

德国莱歇立磨是一种高效节能的粉磨设备，广泛应用于水泥、化工、电力和钢铁工业等领域。莱歇立磨在多个关键领域占据领先地位，其产品在国际市场上享有盛誉。湖北秦鸿新材料有限公司专业生产莱歇立磨中的耐磨件-磨辊辊皮，磨辊总成，磨盘衬板以及相关的配件。

The Loesche vertical mill is a highly efficient and energy-saving grinding equipment, widely used in the fields of cement, chemical industry, power generation, and steel. The Loesche vertical mill holds a leading position in various key sectors, and its products are highly reputed in the international market. Hubei QinHong New Material Co., Ltd specializes in manufacturing wear-resistant parts for the Loesche vertical mill, including grinding roller segments, roller assemblies, mill table liners, and related accessories.



品牌系列  
Brands

莱歇 (LM 28.2-LM 56.4)  
Loesche (LM 28.2-LM 56.4)



产品参数

Product Parameters

尺寸范围 Size range: 辊套/辊皮 Roller Tyre/Roller Segment 50-300cm

衬板 Table Liner 50-720cm

重量范围 Weight range: 50kg-35ton

材质

Materials

	金属复合陶瓷 Metal matrix ceramic (MMC)	高铬铸铁 High chrome cast iron	镍硬铸铁 Nickel-hard cast iron	堆焊 Hardfacing
硬度 Hardness	60-65HRC	≥60HRC	58±2HRC	≥58HRC
标准 Applicable standards	ASTM A532; GB/T8263; EN12513			

应用领域

Applications

生料磨, 煤磨, 水泥磨, 矿渣磨

Raw material mill, coal mill, cement mill, slag mill and so on



特色

Features

1. 结构与材料: 采用高强度金属材料为基底, 表面覆盖优化的金属复合陶瓷层, 确保了极佳的耐磨和抗冲击性能。先进的金属-陶瓷复合技术使得两种材料牢固结合, 避免了陶瓷层剥落的问题。
2. 耐磨与耐腐蚀性: 陶瓷复合表层具有极高的硬度, 能够承受持续的摩擦和冲击, 保持形状和最佳性能。优异的化学稳定性, 抵抗酸、碱、盐等各种腐蚀性物质。
3. 热稳定性: 在高温环境下保持稳定, 不易变形或产生热膨胀, 能保持极高的硬度, 适用于各种温度波动大的工业场合。

1、Structure and Materials:

Using high-strength metal materials as the base, the surface is covered with an optimized metal-ceramic composite layer, ensuring excellent wear resistance and impact resistance. The advanced metal-ceramic composite technology allows the two materials to be firmly bonded, avoiding the problem of ceramic layer peeling.

2、Wear Resistance and Corrosion Resistance:

The ceramic composite surface layer has extremely high hardness, which can withstand continuous friction and impact, maintaining its shape and optimal performance. It also exhibits excellent chemical stability, resisting acids, alkalis, salts, and various other corrosive substances.

3、Thermal Stability:

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德国非凡立磨是一种高效、先进的粉磨设备，广泛应用于水泥、电力、冶金、化工、非金属矿产业等多个行业。该立磨的设计采用了先进的研磨技术，通过利用料床粉碎原理进行粉磨物料，具有高效节能、烘干能力强、产品粗细度调整方便、粒度均齐、化学成分容易控制、噪音低、扬尘少、金属磨损小、系统工艺流程简单、更换配件方便、占地面积小、投资省等诸多优点。Gebr. Pfeiffer公司，作为MPS立磨的制造商，拥有超过155年的技术驱动力，是立式辊磨机研制的先驱者。湖北秦鸿新材料有限公司专业生产非凡立磨中的耐磨件-磨辊辊皮，磨辊总成，磨盘衬板以及相关的配件。

The German Gebr. Pfeiffer vertical mill is an efficient and advanced grinding equipment widely used in multiple industries such as cement, power, metallurgy, chemicals, and non-metallic mining. The design of this vertical mill incorporates advanced grinding technology, utilizing the principle of bed crushing to pulverize materials. It boasts numerous advantages, including high efficiency and energy conservation, strong drying capacity, convenient adjustment of product fineness, uniform particle size, easy control of chemical composition, low noise, reduced dust emission, minimal metal wear, simplified system process flow, convenient replacement of parts, small footprint, and cost-effective investment. Gebr. Pfeiffer, as the manufacturer of MPS vertical mills, has over 155 years of technological driving force and is a pioneer in the development of vertical roller mills. Hubei QinHong New Material Co., Ltd. specializes in the production of wear-resistant parts for Pfeiffer vertical mills, including grinding roller liners, grinding roller assemblies, grinding table liners, and related accessories.

