

Innovative Solutions for Fine Pulverising, Minerals and Metallurgical Laboratories



IMP has been providing complete solutions from sampling to analysis
for the mining and metallurgical industry since 1987

IMP
Innovative Solutions

Pulverising Solutions

Bench top pulveriser

HSM 50

Used for pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, concrete, etc. for XRF, XRD or other instrumental methods or wet chemistry.

Advantages include:

- Very quiet operation
- Quick release bowl clamp
- Very fast grinding
- Easy to clean
- Dust free grinding
- Low capital cost
- Uniformly fine grinding
- Long life
- Very low contamination of samples
- Maintenance free
- 10cc and 50cc grinding vessels can be used and are available in a number of materials including carbon steel, chrome steel and tungsten.



Free standing grinding (pulverizing) machine

HSM / HSP 100 / 250

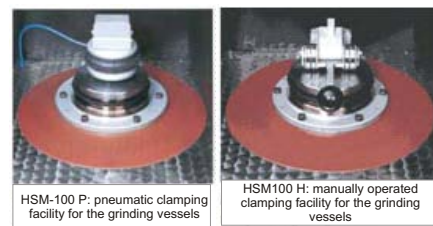
HERZOG HSM series of vibration grinding mills are suitable for the grinding of minerals, slag, ferro-alloys, cement, concrete, organic substances and other materials for XRF, XRD or other instrumental methods or wet chemistry.

The high speed of the drive motor enables even hard material to be ground quickly and efficiently. The robust design with twin eccentric disk bearings enables the grinding mills to achieve a long service life with minimum maintenance requirements.

The "M" series has a quick release mechanical device while the "P" has a pneumatic quick release for the grinding vessels. Both machines are available with fixed milling speed as standard or can be supplied with variable speed as an option. Various grinding times and speeds can be selected using the PLC. This eliminates errors and the parameters can be password protected.

Advantages include:

- Very quiet operation
- Quick release bowl clamp mechanical or pneumatic.
- Very fast grinding
- Easy to clean
- Dust free grinding
- Low capital cost
- Uniformly fine grinding
- Very low contamination of samples
- Maintenance free
- 10cc, 50cc and 100cc grinding vessels can be used and are available in a number of materials including carbon steel, chrome steel and tungsten carbide.
- **The same grinding vessels can be used on the larger mills:**
 - . HSM 100 M (100cc max) Mechanical clamp
 - . HSM 100 P (100cc max) Pneumatic clamp
 - . HSM 250 M (250cc max) Mechanical clamp
 - . HSM 250 P (250cc max) Pneumatic clamp
 - (Variable speed available as an option)



HSM-100 P: pneumatic clamping facility for the grinding vessels

HSM100 H: manually operated clamping facility for the grinding vessels



Semi automatic free standing grinding (pulverising) machine

HP-M100

This automatic pulveriser is used for pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, concrete, etc. for XRF, XRD or other instrumental methods or wet chemistry.

The machine automatically opens the grinding vessel allowing the operator to load the sample. The lid also closes automatically and clamps into position. Once pulverizing is completed, the sample is presented to the operator in a stainless steel cup and the grinding vessel is automatically cleaned with compressed air. The operator does not need to handle the heavy grinding vessels.

The robust and quiet machine is available with a fixed milling speed or in an optional variable speed version. All parameters are stored on the password protected PLC, minimizing potential operator errors.



Fully automated pulverisers

HP MS and HP-MA

The HP-MA/MS series of fully automated pulverizing mills are suitable for grinding minerals and ferro-alloys, pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, concrete, etc. for XRF, XRD or other instrumental methods or wet chemistry.

The high RPM of the drive motor guarantees efficient fast grinding even with hard materials. The robust construction with dual bearing supports for the eccentric shaft ensure long service life with minimum maintenance.

The mill is fully automated. The operator simply places the sample in a cup, places the cup in the mill and selects the program required on the PLC. All parameters such as milling time, milling speed, cleaning method etc are controlled by the pre selected plc program. Once the cycle is complete the operator is presented with a pulverized sample in the same cup.



Options include:

- Tungsten carbide / low carbon steel / chrome steel grinding vessels
- Grinding aid / binders dosing system adds the binder / grinding aid in tablet form used for pellet pressing.
- 30 of 60 position cup magazine. This allows for long periods of unattended operation.
- Large magazines holding up to 300 samples are also available upon request.
- Additional cleaning options include quartz flushing, water washing, blind sample dosing and detergent rinsing.
- Temperature control of the grinding vessel temperature is also available as an option. This option allows the operator to select a temperature such as 60 degrees C and the system will ensure that the grinding vessel does not exceed this temperature during operation.
- Automation ready. The mill can be linked to other machines with an internal transport, such as a pellet press or fusion machine.



Fully automated pulverisers

HP-M

The HP-M series is the same as the MP-MA/MS series described above. The machine is however narrower in design and has full service access at the rear of the machine. This design takes up less space in a laboratory and also takes up less space in a robot cell allowing more machines to fit into one cell.

The automated pulverizing mills are suitable for grinding minerals and ferro-alloys, pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, concrete, etc. for XRF, XRD or other instrumental methods or wet chemistry.. The high RPM of the drive motor guarantees efficient fast grinding even with hard materials. The robust construction with, dual bearing supports for the eccentric shaft ensure long service life with minimum maintenance.

