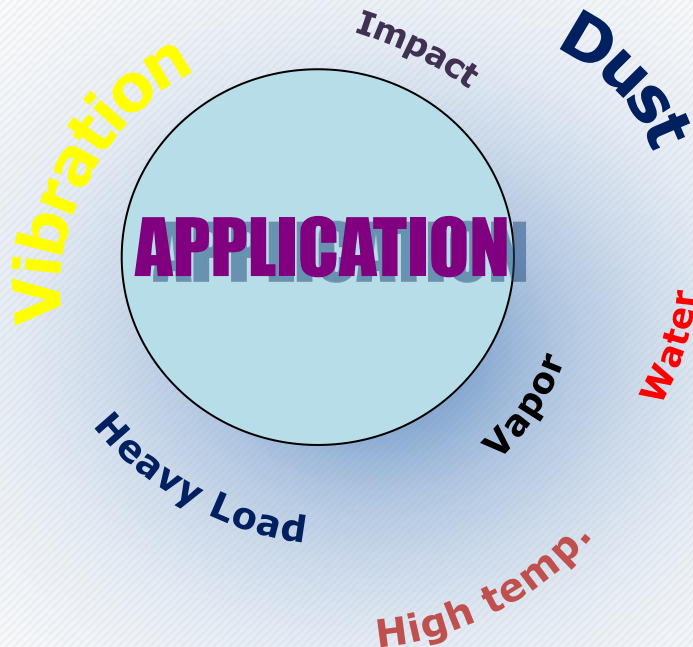
Rolling mill



Smelt equipment



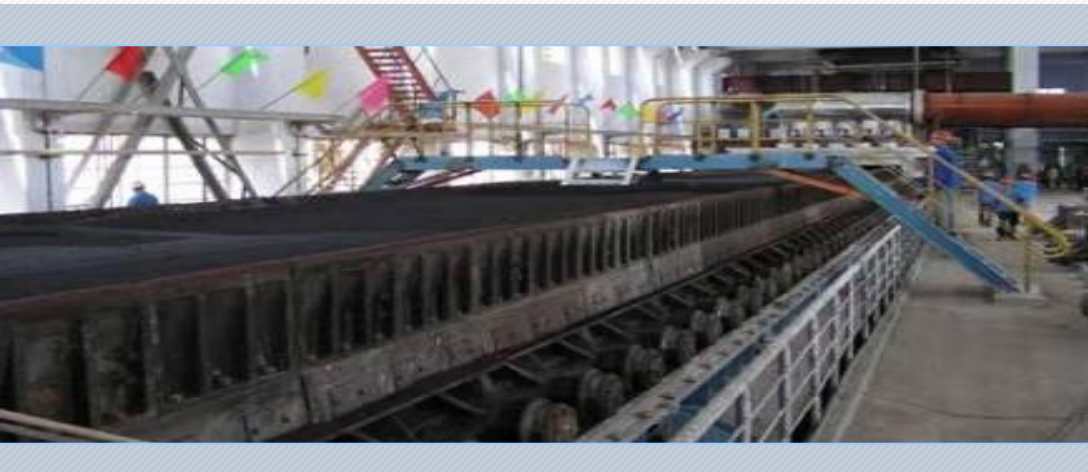
Auxiliary equipment



LYC Steel Industry bearings mainly include: rolling mill bearings, smelt equipment bearings, as well as auxiliary equipment bearings.

LYC's advanced long life designs, detail to process control, provides outstanding performance. Materials are selected from performance history, the application of precision grinding and anti-impact designs all enhance the bearings performance, safety and reliability.





**Common use:**  
Indexing Roller Unit

## Sinter Equipment

- TPCO (Tianjin Pipe(Group) Corporation)
  - Sinter Equipments
  - Double-row tapered Roller Bearings
  - 352124
  - ID: 120 OD: 200 H: 110
- 
- SD Steel (Shandong Laigang Steel)
  - Sinter Equipments
  - Double-row Tapered Roller Bearings
  - 352122
  - ID: 110 OD: 180 H: 95
- 
- Liuzhou Steel (Guangxi Liuzhou Steel)
  - Sinter Equipments
  - Double-row Tapered Roller Bearings
  - 352126
  - ID: 130 OD: 210 H: 110



The bearing for the trunnion is an important part of the tilting device of the converter. The operating environment is at a high temperature, heavy loads, running frequently. Additionally, the bearing is affected by slag splashes and particle contaminants in the environment.

