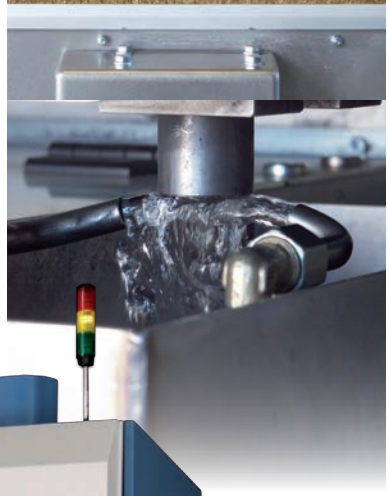


HS-CF

HERZOG

Designed for manual and automatic operation

The input of samples can either be manual by the operator or automatic by a robot or via conveyor belts. Alternatively, a variety of input magazines are also available. These magazines allow input of samples to be cut before milling or which do not require any cutting.

In automatic mode, the samples can be fed directly into the machine by the robot. The cut slice, as well as the milled sample, are released automatically from the machine and can be further processed. The cut slice can, for example, be transferred automatically to the HUST in order to punch samples for CNS analysis.

Sample input by tray or manually

Original sample – Bomb samples

Advantages at a glance

The HS-CF is an automatic machine for the processing of cylindrical and conical iron and steel samples (so-called bomb samples).

- The HS-CF combines the cutting and milling stages within one unit thus enabling sample preparation for the OES and other methods such as the CNS analysis.
- The HS-CF can be operated on a manual basis or integrated into an automated system (utilizing robots, conveyor belts or air tube systems).
- The machine design enables particularly fast and high-quality processing of samples.
- The machine design has been based on user friendly operation and maintenance as well as safety and reliability.

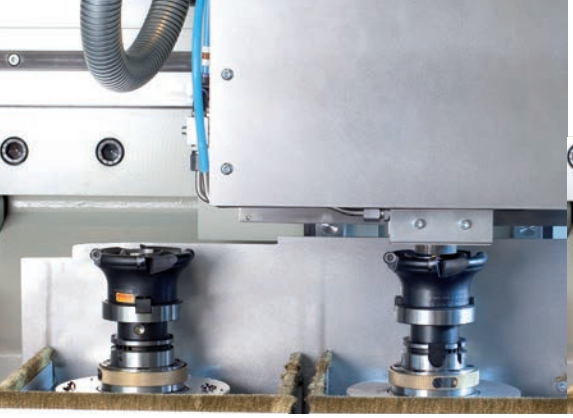
The HS-CF is the ideal machine for the fully automatic processing of conical steel and iron ore samples. The machine has been designed for use in the laboratory and in the production of sample material for OES and CNS analyses.
The HS-CF can be either operated in the laboratory or production site.

A wide variety of sample shapes can be processed including round and angular samples as well as samples with and without mounting pin. Moreover, it is possible to process other sample shapes by arrangement. The only prerequisite here is that the sample must have two parallel lateral surfaces. These are required in order to fix it firmly in the clamping device.

The HS-CF can handle all types of cast steel with different ranges of hardness. The individual work processes are executed completely automatic according to the program selected:

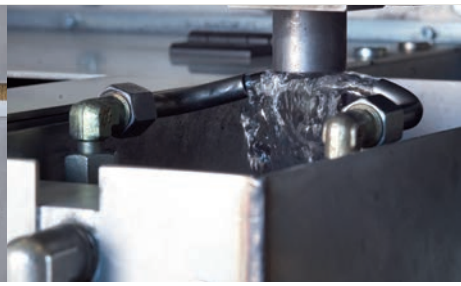
- Pre-selection of the milling head to suit the quality of the sample
- Single and multiple milling of samples with infinitely adjustable feed rate, in-feed and rotational speed
- Cooling of samples
- Cutting of samples with one or two separating cuts: One possibility is to cut off a sample for the OES. The other possibility involves the extraction of a slice of varying thickness between 4 to6 mm. At a later stage, it is possible to punch samples (e.g. with the HUST) from this slice for the CNS analysis.

