HN-FF

Fully-automatic milling machine for non-ferrous samples

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Tailor-made sample preparation for the OES and XRF analysis

Manual sample input, proteced by safety switch

Eight-position turntable magazine for batch processing

Easy to remove collection container for chips

Easy to adjust support arm system of the control panel

Fully-automatic milling machine for non-ferrous samples

The HN-FF is the milling machine for fully automatic sample preparation of non-ferrous samples. The HN-FF enables the reproducible production of sample surfaces ideally suited for optical emission spectroscopy or X-ray fluorescence spectroscopy. The HN-FF offers a compact design, a highly developed safety concept and ergonomic usability. This makes the machine a perfect choice for standalone operation as well as for integration into linear or robotic automation systems.

Automatic sample preparation for more precise analyses

All parameters important for the milling process such as feed speed, milling depth and rotational speed can be easily adjusted and are reproducibly controlled via the PLC. This prevents improper handling and processing of samples and increases the reliability of the analytical process. The automation of the HN-FF by means of batch magazines and/or robots leads to a significant increase in sample throughput while reducing time and costs.

Compact and modular design

The footprint of the machine is only 800 x 800 mm. This allows for easy installation, operation and maintenance even in tight spaces. Due to the modular design, the machine can be easily adapted to almost any customer requirement. Standard modules such as the robot input, magazines or conveyor connections facilitate integration into automatic systems and lead to significant cost savings for the customer.

The HN-FF is a central component of the HERZOG MetalLab, which represents a cost-efficient full automation of sample preparation and analysis for the non-ferrous industry.

The following modules can be combined with the HN-FF:

- Turntable magazine for 8 samples
- Chain magazine for 20 samples
- Spiral magazine for approx. 100 samples
- Double conveyor belt magazine
- Transport belts
- Pneumatic airtube station

Maximum flexibility in sample size and shape

The HN-FF offers maximum flexibility when processing different sample shapes. The three-jaw chuck has a stroke of 25 mm with a clamping range of 34 mm. Samples with a minimum diameter of 10 mm to a maximum of 100 mm can be clamped. Different sample shapes including mushroom samples and sample heights can be processed by using the HN-FF.

Easily extendable according to customers' needs

HERZOG MetalLab- The standard automation for preparation and analysis of non-ferrous samples.

Optimally tuned sample preparation steps

All sample preparation steps in the HN-FF have been perfectly matched to allow optimal processing of non-ferrous samples. Numerous configuration options for milling tools, cutting inserts and cooling media offer full process control for optimum analytical surfaces, minimum burr formation and the longest possible service life. Sepcially developed face-milling cutter as well as cutting tips with special coating and cut (hard metal and PKD) enable the processing of even difficult and particularly soft samples.

The two milling spindles available in the HN-FF can be configured in different ways. Often the first spindle is equipped with a milling head, delivering a high material removal rate during so-called „coarse milling" and thus enables the exposure of the representative sample layer. The second milling head then performs the so-called „fine milling", which ensures a perfect surface for the subsequent analysis.

Alternatively, the first spindle can be equipped with special circular saw blade for rapid cutting through the sample. After the cutting process the sample surface is finished by the fine milling head.

Perfect combination of safety and ergonomics

The HN-FF sets standards for safety. The fully automated processes and the use of safety switches on the manual sample input and the milling chamber door ensure the health and safety of the operating personnel.

For the sample preparation of magnesium samples a special version of the HN-FF is available, which allows an immediate and residue-free transport of the chips from the milling chamber of the machine.
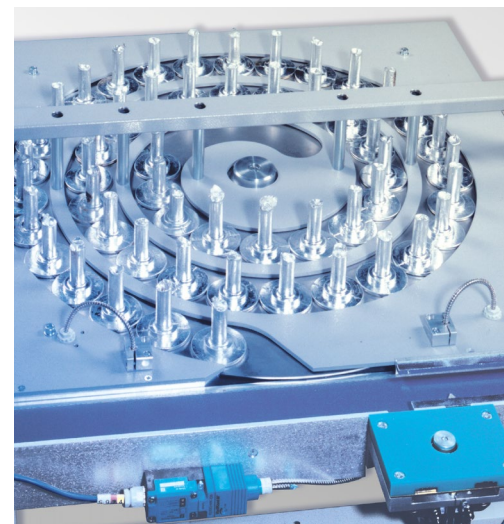
Great importance was attached to reducing noise emissions and further improving ergonomic operation, e.g. by making the machine easier to access and clean.

Spiral magazine for approx. 100 samples
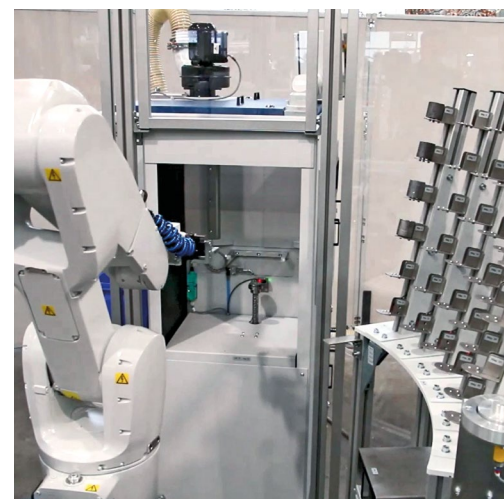
Tool condition monitoring

The use of modern sensor technology enables, for example, to monitor the machine bearings and the condition of the cutting inserts. Automatic data evaluation is performed with the help of our PrepMaster Analytics software, which provides the operator with a comprehensive overview of the machine's condition.

Sample input to the machine by the robot