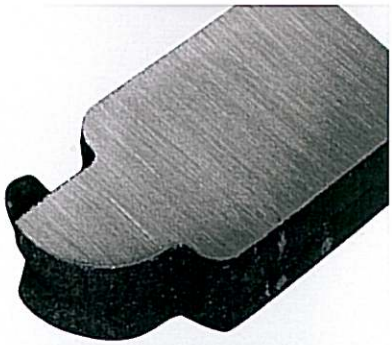
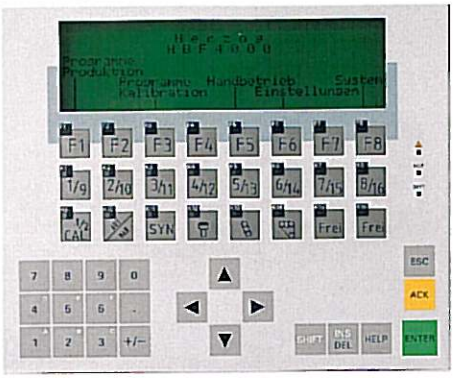
HBF 4000
Automatic Grinder and Miller

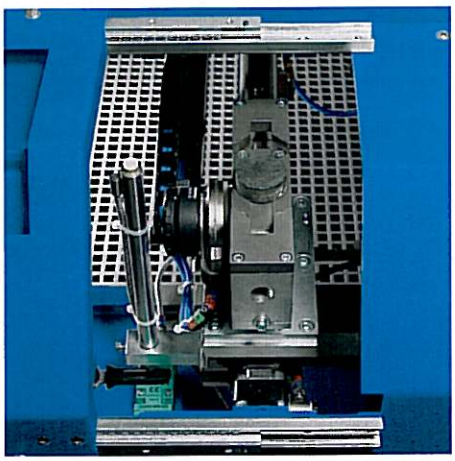


UNIVERSAL SAMPLE PREPARATION FOR SPECTRO-CHEMICAL ANALYSIS: HERZOG AUTOMATIC GRINDER AND MILLER FOR STEEL AND IRON SAMPLES

HERZOG



Storable parameter programming via the operator terminal, protected by password, for fully automated operating cycles and precise reproducibility.



The easily accessible sample holder with pneumatic clamping unit guarantees reliable, defined gripping.

Herzog HBF 4000 grinder

PRECISE ANALYSIS IN LESS TIME AND AT LOWER COST

The HBF 4000 abrasive belt grinding and milling machine permits fully automatic sample preparation for spectral analysis with all its benefits. The method of operation with program-controlled grinding and milling processes offers significant improvements in the reproducibility of the sample preparation and thus accurate analysis results in less time and at lower costs.

UNIVERSAL GRINDING OR MILLING OF DIFFERENT IRON AND STEEL SAMPLES

The HBF 4000 is characterised by quick and precise grinding and/or milling of iron and steel samples with widely differing compositions, geometries, hardnesses and temperatures.

A pneumatic clamping unit allows symmetrical samples with diameters of up to 60 mm to be gripped reliably and in a defined position, thus enabling high grinding and milling capacities and short sample preparation times.

