ZENITH MINERALS

/ ZENITH INTHE WORLD /

MTW
系列系列欧版磨粉机
Series Europen Type Mill

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ZENITH MINERALS

MTW系列欧版磨粉机
MTW Series Europen Type Mill

产品简介
Brief Introduction

MTW系列梯形磨粉机是我公司技术研发团队总结数十年来工业磨粉机设计经验在MTM系列工业磨粉机基础上听取国内外数千名用户使用情况及意见自主研发出的最新一代拥有多项专利技术产权(如锥齿轮整体传动、内部稀油润滑系统、弧形风道等)的粉磨设备。该产品的面市，标志着我公司在工业磨粉机设计生产方面已达到国际一流水平。

MTW Series Trapezium Mill is the latest grinding equipment researched and developed by our company's experts based on years' researching experiences MTM series industrial grinding mill and according to thousands of grinding mill users' opinions. This mill adopts a number of patent technology property rights (such as the whole bevel gear transmission design, the internal thin oil lubrication system, and curved duct,etc.). The innovation of this mill has symbolized that our company has achieved the world — class level in industrial mill manufacturing industry.

MTW110
MTW138
MTW175
MTW215

整机结构及工作过程介绍

Introduction to complete machine structure and working process

结构特点：该系列磨粉机整机为立式结构，占地面积小，成套性强，而且主机传动装置采用密闭齿轮箱，传动平稳。磨机的重要部件均采用优质钢材制造，因此整机耐用可靠。磨粉机电器系统采用集中控制，选型先进合理，自动化程度高，振动给料机体积小、重量轻，易于调节并且省电。

Structural feature:This series pulveriser is of vertical structure， small in floor space and strong in complete set.Furthermore sealing gear case is adopted for main unit gearing and smooth in transmission. The key components are manufactured by quality steel， so complete machine is durable and reliable. The centralized control is adopted for electric system of pulveriser. It is advanced and reasonable in lectotype and high in degree of automation. The vibrating feeder is small in volume, light in weight, easy to be regulated and saves electricity.

1、颚破
Jaw Crusher
2、斗式提升机
Bucket Elevator
3、料仓
Stock Bin
4、电磁振动给料机
Electro-vibrating Feeder
5、选粉机
Classifier
6、管道
Pipeline
7、旋风集粉器
Whirlwind Powder Collector
8、风机
Fan
9、布袋除尘器
Bag-type Dust Collector

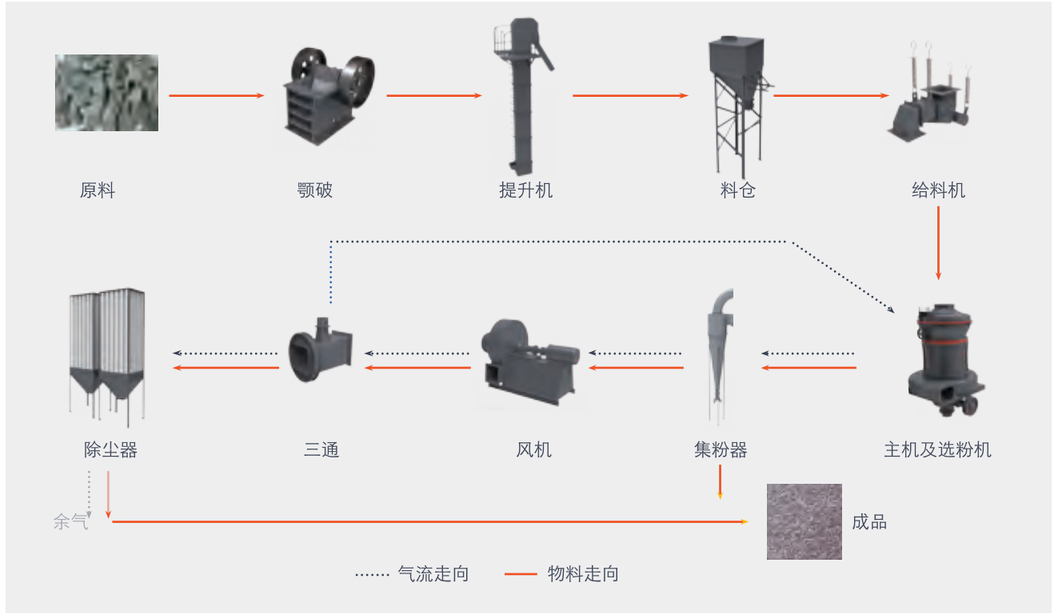
整机工作过程 / *Working process*

首先大块物料先送至领式破碎机，经由颚式破碎机将大物料破碎到所需粒度。

The bulk material is firstly sent to the jaw crusher and crushed into required granularity.

