



CITIC IC LUOYANG HEAVY MACHINERY CO., LTD

Benefit / Efficiency / Standard / Technology



CITIC IC
中实重机

Win-win and pragmatic-CIC International Trustworthy



CITIC IC ADVANTAGES

Foreword: Brief introduction of mill and grinding technology

1. Process selection and design development

2. Manufacturing equipment and supporting system

3. Quality control and quality inspection methods

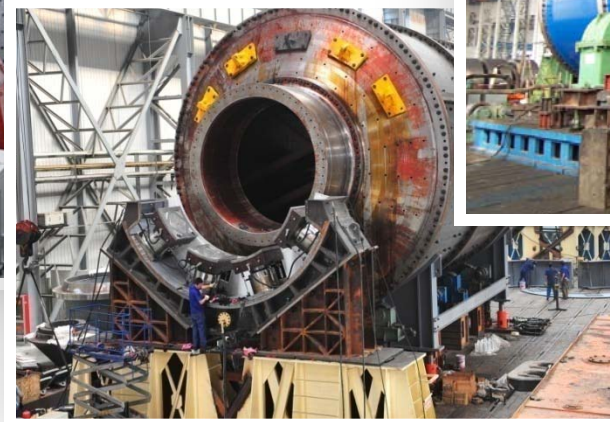
4. packaging, transportation multi-function, multi-program,

Customized

5. Case

6. Service

MILL



> MILL STATUS

The mill is a kind of grinding machine, and it has a mixing effect at the same time. Up to now, in some fields, it has a crushing function, which can replace the crushing equipment of a certain link.

Main types of mill



BALL MILL



COLUMN MILL



TUBE MILL



ROD MILL



AUTO MILL



VERTICAL MILL



DMC MILL



OTHERS



CITIC IC
中实重机

An equipment manufacturer and a mineral processing service provider



The predecessor of CITIC IC Luoyang Heavy Machinery Co.,Ltd was Luoyang Mining Machinery Factory, located in Luoyang City, Henan Province, which is known as the "13th dynasty ancient capital". It was built in 1954 and is China's largest mining machinery manufacturing enterprise. The research institute affiliated to the company is the largest comprehensive research and development institution for mining machinery in China, and has the qualification of Grade A mechanical engineering design.

After 64 years of industry accumulation, it has provided a total of 3 million tons of complete technical equipment and technical service products for mining, building materials, metallurgy, power, nonferrous metals, chemical industry, environmental protection and other industrial fields.

The company's products are exported to more than 20 countries and regions in Asia, Africa, Europe, America and Australia.

The concept and attitude of CIC grinding technology

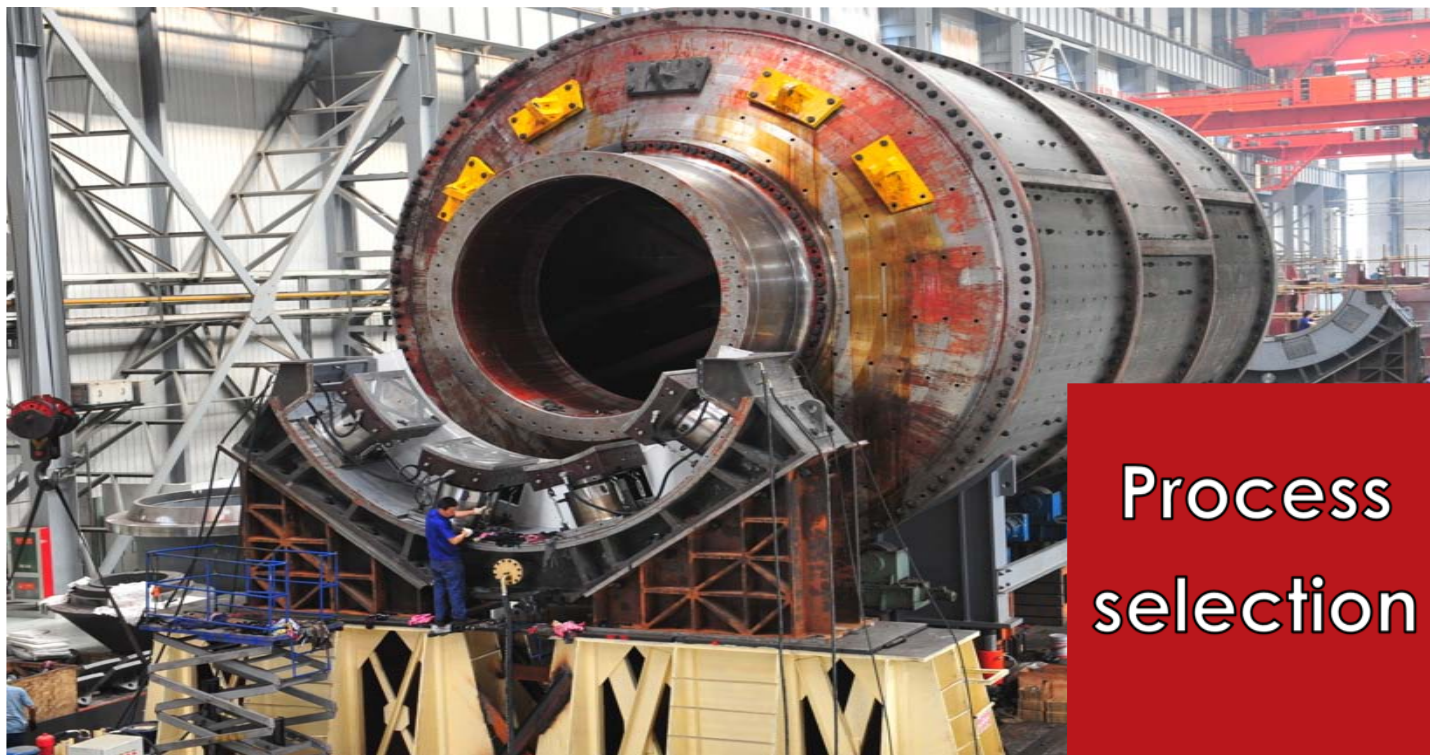


Grinding Technology Concept

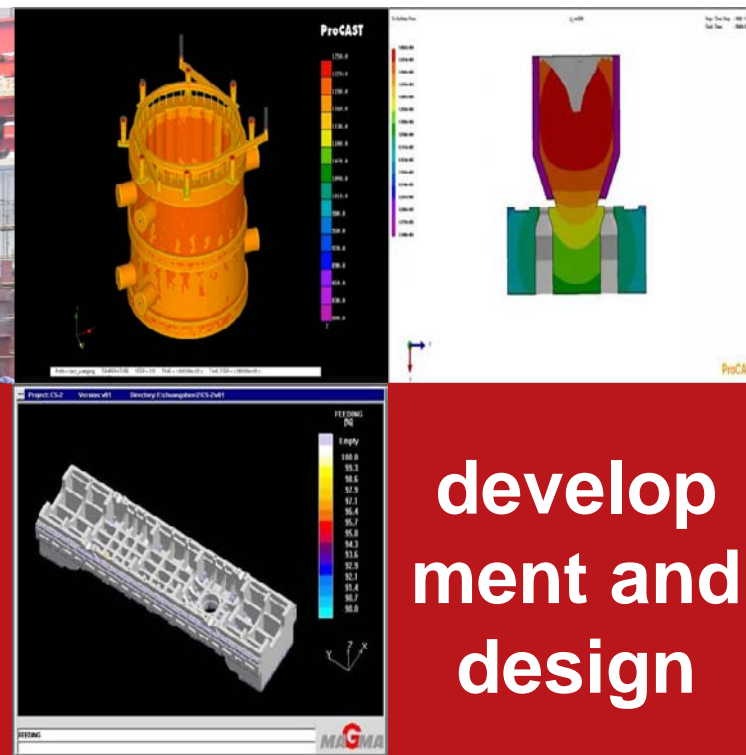
Grinding technology is an experimental science, which requires a wealth of experience as an accumulation. Through repeated debugging and verification, our grinding technology development experience is rich, drawing on and absorbing the international advantages of well-known international brands, combined with our own unique thinking and practice, We could have the total understanding and feeling of our users.



