

Fully-automatic  
vibratory disc mill

HP-M 1500



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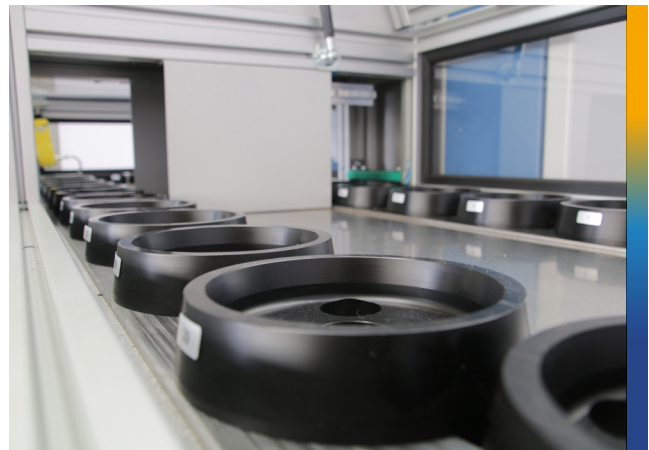
# Maximum precision with high throughput

The ideal choice for laboratories and process environments that demand reliability.

## Powerful and Reliable Sample Preparation

The HP-M 1500 sets new standards in the fully automated grinding of large sample volumes. With its robust design and advanced process control, it combines maximum precision with high throughput capacity. This ensures fast, homogeneous, and contamination-free sample preparation – even for highly demanding materials.

Offering a wide range of options and seamless software integration, the HP-M 1500 is the ideal choice for laboratories and process environments that demand reliability, reproducibility, and efficiency.



## Designed for Large Sample Volumes

With a grinding vessel capacity of 1500 ccm, even large sample batches with particle sizes up to 5 mm can be processed safely and efficiently. The large volume improves representativity, ensures reliable homogenization, and enables safe processing of materials with large surface areas – key factors for accurate analytical results.

All steps – from sample input and grinding to cleaning – are performed automatically. After each cycle, all material-contacting components are cleaned with compressed air, minimizing the risk of cross-contamination. An optional external dust extraction system, controlled via the machine PLC, ensures a clean machine and a safe, dust-free laboratory environment.

A white ABB industrial robot arm is shown in a laboratory or industrial setting. The robot arm is positioned horizontally, with its end effector pointing towards the left. The background features blue and white metal cabinets and various mechanical components. The robot arm has the ABB logo on its upper section. The overall scene is brightly lit, highlighting the metallic surfaces and the blue accents of the robot and background.

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## Versatile Applications in Laboratory and Process Environments

The HP-M 1500 comes with a comprehensive standard configuration and a wide range of customization options. It is suitable for diverse materials such as ores, concentrates, electronic scrap, catalysts, or limestone, and can be flexibly integrated into different workflows.

Whether used as a stand-alone system or embedded into automated laboratories with robots, gantries, or conveyor systems – the mill adapts seamlessly to specific requirements.



## Fast and Precise Grinding for Reproducible Results

The HP-M 1500 delivers efficient pulverization of samples across a wide hardness range – from soft to very hard materials. Its precisely balanced, spring-mounted swing aggregate generates a stable circular motion of the grinding vessel, ensuring uniform acceleration of the grinding set and highly effective size reduction.

Operating parameters such as rotation speed can be conveniently adjusted via the control panel or HERZOG PrepMaster software. For sensitive samples, special grinding sets made of hardened chromium steel are available. A smaller 1000 ccm grinding vessel is also offered. For continuous workflows, the HP-M 1500 can be configured as a pass-through mill.