品牌系列  
Brands

德国非凡(MPS 3750B-MPS 5300B)  
GEBR.PFEIFFER(MPS 3750B-MPS 5300B)



产品参数

Product Parameters

尺寸范围 Size range: 辊套/辊皮Roller Tyre/Roller Segment 50-300cm

衬板 Table Liner 50-720cm

重量范围 Weight range: 50kg-35ton

材质

Materials

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Applications

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日本宇部立磨是由日本宇部 (UBE) 公司研制开发的立式辊磨设备, 自1958年交付第一台以来, 已有超过500台立磨在全球销售。日本宇部立磨是一种高效的工业设备, 在水泥行业中适宜于粉磨水泥生料、煤粉和水泥熟料; 在建材、冶金行业中, 适宜于粉磨高细矿渣粉和高细钢渣粉; 在火力发电厂, 适宜于煤粉的制备和脱硫剂石灰石粉的制备; 在冶金、化工和矿山等行业中, 适宜于粉磨各种矿石和其它工业固体物料。

日本宇部立磨凭借其高效、可靠、多功能的特性, 以及广泛的应用范围, 成为了工业磨粉行业的重要设备之一。

湖北秦鸿新材料有限公司专业生产宇部立磨机耐磨件及配件。

The UBE Vertical Mill, developed by Japan's UBE (UBE) Company, is a vertical roller mill equipment. Since the delivery of the first mill in 1958, more than 500 vertical mills have been sold globally. The UBE Vertical Mill is a highly efficient industrial equipment suitable for grinding cement raw meal, coal powder, and cement clinker in the cement industry; grinding high-fineness slag powder and high-fineness steel slag powder in the building materials and metallurgical industries; preparing coal powder and desulfurization agent limestone powder in thermal power plants; and grinding various ores and other industrial solid materials in metallurgy, chemical, and mining industries.

With its efficient, reliable, and multi-functional characteristics, as well as its wide range of applications, the UBE Vertical Mill has become one of the important equipment in the industrial grinding industry.

Hubei QinHong New Material Co. Ltd. specializes in the production of wear parts and accessories for UBE vertical mills.

品牌系列  
Brands

日本宇部(UM 38.4-UM56.4)  
UBE (UM 38.4-UM56.4)



产品参数

Product Parameters

尺寸范围 Size range: 辊套/辊皮Roller Tyre/Roller Segment 50-300cm

衬板 Table Liner 50-720cm

重量范围 Weight range: 50kg-35ton

材质

Materials

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应用领域

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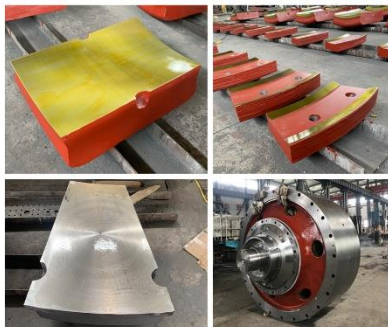
It remains stable in high-temperature environments, resisting deformation or thermal expansion. It maintains extremely high hardness, making it suitable for various industrial applications with significant temperature fluctuations.

史密斯立磨，作为丹麦史密斯公司的一项重要产品，其在水泥工业领域的应用具有悠久的历史 and 广泛的应用。其中 ATOX 和 OK 系列 在水泥行业磨煤机，原料磨，水泥磨，得到大量应用和用户的的一致好评。湖北秦鸿新材料有限公司专业生产史密斯立磨中的耐磨件——磨辊辊皮，磨辊总成，磨盘衬板以及相关的配件。

As an important product of Denmark's FLS Company, the FLS vertical mill has a long history and extensive application in the cement industry. Among them, the ATOX and OK series have been widely used in coal mills, raw material mills, and cement mills in the cement industry, receiving unanimous praise from users. Hubei QinHong New Material Co., Ltd. specializes in the production of wear-resistant parts for FLS vertical mills, including grinding roller segments, grinding roller assemblies, grinding table liners, and related accessories.



品牌系列  
Brands



史密斯 ATOX (ATOX17.5 - ATOX57.5)  
FLS ATOX Series  
(ATOX17.5-ATOX57.5)

史密斯 OK (OK32-4——56-4)  
FLS OK Series  
(OK32-4——56-4)



产品参数

Product Parameters

尺寸范围 Size range: 辊套/辊皮 Roller Tyre/Roller Segment 50-300cm

衬板 Table Liner 50-720cm

重量范围 Weight range: 50kg-35ton

材质

Materials

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应用领域

Applications

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特色

Features

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3. 热稳定性: 在高温环境下保持稳定，不易变形或产生热膨胀，能保持极高的硬度，适用于各种温度波动大的工业场合。

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伯利鸿斯立磨是一种由德国伯利鸿斯公司生产的立式辊磨机，主要用于粉磨水泥原料和矿渣等工业用途。伯利鸿斯立磨是由德国伯利鸿斯股份公司制造的，该公司隶属于蒂森克虏伯集团，拥有超过150年的历史。作为一家全球知名的工程设备制造商，伯利鸿斯以其高质量产品和服务而著称。湖北秦鸿新材料有限公司专业生产伯利鸿斯立磨中的耐磨件-磨辊辊皮，磨辊总成，磨盘衬板以及相关的配件。

The Polysius roller mill is a vertical roller mill designed and manufactured by the German company Polysius AG, which is part of the ThyssenKrupp Group. With over 150 years of history, Polysius is a globally renowned manufacturer of engineering equipment, known for its high-quality products and services. The roller mill produced by Polysius is mainly used for grinding cement raw materials and industrial materials such as slag. Hubei Qin Hong New Material Co., Ltd. specializes in the production of wear-resistant parts for the Polysius roller mill, including grinding roll shells, complete grinding rolls, grinding table liners, and related accessories.

