

Dental



Furnaces and Accessories

**Sintering Furnaces for
Zirconia
Translucent Zirconia
CoCr Alloys
CAD/CAM Systems
Burnout Furnaces
Laser Sintering
Model Casting
Production Furnaces**

www.nabertherm.com

■ Made
■ in
■ Germany



Made in Germany

Nabertherm with 450 employees worldwide have been developing and producing industrial furnaces for many different applications for over 60 years. As a manufacturer, Nabertherm offers the widest and deepest range of furnaces worldwide. 150,000 satisfied customers in more than 100 countries offer proof of our commitment to excellent design, quality and cost efficiency. Short delivery times are ensured due to our complete inhouse production and our wide variety of standard furnaces.

Setting Standards in Quality and Reliability

Nabertherm does not only offer the widest range of standard furnaces. Professional engineering in combination with inhouse manufacturing provide for individual project planning and construction of tailor-made thermal process plants with material handling and charging systems. Complete thermal processes are realized by customized system solutions.

Innovative Nabertherm control technology provides for precise control as well as full documentation and remote monitoring of your processes. Our engineers apply state-of-the-art technology to improve the temperature uniformity, energy efficiency, reliability and durability of our systems with the goal of enhancing your competitive edge.

Global Sales and Service Network – Close to you

Centralized engineering and manufacturing and decentralized sales and service define our strategy to live up to your needs. Long term sales and distribution partners in all important world markets ensure individual on-site customer service and consultation. There are various reference customers in your neighborhood who have similar furnaces or plants.



Large Customer Test Center

What furnace is the right choice for this specific process? This question cannot always be answered easily. Therefore, we have set up our modern test center which is unique in respect to size and variety. A representative number of furnaces is available for tests for our customers.

Customer Service and Spare Parts

Our professional service engineers are available for you worldwide. Due to our complete inhouse production, we can despatch most spare parts from stock over night or produce with short delivery time.

Experience in Many Fields of Thermal Processing

In addition to furnaces for laboratory, Nabertherm offers a wide range of standard furnaces and plants for many other thermal processing applications. The modular design of our products provides for customized solutions to your individual needs without expensive modifications.

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Cobalt-Chromium Sintering System LT 02/13 CR



LT 02/13 CR



LT 02/13 CR



Forced cooling system with compressed air



Flowmeter for Argon

LT 02/13 CR

The high-temperature furnace LT 02/13 CR is perfectly suited for sintering of cobalt-chromium restorations. The blanks are placed in the retort and will be sintered under argon. The specific design in combination with sintering pearls provides for good sintering results in a nearly oxygen-free atmosphere at very low argon consumption.

The system is open and can be programmed for various materials up to sintering temperatures of 1300 °C. Furthermore, the model LT 02/13 CR is designed for a single-phase connection.

- Tmax 1300 °C
- Working temperature up to 1280 °C, depending on the CoCr material
- Single-phase connection
- High quality, non-classified fiber material
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Gas supply system with solenoid valve and flow meter
- Multi-part gassing retort with good sealing for sintering under argon
- Retort volume for up to 30 units per sintering process
- Controller allows for automatic temperature control and switching of the gas flow
- Switching system with solid-state-relays to switch the heating
- 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
- Controls description see page 15

Additional equipment

- Process control and documentation with Controltherm MV software package see page 16
- Forced cooling system with compressed air

Model	Tmax °C	Inner dimensions in mm			Volume in l	Maximum units	Outer dimensions in mm			Connected load kW	Electrical connection ²	Weight in kg	Minutes to Tmax ⁴
		w	d	h			W	D	H ¹				
LT 02/13 CR	1300	110	120	120	1,5	30	402	370 (455 ³)	475 + 195	3.5	1-phase	25	35

¹Including opened lift door

²Including compressed air connection for forced cooling

³These furnaces are available for main voltage of 110 V - 120 V resp. 220 V - 240 V, 1/N/PE or 2/PE

⁴If connected at 230 V 1/N/PE

High-Temperature Chamber Furnaces up to 1650 °C suitable for Sintering Translucent Zirconia



LHT 03/17 D



LHT 01/17 D

LHT 01/17 D - LHT 03/17 D

These furnaces are perfectly suited for sintering of translucent zirconia units. The special molybdenum disilicide heating elements offer best possible protection against chemical interaction between charge and heating elements.

