Bead One HF

Benchtop high frequency fusion instrument

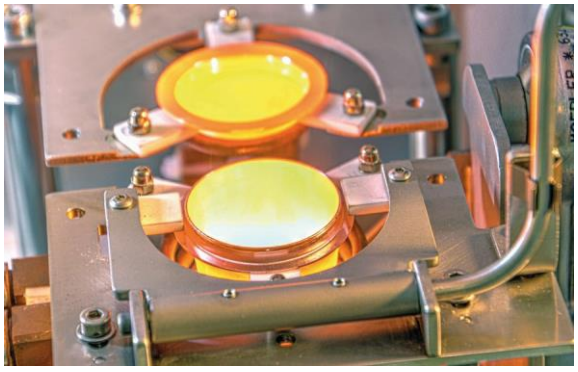
HERZOG

Bead One HF - Benchtop fusion instrument
High frequency induction heating technology

The Bead One HF offers maximum flexibility and accuracy in preparation of glass beads for XRF analysis. Due to its high-frequency induction heating technology the Bead One HF enables complex multi-step fusion processes and shortens preparation time.

Specially designed for demanding tasks

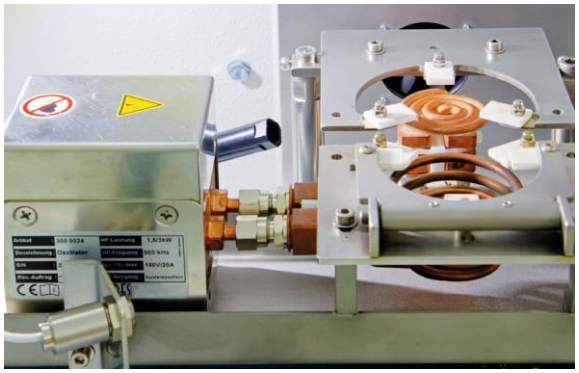
The Bead One HF offers you extensive functionality and flexibility for demanding analytical tasks. The inductive fusion method allows fast and instantaneous heating-up of the melt to the set temperature. The system operates without inertia and makes it possible to undergo complex preparation cycles requiring extremely precise temperature ramp up. This is useful for preparation procedures of, e.g., ferroalloys depending on several different oxidation and fusion steps of exactly defined temperatures and time lengths.



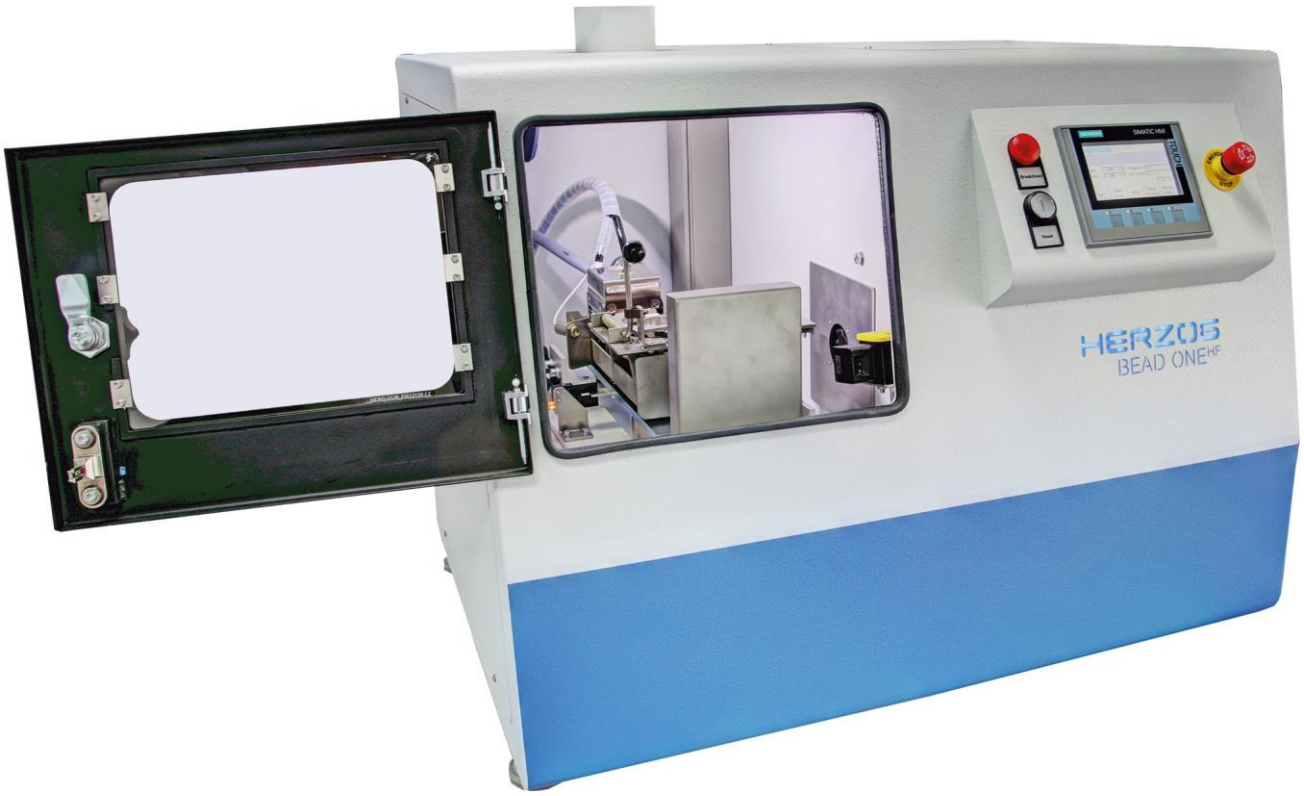
simultaneous heating of crucible and dish

