



# SHANGHAI SHIBANG MACHINERY CO., LTD.

## MTM Medium speed trapzium mill

### Usage of MTM Medium speed trapezium mill

It is mainly used for grinding mineral products in such industries as metallurgical industry, building, chemical industry, mine, etc. The MTM Series can be used for grinding all kinds of nonflammable and non-explosive minerals of which Moh's hardness and moisture content are lower than 9 and 6% respectively.



### Specification and Functions

#### Specification

Ite	MTM100	MTM130	MTM160
Number of roller	4	5	6
Major diameter of roller ×Height (mm)	Φ320×200	Φ410×240	Φ440×270
Internal diameter of roller × Height (mm)	Φ980×200	Φ1280×240	Φ1600×270
Main engine spindle speed (mm)	130	103	82
Maximum feeding grain size (mm)	<25	<30	<35
Grain size of finished product (mm)	1.6 —0.038	1.6 —0.038	1.6 —0.038
Output (t/h)	3 — 8.8	6 —13	13 —22
Overall dimension (mm)	9910×5365×8310	7910×7000×9645	12550×5700×8355
Weight(t)	16	26.1	35

Note: If there is any modification, all parameter and overall dimension are subject to the operating instructions.

Name	Item	Unit	Specification and technical data			
			MTM100	MTM130	MTM160	
Motor of main engine	Model	-	Y225M-4	Y280S-4	Y135M1-4	
	Power	kw	45	90	132	
	Spindle speed	r/min	1480	1480	1480	
Motor of adjustable varying speed motor	Model	-	GZT2-42-4	YCT200-4B	JZT2-52-4	
	Power	kw	5.5	7.5	11	
	Spindle speed	r/min	125~1250	125~1250	125~1250	
Motor of elevator	Model	-	Y1000L-4	Y1000L2-4	Y112M-4	
	Power	kw	3	3	4	
	Spindle speed	r/min	1420	1420	1420	
Motor of centrifugal induced draught fan	Model	-	Y225S-4	Y250M-4	Y112M-4	
	Power	kw	37	75	110	
	Spindle speed	r/min	1480	1480	1480	
Motor of jaw crusher	Model	PE	200x350	250X400	250x400	257x750
		-	Y160M-6	Y180L-6	Y180L-6	Y200M-6
	Power	kw	7.5	15	15	22
	Spindle speed	r/min	970	970	970	970
Magnetic vibration-actuated feeder	Model	-	GZ1F	GZ2F	GZ3F	
	Spindle speed	watt	60	150	200	

## Structure Characteristic and Operational Principle

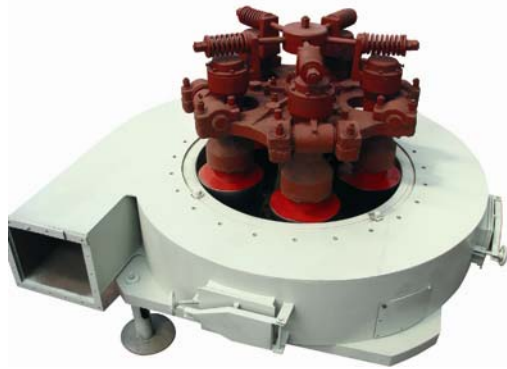
A set of MTM medium speed trapezium grinding mill consists of main frame, decelerator, powder Classifier, blower, jaw crusher, bucket-elevator, vibrating feeder, hopper ,bag filter, pipe—devices ,motor and electric switch box, etc..(See detail in the installation diagram)



## Operation Principle

Firstly, raw material should be crushed by the jaw crusher to the size specified, and then the crushed stuff is elevated into a hopper from which the stuff is loaded, through the vibrating feeder, evenly and continuously into the grinding chamber for power-processing. After this, the ground stuff is carried by the air from the blower into the Classifier for screening. The fine powers are blow into the cyclone collector and are poured out through the output-powder valve as the final products and the rough stuff after the screening will be recycled back into the grinding chamber for regrinding. The set's airflow system is closely sealed up and circulated under condition of negative and positive pressure.

Because the stuff contain some moisture, and the heat generated during the grinding process makes the moisture evaporated, what's more, the pipeline joints are not airtight and therefore the external air is sucked in, all these will increase air-current in circulation and disturb the circulation balance. To keep the air current balance in circulation can be realized by adjusting the pipeline of extra air-current between the blower and the grinder main from. In this way, the extra air current is channeled into a dust filter which will collect powder carried by the extra air current and then get rid of the extra air current back to the atmosphere after purification.



## Operational mechanism of the grinder:

The grinder is driven by rotation of the central axle through decelerator, with the up end of the axle connecting to a quincunx-rack upon which the grinding equipment is fixed.

The whole set equipment turns together with the axle along the grinding ring while the rollers rotate driven by the fractional force.

A set of shovel are installed at the lower end of the quincunx-rack, and positioned at the piece under the lower-end of the rollers. While turning together with the rollers, the shovels shed the stuff onto the gap between the rollers and the ring and the stuff layer is formed there.

The rotating rollers, while turning together with the ring, grind the stuff layer in between into power.



## Operational mechanism of the Classifier:



To separate the ground stuff into the fine power-product and the rough stuff is done through vane on the turntable driven by a speed adjustable motor.

The turning speed of the vane can be adjusted to the requirement of the fineness of powder products.

If more finer powders are needed, the turning speed will be increased so that the rough stuff can be thrown towards the outer wall of the pipeline away from the air current and then back into grinding chamber for redone.

Whereas, the powder fine enough will be collected as the final product by the cyclone-collector.

## Operational mechanism of the cyclone-collector:

It plays an important role in ensuring the smooth functioning of the grinder.

As the highly spinning air current mixed with ground stuff is flown into the cyclone-collector, the ground stuff is separated from the air-current.

After the separation, the air current moves downward, within cone-shaped pipeline, towards the end of the cone pipe, the fine powder will fall down and be collected there, then the inner part of the air current is be driven by the negative pressure upwards into the cylinder-shaped part of the pipe.

Due to the negative pressure, the lower-end of the collector must be tightly sealed up to prevent air in, otherwise the separated fine powder will be taken away again together with the upward air current, then the output-capacity of the whole equipment will be greatly reduced.

Therefore, a powder-locking device is installed at the down-end of the collector to isolate the negative pressure with in the collector from the positive pressure. This is a key device. Without it, the output capacity will be decreased, worse even to zero output of powder.

## Lubrication System

To ensure the normal operation, lubrication should be done in accordance with the methods specified in the following table.

Position for Lubrication	Methods		Types of Grease	Point	Time	Notes
	Hand	Oil case				

Central Axle of grinder	△		NO.3MOS <sub>2</sub> Compound Calcium-based Grease	2	1-3 days	Or Compound Lithium-based Grease
Rollers system	△		NO.3MOS <sub>2</sub> Compound Calcium-based Grease	12	2 Shifts	Or Compound Lithium -based Grease
Axle base of blower	△		NO.3MOS <sub>2</sub> Compound Calcium-based Grease	2	1 month	Or Compound Lithium -based Grease
Axle base of Classifier	△		NO.3MOS <sub>2</sub> Compound Calcium-based Grease	2	1/2month	Or Compound Lithium -based Grease
Axle base of elevator	△		NO.3MOS <sub>2</sub> Compound Calcium-based Grease	2	1 month	Or Compound Lithium -based Grease
Turbine base of elevator		△	HJ-40	1	level mark	Change oil once in three month
decelerator		△	HJ-40		3000hours	Servicing, cleanness, replacement
Oil tank of Classifier		△	HJ-40		3000hours	Servicing, cleanness, replacement

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