The zirconia units are positioned in ceramic saggars. Up to three saggars can be stacked into the furnace.

- Tmax 1650 °C
- Furnace chamber with a volume of 1 or 2 liters
- High-quality heating elements made of molybdenum disilicide offer best possible protection against chemical interaction between charge and heating elements
- Furnace chamber lined with first-class, durable fiber material
- Housing made of sheets of textured stainless steel
- Dual shell housing with additional fan cooling for low surface temperature
- Compact design with lift door, opening upwards
- Adjustable air inlet integrated in the door
- Exhaust air opening in the roof
- Precise temperature control, also in the lower temperature range for drying
- Switching system with phase-angle firing thyristors (SCRs)
- Delivery incl. starter set to charge the zirconia works
- Defined application within the constraints of the operating instructions
- Controls description see page 15



Charge sagger, starter-set

Additional equipment

- 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
- Sagger for charging of up to three layers see page 13
- Process control and documentation with Controltherm MV software package see page 16
- Protective gas connection for non-flammable protective or reaction gases
- Manual or automatic gas supply system



Over-temperature limiter

Model	Tmax °C	Inner dimensions in mm			Volume in l	Maximum units	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ¹
		w	d	h			W	D	H ²				
LHT 01/17 D	1650	110	120	120	1	45	382	450	525+195	3.6	1-phase	28	10
LHT 03/17 D	1650	135	155	200	2	75	470	620	770+260	3.0	1-phase	75	60

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE

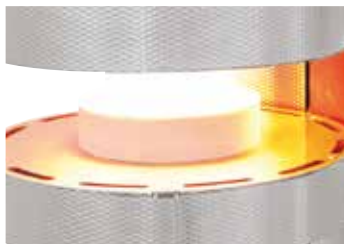
¹If connected at 230 V 1/N/PE

²Including opened lift door

High-Temperature Lift-Bottom Furnace up to 1650 °C for Sintering of Translucent Zirconia with Integrated Speed Cooling System



LHT 02/17 LB Speed with rapid cooling function



Automated table lowering for cooling



Charge saggar, starter-set

LHT 02/17 LB Speed

Due to its maximum temperature of 1650 °C this model is perfectly suited for sintering of translucent zirconia. The electrically driven lift-bottom provides for easy charging. The heating all around the cylindrical furnace chamber provides for a good temperature uniformity.

By using special heating elements made of molybdenum disilicide crowns and bridges are protected against chemical contamination at the best. The charge will be placed in saggars made of technical ceramics. Up to three saggars on top of each other guarantee high productivity.

Model LHT 02/17 LB Speed is additionally equipped with rapid cooling device. The furnace automatically opens stepwise for faster cooling. Depending on the charge and the type of saggars process times shorter than two hours can be realized.

- Tmax 1650 °C
- High-quality heating elements made of molybdenum disilicide offer best possible protection against chemical interaction between charge and heating elements
- Furnace chamber lined with first-class, durable fiber materials
- Outstanding temperature uniformity due to all-round furnace chamber heating
- Furnace chamber with a volume of 2 liters, table with large floor space
- Electric screw drive with push button operation, automatic opening of Speed model for cooling possible
- Housing made of sheets of textured stainless steel
- Exhaust air vent in the roof
- Speed model with drying function. When starting the program the table will be driven in drying position and closes automatically at 500 °C
- Delivery incl. starter set to charge the zirconia works
- Defined application within the constraints of the operating instructions
- Controls description see page 15

Additional equipment

- 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
- Saggar for charging of up to three layers see page 13
- Process control and documentation with Controltherm MV software package see page 16

Model	Tmax °C	Inner dimensions in mm		Volume in l	Maximum units	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ¹
		Ø	h			W	D	H				
LHT 02/17 LB Speed	1650	Ø 120	130	2	75	540	610	740	3.3	1-phase	85	80

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE

¹If connected at 230 V 1/N/PE

High-Temperature Furnace with SiC Rod Heating for Sintering Zirconia up to 1550 °C



HTCT 01/16



HTCT 01/16

HTCT 01/16

Designed as table model with SiC heating rods, this model offers numerous advantages when sintering zirconia. The large heating chamber and fast heating-up times make this model a good selection for the CAD/CAM processing of zirconia. The furnace controller can be freely programmed for the individual sintering of the zirconia material. The model HTCT 01/16 is moreover designed for connection to the single-phase mains supply.