Process selection and development design



Process
selection



develop
ment and
design



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Process selection and development design

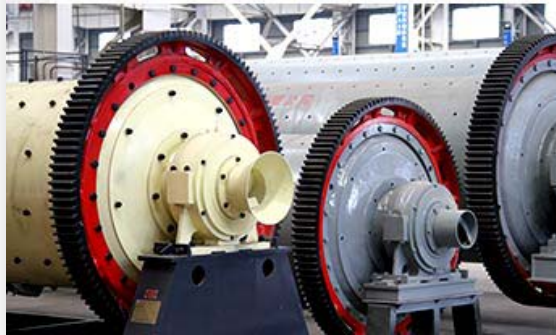


➤ Process selection

The importance of process selection

According to the processing capacity, the diameter and length of the mill can be determined.

According to the nature of the material can determine the form of mill (Ball mill, Rod mill or other)





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Process selection and development design



Process Selection

1 Process Selection

According to the ore sample provided by the customer, the parameters of ore crushing and grinding are measured. Through the simulation of JKSimMet computer software, the best semi-self-mill, self-mill, Ball mill specifications and parameters are settled.

1 strength

Finite element analysis is commonly used to calculate the strength of the mill barrel, end cover, and hollow shaft to determine the optimal structural parameters.

Transmission

According to the power and working conditions, you can choose:

- 1.Single motor gear drive
- 2.Dual motor gear drive

Perform torsional vibration analysis of the transmission system to avoid resonance.

1 Main bearing

According to the mill specifications and load conditions, three types of dynamic and static pressure, static pressure and sliding shoe bearings can be selected, and the corresponding special lubrication station can be configured.

1 Auxiliary machine

1.Optimization of the structure of the feeding and discharging device (feeding trolley, discharge drum screen)

2.Use liner simulation software to study the geometry of liner

3.High-strength bolt strength calculation by software

Improved reliability and service life.

1 Control

Through PLC control, touch screen display and operation, as well as the measurement and monitoring of temperature, vibration, oil pressure, oil flow, oil film thickness and other parameters, and the use of DCS system, the reliability of operation is improved

1 Supporting

The preferred domestic and foreign well-known supporting suppliers provide the best configuration for the mill.



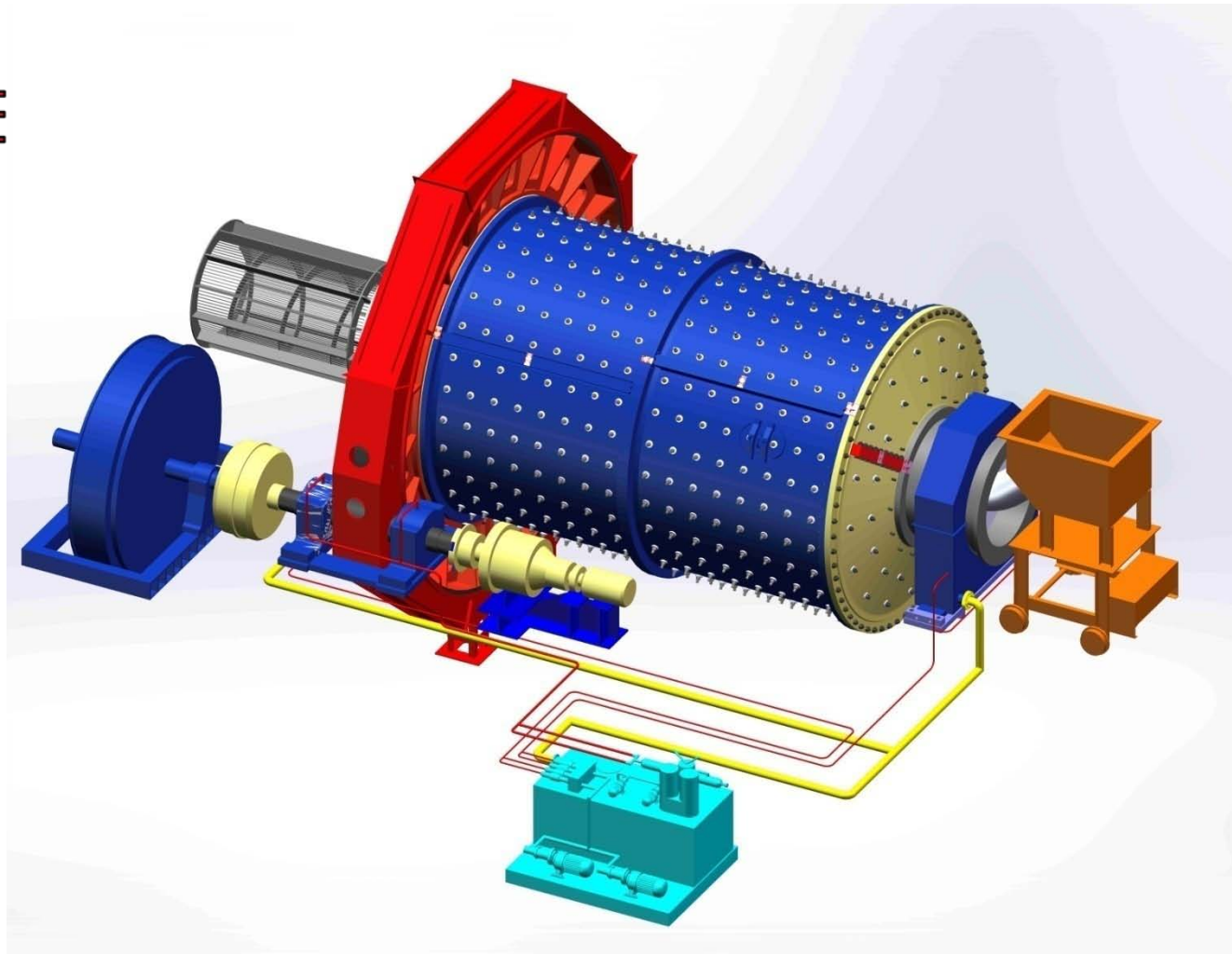
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Process selection and development design



➤ MILL MAIN BODY STRUCTURE

- SHELL ASSY.
(liner、 end cover、 shell etc.)
- DRIVING SYSTEM
(girth gear & pinion、 pinion、 main motor etc)
- LUBRICATE SYSTEM
(main bearing、 girth gear & pinion、 reducer etc)
- ELECTRIC CONTROL SYSTEM
- BASEMENT