品牌系列  
Brands



伯利鸿斯 (RM 25/12-RM 54/27)  
POLYSUIS Series (RM 25/12-RM 54/27)



产品参数

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辊压机由两个相向同步转动的挤压辊组成，一个为固定辊，一个为活动辊。通过液压系统或重力对辊子施加压力，对物料进行压实和粉磨。

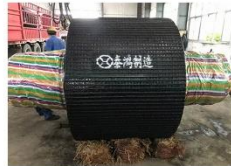
辊压机在多个行业有着广泛的应用，如冶金行业、水泥行业、矿山、石膏、煤等。

我公司结合多年的辊压机维护应用经验，开发了新的辊套耐磨解决方案，碳化钨镶嵌铸钉+堆焊方案，或者碳化钨镶嵌+42CrMo锻造辊套。成倍增加了辊套的使用寿命，保证运行的稳定。

The high pressure roller press consists of two oppositely rotating squeeze rolls, one fixed and the other movable. Pressure is applied to the rolls through a hydraulic system or gravity to compact and grind the material.

The HPRP has a wide range of applications in multiple industries, including metallurgy, cement production, mining, gypsum processing, and coal handling.

Drawing on our years of experience in maintaining and applying HPRP, our company has developed new wear-resistant solutions for roller tyres. These include a combination of titanium carbide rod insert casting nails and hardfacing, or tungsten carbide rod insert with 42CrMo forged roller tyres. These solutions significantly increase the service life of the roller tyres and ensure stable operation.



我公司有多年的生产制造磨机和辊压机等重型设备辊轴、锻件轴等配件的经验。优选材料经过的真空冶炼脱氧脱硫脱磷，有害杂质含量少，经过优化的锻压工艺，确保轴体无缺陷。材质可选包括42CrMo, 35CrMo, 34CrNiMo, 30CrNiMo8等。

同时我们也提供辊轴的安装，选材，修复等方面的技术咨询服务。

Our company has years of experience in manufacturing roller shafts, forged shafts, and other components for heavy equipment such as grinding mills and roller presses. We use high-quality materials that undergo vacuum smelting for deoxidization, desulfurization, and dephosphorization, resulting in minimal levels of harmful impurities. Through optimized forging processes, we ensure that the shafts are defect-free. Available materials include 42CrMo, 35CrMo, 34CrNiMo, and 30CrNiMo8, etc.

In addition to manufacturing, we also provide technical consulting services for roller shaft installation, material selection, and repair. Our experts can guide you through the entire process, ensuring that your equipment operates efficiently and safely.



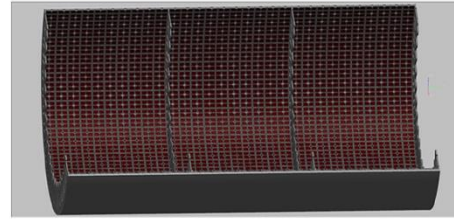


球磨机金属复合陶瓷衬板

**Metal Composite Ceramic Liner of Ball Mill**

球磨机用金属陶瓷复合衬板是我公司研发的一种球磨机用衬板。特点比原球磨机高锰钢轻40%，节能每生产1吨水泥节2度电左右，由于采用金属复合陶瓷，耐磨性显著提高，使用寿命可提高1-2年左右，是替代高锰钢衬板的新型功能衬板。是为水泥企业节能降耗，提高水泥质量的理想产品。

The metal ceramic composite liner for ball mill is a kind of liner developed by our company for ball mill. Compared with the original ball mill with high manganese steel liner, it is 40% lighter, and can save about 2 kwh of electricity per ton of cement production. Thanks to the use of metal ceramic composite, the wear resistance is significantly improved, and the service life can be extended by about 1-2 years. It is a new functional liner that replaces the high manganese steel liner. It is an ideal product for cement enterprises to save energy and reduce consumption, and improve the quality of cement.



结构方式 **Structural Mode**

陶瓷衬板采用金属镶嵌陶瓷的结构方式，其外形和安装方式与磨机原装的金属衬板完全一致，具有质量轻、高强度、高耐磨、无污染、安装拆卸方便的独特性能。陶瓷衬板以其独特的结构方式，特别适用于球磨机的研磨仓，与原装的金属衬板相比，安装重量减轻30-42%，使用寿命比高铬衬板提高1-2年左右。

The ceramic composite liner adopts a metal-inserted-ceramic structural design, which is completely consistent with the original metal liner of the mill in terms of appearance and installation method. It features light weight, high strength, high wear resistance, no pollution, and convenient installation and disassembly. With its unique structural design, the ceramic liner is particularly suitable for the grinding chamber of the ball mill. Compared with the original metal liner, the installation weight is reduced by 30-42%, and the service life is extended by about 1-2 years compared to high-chromium liner.