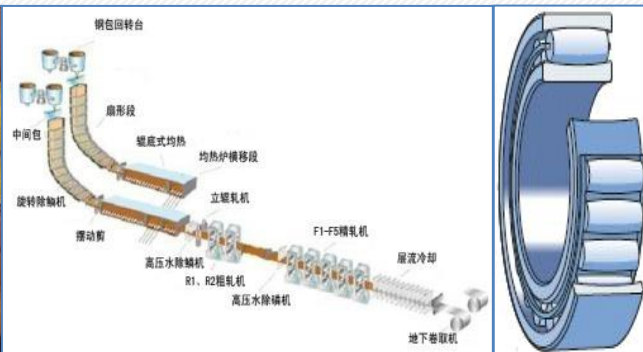
### Common use:

Double-row spherical roller split bearings  
Single, double-row cylindrical roller split bearings

## Converters and BOF's

- WISCO (Wuhan Iron & Steel (Group) Corp.)
  - 90T converter trunnion
  - Spherical roller split bearings
  - 26/900D/C3W33X
  - ID:900 OD:1270 H:470
- Baosteel (Baosteel Group Corporation)
  - 350T converter trunnion
  - Spherical roller split bearing
  - 240/1320D/C3W33X
  - ID:1320 OD:1850 H:815





## Work Characteristics:

Work under high ambient temperature, its work temperature will be arrive at 120°C.

Work under high content of impurity and water circumstances, the high sealed performance of the bearing house should be required.

## Common use:

Double-row spherical roller bearings

Double-row spherical roller split bearings

Single, double-row cylindrical roller split bearings

Needle roller bearings, CARB bearing

## Continuous Casting Machine

- Xinsteel (Xinyu Iron & Steel Group CO., LTD)
  - Rollers of the fan section
  - Structure: CARB
  - C3120V/C3
  - ID:100 OD:165 H:65
- 
- Delong Steel (Delong Iron & Steel CO., LTD)
  - Roller of the bending section
  - Structure: CARB
  - C5915V/C4S3
  - ID:75 OD:105 H:40
- 
- Wsico (WuhanIron & Steel CO., LTD)
  - Horizontal section of the free end
  - Structure: CARB
  - C4032V/C4W
  - ID:160 OD:240 H:80



This process is at the head of the process in the steel making industry, this requires a ladle turret slewing bearing, with a high degree of load support capacity and increased reliability. LYC slewing bearings are mated in series : 80,100,150,180,200,250 tons.

## Common use:

Slewing bearing Structure:

Crossed cylindrical roller slewing bearings

Three-row cylindrical roller slewing bearings

## Ladle Turret Turntable

- Angang Steel (Anshan Iron and Steel Group)
  - 150T Ladle Turret, 200T Ladle Turret
  - Structure: Three Row Cylindrical Roller Bearing
  - 6397/3582, 6397/4440
- Bao steel (Baoshan iron and steel plant)
  - 250T Ladle Turret
  - Structure: Three Row Cylindrical Roller Bearing
  - 6397/4680
- Siemens-VAI
  - Ladle Turret
  - Structure: Three Row Cylindrical Roller Bearing
  - 7397/2480
- Posco
  - Electric Arc Cover
  - Structure: Slewing bearing
  - 130.32.3000.25.03





LYC's bearings are installed within 1350,2500, 3000 and the 4200 production line for Masteel and Jinan Iron & Steel Company Ltd and WISCO.