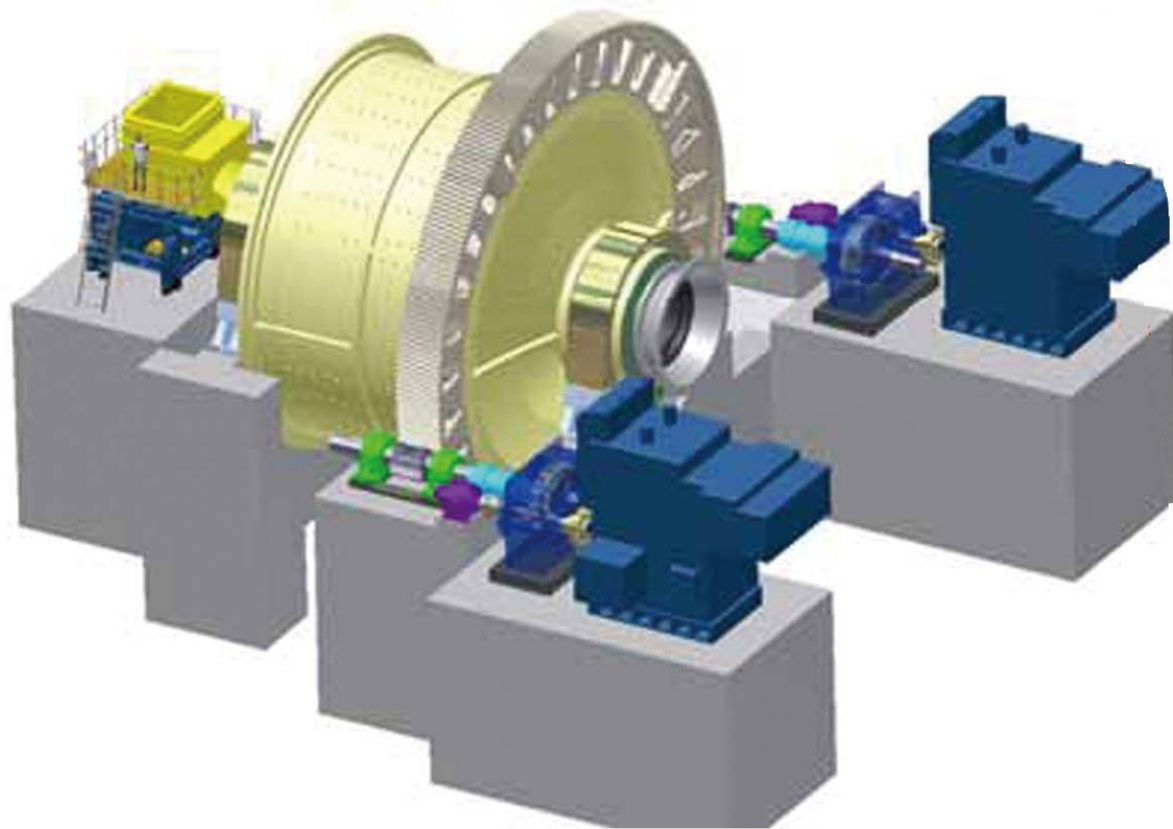
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Process selection and development design



➤ ANALYSIS AND DESIGN OF CORE COMPONENTS

- FEA
ANSYS、STRAND
- Material simulation software
JMATPRO
- Casting simulation software
DEFORM、MAGMA
- Welding simulation software
SYSWELD
- Simulation Software-Assembly simulation
Operation simulation。
SOLID WORK , JKSIMMET , I-DEAS



Process selection and development design



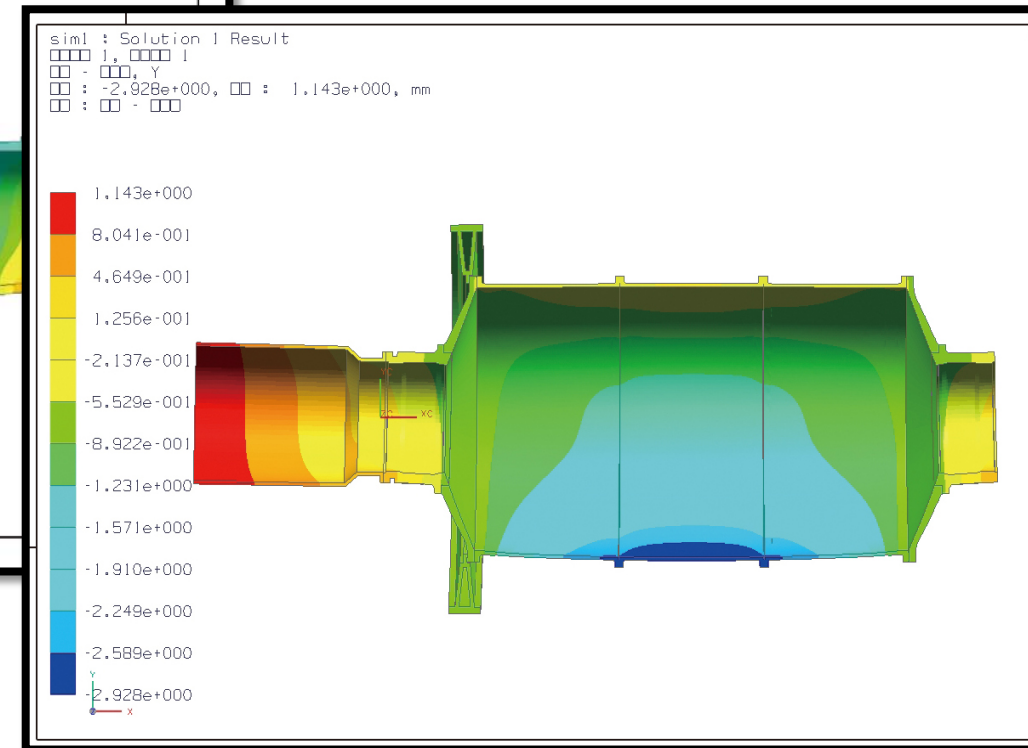
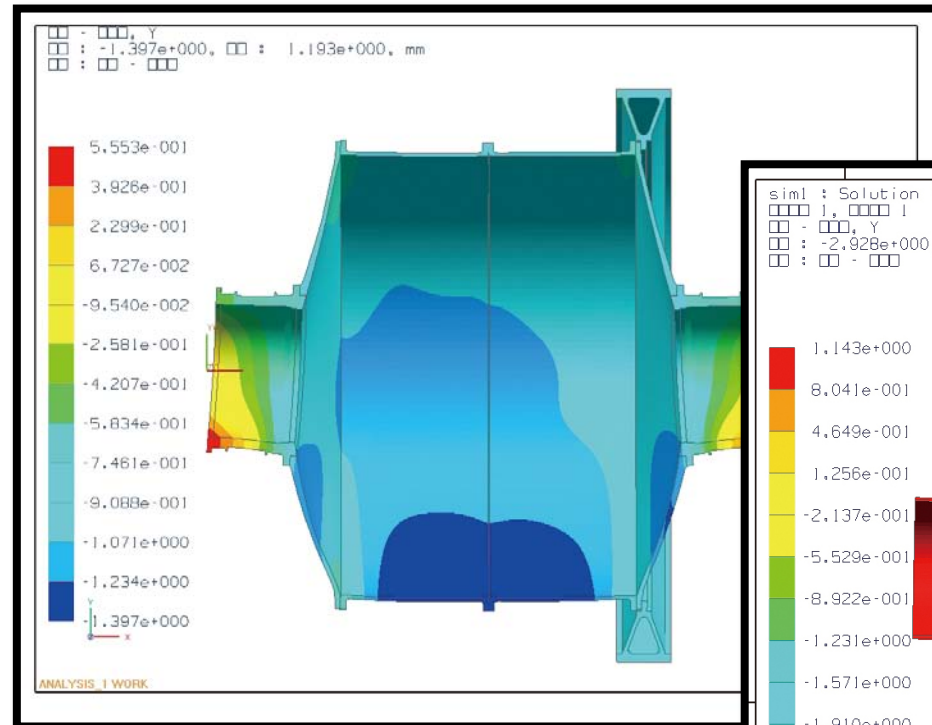
> FEA

ANSYS

Decompose first, then merge, and decompose by meshing, transforming qualitative difficulties into quantitative complexity!

In essence, a difficult problem is transformed into a superposition of several simple problems!

Purpose: Obtain the overall parameters of a simulated mill



Process selection and development design



➤ Material simulation software

JMATPRO

Originated from the UK , Simulate the microstructure, composition, process and performance of materials based on computer simulation

Significance: To verify the feasibility of the raw material performance in manufacturing mill



Process selection and development design

➤ Casting simulation software

DEFORM、MAGMA

The process of casting is complicated, Castings are also prone to defects such as shrinkage cavity, shrinkage porosity, sand washing, and insufficient pouring, cold shut. In the traditional foundry industry, process design and casting quality control often rely on experience, the flow state of the molten metal during the casting process and the temperature and stress state during solidification cannot be intuitively expressed.