金属陶瓷复合衬板的性能指标 **Performance index of ceramic composite liner**

基体部分的高锰钢的性能指标:

牌号	抗拉强度	延伸率	初始硬度 (洛氏)	硬化后硬度 (洛氏)	C含量%	Mn含量%
Mn13高锰钢	≥900Mpa	≥40%	16-19	≥33	0.9-1.12	11-14.0

功能部分复合陶瓷的性能指标:

牌号	Al2O3+ZrO+SiO2	密度	硬度 (莫氏)	硬度 (洛氏)	吸水率	当量磨耗	抗弯强度
复合陶瓷	≥92%	>3.65g/cm <sup>3</sup>	9	80-83	0%	< 0.08%	220Mpa

Performance index of high manganese steel in the base part:

Brand name	Tensile strength	Elongation	Initial hardness(Roclowell)	Hardness after hardening(Roclowell)	C contained%	Mn contained%
Mn13 high manganese steel	≥900Mpa	≥40%	16-19	≥33	0.9-1.12	11-14.0

Performance index of functional composite ceramics:

Brand name	Al2O3+ZrO+SiO2	Densities	Hardness (Mohs)	Hardness (Roclowell)	Water absorption rate	equivalent wear	bending strength
Composite Ceramics	≥92%	>3.65g/cm <sup>3</sup>	9	80-83	0%	< 0.08%	220Mpa

球磨机高铬衬板 **Ball mill high chrome liner**





铬合金铸造耐磨球

Chromium alloy casting wear-resistant balls

铬合金铸造耐磨球是以铬为主要合金元素的白口铸铁铸造磨球。而高铬铸球全称是高铬白口铸铁耐磨球，又名高铬钢球、高铬合金铸球，简称高铬球，是指含铬量大于 10%，共晶碳化物的晶格类型主要为 (Fe, Cr) 7C3 的铸球。是被使用最多的一种研磨体。常用于水泥行业、矿山行业、冶金行业、发电行业以及建筑行业。运用中频电炉，对合理匹配后的优质废钢、铬合金材料进行熔炼；以及对铁水进行微合金化处理和调质；再加以独特的金属模、砂模浇铸成型工艺；而后经高温淬火+回火处理后获得马氏体基体，以达到较高的硬度和耐磨性。Chromium alloy casting wear-resistant balls are white cast iron casting grinding balls with chromium as the main alloying element. The full name of high-chromium cast ball is high-chromium white cast iron wear-resistant ball, also known as high-chromium steel ball, high-chromium alloy cast ball, referred to as high-chromium ball, which refers to the lattice of eutectic carbide containing more than 10% chromium. The type is mainly cast balls of (Fe, Cr) 7C3. It is the most used grinding body. Commonly used in cement industry, mining industry, metallurgical industry, power generation industry and construction industry. The medium frequency electric furnace is used to smelt the reasonably matched high-quality scrap steel and chromium alloy materials; and the molten iron is micro-alloyed and tempered; then a unique metal mold and sand mold casting process is applied; and then high temperature quenching + tempering A martensitic matrix is obtained after treatment to achieve higher hardness and wear resistance.





## 半自磨机

## Semi-autogenous grinding mill (SAG Mill)

半自磨机 (SAG Mill) 是一种大型旋转设备, 广泛应用于矿山和冶金工业, 主要用于将大块的矿石破碎成较小的颗粒, 并通过摩擦和冲击将其进一步磨细。这种设备通常由金属筒体和内衬板组成, 利用电动机驱动传动部带动筒体转动。在应用领域方面, 半自磨机不仅适用于金属矿选矿, 如铁矿、铜矿、铅锌矿等, 也适用于非金属矿选矿, 如钾矿、磷矿、萤石等。

我公司专业生产半自磨机衬板及配件, 特殊优化的铬钼合金衬板, 拥有高硬度和高冲击韧性。

Semi-autogenous grinding mill (SAG Mill) is a kind of large-scale rotating equipment, which is widely used in mining and metallurgical industries, mainly used for crushing large ores into smaller particles, and further grinding them through friction and impact. This type of equipment usually consists of a metal cylinder and inner liner, and utilizes an electric motor to drive the transmission section to rotate the cylinder section.

In the field of application, SAG Mill is not only suitable for metal ore dressing, such as iron ore, copper ore, lead-zinc ore and so on, but also suitable for non-metallic ore dressing, such as potash, phosphorus ore, fluorite and so on.

Our company specializes in the production of SAG Mill liners and accessories, special optimized chrome molybdenum alloy liners with high hardness and high impact toughness.

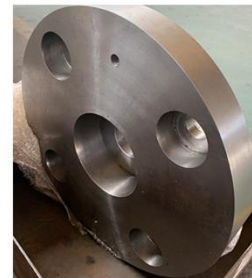
## 产品参数

## Product parameters

材质 **Material:** 铬钼合金Cr-Mo Alloy steel

硬度 **Hardness:** 45-50HRC

冲击功 **Impact:** 230-270J/cm<sup>2</sup>



塔式立磨是一种高效、节能的粉磨设备, 广泛应用于水泥、矿山、电力、化工等多个行业。该设备采用了先进的研磨技术, 能够有效地对物料进行粉磨, 磨矿效率高, 介质消耗低, 安装维护容易。立磨衬板是一种用于立式磨机中不可或缺的重要耐磨部件。

我公司专业生产塔式立磨螺旋衬板, 螺旋轴总成等, 有丰富的生产经验, 同时我们也提供相关的高强度螺栓, 橡胶衬板等配套零件。

衬板材质: 高铬铸铁材料, 特殊合金材料, 金属复合陶瓷等。

经过多年优化的迭代材料的选择和更新, 有助于确保衬板在恶劣的工作环境下具有足够的耐用性和可靠性。

Tower mills(VTM), as highly efficient and energy-saving grinding equipment, are widely used in various industries such as cement, mining, power, and chemicals. Employing advanced grinding technology, these machines effectively pulverize materials, offering high grinding efficiency, low media consumption, and ease of installation and maintenance. Among the critical wear-resistant components in VTM, the lining plate is indispensable.

