



TOP HAT FURNACE - HB

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 MoSi2 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.

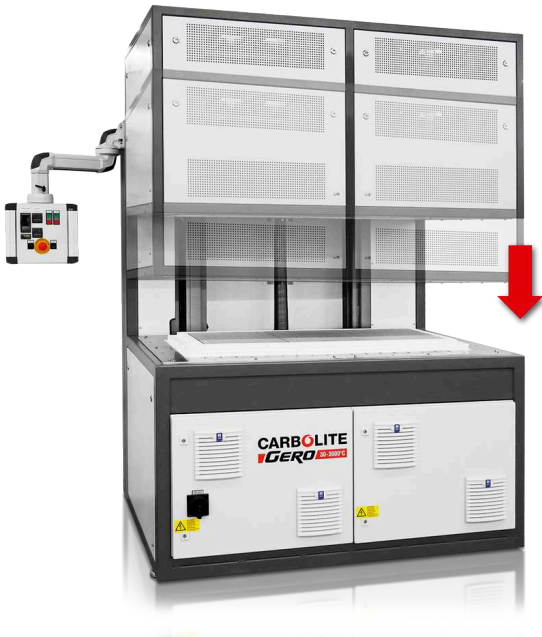
STANDARD FEATURES

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

TOP HAT FURNACE - 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 .



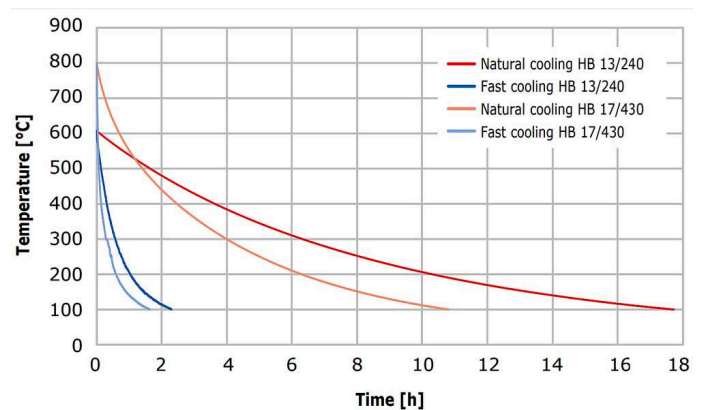
HB 13/240 with optional preheated hot air blowers



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

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/m² instead of 250 kg/m²
- | 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

TOP HAT FURNACE - HB

APPLICATION EXAMPLES

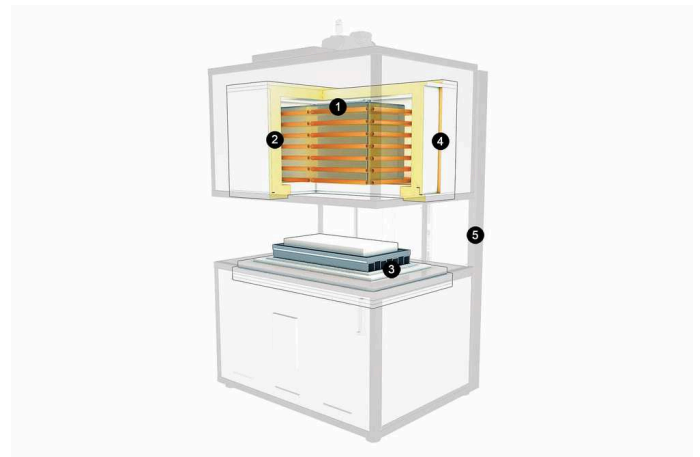
annealing, ceramic injection moulding (CIM), debinding, debinding in air, degassing, drying, sintering, sintering in air, sublimation, synthesis, tempering

TOP HAT FURNACE - 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



Layout diagram

TECHNICAL DETAILS (MODELS)

	HB_/80	HB_/160	HB_/240
Max temp (°C)	1700, 1800	1700, 1800	1600, 1700, 1800
Uniformity between 800°C and Tmax (°C) [DIN 17052]	± 5	± 5	--
Max. heat-up rate (°C/min)	5, 10, 10, 10	5, 10, 10, 10	--
Cooling time (h)	12, 14, 14, 14	14, 14, 14, 14	14
Dimensions:			
Internal H x W x D (mm)	500 x 400 x 400	500 x 800 x 400	500 x 1200 x 400
Dimensions:			
External H x W x D (mm)	2580 x 1245 x 1650	2525 x 1475 x 1650	2200 x 2200 x 1200
Volume (l)	80	160	240
Max power (kW)	18, 45, 50, 60	30, 80, 85, 90	--

	HB_/430	HB_/560	HB-BL_/240
Max temp (°C)	1600, 1700, 1800	1600, 1700, 1800	1600, 1700, 1800
Uniformity between 800°C and Tmax (°C) [DIN 17052]	--	--	--
Max. heat-up rate (°C/min)	--	--	--
Cooling time (h)	--	--	14
Dimensions:			
Internal H x W x D (mm)	600 x 1200 x 600	780 x 1200 x 600	500 x 1200 x 400
Dimensions:			
External H x W x D (mm)	2500 x 2200 x 1500	2700 x 2200 x 1400	3600 x 2200 x 2500
Volume (l)	430	560	240
Max power (kW)	--	--	63, 65, 69, 75

HB-BL__/430

Max temp (°C)	1600, 1700, 1800
Uniformity between 800°C and Tmax (°C) [DIN 17052]	--
Max. heat-up rate (°C/min)	--
Cooling time (h)	--
Dimensions: Internal H x W x D (mm)	600 x 1200 x 600
Dimensions: External H x W x D (mm)	3700 x 2200 x 2700
Volume (l)	430
Max power (kW)	--

Please note

- Maximum continuous operating temperature is 100 °C below maximum temperature

www.carbolite.com/hb