## Options for Maximum Flexibility and Process Integration

The HP-M 1500 offers a wide variety of options to meet individual laboratory requirements:

- **Integrated scale:** Automatic weighing before and after grinding to detect potential material losses. Data is transferred directly to PrepMaster or other systems.
- **Temperature monitoring:** Optional continuous monitoring of vessel temperature to ensure that grinding only occurs under suitable conditions.
- **Solid media cleaning:** Additional cleaning with abrasive media such as quartz sand or plastic granules, complementing compressed air cleaning.
- **Wet cleaning:** Washing with water and cleaning solution, followed by thorough drying with compressed air.
- **Dosing of liquid grinding aids:** Precise dosing of additives such as ethanol or triethanolamine to improve grinding efficiency and prevent agglomeration.
- **Grinding under protective atmosphere:** For potentially combustible materials, the vessel can be flushed with nitrogen, allowing safe grinding without oxygen contact.

## Flexible Sample Input with Magazine Systems

The HP-M 1500 can be equipped with two different magazine options to handle varying sample throughputs:



### 8-position magazine

Compact and space-saving, operating on a rotary table principle. Ideal for small batches, with samples automatically processed and returned to their original cups.



### 30-position magazine

Designed for higher throughput. Up to 30 cups can be conveniently loaded through large access doors, with sequential, fully automatic processing.



Both magazine systems are fully integrated into the machine and process control. Through the HMI panel or PrepMaster software, samples or batches can be easily assigned to specific grinding programs. Registration is possible manually, by barcode, or via RFID chips, ensuring smooth management of even large sample series and seamless integration into higher-level systems such as LIMS.

## Tool Condition Monitoring – Maximum Process Reliability

The HP-M 1500 is equipped with advanced Tool Condition Monitoring (TCM) based on high-precision acceleration measurements. The swing aggregate is continuously monitored, enabling the detection of even the smallest deviations from the optimal motion profile. This ensures early diagnosis of wear or defects and allows timely corrective action.

In addition, TCM enables detailed analysis of each grinding cycle. Irregularities are immediately visible and provide valuable insights, for example in the optimization of new applications.

Through PrepMaster Analytics, all data are automatically recorded, statistically analyzed, and deviations highlighted in real time. This supports predictive maintenance and ensures consistently high performance in laboratory operations.



## Technical Description

<b>Model</b>	HP-M 1500
Color	RAL 5007/7035
<b>Dimensions</b>	
	<b>L x B x H</b>
Machine	1400 x 925 x 2170 mm
Magazine, 30 positions	900 x 2660 x 1361 mm
Magazine, 8 positions	900 x 910 x 1368 mm
Machine height with solid media cleaning	2681 mm
<b>Weight</b>	
Machine	1235 kg
Magazine, 30 positions	540 kg
Magazine, 8 positions	270 kg
Weight including solid media cleaning	1400 kg
<b>Power supply and consumption</b>	
Voltage	400 V, 50 Hz, 3 phases
Neutral conductor	Not required
Power consumption	5 kVA
<b>Electrical control cabinet (integrated)</b>	
PLC control	Siemens PLC
Control voltage	24 V
Protection class	IP 54
Insulation class	B
<b>Compressed air supply and consumption</b>	
Pressure	Min. 5 bar, max. 10 bar
Consumption	Approx. 2000 dm <sup>3</sup> /sample
Consumption magazine	Approx. 1300 dm <sup>3</sup> /sample
Consumption sand cleaning	Approx. 400 dm <sup>3</sup> /sample
<b>Connection for disposal</b>	
Dust extraction port location	Rear
Dust extraction port diameter	50 mm (outer diameter)
Required extraction capacity	6 - 10 m <sup>3</sup> /min at 2100 Pa
<b>Processable samples</b>	
Material	Granulates, minerals of various types
Particle size	Max. 5 mm
Hardness	Max. 9 Mohs
Temperature	Max. 100 °C
<b>Options</b>	
<ul style="list-style-type: none"> <li>• Integrated scale</li> <li>• Temperature monitoring</li> <li>• Solid media cleaning</li> <li>• Wet cleaning</li> <li>• Dosing of liquid grinding aids</li> <li>• Grinding under protective atmosphere</li> <li>• Grinding vessel 1000 ccm</li> <li>• Trolley for transport of swing aggregate</li> <li>• 8-position magazine</li> <li>• 30-position magazine</li> <li>• Tool Condition Monitoring module</li> </ul>	

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