Our company specializes in the production of spiral liners and spiral shaft assemblies for VTM. With rich production experience, we also provide related high-strength bolts, rubber lining plates, and other supporting parts.

The liners are made of high-chromium cast iron, special alloy materials, metal-ceramic composites, and other materials. Through years of optimization and material selection updates, we ensure that the lining plates possess sufficient durability and reliability in harsh working environments.

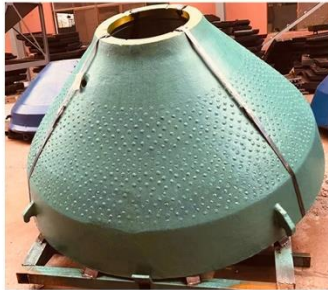
Committed to quality and reliability, we strive to meet the needs of our customers and contribute to the efficient operation of their VTM.



鄂式破碎机，反击式破碎机，圆锥破碎机等破碎在矿山破碎设备市场中占据了重要地位。

我公司生产常规金属（高锰钢，高铬铸铁，马氏体钢）以及复合金属陶瓷耐磨件一站式发货服务，同时提供反击板 边护板，总成等配件  
Jaw crushers, impact crushers, cone crushers, and other crushing equipment occupy an important position in the mine crushing equipment market.

Our company produces wear-resistant parts made of conventional metals (such as high-manganese steel, high-chromium cast iron, and martensitic steel) as well as composite metal-ceramic wear-resistant parts, offering a one-stop shipping service. At the same time, we also provide accessories such as impact plates, side guards, and assemblies.



部分可以生产的品牌系列

Some of the brand series that can be produced

哈兹马克 Hazemag

美卓 Metso

克磊曼 Kleemann

山特维克 Striker

西蒙斯 Symons

Telsmith

派克森 Pegson





### 回转窑托轮

#### Rotary Kiln Rollers

回转窑托轮是回转窑的主要部件之一，托轮装置承载着整个回转部分的重量及对筒体起着定向作用，并使回转窑筒体、滚圈能在托轮上平稳转动，因此对于托轮的耐力质量上要求比较高。

Rotary kiln supporting rollers are one of the main components of the rotary kiln. The roller assembly bears the weight of the entire rotating section and serves as a directional guide for the cylinder, enabling the cylinder and rolling ring to rotate smoothly on the rollers. Therefore, high endurance and quality standards are required for the supporting rollers.



#### 1、采用优质钢材，承载负荷大

我公司所生产回转窑托轮均采用优质钢材（ZG42CrMo）铸造/锻造，其机械性能不低于JB/T6402规定，抗拉强度高，抗冲击韧性好，很大程度保证了托轮的质量，具有承载负荷大，可连续运转等优点。

#### 2、工艺简单，维修成本低

回转窑托轮采用滚动轴承轮组，运转平稳，滚动轴承的制造精度高，比用滑动轴承更平稳，维修更少。

#### 3、专业的热处理工艺，让产品硬度有保证

回转窑托轮生产中采用正火+回火的工艺进行处理，让托轮外观的表面硬度高于HBW200，耐高温性能好、摩擦阻力小，保证了回转窑托轮装置的质量。

#### 1. High-quality Steel for Enhanced Load Bearing Capacity

Our rotary kiln supporting rollers are manufactured using high-quality steel (ZG42CrMo) through casting/forging processes. Their mechanical properties meet or exceed the standards specified in JB/T6402, exhibiting high tensile strength and impact toughness, thus greatly ensuring the quality of the rollers. These rollers are capable of bearing heavy loads and can operate continuously without issues.

#### 2. Simple Process and Low Maintenance Cost

The rotary kiln supporting rollers employ rolling bearing roller assemblies, ensuring smooth operation. The rolling bearings are manufactured with high precision, providing smoother operation and reduced maintenance compared to sliding bearings.

#### 3. Professional Heat Treatment Process Ensures Product Hardness

During the production of rotary kiln supporting rollers, we adopt a normalizing and tempering process to ensure that the surface hardness of the rollers exceeds HBW200. This treatment also confers excellent high-temperature resistance and low friction resistance, guaranteeing the quality of the rotary kiln roller assembly.