With the development of computer technology, the application of computer computing technology can simulate the changes in the stress field, temperature field, and flow field during the casting process, as well as the growth and growth of microstructure grains and the visualization of morphology.

The application of numerical simulation technology can reduce laboratory research work, shorten the research cycle, optimize the casting process parameters, and obtain better quality castings.



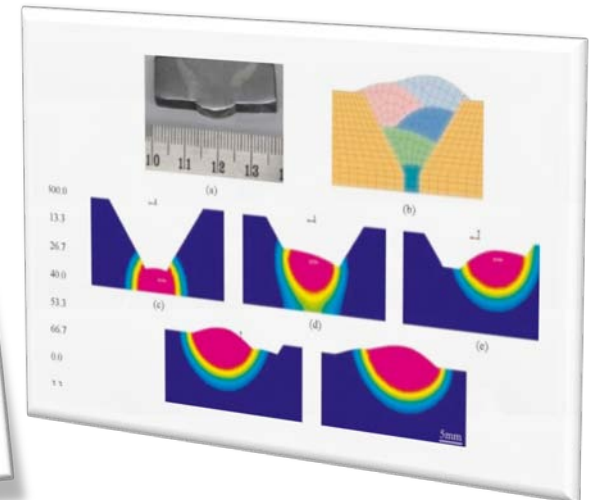
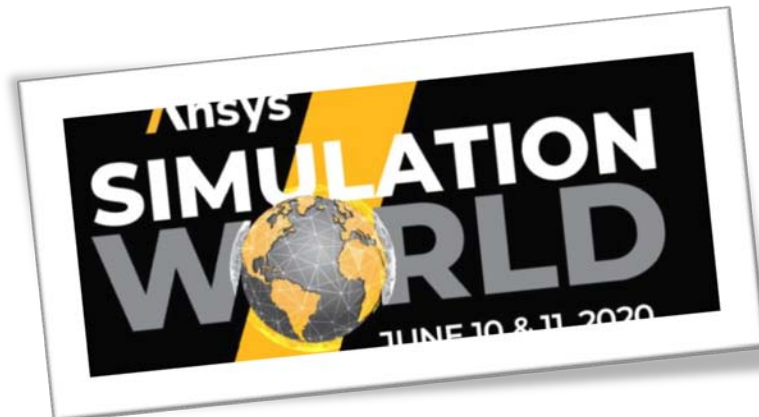
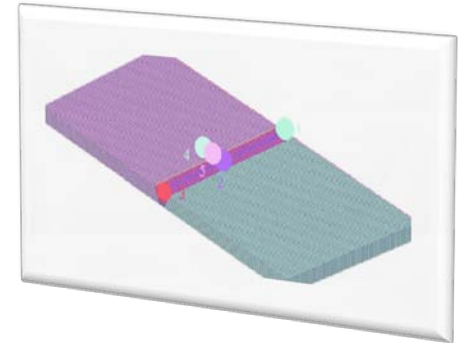
Process selection and development design



➤ Welding process simulation software

Welding is a process in which the material (same or different) of the workpiece to be welded is used by heating or pressurizing or both, and with or without filling materials, so that the material of the workpiece can be bonded between atoms to form a permanent connection. Welding is a complex physical-chemical process. It is impractical, costly, and time-consuming to understand and control the welding process based on accumulated process experimental data. With the development of computer technology, computer simulation methods have created favorable conditions for the development of welding science and technology.

The welding thermal process runs through the entire welding process. It can be said that all welding physical and chemical processes occur and develop during the thermal process. The welding thermal process is local, the heating is extremely uneven, and has the characteristics of instantaneity, complexity and instability. The welding field temperature determines the welding stress field and strain field. It is also inseparable from metallurgy, crystallization, and phase change, making it one of the main factors affecting welding quality and productivity. Accurate calculation and measurement of welding thermal process is the prerequisite for welding metallurgical analysis, welding stress and strain analysis and control of the welding process.



Process selection and development design



Simulation Software

- Simulation Assembly
- Simulation Operation

SOLIDWORK , JKSIMMET

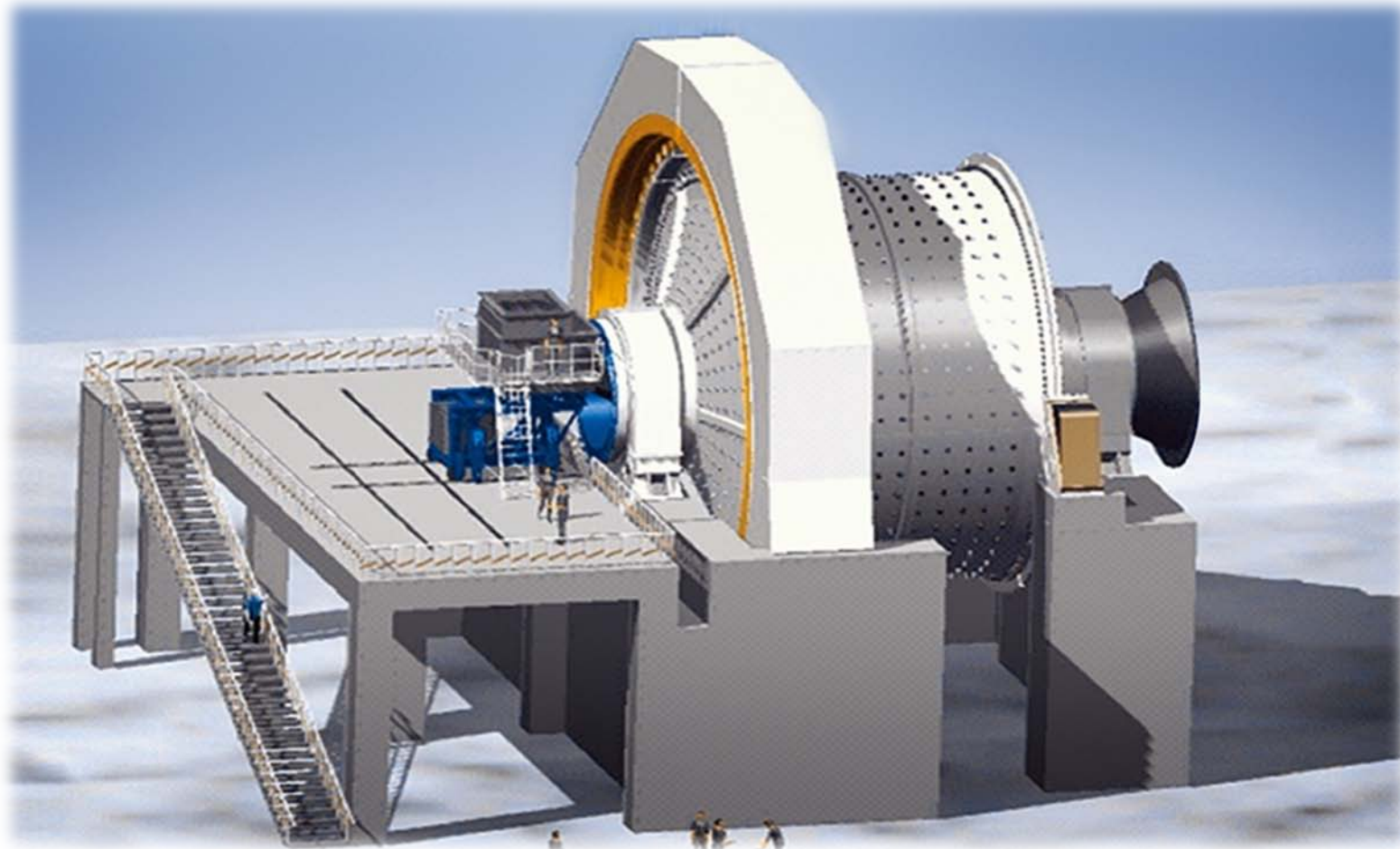
Simulation assembly: computer simulation assembly of all parts of the mill to verify the parameters

