CLASSIFIER MILLS SERIES RTM

<table>
<thead>
<tr>
<th>S - Types</th>
<th>Installed power - Grinding</th>
<th>Installed power - Classifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTM 160 S</td>
<td>kW 15</td>
<td>kW 2,2</td>
</tr>
<tr>
<td>RTM 260 S</td>
<td>kW 17</td>
<td>kW 2,5</td>
</tr>
<tr>
<td>RTM 460 S</td>
<td>kW 20</td>
<td>kW 3,7</td>
</tr>
<tr>
<td>RTM 680 S</td>
<td>kW 24</td>
<td>kW 4,8</td>
</tr>
<tr>
<td>RTM 1000 S</td>
<td>kW 180</td>
<td>kW 21,3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M - Types</th>
<th>Installed power - Grinding</th>
<th>Installed power - Classifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTM 250 M</td>
<td>kW 5,5</td>
<td>kW 1,5</td>
</tr>
<tr>
<td>RTM 300 M</td>
<td>kW 7,5</td>
<td>kW 2,2</td>
</tr>
<tr>
<td>RTM 450 M</td>
<td>kW 18,5</td>
<td>kW 5,5</td>
</tr>
<tr>
<td>RTM 690 M</td>
<td>kW 36,0</td>
<td>kW 7,5</td>
</tr>
</tbody>
</table>

PRODUCTS AND PARTICLE SIZE
Suitable for all material with a humidity of less than 2% and a material hardness of max. 4 (Mohs scale), suitable for virtually all sectors where very fine grinding is required: minerals, pharmaceutical, chemical, food, etc.

Product particle fineness d97, 8 – 120 micron. Special application for toxic waste smoke treatment.

OPERATIONAL ADVANTAGES
Compact design, limited space requirement, easy installation
- Minimum maintenance
- Reduced energy consumption due to the electronic operation control system
- Possibility to adjust the particle size at the control board even while the machine is running
- Fully automatic operation process

DESIGN CHARACTERISTICS
The grinding process is achieved by the impact of the material particles against the grinding track and against each other.
- The grinding chamber is divided into two sections each with its own grinding disc. The two discs are turning in different directions against each other thus generating the particle flow against the grinding track and against each other. This grinding method results in an optimised energy efficiency.
CLASSIFIER MILLS
SERIES COMPACT

DESIGN CHARACTERISTICS

The grinding process is achieved by the impact of the material particles against the grinding track.

Working principle: A 360° rotating disc, utilizing the cylindrical grinding track of the grinding chamber, causes the material grinding and classifying process. The material enters the single grinding chamber from the top, due to this design the material flows through the grinding and classifier wheel.

PRODUCTS AND PARTICLE SIZE

Suitable for material with a humidity of less than 1% and a material hardness of max. 3.5 at the Mohs scale; suitable for virtually all fields where fine grinding is required: minerals, chemical, pharmaceutical, food etc.

Material fineness d97 20 – 200 micron.

Special application for toxic waste smoke treatment.

OPERATIONAL ADVANTAGES

Compact design, limited space requirement, easy installation

Minimum maintenance

Reduced energy consumption due to the electronic operation control

Fully automatic operation process

ULTRA FINE JET STREAM
CLASSIFIER MILLS SERIES MJS

DESIGN CHARACTERISTICS

The grinding of the material, fed from top into the grinding chamber, is achieved by using compressed air, blown in through centered injection points. The grinding process is achieved by the impact and grinding of the particles against each other. The integrated classifier selects the particles of the required size and returns unwanted particle sizes back to the grinding process until the required size is achieved.

PRODUCTS AND PARTICLE SIZE

Suitable for ultra fine grinding of material with a hardness up to 10 at the Mohs scale, for the production of very fine to ultra fine powder with particle sizes 2 – 80 micron.

Wear:

Jet Mills enjoy extremely reduced operational wear

Due to that production of powder absolutely free of unwanted metallic particle contamination

Product quality:

The Jet Mill allow grinding processes of all kind without any limitation and without any unwanted particle sizes.

OPERATIONAL ADVANTAGES

Fully automatic operation, reduced operational wear, virtually no product contamination

Easy adjustment

Reduced grinding process noise

Simple dismantling for cleaning and sterilization

Reduced energy consumption
SIEVE MILLS SERIES MR

The grinding is achieved by the material impact on the grinding tools, mounted to the grinding disc (fixed or oscillating), and the grinding track, which could be a sieve or partially a solid grinding track of special design.

PRODUCTS AND PARTICLE SIZE

Suitable for dry material of reduced hardness, for the production of final products with particle sizes from 0.1 to 10 mm. Very often used for general purpose in the animal food industry, for example as a pre grinding mill prior to a second grinding by other means and methods.

OPERATIONAL ADVANTAGES

Simple design
- Material feeding and unloading by gravitation
- Available with a wide range of accessories and different grinding disc designs of various material suitable for virtually every purpose.

<table>
<thead>
<tr>
<th>Models</th>
<th>Installed power</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR 150</td>
<td>kW 5.5</td>
</tr>
<tr>
<td>MR 250</td>
<td>kW 11 - 18.5</td>
</tr>
<tr>
<td>MR 350</td>
<td>kW 18.5 - 33</td>
</tr>
<tr>
<td>MR 450</td>
<td>kW 45 - 90</td>
</tr>
<tr>
<td>MR 550</td>
<td>kW 90</td>
</tr>
<tr>
<td>MR 650</td>
<td>kW 75 - 150</td>
</tr>
</tbody>
</table>

PIN MILLS SERIES MP

The material is fed between one fixed and one rotating disc or between two discs rotating against other with steel pins whose number, dimensions and positions to each other can be modified according to the actual requirements. Impact grinding without product classifying. The particle size is defined by the space between the pins and by the number of the disc revolution. Very often this mill series is used for cryogenic grinding.