### 回转窑耐火砖

#### Rotary Kiln Refractory Bricks

回转窑耐火衬里是安装在窑筒内的一层耐火材料，起着多方面的保护作用，是回转窑的重要组成部分。要结合水泥回转窑的结构来选择耐火砖，水泥回转窑一般可分为预热区、下过渡区、上过渡区、烧结区、冷却区。各区域的长度、温度、功能各不相同，因此耐火衬砖的选择应满足各区域的要求。

我公司针对不同的回转窑工况开发出全系列优质耐火衬砖，具有以下优势：

1. 抗高温熟料和碱盐侵蚀能力强。
2. 良好的抗热应力和机械应力的结构韧性。
3. 砖的成分符合环保要求。

The refractory lining of a rotary kiln is a layer of refractory material installed inside the kiln cylinder, serving multiple protective functions and being a crucial component of the kiln. The selection of refractory bricks must take into account the structure of the cement rotary kiln, which typically comprises a preheating zone, lower transition zone, upper transition zone, sintering zone, and cooling zone. Each zone has distinct lengths, temperatures, and functions, thus requiring refractory bricks that meet the specific requirements of each zone. Our company has developed a full range of high-quality refractory bricks specifically tailored to different rotary kiln operating conditions. These bricks offer the following advantages:

1. Strong resistance to high-temperature clinker and alkali salt erosion.
2. Excellent structural toughness against thermal and mechanical stresses.
3. Brick composition that meets environmental protection standards.





预热器纳米耐磨陶瓷内筒、各种分离器内筒

Pre-heating Machine Nanometer Wear Resistant Ceramic Inner Cylinder

预热器内部环境复杂、苛刻，受高粉尘、强气流冲刷，高温气氛含酸碱等腐蚀，预热器内筒耐热钢Ni20Cr25挂件不耐腐蚀，使用寿命一年左右，同时耐热钢Ni20Cr25价格昂贵，加上频繁停产更换，大大增加了水泥生产成本投入和工人劳动强度。我公司针对水泥窑预热器的内部环境情况，立项研制纳米陶瓷内筒，花费三年时间，经过无数次实验及水泥生产线现场试验，集专家之智慧，终于研制成功纳米陶瓷内筒。该产品完全解决预热器耐热钢内筒不耐腐蚀、冲刷、使用寿命短仅一年等问题，使用寿命提高到预热器耐热钢内筒的2-3倍左右，它是一种替代N20Cr25耐热钢内筒的理想功能材料，也是预热器内筒一种质的飞跃和技术革命。

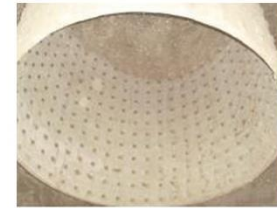
The internal environment of the pre-heating machine is complicated and harsh, which are always eroded by high dust and strong air flow and corroded by acid and alkali contained high temperature. The wear resistant steel Ni20Cr25 hanging piece of the pre-heating machine inner cylinder can't resist corrosion and the life time is only about one year. What's more, the wear resistant steel Ni20Cr25 is too expensive. Taking the frequent change into consideration, it will greatly increase the cement production cost and labor strength. In order to solve this problem, our company set up the project to research the Nanometer Wear Resistant Ceramic Inner Cylinder, spending 3 years and finally successfully developed the pre-heating machine wear resistant ceramic inner cylinder after nearly 100 experiments. The product can fully solve the problem of corrosion, erosion and life time short of the pre-heating machine wear resistant steel inner cylinder. The life time of the pre-heating machine wear resistant ceramic inner cylinder is 2 to 3 times as the original wear resistant steel hanging piece, which is the most ideal material to replace the Ni20Cr25 wear resistant steel inner cylinder and is a qualitative leap and technology innovation of pre-heating machine inner cylinder material.



预热器纳米耐磨陶瓷内筒的技术特性:

The Technical Properties of the Pre-heating Machine Wear Resistant Ceramic Inner Cylinder:

- ◎ **耐高温:** 由于纳米陶瓷内筒是以SiC和Al<sub>2</sub>O<sub>3</sub>为主体原料，经过2000C左右重新结晶制成，耐高可达1500°C左右。
- ◎ **高耐磨性、抗冲刷性好:** 由于SiC和Al<sub>2</sub>O<sub>3</sub>，陶瓷莫氏硬度达到9级以上，它具有高耐磨特性，抗冲刷性能。
- ◎ **耐腐蚀性:** 由于SiC和Al<sub>2</sub>O<sub>3</sub>，高温化学性能稳定，高温下不与任何复杂气体和酸碱成份反应，具有优越的抗腐蚀性能。
- ◎ **抗结皮、不粘附性:** SiC和Al<sub>2</sub>O<sub>3</sub>高温化学性能稳定，不与水泥原料及各种酸碱成份反应，不粘附、不结皮。
- ◎ **热震性能好:** 由于纳米SiC和Al<sub>2</sub>O<sub>3</sub>，陶瓷热导性好，热膨胀系数小，具有抗热性好，耐冷热急变可达50次以上。
- ◎ **重量轻、施工方便:** 设计采用科学的模块挂接方法连接，重量只是耐热钢Ni20Cr25内筒的1/3，安装方便，降低劳动强度，减少停产维修时间，提高生产效率。
- ◎ **High temperature resistance:** As the Nanometer ceramic inner cylinder is used SiC and Al<sub>2</sub>O<sub>3</sub>, as the main raw material and made by re-crystallization under about 2000 C high temperature, it can work under 1500 C environment.
- ◎ **High wear resistance and high erosion resistance:** As the Morse hardness of SiC and Al<sub>2</sub>O<sub>3</sub> ceramics is more than nine, it has high wear resistance and high erosion resistance.
- ◎ **High Corrosion Resistance:** As the chemical properties of SiC and Al<sub>2</sub>O<sub>3</sub>, under high temperature are stable, it will not react with complex gas and acid and alkali elements under high temperature and has brilliant corrosion resistance.
- ◎ **Crust resistance and non-adhesion:** As the chemical properties of SiC and Al<sub>2</sub>O<sub>3</sub>, under high temperature are stable, it will not react with cement raw material and the acid and alkali elements, so it is crust resistant and non-adhesive.
- ◎ **Good heat vibration performance:** As the thermal conductivity of the nanometer SiC and Al<sub>2</sub>O<sub>3</sub>, is great and the heat expansion coefficient is small, so it has good heat resistance and can resist the sudden change of heat and cold for more than 50 times.
- ◎ **The weight is low so it is easy for construction:** Using the scientific module hanging connection method. The weight is only 1/3 of the heat Resistant steel Ni20Cr25 inner cylinder. It is easy for construction and it can reduce the labor strength, reduce the repair time by stopping roduction and improve production efficiency.