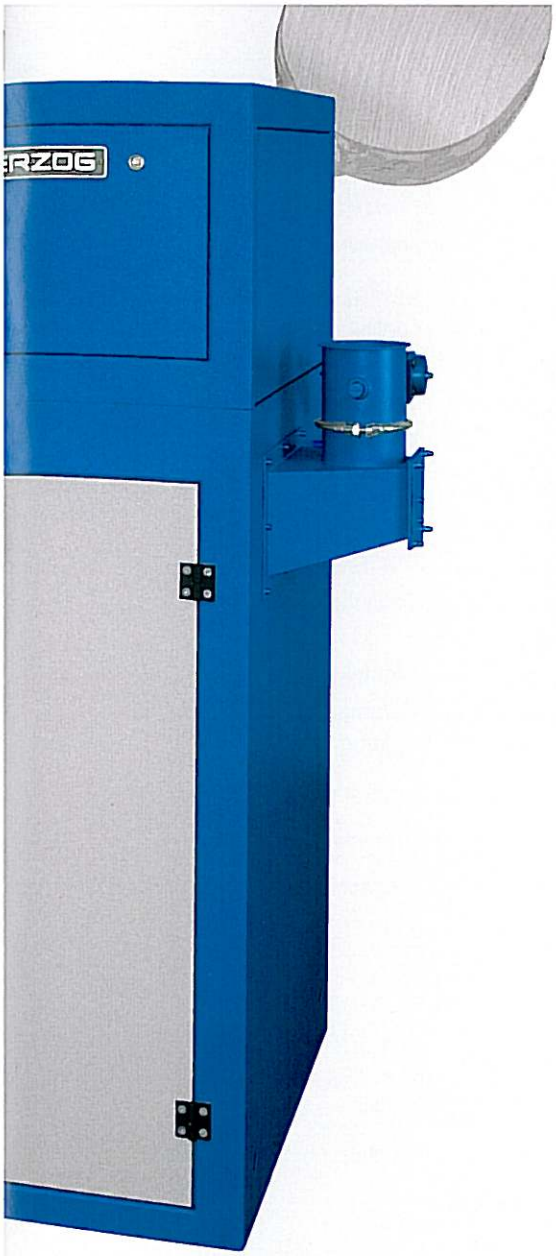
FINE GRINDING: THE OPTIMUM SAMPLE PREPARATION FOR HARD MATERIALS

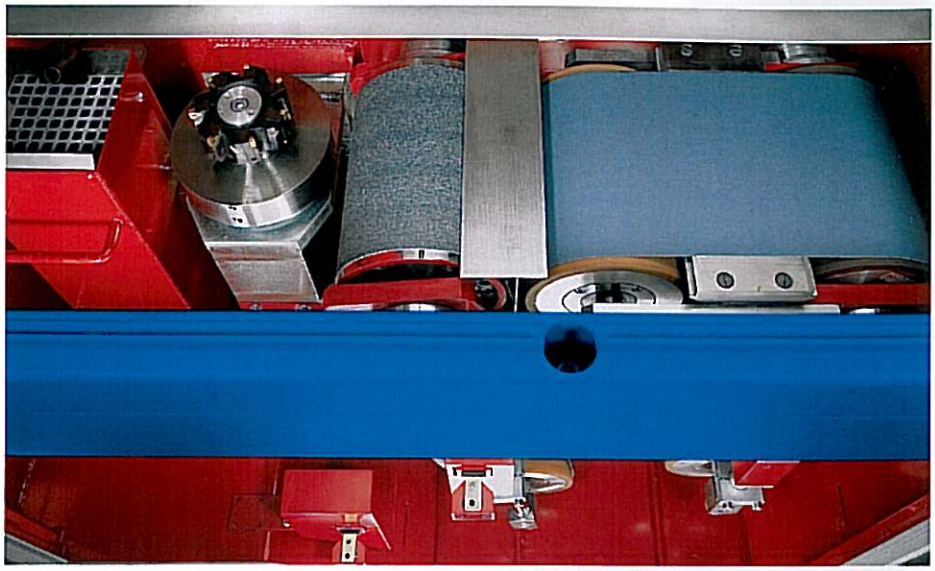
After roughing on the coarse belt grinding which offers long service life, the fine grinding of extremely hard samples on the 200 mm wide grinding belt offers benefits which are reflected in higher quality, longer service life and lower abrasive costs. The width of the grinding belt enables different samples to be fine ground on several tracks – so cutting material costs and time thanks to reduced grinding belt consumption and replacement. Preselectable grinding belt zones prevent cross-contamination of the samples during the preparation of different sample qualities.

FINE MILLING: THE ALTERNATIVE FOR SOFT STEELS

On steels with very low carbon contents, abrasives can leave residues in the form of minute carbon particles which lead to falsified and useless analysis results. For these samples, use of the fine miller instead of fine grinding after coarse grinding is therefore the right decision. Finish cutting of steel samples with low carbon contents using the milling cutter guarantees precise analysis results for evaluation.

The HBF 4000 with its integration of the different machining methods, „grinding belt" or „milling cutter" for fine machining, ensures optimum sample preparation for the analytical requirements for samples with all degrees of hardness and alloys. The HBF 4000





The 200 mm wide grinding belt: Simultaneous fine grinding of different samples on preselectable belt zones without cross-contamination of the samples. The fine milling cutter: Machining of steel grades with low carbon contents without distorted analysis results due to minute residue particles.

Optimised, flexible machine use thanks to the integration of grinding belt and milling cutter; for combined or separate application.

also allows the grinding belt and milling cutter to be used not only in combination but also for separate grinding and milling operations.

