

Annealing After Laser Sintering



Chamber furnace system LH 60/12 with manual lift door and protective gas box for non-flammable protective or reactive gases



Chamber furnace LH 30/12

The chamber furnace systems LH 15/12 - LH 60/12 have proven themselves for many years as professional chamber furnaces. For stress relief annealing after laser sintering, the furnaces are equipped with a protective gas box for non-flammable protective gas, e.g. argon, and a manual protective gas supply with solenoid valve. The design with gas supply box is a cost-effective alternative to retort furnaces and is suitable for many processes. The batch to be annealed is wrapped in annealing/hardening foil during the process to protect it from oxidation and decarburization. To protect the bottom insulation of the furnace from mechanical stress, a charging plate is required when using a gas supply box.

- Tmax 1200 °C
- Recommended operating temperatures up to 1100 °C, at operating temperatures up to 1150 °C increased wear of the protective gas box must be expected
- Dual shell housing with rear ventilation, provides for low shell temperatures
- High furnace chamber with five-sided heating for very good temperature uniformity
- Heating elements on support tubes ensure free heat radiation and a long service life
- Multi-layered insulation of light refractory bricks and special backup insulation
- Self-supporting arch for high stability and greatest possible protection against dust
- Motor driven exhaust air flap
- Adjustable air inlet in furnace floor
- Base included
- Protective gas boxes for inert gas atmosphere with additional thermocouple, type K
- Solenoid valve, controlled via the extra function of the controller P470
- Charge control for measuring the temperature directly at the load in the gas supply box
- Charging plate and annealing and hardening foils
- 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 22



Gas supply system for non-flammable protective or reactive gas with shutoff valve and flow meter with regulator valve, optionally with magnetic valve

Model	Tmax furnace °C	Inner dimensions protective gas box in mm			Volume in l	Outer dimensions in mm ³			Heating power in kW	Electrical connection*	Weight in kg	Minutes to 1100 °C ²
		w	d	h		W	D	H				
LH 15/12 System	1200	100	100	100	15	680	860	1230	5.0	3-phase ¹	170	44
LH 30/12 System	1200	170	170	170	30	710	930	1290	7.0	3-phase ¹	200	60
LH 60/12 System	1200	250	250	250	60	790	1080	1370	8.0	3-phase	300	85

¹Heating only between two phases

*Please see page 22 for more information about supply voltage

²In the empty and closed furnace, connected to 230 V 1/N/PE resp. 400 V 3/N/PE

³External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.



Chamber furnace system N 7/H with protective gas box



Chamber furnace system N 41/H with protective gas box

Chamber furnace systems N 7/H - N 41/H with their low but deep furnace chamber are particularly suitable for smaller batches. The process in these furnaces can be carried out exactly as in the chamber furnace systems LH 15/12 - LH 60/12.

- Tmax 1150 °C
- The recommended working temperature is max. 1100 °C. Higher wear and tear of the protective gas box has to be expected at higher working temperatures up to 1150 °C
- Deep furnace chamber with three-sides heating: from both side walls and bottom
- Heating elements on support tubes ensure free heat radiation and a long service life
- Bottom heating protected by heat-resistant SiC plate
- Multi-layer insulation with high-quality lightweight refractory bricks in the furnace chamber
- Exhaust opening in the side of the furnace, or on back wall of chamber furnace system N 41/H and higher
- Chamber furnace systems N 7/H - N 17/HR are designed as tabletop models
- Base included with chamber furnace system N 41/H
- Protective gas boxes for inert gas atmosphere with additional thermocouple, type K
- Solenoid valve, controlled via the extra function of the controller P470
- Charge control for measuring the temperature directly at the load in the gas supply box
- Charging plate and annealing and hardening foils
- Defined application within the constraints of the operating instructions
- NTLLog Basic for Nabertherm controller: recording of process data with USB-flash drive
- Controls description see page 22



Protective gas box included in scope of delivery

Further information about the accessories for inert gas applications can be found on the following pages.

Model	Tmax °C	Inner dimensions protective gas box in mm			Volume in l	Outer dimensions in mm ³			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ²
		w	d	h		W	D	H				
N 7/H System	1150	180	190	90	9	800	650	600	3.0	1-phase	60	180
N 11/H System	1150	180	290	90	11	800	750	600	3.5	1-phase	70	180
N 11/HR System	1150	180	290	90	11	800	750	600	5.5	3-phase ¹	70	120
N 17/HR System	1150	180	440	90	17	800	900	600	6.4	3-phase ¹	90	120
N 41/H System	1150	280	380	200	41	1040	1250	1340	15.0	3-phase	260	120

¹Heating only between two phases
²In the empty and closed furnace, connected to 230 V 1/N/PE resp. 400 V 3/N/PE
³External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.
 *Please see page 22 for more information about supply voltage