Simulation operation: dynamic display effect to verify the matching degree between parameters and performance of each component in operation state

ENSURE MANUFACTURING QUALITY

REDUCE ERROR

IMPROVE EFFICIENCY



Process selection and development design

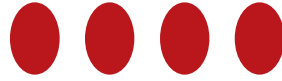


Excellent Design Capability and Manufacturing Capability

©Word-Class Equipment System ©Main Parts Are Manufactured In the Factory ©World Famous Partner © 64 Years History

Manufacturing equipment and supporting system

FORGING EQUIPMENT



◆ 4000T oil press
4000T 油压机



◆ 8400T water press
8400T 水压机



◆ 5m ring rolling mill
5m 轧环机

Manufacturing equipment and supporting system

● ● ● ● CASTING EQUIPMENT



◆ 80t Vacuum Degassing Furnace



◆ 75t Ladle Refining Furnace



◆ 20t Electric-arc Furnace



◆ 60t Electric-arc Furnace

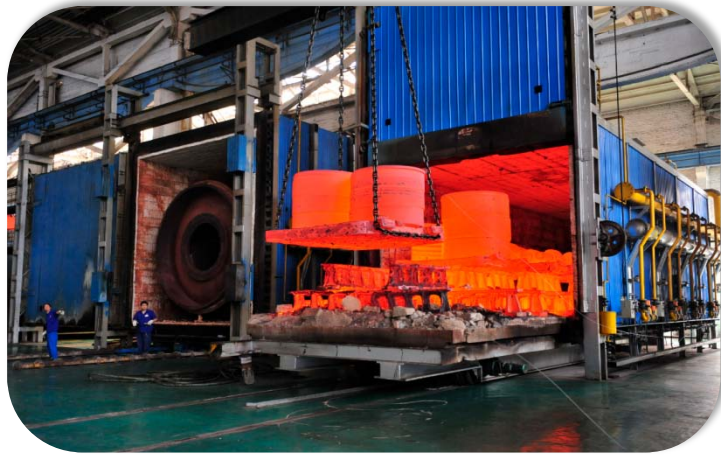


◆ 5t Electric Furnace

Manufacturing equipment and supporting system



HEAT TREATMENT



◆ 14×8×5.5m Heattreatment Furnace



◆ 9×4×3m Heattreatment Furnace



◆ 5×2×2m Heattreatment Furnace



◆ $\phi 5 \times 2.5$ m Well Heattreatment Furnace



◆ 3X6.3m Heattreatment Furnace

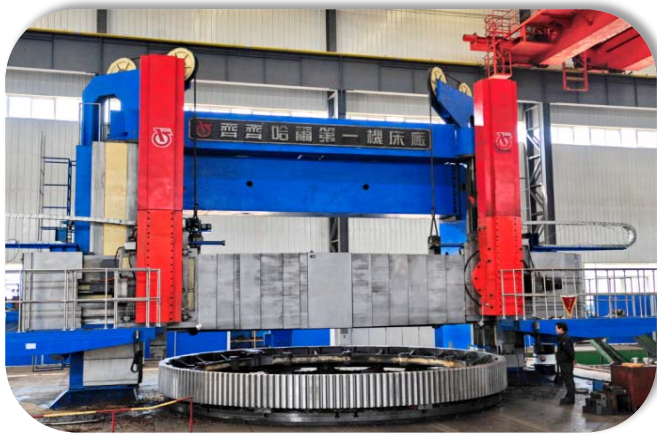


◆ 5X15m Heattreatment Furnace

Manufacturing equipment and supporting system



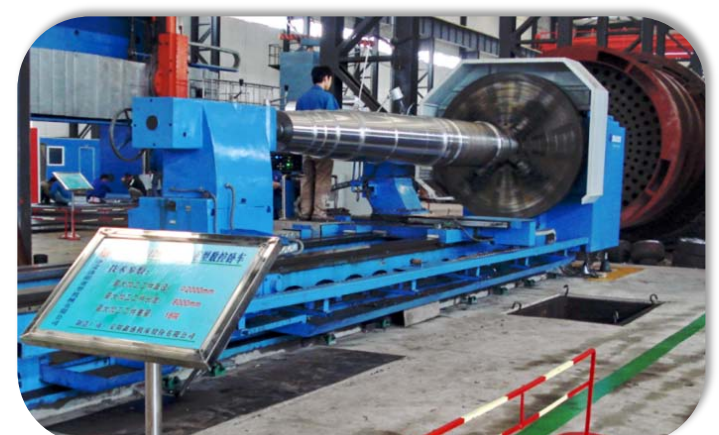
PROCESSING EQUIPMENT



◆ 8m CNC Vertical Lathe



◆ 220 CNC Miller



◆ 2X10m CNC Horizontal Lathe



◆ 5m CNC Vertical Lathe



◆ 9X30m Plane Milling and Boring Machine



◆ 6X20m CNC Heavy Horizontal Lathe

Manufacturing equipment and supporting system



PROCESSING EQUIPMENT



◆ 8m Hobbing Machine



◆ 15m Hobbing Machine

Manufacturing equipment and supporting system



CUTTING AND WELDING EQUIPMENT



◆ 100X3200mm Rolling Machining



◆ CNC Flame Cutting



◆ Submerged Arc Welding

Manufacturing equipment and supporting system



LOADING EQUIPMENT (No. of travelling crane and loading capacity) and PLACE



◆ 75t Manned craneX4

Manufacturing equipment and supporting system



SUPPORTING ABILITY



◆ Electric Control System



◆ Lubrication System



◆ Reducer



Quality Control



Main standards for mill design, manufacturing and inspection

1. National Standard

JB/T1406-2002 《球磨机、棒磨机》
JB/T5000.1-1998 《产品检验通用技术条件》
JB/T5000.2-1998 《火焰切割件通用技术条件》
JB/T5000.3-1998 《焊接件通用技术条件》

2. International Standard

BS7608 筒体疲劳分析
AWS D1.1 焊接
ASTM A609 UT
ASTM E709 OR ASTM E1444 MT
VDI 2230 and BS7608 联接螺栓分析
AGMA6004-F88 开式齿轮强度计算

3. Company Standard

Q/HM 708 — 2007 磨机筒体焊接制造及检验要求
Q/HM 973 — 2007 磨机铸钢件规范
Q/HM 1014 — 2007 矿用磨机铸钢斜齿轮技术规范
Q/HM 1016 — 2007 大型磨机衬板制造规范

Quality Control

数控液压卷板
CNC Hydraulic Plate Rolling



埋弧自动焊 (焊缝UT)
Submerged-Arc Welding (UT)