经过颚式破碎机进行破碎后的物料经由提升机送至储料斗，再经由振动给料机将料均匀定量的连续的送至主机内进行研磨。

Post-crushing material through jaw crusher is sent to the storage hopper via bucket elevator and then sent uniformly quantitatively, consecutively by vibrating feeder to main unit for pulverizing.



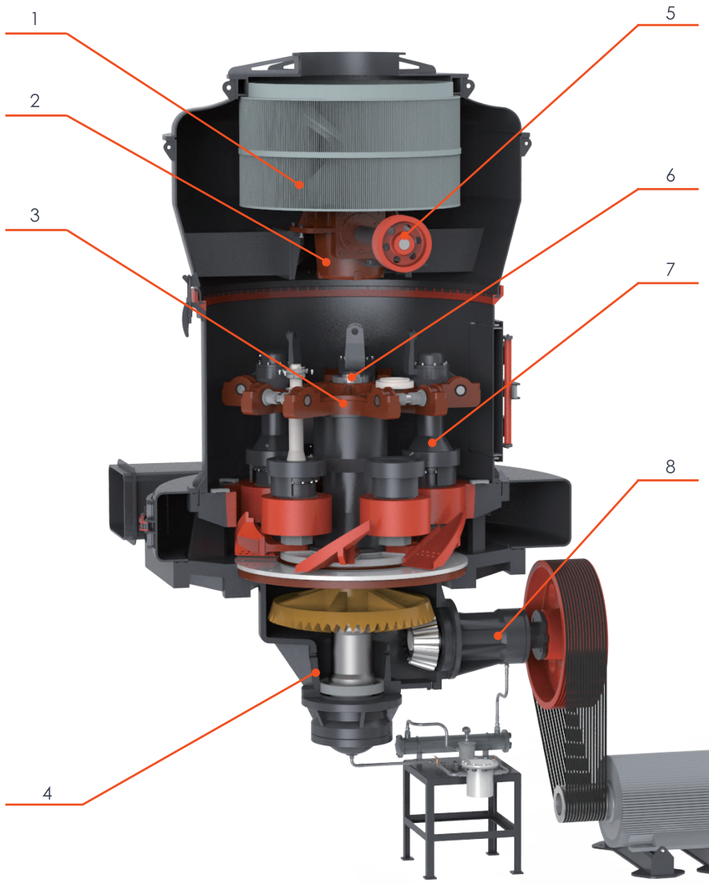
经由给料机送入主机的物料经主机磨粉，产生的粉子随风机气流上升，经由选粉机进行分级，符合细度要求的粉子随气流经管道进入旋风集粉器中。

Materials fed into main unit by way of feeding machine are pulverized by main unit. The generant powders, which rise with airflow of fan, are graded by powder concentrator. Powders conforming to fineness requirement enter into whirlwind powder collector with airflow via duct.

粉粒进入旋风集粉器进行分离收集，经出粉阀排出即为成品粒子。此时气流由旋风集粉器上端回风管吸入离心引风机循环流动。

The powder particles are fed into whirlwind powder collector for separation and collection. What are discharged out through powder valve are finished product particles. At this time airflow is sucked by air return duct at upper end of whirlwind powder collector into centrifugal induced draft fan for circulation flow.

主机结构 / *Main struture*



1、选粉机叶片
Classifier bllade

2、选粉机油池
Classifier oil sump

3、磨辊吊架
Gringing roller hanger

4、齿轮箱
Gear case

5、选粉机皮带轮
Classifier belt pulley

6、主轴
Main shaft

7、磨辊部分
Grinding roller part

8、传动轴部分
Transnission shaft part

主机工作过程 / *Main unit's working process*

主机工作过程中磨辊装置不仅围绕中心轴回转，还围绕着磨环公转，磨辊本身因摩擦作用而自转，这样工作的好处是不仅能对物料进行充分的研磨，而且使磨辊的周围均匀磨损，提高了磨辊的使用寿命。

In main unit's working process, grinding roller device not only performs gyration by surrounding the central axis, but also performs revolution by surrounding the grinding ring. The grinding roller itself self- rotates by rubbing effect, the merit of which is that it can not only fully pulverize material, but also ensure uniform wear around grinding roller increasing service life of grinding roller.

