High Pressure **GRINDING ROLLS**
CITIC HIC commenced business in 1956. After more than 50 years of evolution and development it has become a significant global supplier of mining machinery equipment in the World. The works of CITIC HIC are located in Luoyang city, China. The factory at Luoyang covers more than 1.7 million square meters, of which 724 thousand square meters is under cover. It has a total workforce of approximately 9000 of which more than 1,500 are technicians. Within CITIC HIC works there are 10 manufacturing departments including the Engineering and Design facility. These manufacturing departments produce quality products ranging a broad spectrum of disciplines including casting, forging, heat treatment, machining, fabrication, unit assembly, electric controls and hydraulic control systems.

CITIC HIC produces over 200,000 tons of quality equipment annually. This equipment covers a broad range of industries and product types including mining, crushing, hoisting, washing, gearing, automation, construction, excavation, power generation, research and others.

It is this broad spectrum of experience that provides our customers with confidence in CITIC HIC.
Manufacturing Works

Melting and Casting

Casting capacity of 65,000 tonnes per year producing carbon steels, alloy steels, SG Iron, structural steels, non-ferrous and when specifically ordered heat resistance steels and stainless steels. CITIC HIC has a Single Casting capacity of 600 tons of steel in a 9500m² pouring area.

CITIC’s casting capacity for:
- Carbon steel - 600t
- SG Iron - 200t
- Non-ferrous - 20t
- Steel Ingot - 600t

Foundry equipment includes:
- 80t, 50t, 30t Electric arc furnaces
- 2x150t, 1x60t, 1x40t Ladle refining furnace
- 150t, 60t VD/VOD furnace

Machinery & Fabrication

CITIC HIC is extremely well equipped in relation to fabrication work. CITIC HIC is also a designated Training Base of the National Welding Institute. Over recent years CITIC has further expanded its machine base to include some of the largest machines in China, and in some instances the world.

Facilities include:
- More than 80 CNC based machines
- 100,000t annual fabrication capacity
- NDT and mechanical testing Laboratory with UT and RT equipment manned by certified technicians
- More than 3000 machines (incl. >80 CNC machines) including:
  - 160/250mmx4000mm & 105/200mmx4000mm Hydraulic Plate Rolls
  - Automatic welders (14x10m, 10x10m, 7x7m, 6x6m, 5x5m...)
  - Narrow Gap welding units
  - Unionmelt welding, gas shield and arc welding units
  - A 7m×9m×45m shot blasting chamber
  - Multiple heat treating furnaces ranging from Ø2mx30m shaft furnace to 9mx9mx15m furnaces as well as carburizing furnaces
  - Ø16m, 13m, 12m, 10m, 5m, 4m, 2.8m, 1.6m Gear Cutting Machines
  - Ø5m, 4m, 2.8m, 1.25m, 9m CNC Gear Grinding Machines
  - 600t Overhead crane (height of 26m)
  - Other cranes include 300t, 250t, 200t, 150t, 82t, 75t, 32t and others
  - Fabrication straddle 36m x 135m
  - Three Roll Straighteners
  - Ø16m CNC Vertical Borer
  - Also available to CITIC HIC are four external Fabrication and Machining works capable of producing large sized cement kilns up to 6m diameter and 95m long
  - 6m×20m CNC Cutting Machine

Forgings

CITIC HIC possess hydraulic presses of 18500t (the largest in the world), 8400t, 3150t, 1600t using Open die forging technique, 5000t Die Forging Press & High Precision Ring Roll Mill. It can produce free forgings up to 400 tons, ring roll forgings up to a maximum diameter of 7.8m and shaft forgings up to a maximum length of 25m.
Using the latest in design methods and tools CITIC HIC prides itself in designing, manufacturing and delivering equipment that exceed all expectations. CITIC HIC designs, manufactures and delivers all the major components at its own works at a single location (Luoyang, China) to the highest design and manufacturing standards.

CITIC HIC’s Technology Centre, Luoyang Mining Machinery Engineering Design Institute (LMMEDI), is the largest organization for comprehensive technology development and research in mining, metallurgy, coal, non-ferrous metals and building materials in China.

LMMEDI employs approximately 891 staff of which more than 600 are engineers (with approximately 167 masters and doctors) involved in research and development of machinery design, manufacturing, automation, hydraulics, construction, cement, active lime, pellets plants, plant design, water supply and drainage, heating and ventilation, electrical supply and testing technology, etc.

Design Institute Departments

- Grinding Mills
- Hoists
- Kilns & Furnaces
- Crushing & Screening
- Excavation
- Process Washing
- Power Generation
- Hydraulics
- Metallurgical
- Gearing
- Automation
- Turnkey Systems
- Process Research
- Cement
- Civil Construction

YOUR NEEDS ARE OUR BUSINESS
## Model Range

<table>
<thead>
<tr>
<th>Model Range</th>
<th>Power kW</th>
<th>Weight t</th>
<th>Roll Diameter mm</th>
<th>Roll Length Mm</th>
<th>Capacity Range tph</th>
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<tr>
<td>HPGR120-50</td>
<td>2 x 355</td>
<td>55</td>
<td>1200</td>
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<td>1100</td>
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CITIC HIC DESIGN

SOFTWARE

- ANSYS
- I-DEAS
- STRAND
- MAGMA
- DEFORM
- SYSWELD
- JMATPRO
- OTHERS

CITIC HIC HPGR Features

Through historical co-operation with KHD in the manufacture of High Pressure Grinding Rolls (HPGR) CITIC HIC now designs and manufactures a full range of HPGR’s to suit the cement and mineral processing industries. With over 170 units sold CITIC HIC has the experience in supplied world class HPGR’s to the industry.