## Common use:

Four row taper roller bearings  
Four row cylindrical roller bearings

## Medium & Thick Plate Rolling

- HBIS (Wugang Iron & Steel CO., LTD)
  - 4200 mill vertical shaft
  - Four row tapered roller bearing
  - 771/600
  - ID:600 OD:870 H:480
- Tgsteel (Tianjin Iron & Steel CO., LTD)
  - 2400 mill working shaft
  - Four row tapered roller bearing
  - 77880
  - ID:400 OD:540 H:280
- Jigang (Jinan Iron & Steel CO., LTD)
  - 2500 mill working shaft
  - Four row tapered cylindrical roller bearing
  - 6728/500Y
  - ID:500 OD:670 H:450



LYC'S bearings are installed within 1700, 1780 and 2150 production lines.

The 2150 hot strip mills of Ansteel Group was developed as one of the first heavy Industries and one of the most domestically advanced plate mills in China.

## Common use:

Working roll: Double row taper roller bearings  
Four row taper roller bearings

Backup roll: Four row cylindrical roller bearings  
Oil film bearing

## Hot Rolling Mill

- Ansteel (Ansteel Group Corporation)
  - 2150 Working roll F1—F4 :
  - Four-row tapered roller bearing
  - 3806/510-2LS
  - ID:510 OD:655 H: 379
- HBIS (Wugang Iron & Steel CO., LTD)
  - 1700 mill small vertical shaft
  - Four-row tapered roller bearing
  - 3806/501.65-2LS
  - ID: 501.65 OD:914.4 H:420
- Pansteel (Pangang Group Vanadium Titanium & Resources CO., LTD)
  - 1450 mill R2 working shaft
  - Four-row tapered roller bearing
  - 3819/600
  - ID:600 OD:800.5 H:380





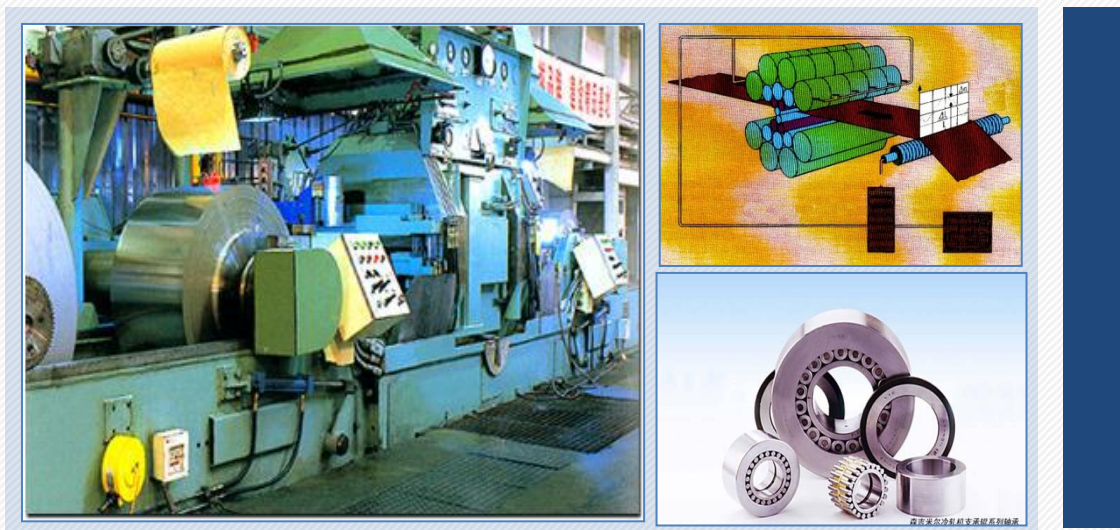
LYC's bearings are fitted within the 1450,1550,1870 production line. Benxi Steel 1870 Cold Rolling Mill is 6 Hi UCM high-speed mills, It began operation in July 2007, and mainly produced automobile plates.

## Common use:

Working roll: Four row taper roller bearings  
Backup roll: Four row cylindrical roller bearings  
Thrust bearing

## Cold rolling mill

- Wsico (Wuhan Iron & Steel CO., LTD)
- 1700 Five-stand Cold Tandem Rolling Mill  
Working Shaft
- Four-row tapered roller bearing
- 3806/508-2LS/YA3
- ID:508 OD:760 H:463.55
- Ansteel (Ansteel Group Cooperation)
- 1200 Six Roller Cold Rolling Mill  
Intermediate roll
- Four row tapered roller bearing
- EE126096DW/150/151D
- ID:244.475 OD:381 H:304.8
- Liuzhou Steel (Guangxi Liuzhou Steel Group Co., LTD)
- 1250 Cold Rolling Mill Backup Roll
- Four row cylindrical roller bearing
- FCDP 138196750
- ID:690 OD:980 H:750



Sendzimir Mill bearings are for high speed applications, high precision rolling thin plate rolling mill bearings. These produce 0.2~2mm super thin steel plate. Bearings are grouped for supporting rolls within the same group of bearing ID, OD, clearance.