磨辊吊架下，装有铲刀，与磨辊同时转动，在这过程中铲刀把物料抛起并喂入磨辊磨环之间，形成垫料层，该料层受磨辊产生的向外的离心力（即磨辊与磨环挤压物料的力）将物料碾碎，由此达到制粉目的。

Perching knife, which is installed under grinding roller hanger, rotates with grinding roller at the same time. In this process, the perching knife throws up materials and feed them into grinding ring of grinding roller to form a paddinglayer. This padding layer is pulverized through outward centrifugal force generated by grinding roller (namely extru-sion force between grinding roller and grinding ring) for the purpose of pulverization.

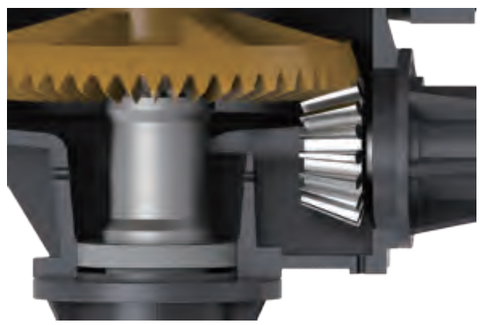
技术优势 / *Technology advantages*

锥齿轮整体传动

The whole bevel gear transmission

在传动方式上，传统磨机需要另配减速机，通过联轴器传动主轴。安装难度大传动效率相对低且更容易产生噪音。MTW系列梯形磨粉机采用锥齿轮整体传动技术，使传动系统结构更加紧凑，安装调节更方便快捷使用寿命大大延长。

On driving mode, traditional mill needs additional reducer to drive the main shaft by coupling, which brings difficulty in installation, lower efficiency and also brings noisy pollution. Whole bevel gear transmission is adopted in the MTW Series Trapezium Mill,which makes the transmission system features of compact structure, easy to installate and adjust, long service life.

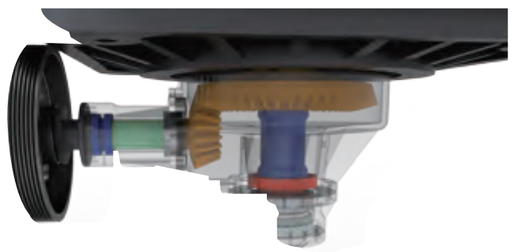


内部稀油润滑系统

Internal thin oil lubrication system

传统磨机采用的润滑方式为脂润滑，但脂润滑阻力大，温升高，轴承寿命短、成本高。MTW系列梯形磨粉机采用内部油泵供油润滑无需另外增加油泵及润滑站，即可实现主轴轴承和圆锥齿轮轴轴承的润滑。

Grease acts as lubrication media in traditional mill use, but its disadvantages are large lubrication resistance, high in temperature, short bearing life and higher cost.Built-in type lubrication pump is integrated in MTW Series Trapezium Mill,thus lubrication between the main shaft bearing and bevel gear shaft bearing can be realized very easily without any external or additional lubrication pump&station.



弧形风道

Curved air duct

传统磨机中的磨粉机风道，均为直板型风道。这种结构存在着气流冲击风道板产生阻力，气流分子间相互碰撞的能力损失大，易产生涡流导致风道堵塞等缺点。MTW 系列梯形磨粉机所采用弧型风道，切向气流进口顺滑，气流在风道流动过程中阻力小，内部出口方向有利于物料的分散，不容易堵料。

Straight plate type air ducts are widely used in most traditional mills, However this structure has some shortcomings such as easy to generate airflow resistance, higher energy loss, easy to generate air eddy that may result .material block etc.MTW Series Trapezium Mill uses curved surface duct, Tangential air flow inlet is smooth, the resistance is small, internal outlet direction is good for the distribution of material, it is not easy to cause material jam.

精美的外观

Exquisite appearance

MTW系列梯形磨粉机外部采用优美的弧形结构设计，使整台机器显得更加秀外慧中。.

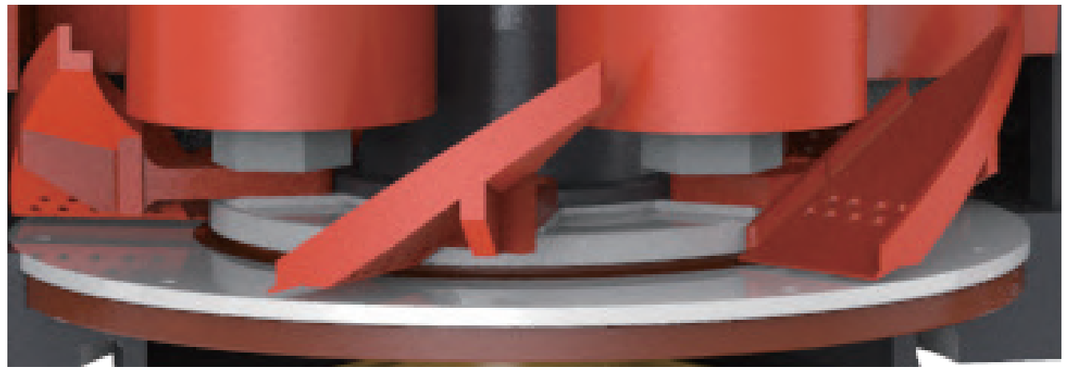
MTW Series Trapezium Mill adopts nice curved external structure design,making the whole machine more beautiful.