重型卧车整体加工
Heavy Horizontal Lathe



数控下料切割
CNC Cutting Machining



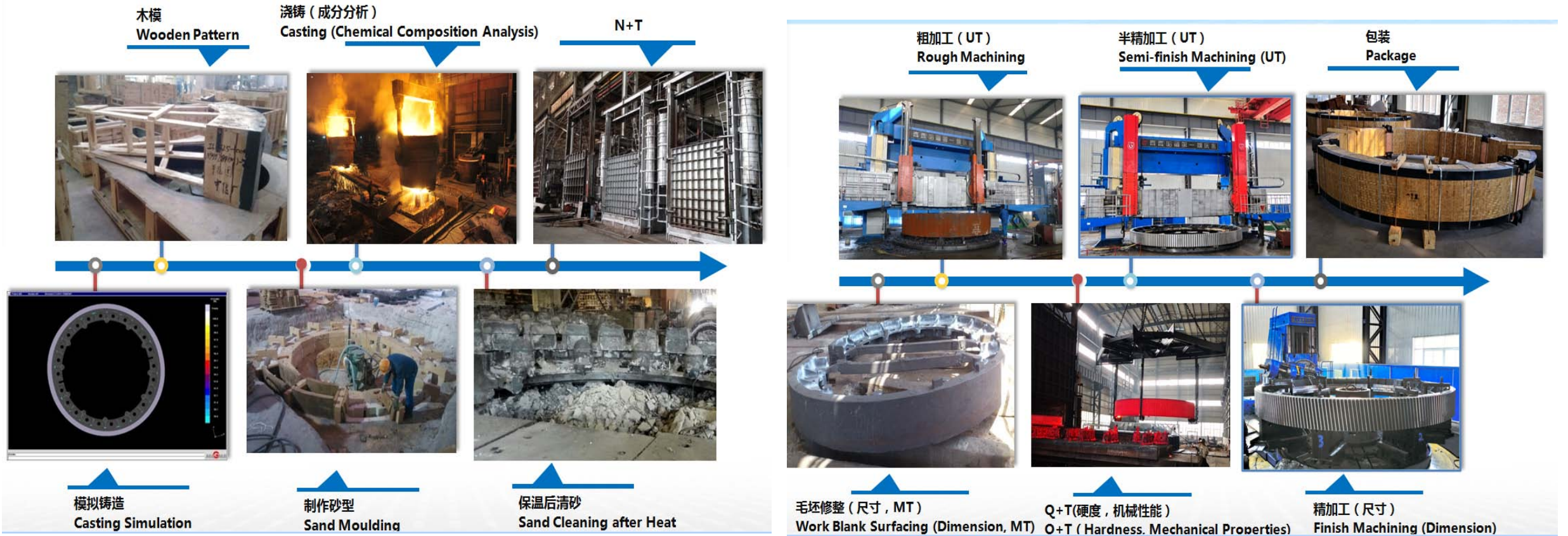
加工坡口
Groove Machining



整体退火去应力
Stress Annealing of Whole Parts

Manufacturing
process
And quality control
points
Cylinder

Quality Control



Manufacturing process and quality control points—Girth Gear

Quality Control

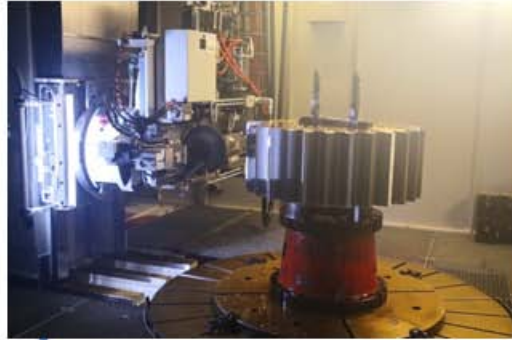
N+T



Q+T (硬度, 性能)
Q+T (hardness, performance)



精加工 (尺寸, MT)
Finish Machining (Dimension, MT)



加热锻造 (轧环)
Forging (Ring Rolling)



粗加工 (UT)
Rough Machining



半精加工 (UT)
Semi-finish
Machining (UT)

Manufacturing
process
And quality
control points
Pinion

Quality Control



TEST



Girth Gear Testing



End Cover Testing



Pinion Testing



Liner Testing

Quality Control



TESTING EQUIPMENT



Mechanical properties tensile testing machine



Mechanical properties impact testing machine



Defectometer



Direct reading spectrometer



Durometer

Quality Control



End Cover ITP-QAP



KHD 磨机端盖 END COVER

订单号/KHD-PO-No.: 517669 / M15 图号/KHD drawing No.: 308-040-000069 / 308-040-000070

No.	工序 Process	特性/检查内容 Inspection Items	验收标准 Inspection Report	质量记录 Applicable Standards	检查 inspection test			备注 Remarks	
					1-CIC	2-KHD	3-Client		
1	铸造工艺 Casting Design	确认合同、图纸 Confirm contract & drawings	合同及图纸要求 Requirement of contract & drawing	双方确认 Confirm by two parties	合同评审记录 Contract assessment record	H	-	-	
		确认铸造工艺方案 Confirm casting process plan	工艺合理性 Process rationality	符合本公司生产条件且 客户认可 Fit with production situation and confirmed by client	会议纪要 minutes of meeting	H	-	-	
2	模型 Wood pattern	按模型工艺图纸检验模型尺寸、形状等。 size and shape	工艺图纸 Process drawing	木型检验记录 Wooden pattern record	H	-	-		
3	造型 Moulding	按铸造工艺图纸检查型腔尺寸、产品标识代码等	工艺图纸	砂型检验记录 Sand mold shape record	H	-	-		
4	浇注 Pouring	浇注方案 Pouring plan	与铸造车间沟通 Negotiating with casting workshop	双方认可 Confirm by two parties	会签 Signature	H	-	-	
		浇注 pouring	浇注温度 pouring temperature	浇注方案 Pouring plan	浇注记录 Pouring record	H	-	-	
		取样 sampling	浇注过程取样 Sampling during the casting	工艺规程 Process planning	桶样化学分析报告	H	R	-	
5	清理 cleaning	落砂 cleaning	落砂温度 cleaning temperature	工艺规程 Process planning	-	H	-	-	
6	正火 Normalizing	温度、时间 Temperature and time	热处理工艺 HT process	热处理记录 HT record	H	R	-		
7	切冒口 Cutting rizer	控制温度、留量 Control the temperature and the allowance	切冒口工艺 Rizer cutting process	打点记录 record	H	-	-		
8	回火 tempering	温度、时间 Temperature and time	热处理工艺 HT process	热处理记录 HT record	H	R	-		
9	Mechanical Property 机械性能试验	屈服强度, 延伸率 Yield stress, elongation	Yield stress≥275MPa elongation≥15%	机械性能报告 mechanical property report	H	R	-		