And section height maintain a strict requirement. LYC 20Hi Sendzimir mill bearings have been developed successfully, and now are in mass production.

## Sendzimir Mill

- TISCO (Taiyuan Iron & Steel (Group) Co. )
  - 20 Hi Sendzimir mill backup roll
  - Double-row cylindrical roller bearing
  - NNTB626/YA
  - ID:130 OD:300 H:171.6
- Wsico (Wuhan Iron & Steel CO., LTD)
  - 20 Hi Sendzimir mill backup roll
  - Double Row Cylindrical Roller Bearing
  - B3-230
  - ID:130 OD:300 H:172.644
- KISC (Kunming Iron & Steel Holding CO., LTD)
  - 12 Hi Sendzimir mill big intermediate roll
  - Double-row Cylindrical Roller bearing
  - LY-N060
  - ID:205 OD:520 H:168





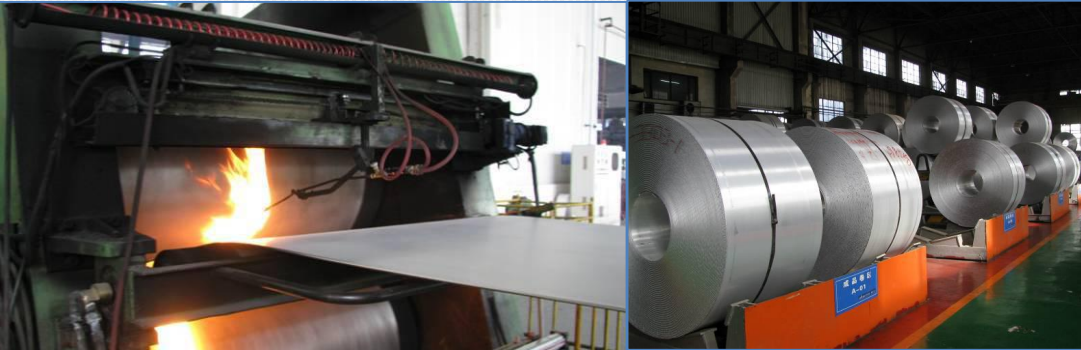
LYC bearings are also installed within production lines for steel bar, wire and Rods. In Oct 2002 LYC's bearings were installed in the High-speed wire mill Tk-N312. LYC was awarded "Nation key new product" .

## Common use:

Deep groove ball bearing  
Double row angular contact ball bearing  
Double row cylindrical roller bearings  
Four row taper roller bearings

## Steel bars Wires and rods

- Masteel (Maanshan Iron & Steel Company ).
  - High-speed wire mill
  - Tapered roller bearing
  - EE 73810D/738172
  - ID:254 OD:438.15 H:165.1
- Baosteel (Shanghai Iron & Steel Group)
  - 500 Rough mill working roll
  - Four-row tapered cylindrical bearing
  - M257149DW/10/10D
  - ID:304.8 OD:419.1 H:269.875
- XISC (Xiangtan Iron & Steel CO., LTD of Hunan Valin)
  - 450 mill
  - Four- row cylindrical roller bearing
  - 77956
  - ID:279 OD:313.7 H:252.4



LYC's bearings are installed within assemblies for Aluminum casting rolling mills, cold rolling mills and Aluminum foil mills.