PROGRAM CONTROL PREVENTS OPERATOR ERROR AND ENSURES REPRODUCIBILITY

All the parameters necessary for the machining of the samples are programmed via an operator terminal and remain stored. The operating cycles are performed fully automatically under program control and are therefore precisely reproducible.

Errors caused by incorrect use or wrong settings are a thing of the past. The preselected program parameters are protected by password.

SAFE, CLEAN WORKING

The machine is completely enclosed and meets all the relevant safety standards of the German accident prevention regulations and the VDE regulations.

A dust extraction unit can be easily connected to the machine via the fitting provided on the machine, thus guaranteeing clean work with no health-endangering dust development.

EASY CLEANING

Coarse dust and milling chips are collected in the machine housing in a pull-out tray and are therefore easy to remove.

The water tank for the cooling system can be removed from the housing within seconds for quick and easy cleaning.

MODULAR DESIGN ENSURES TAILOR-MADE MACHINES

Herzog products such as the HBF 4000 automatic grinder and miller have been specially developed to prepare samples for spectrochemical analysis. With their high technical standard and small size, they meet all the demands made on machine for use in laboratories.

The greatest advantage, however, is the modular design of Herzog products. They pave the way for fully automatic sample preparation with the benefits of highest precision and exact reproducibility.

In conjunction with robots and transport facilities, the machine can be perfectly integrated into laboratory automation systems.

HERZOG

TECHNICAL DATA

Model HBF 4000
Colour: blue/white

Lettering: English

Operating manual: 1 copy, English

Accessories: 1 set of grinding belts, 1 set of indexable inserts, 1 set of spanners

Dimensions L x W x H
Overall dimensions of machine:
1665 x 840 x 1620 mm

Switchgear cabinet:
1200 x 400 x 2000 mm

Machine floor area:
840 x 1120 mm

Weight
Machine: 1400 kg

Switchgear cabinet:
approx. 500 kg

Grinding belt dimensions
Coarse grinding belt:
200 x 2000 mm; grain 40,60

Fine grinding belt:
200 x 2000 mm; grain 80,100

Milling cutter dimensions
Diameter: 100 mm

Indexable cutting tips: 7

Power supply and consumption
Voltage: 400 V, 50 Hz, 3-phase AC

Neutral conductor:
not required

Power consumption: 20 kVA

Cable connection: on the left-hand side of the machine

Compressed air supply and consumption
Pressure setting:
min. 5 bar, max. 10 bar

Consumption:
approx. 750 dm3/N per sample

Connecting sleeve: OD 19 mm

Water supply and consumption
Pressure setting:
min. 2 bar, max. 5 bar

Consumption:
approx. 1.5 l per sample

Connecting sleeve: OD 19 mm

Discharge fitting – water
Discharge fitting: OD 40 mm

Discharge water pressure: Zero

Discharge fitting – dust
Location of dust extraction sleeve: on rear right-hand side of machine

Diameter of dust extraction sleeve:
OD = 120 mm, ID = 115 mm

Required exhaust rate:
15 m³/min. at 2100 Pa

Dust collecting tray: removed from the front

Sample clamping facility
Type: 2 clamping jaws, self-centering and parallel clamping

Clamping range: diameter max. 60 mm with 15 mm stroke per jaw

Thickness: 7–60 mm

Processable samples
Material: steel and iron

Form: without butt, round, oval and tab samples

Sample hardness: max. 64 HRC

Temperature: max. 800° C

Processing parameters
Grinding depth: max. 2 mm

Processing cycle time: application-dependent; for fine grinding approx. 32 s with cold samples, for milling approx. 35 s with cold samples

Machining programs
Programs: 16

Sample cooling
Cooling medium: compressed air and water

Cooling method: by means of cooling nozzles

Sample insertion and discharge
Insertion method: manual, into the sample insertion mask

Discharge method: manual, to discharge position

Electrical switchgear cabinet
Programmable controller:
SIMATIC S 7

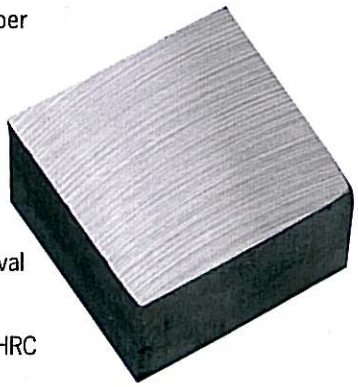
Control voltage: 24 V DC

Protection class: IP 44

Insulation class: B

The design of the machine complies with the applicable accident prevention and VDE regulations.

Technical modifications reserved.



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