曲面可换刀刃铲刀

Curved surface shovel with exchangeable blade

传统磨机中所使用的铲刀为整体式设计，刃部一旦磨损即需整体更换，且铲刀为平面设计，铲起的物料会堆积在研磨部有限区域，导致磨辊和磨环中部磨损不均衡，最终导致生产成本增加。MTW系列梯形磨粉机采用分体式曲面铲刀，更换时只需更换刀刃部分，同时刃部采用高耐磨合金材料，使用寿命大大延长，提高了材料利用率和机器的工作效率。另外曲面型铲刀可将物料导向立面，使磨辊磨环上、中、下部都能粉磨，使其磨损均匀，同时也增大了有效工作面积，提高了机器的产量。

The shovel in traditional mill is integrally designed, once the blade is worn out, it needs to be replaced completely. The shovel surface is flat and material scooped by it can be only spread to limited area of the grinding section, which leads to non-uniform wearing to the grinding roller&ring and finally result higher production cost. MTW Series Trapezium Mill adopts curved surface shovel with split design, the blade is made of high wear-resistant alloy material and designed to be changeable separately. Thus the shovel has long service life and can improves material utilization rate.Moreover, curved surface shovel can scoop material to the total facade of the grinding section, so all the grinding surface of the roller and ring can play a role.The grinding area become lager and therefore output increases.

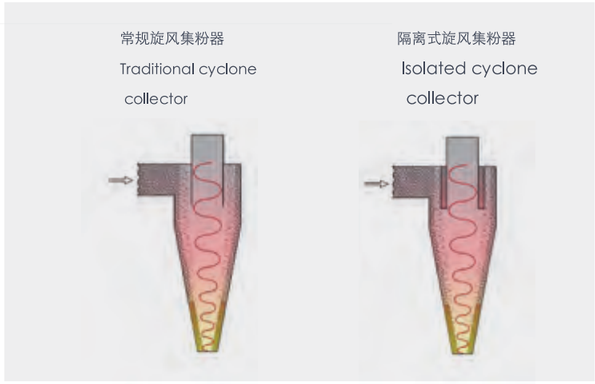


无阻力进风蜗壳(小观察门无涡流)

No resistance inlet volute (small observation door without vortex)

MTW系列梯形磨粉机观察门内面与进风蜗壳内面在同一曲面上，能有效的避免涡流效应的发生降低系统能耗。

MTW Series Trapezium Mill makes inner surface of internal door and inner surface of inlet volute on the same curved surface, so that eddy current effects can be effectively avoided, obviously reduce the power consumption.



隔离式旋风集粉器

Isolated cyclone collector

MTW 系列梯形磨粉机采用隔离式旋风集粉器，内筒与混合气粉流之间采用隔离结构，能够有效的提高选粉效率和选粉精度。

The isolated structure is adopted between the internal cylinder and the mixed air and powderflow, effectively improving the classifying efficiency and accuracy.

主机核心部件进一步全方位设计优化

Complete design optimization for the key components

我公司对MTW系列磨机的核心部件采用了强耐磨材料，对材料的耐磨性能进行了反复实验，采用多种特殊检测手段严格检测控制原料质量。采用添加增压弹簧的设计，增加磨辊磨环间压力，提高磨粉效率。MTW系列梯形磨粉机所使用的选粉机经过了精心设计，通过进行流体力学分析等手段对选粉机叶片进行了优化设计，极大地提高了选粉的精度与速度。

The key components such as roller and ring of MTW series trapezium mill adopt strong wear resistant material. Our company strictly controls the quality of the raw material for the key components, special detection means are introduced in. We add springs to enhance the pressure between the grinding roller and ring to improve the production efficiency. The classifier of the MTW mill is well-designed and optimized through hydromechanics and other means, the powder classification precision and speed are obviously improved.