## Common use:

Double row taper roller bearings  
Four row taper roller bearings  
Four row cylindrical roller bearings

## Aluminum Industry

- NELA (Northeast Light Alloy CO., LTD)  
2000 medium plate mill backup roll  
Four-row cylindrical roller bearing  
6729/748  
ID:748 OD:1135 H:690
- SWA (Southwest Aluminum(Group) CO., LTD)  
1850 rolling mill working roll  
Four-row cylindrical roller bearing  
FCDP164226800  
ID:820 OD:1130 H:800
- WDA (Henan Wanda Aluminum CO., LTD)  
2400 rough rolling mill backup roll  
Four-row cylindrical roller bearings  
FCDP 180244840  
ID:900 OD:1220 H:840





LYC's bearings were the first to be matched with the large size H type steel in China. This complemented the full range of assemblies for Shandong Laiwu Steel Group .

## Common use:

Double row taper roll bearings  
Four row taper roller bearings  
Four row cylindrical roller bearings

## H Type Steel

- SD Steel (Shandong Laigang Construction CO., LTD)
- Big size H type steel working roll
- Four-tapered roller bearing
- 370680/YA
- ID:400 OD:650 H:200
  
- Feng-Hsin(TaiWan) FENG HSIN IRON&STEEL CO.,LTD
- H type steel mill
- Double-row tapered roller bearing
- 46CEE231400/975/60.8C3 (KOYO)
- ID:355.6 OD: 501.65 H: 210
  
- Jinxi Group
- Hebei Jinxi Iron & steel group



## Stainless Steel Strip

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- TISCO
- Taiyuan Iron & Steel (Group) Co., Ltd.
- HuaYin Group
- Foshan Zhongde Stainless Steel Co., Ltd
- Bao Steel
- DeSheng Stainless Co.,Ltd





Stacker-Reclaimer

Customer Name	Bearing Type	Application
DHI·DCW	132.50.5000.03K	Port Quay Stacker-reclaimer
TRF	130.50.3150.03	Mining Stacker-reclaimer
Sandvik	121.45.5200.03	Mining Stacker-reclaimer



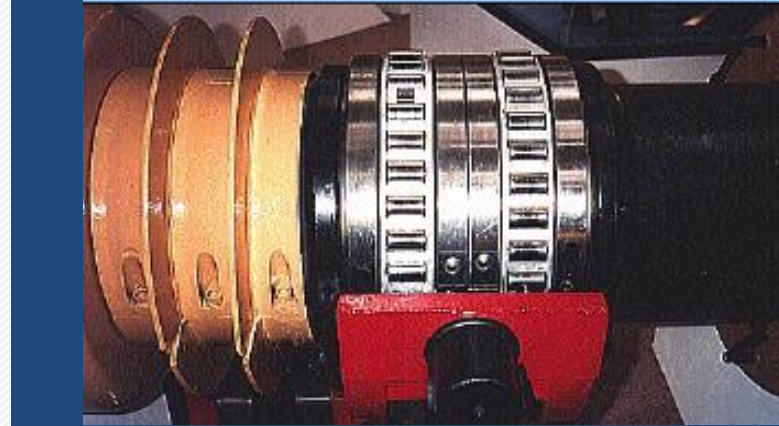
- Project of Shanghai Baosteel stacker-reclaimer localization structure retrofit
- 6397/4914
- Largest outer ring diameter is 5.492m