Short fusion time and fast ramping up

The Bead One HF reaches temperatures of minimum 1300°C within a short period of time. Accordingly, the Bead One HF is reducing process time and increasing sample throughput. The high fusion and casting dish temperature of the Bead One HF shortens preparation time and improves bead quality for material requiring long-lasting fusion procedures. Moreover, short fusion times lead to low element losses and subsequently improve analysis accuracy and reliability. The crucible is oscillated in a circular movement to improve homogenization of the melt. Additionally, the crucible can be tilt by 45°.

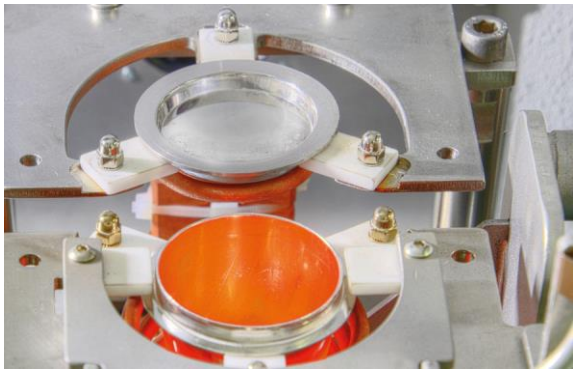


Fusion with seperate pyrometer for crucible and casting dish (optional)



Remarkable features of the Bead One HF are the compact design, easy operation and flexible programmability. The high-frequency induction technology enables complex fusion processes within short period of time.

Easy programm and parameter selection by HMI touch panel



High precision temperature control

Simultaneous heating of crucible and casting dish

Two separate high frequency generators supply power at the induction coil of the crucible and the casting dish. Since the casting dish is simultaneously heated up the fusion can be casted automatically into the preheated dish. Alternatively, the mold remains in the crucible until solid. The temperature curve of the dish is fully configurable and allows absolutely controlled cooling down subject to analytical requirements. Furthermore, it guarantees that glass buttons are free from reams and seeds. High performance pyrometers for crucible and casting dish ensure absolute temperature constancy. After solidifying, the casting dish is further cooled down by blowing with air.

Safety measures

The safety door is locked during the entire fusion and cooling process. Pouring is fully automatically without need for intervention. The Bead One HF has been designed for cold-to-cold operation and the user never comes in contact with hot vessels.

Easy to operate

Due to its small foot print design the Bead One HF can be set up flexibly at any location. Installation of the machine is very simple, no compressed air is needed. All fusion and cooling parameters can be easily set, modified, stored and monitored using the HMI panel of the machine.

At a glance

- Benchtop fusion instrument (high frequency induction technology) for preparation of glass disks for XRF analysis
- Highly accurate and precise analysis results for a wide range of different applications
- Optimally suited for complex preparation task due to short ramping up and precise temperature control
- Easy installation and operation, full flexibility in parameter setting, and circular rocking of the crucible for perfectly fused and homogenized beads
- Maximum safety measures including safety door locking and cold-to-cold operation

Technical data

Bead One HF

Colour	Blue/white RAL 5007 / 7035 / 7005
Dimension and Weight	
LxWxH	800x670x790mm
Weight	Approx. 140kg
Power supply and consumption	
Voltage	400 V, 50 Hz, 3/N/PE; CEE 32A
Power consumption	6.5 kVA
Protection class	IP50
Control system and panel	
Controller	Siemens S7
Panel	Touchpanel 4”
Language	German/English
Fusion process	
Number of definable programms	16
Number of definable steps per programm	Up to 10 parameters: · Temperature · Homogenization · Cooling time
Temperature range crucible	385 – 1300 °C
Temperature range dish	200 – 1200°C
Heating of crucible and dish	Simultaneous
Connections	
Cabel	Terminal
Compressed air	Not required
Exhaust air stuf	Top of the machine; DN=80mm
Cooling water; inlet/outlet	2x hose nozzle; NW9mm

Cooling water supply	
Cooling water	Min. 2l/min
Inlet pressure	min. 4bar, max. 6bar, cooling water supply directly to the machine
Temperature	20°C – 30°C
Bead diameters and cooling	
Diameters	29, 32, 34 and 39mm
Cooling	Electrical fan
Input/output	
Crucible, dish, bead	Manual

Options

- Temperature measuring of the dish
- Separate ultrasonic cleaning device
- Separate chiller for water

CE Die Ausführung der Maschine entspricht den geltenden UVV- und VDE-Vorschriften. Technische Änderungen vorbehalten.

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