## Pre-heating Machine

系列预热器纳米耐磨陶瓷内筒理化指标

### The Physicochemical Index of the Series Pre-heating Machine Nanometer Wear Resistant Ceramic Inner Cylinder

性能 Properties	指标 Normative
体积密度 kg/m <sup>3</sup> Bulk Density kg/m <sup>3</sup>	3000
抗压强度 Mpa Compressive Strength Mpa	580
常温弯曲强度 Mpa 20°C High Temperature Flexural Strength MPa 20°C	≥260 MPa
高温弯曲强度 MPa 1100°C High Temperature Flexural Strength Mpa 1100°C	≥280 MPa
莫氏硬度 Morse Hardness	≥9
导热系数 w/m·k Thermal Conductivity Coefficient w/m·k	15
热膨胀系数x10 <sup>-6</sup> °C Heat Expansion Coefficient x10 <sup>-6</sup> °C	4.8
工作温度 °C Working Temperature °C	≤1500
耐磨性: (冲击磨蚀) Wear Resistance(Impact Erosion) 在使用温度时所测得值 Measured at the using temp 时间 15分钟 Time: 15m 介质金刚砂 Medium: Emery 速度 150m/s Speed: 150m/s 喷嘴直径 5mm Nozzle Diameter: 5 mm 距离 230mm Distance: 230mm 角度 90° Angle: 90°	0.028
热震稳定率, 次数 1100°C Heat Vibration Stable Rte, Times 1100°C	急冷急热试验≥50次 Sudden heat and sudden cold test≥50
耐酸耐碱 (CaO SO等复杂气体) Acid and Alkali Resistance(Complicated gas such as CaO and SO)	优 Excellent

在同一条件下不同温度耐热钢和耐磨陶瓷的冲蚀对比

### The erosion comparison of the heat resistant steel and wear resistant ceramic under the same condition with the different temperatures.

腐蚀程度 Erosion Degree	温度 Temp	20°C	500°C	800°C	1200°C
Ni20Cr25钢 Ni20Cr25 Steel		0.1	0.5	0.8	腐蚀脱层 <sup>4</sup> Four flaking offs by Erosion
耐磨陶瓷 Wear resistant ceramic		0.028	0.028	0.16	0.16

从以上试验可以看出高温SiC和Al<sub>2</sub>O<sub>3</sub>, 耐磨陶瓷的优越性, 耐冲刷性、耐腐蚀性在1200°C温度下是耐热钢的10倍以上。

It can be found the advantage of the high temperature SiC and Al<sub>2</sub>O<sub>3</sub> wear resistant ceramic from the above test, of which the erosion resistance and corrosion resistance are 9 times more than the heat resistant steel under 1200°C high temperature.

### 案例

我公司预热器5级内筒过去采用耐热钢内筒, 在高温使用环境下, 不耐磨耐腐蚀, 使用寿命, 一年就要更换, 增加了公司的维修费用, 且由于使用过程中频繁掉落, 造成系统产量不稳定, 分解率低, 煤耗高, 严重影响我公司生产效益。

2008年8月我公司采用湖北秦鸿新材料有限公司研制的纳米陶瓷内筒挂片, 在45级筒上试用。纳米陶瓷内筒采用模块化设计, 重量轻, 安装方便, 降低了职工劳动强度, 节省了安装时间。使用陶瓷内筒后, 运行效果非常明显, 预热器系统运行稳定, 没有塌料现象, 分解率明显提高, 完全满足生产工艺要求。

2010年8月底, 陶瓷内筒连续运行730多天, 经检查陶瓷内筒完好无损, 预计使用寿命可达3年以上。陶瓷内筒的使用, 提高生产效率, 减少了维修更换次数, 每年可为我公司节省和创造上百万的经济效益。

陶瓷内筒是替代耐热钢内筒的理想产品, 值得在行业内推广应用。

武汉亚鑫水泥有限公司

### Case Study

Our company used to employ heat-resistant steel cylinders for the five-stage preheater. However, under high-temperature conditions, they were not wear-resistant or corrosion-resistant, resulting in a short lifespan of only one year and frequent replacements, which increased the company's maintenance costs. Furthermore, frequent dropouts during use led to unstable system output, low decomposition rates, and high coal consumption, seriously affecting our company's production efficiency.

