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**TOP HAT FURNACE**

**HB**

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**HB****TOP HAT FURNACE**

The HB furnace range has an automatically operated vertically moving hood for heat treatment in air as standard option. This design allows samples to be accessed from three sides. The HB can be equipped with CrFeAl heating wires up 1300 °C or with MoSi<sub>2</sub> heating elements for temperatures up to 1800 °C.

The HB top hat furnaces are available with usable volumes of 80 to 560 litres. The hood moves up and down automated giving access to the hearth for loading and unloading. Alternatively the HB-BL 240 and HB-BL 430 litres model the hood is steady and the hearth moves up and down in a bottom loading way.

For debinding of technical ceramics, preheated air fans can be installed blowing hot air through the hearth into the furnace chamber. For safe combustion of binder gases several options are available, e.g. active propane gas after burner or catalytic oxidiser.

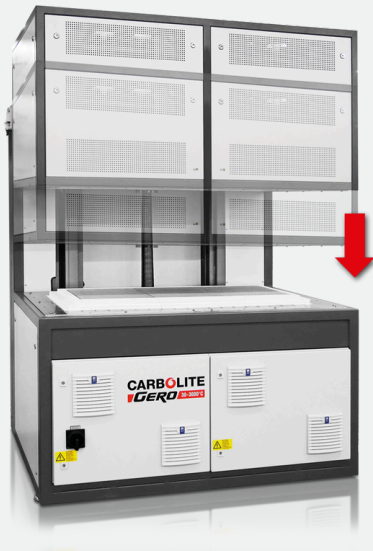
**HB****STANDARD FEATURES**

- | 1300 °C, 1600 °C, 1700 °C & 1800 °C maximum operating temperatures
- | From 80 to 514 litre capacities
- | FeCrAl wire heating elements for 1300 °C models
- | Energy efficient low thermal mass insulation
- | Ethernet communications
- | Programmable EPC3016P1 controller
- | HB = top hat. HB-BL = bottom loading
- | High quality molybdenum disilicide heating elements for higher temperatures
- | Over-temperature protection

## HB

## CONFIGURATIONS

The HB furnaces are available in two versions. The Top hat has a steady hearth and a movable hood. The Bottom loading furnaces (BL) have steady hood and a movable hearth.



HB 13/240 with optional preheated hot air blowers



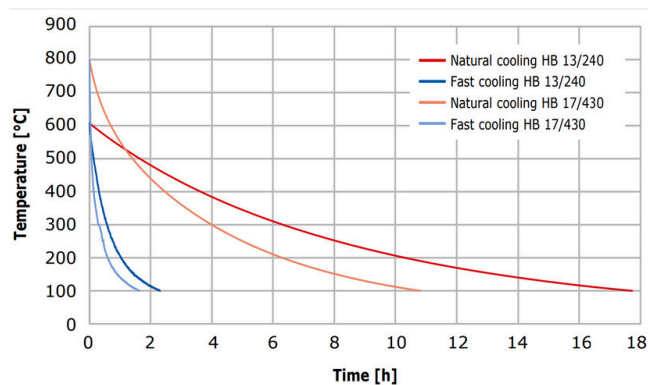
HB-BL 17/430 bottom loader with optional PLC and 19 inch touchscreen control and gas outlet connection to optional catalytical after burner

## HB

# OPTIONS

Specify these at time of order

- | A range of sophisticated digital controllers, multisegment programmers and data loggers with digital communication options is available – more information about controllers
- | Gas inlet for operation under modified atmosphere (not gas tight)
- | Preheated air blower up to 650°C
- | Active propane gas after burner or catalytic oxidiser for safe combustion of debinding applications
- | Reinforced base plate for a surface load of 500 kg/m<sup>2</sup> instead of 250 kg/m<sup>2</sup>
- | Bottom heater for improved temperature uniformity (this option cannot be combined with the reinforced base)
- | Fast cooling options



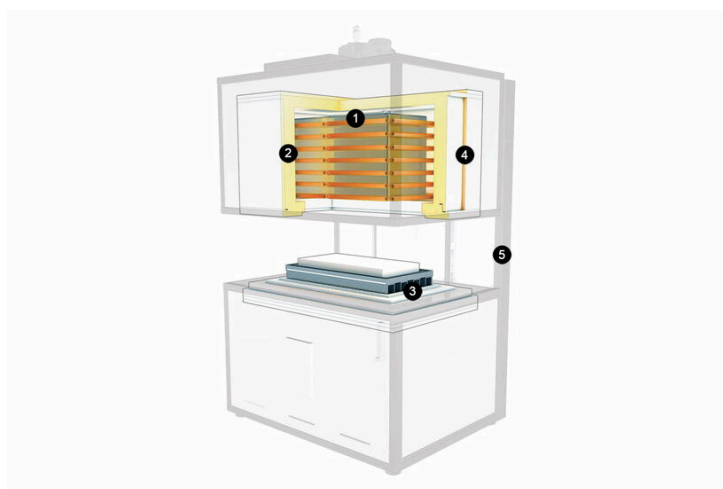
Comparison of natural and forced cooling option

## HB

# TECHNICAL DETAILS

## VIEW INSIDE

- 1| FeCrAl heating elements up to 1600 °C
- 2| Low thermal mass insulation
- 3| Top hat: steady hearth; Bottom loading: movable hearth
- 4| Top hat: movable hood; Bottom loading: steady hood
- 5| Frame



View inside HB top hat furnace

HB

# TECHNICAL DATA

TOP HAT FURNACE / HB

| Model       | Max temp (°C)    | Uniformity between 800°C and Tmax (°C) [DIN 17052] | Max. heat-up rate (°C/min) | Cooling time (h) |
|-------------|------------------|----------------------------------------------------|----------------------------|------------------|
| HB__/80     | 1700, 1800       | ± 5                                                | 5, 10, 10, 10              | 12, 14, 14, 14   |
| HB__/160    | 1700, 1800       | ± 5                                                | 5, 10, 10, 10              | 14, 14, 14, 14   |
| HB__/240    | 1600, 1700, 1800 | --                                                 | --                         | 14               |
| HB__/430    | 1600, 1700, 1800 | --                                                 | --                         | --               |
| HB__/560    | 1600, 1700, 1800 | --                                                 | --                         | --               |
| HB-BL__/240 | 1600, 1700, 1800 | --                                                 | --                         | 14               |
| HB-BL__/430 | 1600, 1700, 1800 | --                                                 | --                         | --               |

| Model       | Dimensions: Internal H x W x D (mm) | Dimensions: External H x W x D (mm) | Volume (l) | Max power (kW) |
|-------------|-------------------------------------|-------------------------------------|------------|----------------|
| HB__/80     | 500 x 400 x 400                     | 2580 x 1245 x 1650                  | 80         | 18, 45, 50, 60 |
| HB__/160    | 500 x 800 x 400                     | 2525 x 1475 x 1650                  | 160        | 30, 80, 85, 90 |
| HB__/240    | 500 x 1200 x 400                    | 2200 x 2200 x 1200                  | 240        | --             |
| HB__/430    | 600 x 1200 x 600                    | 2500 x 2200 x 1500                  | 430        | --             |
| HB__/560    | 780 x 1200 x 600                    | 2700 x 2200 x 1400                  | 560        | --             |
| HB-BL__/240 | 500 x 1200 x 400                    | 3600 x 2200 x 2500                  | 240        | 63, 65, 69, 75 |
| HB-BL__/430 | 600 x 1200 x 600                    | 3700 x 2200 x 2700                  | 430        | --             |

# HB

## CONTACT US →

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