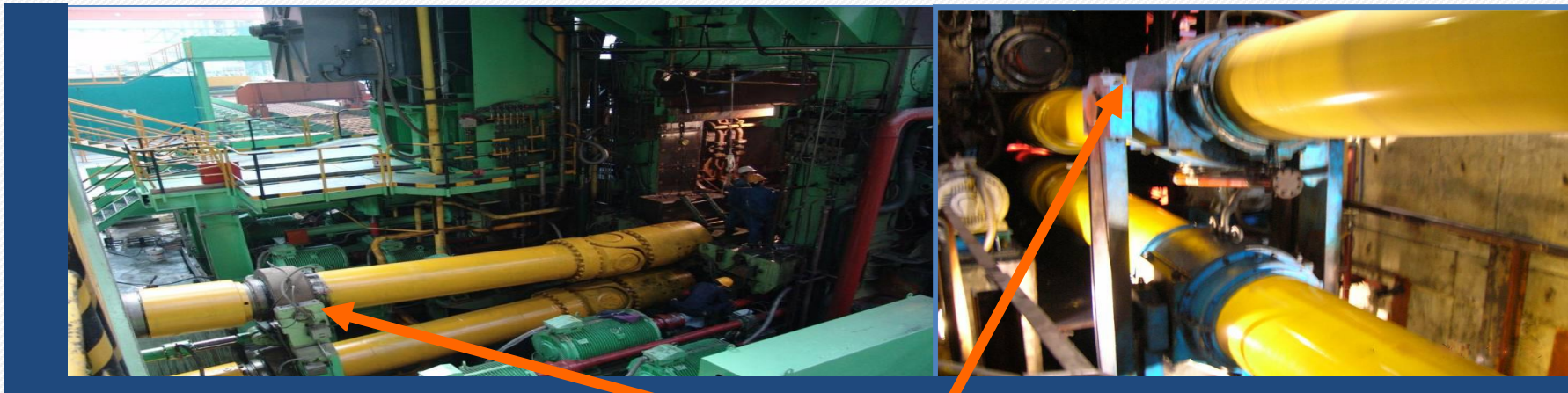
Stacker-reclaimer, Reducer, Recoiling Machine, Skill Pass Mill, Screw down device and etc



Screw Down Bearing



Spilt Bearings for Transmission Shaft



Bearing Application



In the course of operation the ring and rollers must bear the alternate contact stress. The material of the rolling mill bearing is generally selected from high-carbon, chromium bearing steel or carburizing steel families.

### Steel Material

- **High-carbon chromium bearing steel:**  
GCr15, GCr15SiMn, GCr9, GCr9SiM
- **Carburizing Steels :**  
20Cr2Ni4A, 20Cr2Mn2MoA, 12CrNi3MoA  
12Cr2Ni4A .

### Raw Material Source

- LYC generally use the steel GCr15, GCr15SiMn and 20Cr2Ni4A, these selections and types are dependent on application and working conditions.
- LYC's raw materials are sourced from approved steel suppliers such as Bao steel, Dong Bei Special steel, Xi Ning Special steel, and Jiang Yin xingcheng steel.

### Raw Material Inspection

- Steel factories provide all inspection reports including chemical composition and mechanical properties.
- LYC re-inspect the steel's chemical composition by metallographic testing, with additional checks carried out with ultrasonic testing.
- All stocked material is marked with traceability labels back through to material certs.



## Packing Instructions

When the bearings outer diameter is under 225mm bearings will generally be packed in a cardboard carton. Larger bearings are generally kraft paper wrapped, with an additional poly-wrap seal, and then packed Individually or collectively in wooden cartons.





# SERVICE



LYC has established the first domestic bearing service platform, which owns professional technical service engineer team. It provides services as technical consultation, failure analysis, fault detection and so on.



LYC team provides you one-stop service and technical consulting to save your cost and increase efficiency maximum. This will ensure LYC's bearing working perfectly where & when need.





# SALES NETWORK



**China Domestic:**      **54 branch offices in major cities throughout China**

**International:**      **3 Countries Offices in the world**

- LYC North America Inc - Chicago,USA
- LYC Germany- Dusseldorf, GERMANY
- LYC India- Kolkata.INDIA



# BUSINESS PARTNER





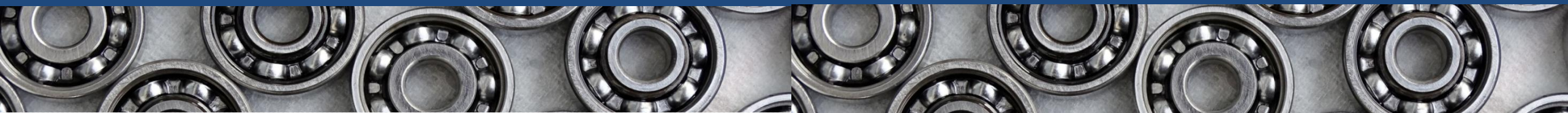


THE  
END

**LUOYANG BEARING CROP. (GROUP)**

Add. : 96#, Jianshe Road, Jianxi District, Luoyang, Henan, China.

[www.lycbearing.com](http://www.lycbearing.com)



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