Quality Control



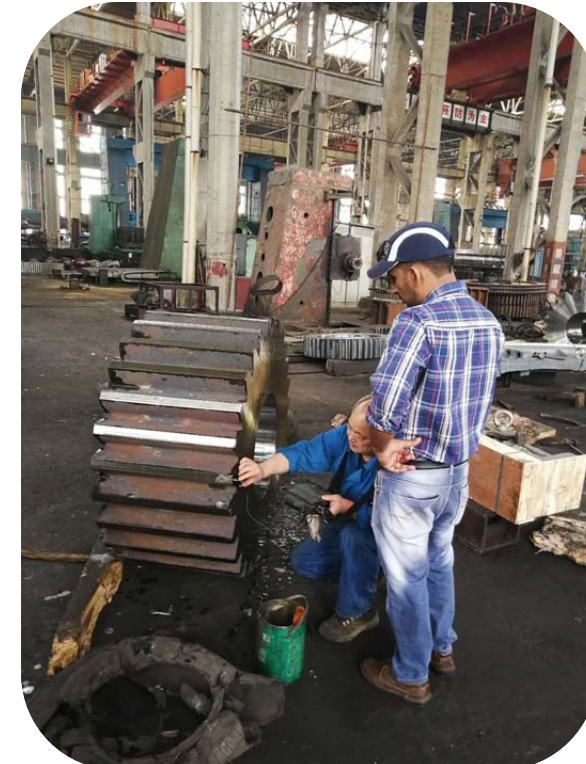
Pinion ITP-QAP



KHD 小齿轮 Forged Pinion

订单号/KHD-PO-No.: 517669 / M15 图号/KHD drawing No.: 308-081-000040

No.	工序 Process	特性/检查内容 Inspection Items	验收标准 Inspection Report	质量记录 Applicable Standards	检查 inspection test			备注 Remarks
					1-CIC	2-KHD	3-Client	
1	熔炼&钢锭制作 Melting & Fabrication of steel ingot	钢水化学成分分析 Chemical composition analysis of the liquid steel	工艺 specification	化学成分报告 Chemical composition	H	R	--	
2	加热锻造 Heated forging	初步的 UT Primary UT test	图纸、工艺 drawing, specification	锻造记录 Forging record	H	--	--	
3	粗车 Rough machining	超声波探伤 UT	LV 413-010 5.4.4 DIN EN 10228-3 II	UT 报告 UT Report	H/N	H/W/R	--	发 UT 检验通知给洪堡 for UT Inspection Call to KHD required.
4	粗开齿 Rough hobbing	外观、尺寸检验 Visual and dimensional inspection	图纸、工艺 drawing, specification		H	--	--	
5	热处理 Heat treatment	淬火&回火 Quenching & Tempering	图纸、工艺 drawing, specification	热处理曲线 heat treatment curve	H	R	--	
6	性能测试 Chemical & Mechanical	机械性能 Mechanical property,	LV 413-010 5.3.3/5.4.3	机械性能 Mechanical property,	H/N	H/W/R	--	发检验通知给洪堡 Inspection Call to KHD required.
7	半精加工 semi-finishing machining	超声波探伤、尺寸、硬度 UT, Dimension, hardness	LV 413-010 5.4.4 DIN EN 10228-3 II LV 413-010 5.3.3	超声波探伤报告、尺寸报告、硬度报告 UT Report, Dimension report, hardness report	H	R	--	
8	半精滚齿 Semi-final hobbing	尺寸 MT, Dimension	图纸、工艺 drawing, specification	磁粉检测报告 MT report	H	R	--	
9	精加工 finishing machining	磁粉、尺寸、齿面硬度、粗糙度 MT, dimension test, hardness on teeth surface, roughness	LV 413-010 5.4.5/5.4.6 DIN EN 10228-1 LV 413-010 5.3.3	磁粉波探伤报告、尺寸报告、硬度报告、粗糙度报告 MT Report, Dimension report, hardness report, roughness report	H	R	--	



Quality Control



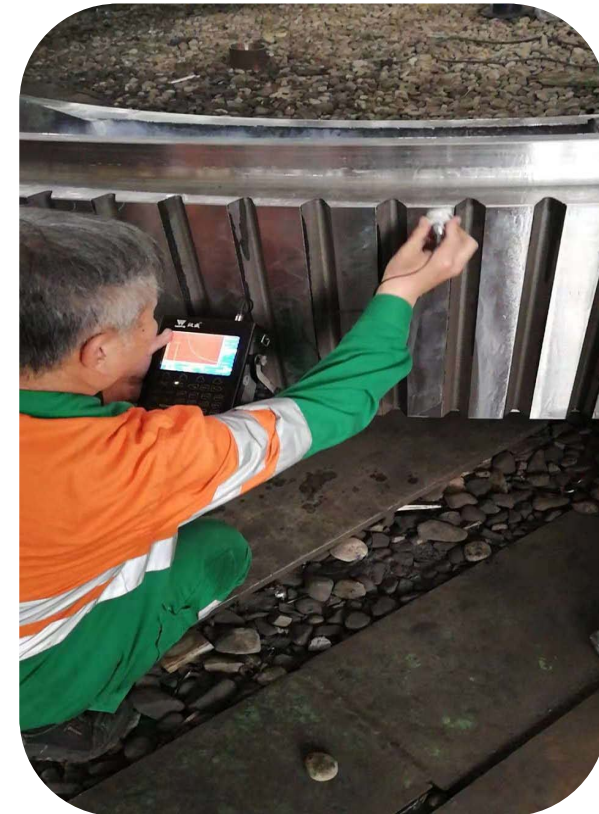
Girth Gear ITP-QAP



KHD 磨机齿圈 Mill Girth Gear

订单号/KHD-PO-No.: 517669 / M15 图号/KHD drawing No.: 308-081-000044

No.	工序 Process		特性/检查内容 Inspection Items	验收标准 Inspection Report	质量记录 Applicable Standards	检查 inspection test			备注 Remarks
						1-CIC	2-KHD	3-Client	
1	铸造工艺 Casting Design	确认合同、图纸 Confirm contract & drawings	合同及图纸要求 Requirement of contract & drawing	双方确认 Confirm by two parties	合同评审记录 Contract assessment record	H	-	-	
		确认铸造工艺方案 Confirm casting process plan	工艺合理性 Process rationality	符合本公司生产条件且客户认可 Fit with production situation and confirmed by client	会议纪要 minutes of meeting	H	-	-	
2	模型 Wood pattern		按模型工艺图纸检验模型尺寸、形状等。 size and shape	工艺图纸 Process drawing	木型检验记录 Wooden pattern record	H	-	-	
3	造型 Moulding		按铸造工艺图纸检查型腔尺寸，产品标识代码等	工艺图纸	砂型检验记录 Sand mold shape record	H	-	-	
4	浇注 Pouring	浇注方案 Pouring plan	与铸造车间沟通 Negotiating with casting	双方认可 Confirm by two parties	会签 Signature	H	-	-	
		浇注 pouring	浇注温度 pouring temperature	浇注方案 Pouring plan	浇注记录 Pouring record	H	-	-	
		取样 sampling	浇注过程取样 Sampling during the casting	工艺规程 Process planning	桶样化学分析报告	H	R	-	
5	清理 cleaning	落砂 cleaning	落砂温度 cleaning temperature	工艺规程 Process planning	-	H	-	-	
6	正火 Normalizing		温度、时间 Temperature and time	热处理工艺 HT process	热处理记录 HT record	H	R	-	
7	切冒口 Cutting rizer		控制温度、留量 Control the temperature and the allowance	切冒口工艺 Rizer cutting process	打点记录 record	H	-	-	
8	焊拉筋 Welding stiffener		-	-	-	H	-	-	
9	割开，分为半齿圈 Cutting to two half parts		划线割开 cutting	图纸工艺 Drawing	-	H	-	-	
10	回火 tempering		温度、时间 Temperature and time	热处理工艺 HT process	热处理记录 HT record	H	R	-	



Quality Control



Liner ITP-QAP



产品质量控制计划 (ITP) Product quality inspection test plan

项目 Project	QAL	工令号 Work No.	1988-011	版次 Rev. No.	0
客户 Client	FFFAustralia	产品名称 Product Name	Liner	日期 Date	2019-09-10
制造商 manufacturer	CIC. China	编制 Prepared By	Shunli Si	页码 Page	1/2

No.	工序 Process		特性/检查内容 Inspection Items	验收标准 Inspection Report	质量记录 Applicable Standards	检查 inspection test			备注 Remarks
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3		造型 Moulding	按铸造工艺图纸检查型腔尺寸，产品标识代码等	工艺图纸 Process drawing	砂型检验记录 Sand mold shape record	H	-		
4	浇注 Pouring	浇注 pouring	浇注温度 pouring temperature	浇注方案 Pouring plan	浇注记录 Pouring record	H	-		
		取样 sampling	浇注过程取样 Sampling during the casting	工艺规程 Process planning	桶样化学分析报告 Chemical analysis report	H	R		
5	清理 cleaning	落砂 cleaning	落砂温度 cleaning temperature	工艺规程 Process planning	-	H	-		
6		去除冒口 Remove riser	控制温度、留量 Control temperature and allowance	去冒口工艺 Riser remove process	-	H	-		
			尺寸检查 Dimension	图纸 Drawing	-	H	-		
7		退火 annealing	温度、时间 Temperature and time	热处理工艺 HT process	热处理记录 HT record	H	-		
8		调质 Quenching + Tempering	1. 淬火+回火 Q+T	热处理工艺 Heat treatment process	热处理记录 HT record	H	-		
			2. 本体硬度 Hardness of base material,	HB350-400	硬度检验报告 Hardness report	H	-		