- Tmax 1550 °C
- Working temperature 1500 °C, increased wear and tear of heating elements must be expected in case of working at higher temperatures
- Single-phase connection
- High-quality fiber material, selected for the working temperature
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Adjustable air inlet integrated in the door
- Switching system with solid-state-relays, power tuned to the SiC rods
- Easy replacement of heating rods
- Defined application within the constraints of the operating instructions
- Controls description see page 15

Additional equipment

- 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
- Square saggars for charging of up to three layers see page 13
- Lid for top saggars



Furnace chamber with high-quality fiber materials and SiC heating rods on both sides of the furnace



Saggars with top lid

Model	Tmax °C	Inner dimensions in mm			Volume in l	Maximum units	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ²
		w	d	h			W	D	H ¹				
HTCT 01/16	1550	110	120	120	1,5	45	340	300	460 + 195	3.5	1-phase	18	40

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE

¹Including opened lift door

²If connected at 230 V 1/N/PE

Production Furnaces for Debinding and Presintering or for Sintering



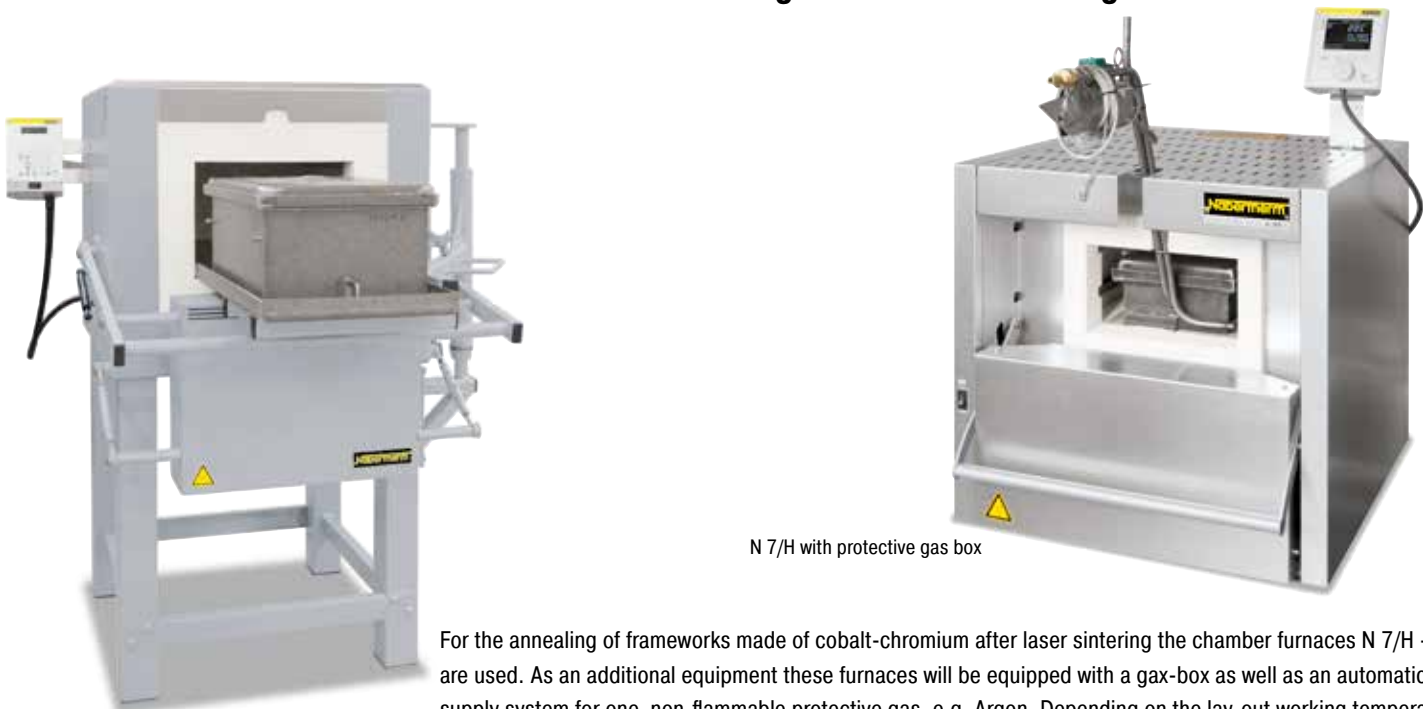
N 650/HDBS

N 300/14 HDBII-2

In addition to the furnaces shown for sintering in laboratory scale, Nabertherm also offers numerous solutions for production. For the production of zirconia blanks there are e.g. production plants that initially provide for the debinding followed by the presintering of the product. In these plants, highest precision with regard to temperature uniformity and reproducibility is of utmost importance in order to satisfy the requirements on the blank with respect to shrinkage and compliance with the later sintering temperature.

For the full sintering of milled crowns and bridges in production scale, Nabertherm offers high-temperature furnaces having a considerably larger capacity than the laboratory furnaces shown here. In this connection, please ask for our special "Advanced Materials" catalog.

Furnaces for Annealing after Laser Sintering



N 41/H with protective gas box

N 7/H with protective gas box

For the annealing of frameworks made of cobalt-chromium after laser sintering the chamber furnaces N 7/H - N 61/H are used. As an additional equipment these furnaces will be equipped with a gas-box as well as an automatic gas-supply system for one non-flammable protective gas, e.g. Argon. Depending on the lay-out working temperatures of 1100 °C are possible. Defined application within the constraints of the operating instructions. Please ask for our catalog "Thermal Process Technology".