Features include:

- Constant Setting and Pressure Control
- Alloy Pin autogenous wear protection of rolls ensuring improved wear life
- Structurally sound welded frame verified using FEA complying to strictest design codes
- Side by Side Dual Planetary reducer drive system for optimized footprint
- 4-Row Cylindrical Roller Bearings for improved load capacity and enhanced reliability
- Stable reliable hydraulic system
- Siemens S7-300 PLC Control System complete with TP270 operator panel
- The control system is responsible for main bearing and reducer bearing lubrication, main drive motor control and drive control
LAB EQUIPMENT

- JKMRC DROP WEIGHT TESTER
- BALL MILL
- VIBRATING MILL
- V-TYPE SEPARATOR
- LAZER SIZE ANALYSER
- RIFFLE SAMPLER
- DRY GRINDING
- HPGR
- DRY CLASSIFIER
- OTHERS

Laboratory

CITIC HIC also has a fully equipped laboratory on site for material testing and reporting. Through material testing and analysis we can accurately select the right equipment to meet your requirements.

Testing Available

- Specific Gravity
- Hardness
- Compressive Strength
- Crushing Work Index
- Rod Mill Work Index
- Ball Mill Work Index
- HPGR Testing
- Particle Size Analysis
- Lime Calcining Test
- Flotation Testing
- Drying
- Others

Simulation

Further, at CITIC HIC we also run various software packages in order to simulate process circuits thereby optimizing equipment selection and operation. These software packages include:

- JK SimMet
- JK SimPlant
- MillTraj
- Various in-house programs
Total customer satisfaction is our everlasting pursuit!

CITIC HIC is ISO9001 accredited. With all the necessary qualified personnel, equipment and experience to ensure your equipment exceeds your quality expectations.

CITIC HIC works with leading mining equipment manufactures as well as EPCM’s and End Users around the globe to achieve international quality standards working to industry accepted specifications.

Our experience and expertise are there for you to rely on.

QUALITY MATTERS!

ISO9001:2000 Certificate
ISO14001:2004 Certificate
GB/T28001-2001 Certificate

Total customer satisfaction is our everlasting pursuit!
Contact Details

CITIC Heavy Industries Co., Ltd
206 Jianshe Road, Luoyang, Henan Province 471039 China

Head Office
Tel +86 379 6408 8888
Fax +86 379 6421 4680
Email: info@citic-hic.com.cn

CITIC HIC Australia Pty Ltd
Level 2, Small Tower, Gateway Business Park, 63 Parramatta Road, Silverwater NSW 2128 Australia

Sydney Office
Tel +61 2 9735 5600
Fax +61 2 9737 0133
Email: info@citic-hic.com

CITIC Heavy Industries Brasil
Alameda da Serra,400-5 floor Nova lima MG Brazil Zip code 34.000-000

Brazil Office
Tel +55 31 3589 5600
Fax +55 31 3589 5601
Email: info@citic-hic.com

CITIC SMCC Process Technology Pty Ltd
Cnr Coonan St. & Riverview Tce. Unit 201, 167 Coonan Street, Indooroopilly QLD 4068 Brisbane, Australia

Tel +61 7 3720 3200
Fax +61 7 3720 3226
Email: jianjun.tian@citic-smcc.com

CITIC HIC Ganderia Censa S.A.U
36400 Porrino (Pontevedra) ,Spain

Spain Office/Manufacturing Facility
Tel +34 986 34 6000
Fax +34 986 34 6268
Web: www.citic-censa.com
Email: secreteria@gandaracensa.com

CITIC HIC South Africa Pty Ltd
8th Floor Convention Towers Cnr Heerengracht & Coen Steytler Rd Cape Town, South Africa

Michael Rauscher
General Manager - Africa & Europe
Tel +27 21 4014572
Mobile: +27 61 199 3868
Email: michael.rauscher@citic-hic.com

CITIC Heavy Industries South Africa Pty Ltd

Claudio E. Delgado
General Manager - South America (excl Brazil)
Tel +562 2303 9390
Mobile: +569 5667 5997
Email: claudio.delgado@citic-hic.com

CITIC HIC North America
6500 Trans Canada, Suite 320 Pointe Claire, QC H9R 0A5 Canada

Beny See Hoye
General Manager - North America
Tel +1 514 447 6111
Email: beny.seehoye@citic-hic.com

CITIC HIC North America

AFTERMARKET SERVICES
CITIC HIC Sydney Australia

Alex Kolc
Global Manager - After Market
Mobile: +61 449 630 447
Email: alex.kolc@citic-hic.com

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