Processed samples



Milling equipment in operation …

… without safety hood …



… in place.

Milling

Two independently operated precision milling spindles can be fitted with milling cutters for various material grades. Thus there is no need to exchange tools when changing from steel to iron and vice versa. The extremely sturdy spindle bearings permit safe, sustained processing of even the hardest material grades.
Tool change is quick and easy - without any special tools being required. Milling of samples takes place from below. This excludes the necessity for measuring the sample height as well as other additional handling stages. Thus optimum processing times are guaranteed.

Special milling tools and different cutting materials, optimally adapted to suit all material grades, can be used. Tool life times are monitored.
Tool changes and maintenance intervals are displayed on the machine control panel.

Cutting

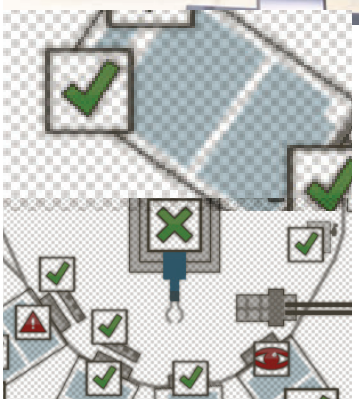
The intelligent servomotor torque control guarantees particularly effective material cutting. The sturdy cutting disc drive in conjunction with the HERZOG high capacity cutting disc guarantees top speed with maximum surface quality.

Handling of samples by an expert

„HERZOG Super“ high-capacity cutting disc in the cutting unit

Simple control

All relevant parameters for cutting, milling, de-burring, cooling etc. can be easily adjusted via the PLC or (in automatic mode) by the PrepMaster. The parameters are included in up to 16 programs which can be selected according to the specific sample type.
Intelligent menu navigation and clear graphical presentation support the operator in selecting the correct parameters.



Further information about the PrepMaster is available under: www.herzog-maschinenfabrik.de

Simple operation and maintenance

The well accessible front and back of the machine makes maintenance and cleaning particularly easy. The waste collection containers for residual cut-offs and chips as well as local exhaust ventilation are easy to access and empty. The machine is noise-insulated and especially designed for low-noise operation. It is therefore suitable for laboratory use.

Technical specifications

Color	Blue/light grey, RAL 5007/7035
Dimensions L x W x H	2,500 x 1,200 x 1,835 mm
Electric power supply and consumption	
Voltage	400 V, 50 Hz, 3-phase AC, and customized
Central point conductor	not required
Power input	approx. 20 kVA
Compressed air supply and consumption	
Pressure	mind. 5 bar, max. 10 bar
Consumption	approx. 1,000 dm^3/N per sample
Connection	ND = 19 mm
Suction	
Location	Back of machine
Diameter	OD = 120/ ID = 115 mm
Capacity	15 m^3/min at 2,100 Pa
Switch cabinet (integrated)	
SPS control	Simatic S7
Control voltage	24 V direct current
Type of protection	IP 44
Number of programs	16
Processing parameter	
Milling depth	2 mm, infinitely adjustable
Processing time	Depending on programme, 25 - 90 s
Number	16
Samples for processing	
Material	Steel and iron
Form	Without handle, round, oval, conical and cylindrical with 2 parallel clamping surfaces and samples with mount.
Diameter	min. 30 mm, max. 60 mm
Hardness	max. 65 HRC dep. on milling plates and material properties
Temperature	max. 800°C
Clamping device	
Type	2 parallel clamping jaws
Diameter	max. 60 mm, min. 30 mm
Thickness/height	7-60 mm
Cooling of samples	
Type of cooling	Cooling injector and/or water
Cooling medium	Compressed air and/or water
Water consumption	
Water pressure	mind. 3 bar, max. 10 bar
Consumption	3l/sample

The design of the machine complies with the applicable accident prevention and VDE regulations.
We reserve the right to make technical modifications.

HS-CF/04.2013-E-2

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