技术参数表 / *Specification Chart*

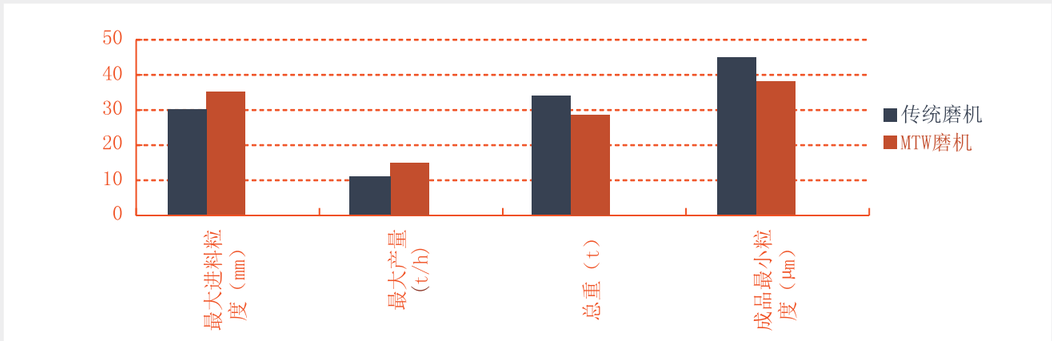
参数 / 产品 / 名称Name	MTW110	MTW138	MTW175	MTW215
磨辊数量(个)Roller number(pcs)	4	4	5	5
磨环内径Inner diameter of ring (mm)	Φ1100	Φ1380	Φ1750	Φ2150
主机转速RotateSpeed(r/min)	120	96	75	65
进料最大尺寸(mm) Max. feed size	<30	<35	<40	<50
成品粒度(mm) Final size	1.6-0.045最细可达0.038 Fineness can reach to 0.038	1.6-0.045最细可达0.038 Fineness can reach to 0.038	1.6-0.045最细可达0.038 Fineness can reach to 0.038	1.6-0.075
产量(t/h) Capacity	2-8tph	4-15tph	6-20tph	9-35tph
外形尺寸(mm) Overall dimension Chart	6186 x 8041x 8640	7262 x 10010 x10010	10171 x 10023 x9916	14300 x 11153 x10351

注:表中产量指粉磨石灰石，其成品的通筛率为80%。各项参数及外形若有变更，依发货时随机带的使用维护说明书为准。

Note: Capacity in the chart refers to limestone grinding under 80% pass rate production. All technical data please subject to maintenance instruction manual with the shipment.

下面是MTW磨机与传统磨机在主机功率为90KW时具体的比较:

The following is specific comparison between MTW grinding machine and traditional one when main unit power is 90KW:



MTW 磨机
MTWgrinding machine
传统磨机
Traditional grinding machine

最大粒进度
Maximal feedstock granute
最大产量
Maximum yield

总量
Gross weigh
成品最小粒
Finished product minimum granute

技术参数表 / *Specification Chart*

名称 Name		项目 Item	单位 Unit	规格、技术数据 Specification			
				MTW110	MTW138	MTW175	MTW215
主机电机 Motor of Main unit		型号 Model		Y280M-6	Y315M-6	Y355M2-8	Y3-400-8
		功率 Power	千瓦 kw	55	90	160	280
		转速 Speed	转/分 r/pm	980	990	740	740
选粉机调速电机 Motor of classifier		型号 Model		YVPI60M-6	YVP200L-6	YVP250M-6	YVP280M-4
		功率 Power	千瓦 kw	7.5	22	37	90
		转速 Speed	转/分 r/pm	980	980	980	1470
风机电机 Motor of blower		型号 Model		Y250M-4	Y315S-4	Y315L2-4	Y355L2-4
		功率 Power	千瓦 kw	55	110	200	315
		转速 Speed	转/分 r/pm	1480	1480	1480	1480
电机部分 Auxiliary parts	斗提 Elevator	斗提型号 Model		TH200	TH315	TH315	TB315
		电机型号 Motor		Y100L2-4	Y112M-4	Y112M-4	Y160M-4
		电机功率 Power	千瓦 kw	3	4	4	11
		电机转速 Speed	转/分 r/pm	1430	1440	1440	1440
	颚破 Jaw crusher	颚破型号 Model		PE250 x 400	PE250 x 750	PE250 x 750	PC1010
		电机型号 Motor		Y180L-6	Y200L2-6	Y200L2-6	Y315L1-6
		电机功率 Power	千瓦 kw	15	22	22	110
		电机转速 Speed	转/分 r/pm	970	970	970	990
	给料机 Feeder	型号 Model		GZ2F	GZ3F	GZ4F	GZ5F
		功率 Power	千瓦 kw	0.15	0.2	0.45	0.65