Pouring



Moulding

Quality Control



Finished Product Testing Before
Delivery

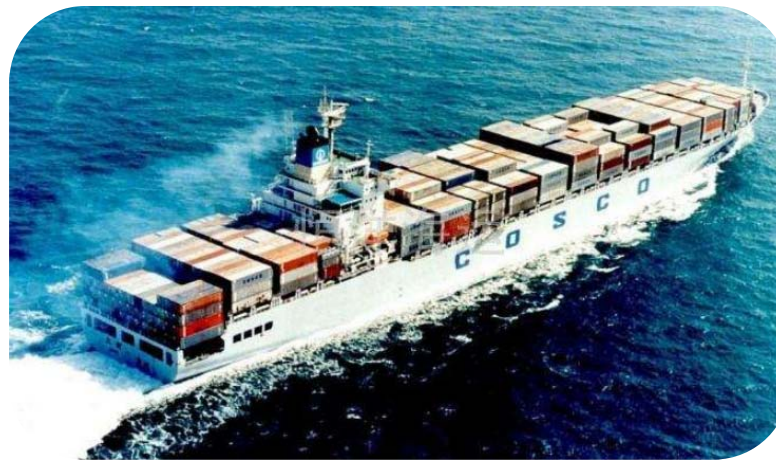


TESTING BEFORE DELIVERY

Packing and shipping



Multi-function & Customized



Packing and shipping



Multi-function & Customized



○ Suitable package for transfer and lifting

○ Multiple protection——Assy. Unit

Packing and shipping



Multi-function & Customized



○ Shell

Packing and shipping



Multi-function & Customized

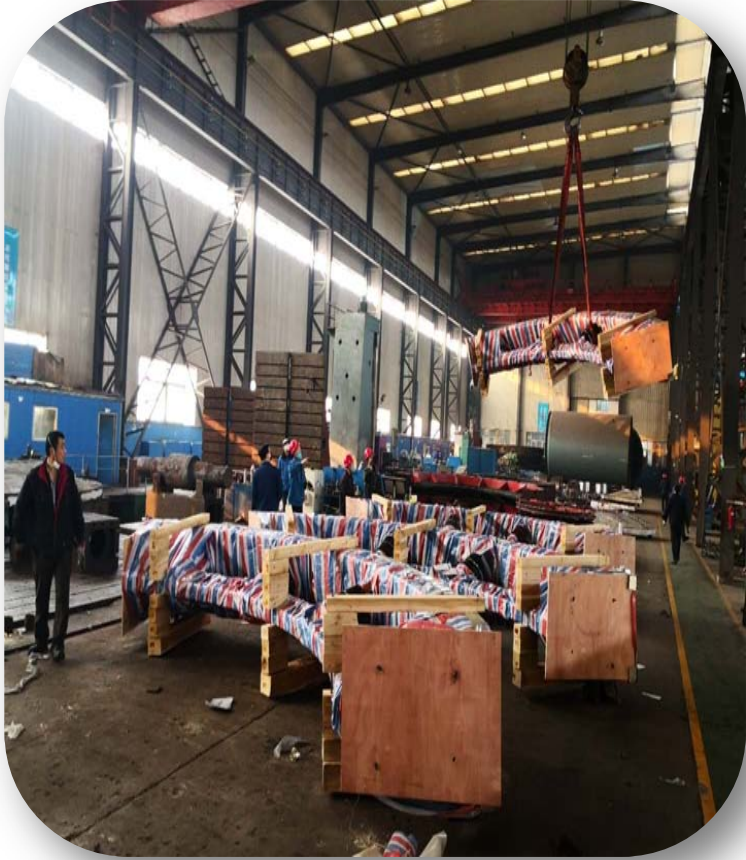


○ End Cover

Packing and shipping



Multi-function & Customized



O Girth Gear&Pinion

Packing and shipping



Multi-function & Customized



○ Liner

Case



● $\Phi 4 \times 6.0\text{m}$ Ball Mill



● $\Phi 5.5 \times 8.8\text{m}$ Ball Mill

Case



● $\Phi 3.2 \times 4.8\text{m}$ Rod Mill

● $\Phi 4.2 \times 13\text{m}$ Shoe-mounted ball mill



Case



● $\Phi 5.5 \times 3.6\text{m}$ SAG

● 7.5X2.8 SAG



CASE

Domestic Case

SAG Mill	Φ9.75×4.57m	Yunnan Copper Group Pulang copper mine
SAG Mill	Φ9.15×5.03m	Anshan Iron and Steel Group Mining Company
SAG Mill	Φ8.5×3.8m	Guangdong Dabaoshan Mining Co., Ltd
SAG Mill	Φ8.2×5.4m	Zijinshan Gold Copper Mine of Zijin Mining Group
SAG Mill	Φ7×3.5m	Jiangxi Copper Group Yinshan mining (copper mine)
SAG Mill	Φ7.5×3.2m	Yunnan Hualian zinc indium Co., Ltd
SAG Mill	Φ7.32×4.27m	Baima iron mine of Panzhihua Iron and Steel Group Co., Ltd
Overflow Ball Mill	Φ6.5×11	Beijing Shougang International Engineering Technology Co., Ltd
Overflow Ball Mill	Φ6.2×9.5	Inner Mongolia Gold Mining Co., Ltd
Ball Mill	Φ6.2×9.5	Dongguashan concentrator of Tongling Nonferrous Metals Group Co., Ltd
Overflow Ball Mill	Φ5.8×8.3	Sinosteel Equipment Co., Ltd
Ball Mill	Φ5.5×7.5	Heilongjiang Tongshan Mining Co., Ltd
SAG Mill	Φ5.03×5.8m	Guizhou Jinfeng Mining Co., Ltd. (gold)
Overflow Ball Mill	Φ4.8×7m	Luoyang Luanchuan Molybdenum Industry Group Co., Ltd
Rod Mill	Φ4.6×3.2	Yunnan Tin Industry Co., Ltd
Raw Material Mill	Φ4.6×8.5+3.5m	Jilin Yatai Cement Co., Ltd
Overflow Ball Mill	Φ4.27×7.3	Dulan Jinhui Mining Co., Ltd
Cement Ball Mill	Φ4.2×11m	Anhui Conch Group
Ball Mill	Φ3.8×5	Chinalco Zhongzhou Branch
Cement Ball Mill	Φ3.6×9	Yunnan Huakun Engineering Technology Co., Ltd
Overflow Ball Mill	Φ3.6×8.5m	Chinalco Great Wall branch

Abroad Case

SAG Mill	Φ7.5×2.8m	Russian (gold) mining
Rod Mill	Φ6.3×4.5	CuDeco Ltd. Rocklands copper mine, Australia
Overflow Ball Mill	Φ6.2×9.5	Laos Ban Houayxai Copper gold project - PanAust
Overflow Ball Mill	Φ6.1×12.5	Brazil Samarco-P4P Iron ore project
SAG Mill	Φ5.6×6	Zelav gold mine in Tajikistan
Overflow Ball Mill	Φ5.5×6.5	Mongolia Erdenet mining company
SAG Mill	Φ5.5×3.6m	Russia JSC Priisk Solovievskiy
Rod Mill	Φ5.4×8	Indian company Issa ESSAR iron ore
Overflow Ball Mill	Φ5.03×8	Zambia KCM copper mine
SAG Mill	Φ4.9×10.29m	Canada Eldorado mining
Ball Mill	Φ4.6×6m	Russia JSC Priisk Solovievskiy
Cement Ball Mill	Φ4.6×14m	Italy Colacem Cement group
Raw Material Mill	Φ4.6×10+3.5m	Hong Kong Jinyun silicon (Shiyan) Co., Ltd
Overflow Ball Mill	Φ4.2×8.8m	South Africa Bateman
Ball Mill	Φ4.2×6.7	Saudi Arabia Jabal Sayid - Barrick gold
Overflow Ball Mill	Φ4.2×5.32	Selinsing Gold
Overflow Ball Mill	Φ4.2×11	Japanese Kurimoto
Cement Ball Mill	Φ3.8×6m	Denmark Smith Company
Grid Ball Mill	Φ3.8×5.8	Bakoudou/ Magnima
Overflow Ball Mill	Φ3.6×6	Eldorado gold mine, Turkey
Overflow Ball Mill	Φ3.25×4.27	Hierro iron ore in Peru

Service



Regular on-site visit

On-site Installation



Service



R&D



CITIC IC
中实重机

Manufacture&
Transformation

Mineral Product analysis-
Environmental protection recycling and
utilization

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