

## Forced Convection Bogie Hearth Furnaces

### Electrically Heated or Gas-Fired

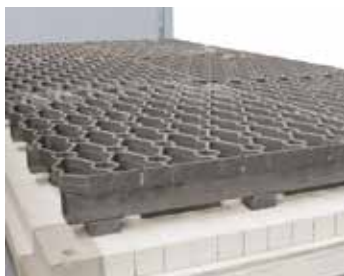


Forced convection bogie hearth furnace W 19150/60AS for tempering of semi-finished borosilicate glass products

The forced convection bogie hearth furnaces W 1000/60A - W 8300/85A are used when heavy charges weighing up to more than 25 t have to be heat-treated. They are ideal for processes such as solution like glass tempering or cooling from glass, for which a good temperature uniformity is crucial. The high-performance air circulation assures that the temperature uniformity achieved throughout the work space is outstanding. A broad selection of additional equipment enables these bogie hearth furnaces to be optimally adapted to suit specific processes.



Cooling fan for accelerated cooling



Charging grid in an forced convection bogie hearth furnace for even load distribution

- Tmax 600 °C or 850 °C
- Dual shell housing with rear ventilation provides for low shell temperatures for the 850 °C models
- Swing door hinged on the right side
- Heating from chrome steel heating elements for the 600 °C models
- Heating from three sides (both side walls and the trolley) for the 850 °C models
- High-performance air circulation fan with vertical circulation
- Temperature uniformity up to +/- 5 °C according to DIN 17052-1 see page 71
- Bottom heating protected by SiC tiles on the bogie providing level stacking surface for the 850 °C models
- Furnace chamber fitted with inner sheets made of stainless steel 1.4301 for 600 °C models and of 1.4828 for 850 °C models
- Insulation structured with high-quality mineral wool for 600 °C models
- Insulation made of high-quality, non-classified fiber material for 850 °C models
- Bogies with flanged wheels running on rails for easy and precise movement of heavy loads
- Electric chain-driven bogie in combination with rail operation for smooth movement of heavy loads from model W 4800
- Over-temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load
- Defined application within the constraints of the operating instructions
- NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Controls description see page 72

**Additional equipment**

- Direct gas heating or upon request with indirect gas heating with radiation tube
- Electric chain-driven bogie in combination with rail operation for smooth movement of heavy loads up to Model W 4000
- Optimization of the temperature uniformity up +/- 3 °C according to DIN 17052-1 see page 71
- Bogie running on steel wheels with gear rack drive, no rails in front of the furnace necessary
- Different possibilities for an extension to a bogie hearth furnace plant:
  - Additional bogies
  - Bogie transfer system with parking rails to exchange bogies running on rails or to connect multiples furnaces
  - Motor-driven bogies and cross-traversal system
  - Fully automatic control of the bogie exchange
- Electro-hydraulic lift door
- Motor-driven exhaust air flaps, adjustable via the program
- Uncontrolled or controlled cooling system with frequency-controlled cooling fan and motor-driven exhaust air flap
- Multi-zone control adapted to the particular furnace model provides for optimum temperature uniformity in the 850 °C models
- Commissioning of the furnace with test firing and temperature uniformity measurement (also with load) for the purpose of process optimization
- Designed for Tmax 950 °C, fan blade driven indirectly via a belt to protect the air recirculation motor against over-heating
- Process control and documentation via VCD software package or Nabertherm Control Center (NCC) for monitoring, documentation and control see page 72



Forced convection bogie hearth furnace W 10430/85AS



Forced convection bogie hearth furnace W 3300/85S with chain drive

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Heating power in kW <sup>1</sup>	Electrical connection*
		w	d	h		W	D	H		
W 1000/.. A	600 or 850	800	1600	800	1000	1800	2390	2305	45	3-phase
W 1600/.. A		1000	1600	1000	1600	2000	2390	2535	45	3-phase
W 2200/.. A		1000	2250	1000	2200	2000	3040	2535	90	3-phase
W 3300/.. A		1200	2250	1200	3300	2200	3040	2745	90	3-phase
W 4000/.. A		1500	2250	1200	4000	2500	3040	2780	110	3-phase
W 4800/.. A		1200	3300	1200	4800	2200	4090	2780	110	3-phase
W 6000/.. A		1500	3300	1200	6000	2500	4090	2900	140	3-phase
W 6600/.. A		1200	4600	1200	6600	2200	5390	2770	140	3-phase
W 7500/.. A		1400	3850	1400	7500	2400	4640	2980	140	3-phase
W 8300/.. A		1500	4600	1200	8300	2500	5390	2780	185	3-phase

<sup>1</sup>Depending on furnace design connected load might be higher

\*Please see page 73 for more information about supply voltage