The mill is fully automated. The operator simply places the sample in a cup, places the cup in the mill and selects the program required on the PLC. All parameters such as milling time, milling speed, cleaning method etc are controlled by the pre selected plc program. Once the cycle is complete the operator is presented with a pulverized sample in the same cup.



Options include.

- Tungsten carbide / low carbon steel / chrome steel grinding vessels.
- Grinding aid / binders dosing system adds the binder / grinding aid in tablet form used for pellet pressing.
- 24 position cup magazine. This allows for long periods of unattended operation.
- Large magazines holding up to 300 samples are also available upon request.
- Additional cleaning options include quartz flushing, water washing, blind sample dosing and detergent rinsing.
- Temperature control of the grinding vessel temperature is also available as an option. This option allows the operator to select a temperature such as 60 degrees C and the system will ensure that the grinding vessel does not exceed this temperature during operation.

Automation ready. The mill can be linked to other machines with an internal transport, such as a pellet press or fusion machine.



Large capacity automated pulveriser

HPM-1500

The HPM-1500 is a large capacity fully automated pulveriser. Depending on the density of the material it can accept up to 1.5kg of material smaller than 12mm in diameter. The machine is ideal for grinding minerals and ferro-alloys, pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, iron ore pellets, ore samples, concrete, etc.

The machine can be operated as a standalone machine or connected to a 30 position sample magazine or a linear or robot automation for unattended operation.

In manual mode, the operator simply places the sample in a sample cup provided and places the sample cup into the machine and selects the pulverizing program from the operator touch screen panel. The mill will then close the door, transport the cup to an optional load cell, weigh the sample (and from the sample weight select the milling time). Place the sample into the grinding vessel and activate the milling cycle.

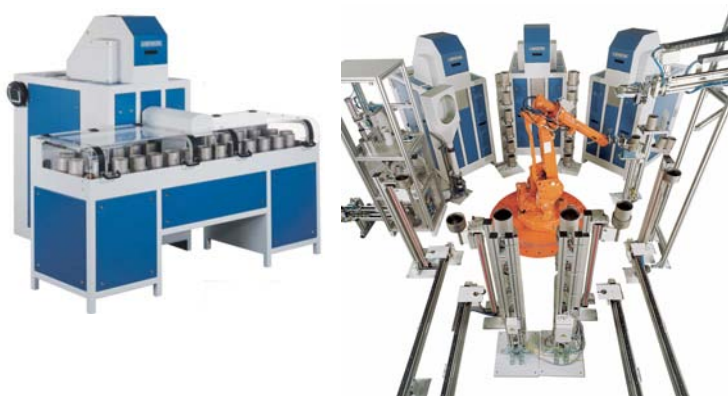
After milling is completed the pulverized material is discharged into the same cup and the cup is presented back to the operator with the pulverized product. A rigorous automated cleaning program is then initiated prior to the machine accepting the next sample. As an option quartz or glass bead flushing is available to flush the grinding vessel between samples.



When the system is used in conjunction with the 30 position cup magazine, up to 30 samples are loaded in the system. Each sample is then automatically pulverised and placed back into the same cup in the magazine where the operator can access the sample. The system is cleaned automatically with a quartz flush between samples if requested.

The base machine is automation ready and can be upgraded at any time.

As this machine is designed to operate continuously the grinding vessel is automatically cooled.



Very large capacity automatic pulveriser

HPM-5000

The HPM-5000 is a very large capacity fully automated pulveriser. Depending on the density of the material it can accept up to 10kg of material smaller than 25mm in diameter. The machine is ideal for grinding minerals and ferro-alloys, pulverising rocks, soil, coal, cement, glass, limestone, bricks, wood, plant material, slags, iron ore pellets, ore samples, concrete, etc.

The sample material, up to 10 kg, is loaded by manual or by external handling devices such as a robot into a sample transport bucket and placed onto a start position in front of the machine.

The machine will then automatically weigh the sample to determine the milling time, load the sample into the grinding vessel and pulverize the entire sample. Once pulverizing is completed the sample will be discharged back into the original sample bucket and the bucket will be presented to the operator.

An optional built in splitter will remove a fixed amount of material and present this to the operator in a separate smaller cup. A rigorous cleaning cycle is initiated between each sample and quartz flushing is available as an option.

A 15 position sample bucket magazine is available as an option for unattended operation. The entire milling unit can be removed from the back for easy maintenance.



Medium Capacity flow through mill / splitter

HPCRMS150

The HPCRMS150 is a flow through pulveriser capable of accepting up to 5kg of -10mm particle size material. The material is pulverized to 95%- 800 microns and a split portion of 500g to 1.5kg is presented to the operator for further processing.



SAMPLE DISCHARGE
Automatic discharge into a container in the simple-to-handle removal device



Large capacity flow through mill / splitter

HPCRMS20

The HPCRMS20 is a large capacity continuous flow ring mill with a built in splitter. The machine accepts up to 20kg of -15mm particle size material. The material is pulverized to a nominal top-size of 1mm and presented to the operator in a sample cup of between 500g and 1.5kg depending on the requirements.

The waste can be collected on a per sample basis or can be accumulated in an optional trolley or waste removal system.



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