In August 2008, our company adopted the nano-ceramic cylinder hangers developed by Hubei QinHong New Material Co., Ltd. for trial use on the 45-stage cylinder. The nano-ceramic cylinder features a modular design, which is lightweight and easy to install, reducing the labor intensity of employees and saving installation time. After using the ceramic cylinder, the operational effect was very obvious. The preheater system ran stably without any collapse of material, and the decomposition rate was significantly improved, fully meeting the production process requirements.

At the end of August 2010, the ceramic cylinder had been operating continuously for over 730 days. After inspection, the ceramic cylinder was found to be intact and undamaged, with an expected lifespan of over three years. The use of the ceramic cylinder has improved production efficiency, reduced the number of maintenance and replacements, and saved and created millions of economic benefits for our company annually.

The ceramic cylinder is an ideal alternative to heat-resistant steel cylinders and is worth promoting and applying in the industry.

Wuhan Yaxin Cement Company Limited

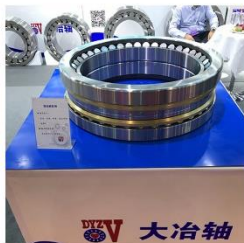


TIMKEN轴承是一种高质量的轴承产品，具有广泛的应用范围和多种特殊性能。TIMKEN轴承以其广泛的应用范围、多种高性能轴承的选择、优秀的设计以及节能环保的特性，为各行业的机械设备提供了可靠且高效的支撑。

我公司为TIMKEN的代理，提供进口SKF,FAG,NTN及知名国内品牌型号的重型轴承。如立式磨机轴承，辊压机轴承，球磨机轴承及各类型重型设备配套轴承。

TIMKEN bearings are high-quality bearing products with a wide range of applications and various special performance characteristics. With their extensive application scope, diverse selection of high-performance bearings, excellent design, and energy-saving and environmentally friendly features, TIMKEN bearings provide reliable and efficient support for mechanical equipment in various industries.

Our company is an agent for TIMKEN and provides imported heavy-duty bearings from SKF, FAG, NTN, as well as renowned domestic brands. These bearings are suitable for various applications such as vertical mill bearings, roller press bearings, ball mill bearings, and bearings for other types of heavy equipment.



骨架油封的作用一般就是将传动部件中需要润滑的部件与出力部件隔离，不至于让润滑油渗漏，通常用于旋转轴，是一种旋转轴唇密封。

我公司生产的骨架油封采用优质氟橡胶材料和金属材料制作，具有以下优点：

- 1.优良的耐高温耐腐蚀性；
- 2.高精度的加工和工艺控制，保证密封尺寸和封油量；
- 3.优化的设计可以保证长期使用中的磨损均匀，稳定的密封性能；
- 4.适应不同的恶劣工况；

The main function of the skeleton oil seal is to isolate the lubricating parts from the output parts in the transmission components, preventing the leakage of lubricating oil. It is commonly used for rotating shafts and serves as a rotating shaft lip seal.

The shaft oil seals produced by our company are made of high-quality fluororubber materials and metal materials, and have the following advantages:

1. Excellent temperature resistance and corrosion resistance;
2. High-precision processing and process control to ensure sealing dimensions and sealing capacity;
3. Optimized design ensures uniform wear and stable sealing performance during long-term use;
4. Ability to adapt to different harsh working conditions.





篦冷机是水泥厂熟料烧成系统中的重要主机设备，主要用于对水泥熟料进行冷却和输送。同时，它还能对回转窑及分解炉等提供热空气，是烧成系统热回收的主要设备。

篦冷机的主要部件是篦床，其中推动篦板由一行一行间隔排列的固定篦板和活动篦板组成。

应用领域包括水泥生产，还广泛涉及钢铁、石化、电力、食品、制药等行业。

我公司生产的篦冷机篦板，经过多年实践检验，采用优化选择的耐高温，耐腐蚀，耐磨的合金钢组成，具有高温条件下不易变形，保持较高的硬度及机械性能的特性。

Grate cooler is an important host equipment in the clinker firing system of cement plant, mainly used for cooling and conveying cement clinker. At the same time, it can also provide hot air for rotary kiln and decomposition furnace, etc. It is the main equipment for heat recovery of firing system.

The main component of the grate cooler is the grate bed, in which the driving grate plate consists of a row of fixed grate plates and movable grate plates arranged at intervals.

Application areas include cement production, but also widely involved in steel, petrochemical, electric power, food, pharmaceutical and other industries.

The grate plate of grate cooler produced by our company, after years of practical test, adopts optimized selection of high temperature, corrosion resistance, wear-resistant alloy steel composition, with high temperature conditions is not easy to deformation, maintain high hardness and mechanical properties of the characteristics.



湖北秦鸿新材料有限公司可生产各种破碎和研磨设备的附件备件：夹具和螺栓、高强度杆螺栓（42 CrMo 材料）、各种类型的喷嘴环等。

Hubei QinHong New Materials can produce various kinds of accessory spare parts for crushing and grinding equipments: clamps and bolts, high-strength rod bolts (42 CrMo material), various types of nozzle ring and so on.