PRODUCTS AND PARTICLE SIZE

Suitable for various material with a tendency of being hard or fragile, for the grinding of particle sizes from fine to medium (fine 30 micron – 1 mm). The grinding principle and the grinding chamber design are especially suitable for cryogenic grinding or cryogenic powder processing and tough material grinding at environment temperature.

OPERATIONAL ADVANTAGES

- The material fineness is extremely accurate due to the high rotating speed of the disc.
- The spacious grinding chamber prevents any internal particle coating or a mill blockade when grinding material containing oil or grease or of tendency to stick.
- The device to adjust the operation parameters, disc rotating speed or direction, opens the possibility to adjust the grinding process according to different material and fineness.
- Easy product dimension regulation
- Interchangeable grinding disc, available of different design and material, with various grinding tools and surface treatment to satisfy specific requirements.
- Easy access for maintenance.

<table>
<thead>
<tr>
<th>Models with one rotating disc</th>
<th>Installed power</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP 150</td>
<td>kW 5.5</td>
</tr>
<tr>
<td>MP 350</td>
<td>kW 11 - 18.5</td>
</tr>
<tr>
<td>MP 550</td>
<td>kW 18.5 - 33</td>
</tr>
<tr>
<td>MP 750</td>
<td>kW 45 - 90</td>
</tr>
<tr>
<td>MP 950</td>
<td>kW 90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Models with two rotating discs</th>
<th>Installed power</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP 150 Disc 1/ Disc 2</td>
<td>kW 15.0 / 22</td>
</tr>
<tr>
<td>MP 350 Disc 1/ Disc 2</td>
<td>kW 18.5 / 30</td>
</tr>
<tr>
<td>MP 750 Disc 1/ Disc 2</td>
<td>kW 32.5 / 45</td>
</tr>
<tr>
<td>MP 950 Disc 1/ Disc 2</td>
<td>kW 45.0 / 75</td>
</tr>
</tbody>
</table>
**DESIGN CHARACTERISTICS**

- Mill with conical grinding rollers for high pressure
- Hydraulically controlled pressure system
- Easy accessible hydraulic roller movement system
- Special roller and roller track material of reduced wear, which can be reconditioned by renewed surface hardening
- Roller bearings specially dust and powder protected
- Compact design of high capacity.

The high pressure rollers, moved forward by the rotating grinding track, and the material crushing achieve the grinding process. The crushing pressure is adjustable in order to modify the material fineness and/or according to different material specifications. The integrated classifier rejects particles of unwanted size and returns them automatically to the grinding process until the requested size is achieved.

**OPERATIONAL ADVANTAGES**

- Simple cleaning and maintenance
- Low energy consumption
- Simple material fineness adjustment through classifier rotation speed adjustment
- Simple hydraulic pressure and roller speed adjustment
- Grinding under virtually all operation conditions
- Suitable for combined drying and grinding operation

**PRODUCTS AND PARTICLE SIZE**

- Suitable for the grinding of material with quartz content up to 6%, a hardness up to 6 at the Mohs scale and particle sizes from 10 - 360 micron.
- Suitable for nearly all kind of material; typical application is the big volume grinding of lime, dolomite, plaster, calcium, phosphate, minerals or similar raw material.

**OPERATIONAL ADVANTAGES**

- Simple cleaning and maintenance
- Low energy consumption
- Simple material fineness adjustment through classifier rotation speed adjustment
- Simple hydraulic pressure and roller speed adjustment
- Grinding under virtually all operation conditions
- Suitable for combined drying and grinding operation

**PRODUCTS AND PARTICLE SIZE**

- Suitable for the separation of minerals and chemical products in general, for material fineness up to “top cut” 2 micron
- One separation chamber with an internal high-speed rotor, which produces a product flow of the required particle size, eliminating particles not in accordance with the requirement
- The product is fed by a screw conveyor or star wheel feeder valve of adjustable rotation speed into the separation chamber and through a centered classifier housing against the rotor. Another star wheel feeder valve in the separation chamber bottom section sorts out the particles of unwanted size. The two different interactions of centrifugal power created by the rotor and air extraction allow the extraction of the product precisely according to the given size and / or specific weight specification and the separation of particles not within the pre selected range.

**OPERATIONAL ADVANTAGES**

- The permanent internal product flow results in a total product separation of highest degree. The result is a material separation degree as much as 70%.
- Compact design, reduced weight and space requirement
- Simple adjustment
- Low operation noise, free of vibrations
- Minimum mechanical wear, resulting in low metallic product contamination
- Wide range of available accessories and components (rotors, stators, blowers, etc) for specific applications
- Reduced energy consumption

**PRODUCTS AND PARTICLE SIZE**

- For the separation of minerals or mixed chemical products in general; for the product separation in connection with grinding mills without recycling device. (only SD 200/350)
The grinding is achieved by crushing the material between the micro balls kept in movement by a vertical rotor with horizontal arms. The micro balls of 3–8 mm diameter and the vertical grinding chamber surface are made of ceramic material. This very hard material of greatest resistance against abrasiveness stands for an extended lifetime of the components. The micro balls move inside the mill from top to bottom. The product fineness depends on the time the product remains inside the grinding chamber which can be modified by the exit valve or the rotor revolution speed. At the exit the balls are separated from the product and refilled from the top into the grinding chamber.

A micro ball mill is normally connected to a classifier; the fine product (final product) is extracted by a classifier and the bigger particles are returned into the mill. Possible power installation 7.5 - 500 kW.

LABORATORY’S MILLS SERIES MJS 120

In order to give you a complete service, STM offers as well a wide range of laboratory equipment.