Compact Burnout Furnaces



LE 1/11



LE 6/11

LE 1/11 - LE 14/11

With their unbeatable price/performance ratio, these compact burnout furnaces are perfect for burnout in the dental laboratory. They convince by very fast possible heating ramps and attractive design. Quality features like the dual shell housing of stainless steel, their compact, lightweight design, or the heating elements installed in quartz glass tubes make these models a reliable partner for your dental application.

- Tmax 1100 °C, working temperature 1050 °C
- Heating from two sides from heating elements in quartz glass tubes
- Maintenance-friendly replacement of heating elements and insulation
- Multi-layer insulation with fiber plates in the furnace chamber
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Flap door which can also be used as a work platform
- Exhaust air outlet in rear wall
- Solid state relays provide for low-noise operation
- Compact dimensions and light weight
- Controller mounted in side space (under the door on the LE 1/11 and LE 2/11 to save space)
- For maximum number of chargeable muffles in the furnace models see page 16
- Defined application within the constraints of the operating instructions
- Controls description see page 15



Maximum chargeable number of burnout muffles see page 16

Additional equipment

- Chimney, chimney with fan or catalytic converter (not for LE 1 and LE 2). For burn-out of muffles and speed investment materials we recommend the use of a catalyzt.
- 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
- Protective gas connection for non-flammable protective or reaction gases
- Manual gas supply system
- Please see page 14 for more accessories
- Process control and documentation with Controltherm MV software package see page 16

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ¹
		w	d	h		W	D	H				
LE 1/11	1100	90	115	110	1	250	265	340	1,5	1-phase	10	10
LE 2/11	1100	110	180	110	2	275	380	350	1.8	1-phase	10	25
LE 6/11	1100	170	200	170	6	510	400	320	1.8	1-phase	18	35
LE 14/11	1100	220	300	220	14	555	500	370	2.9	1-phase	25	40

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE
¹If connected at 230 V 1/N/PE



Over-temperature limiter

Burnout Furnaces for Burn-Out of Muffles and Speed Investment Material



L 3/12



L 5/11



Adjustable air inlet integrated in the door

L 1/12 - LT 15/12

These burnout furnaces are the perfect choice for daily work in the dental laboratory. These furnaces stand for excellent workmanship, advanced, attractive design and highest level of reliability. They are perfectly suitable for burnout of muffles and also for speed investments. These furnaces come equipped with either a flap door or lift door at no extra charge. Furnaces L 3/11 - LT 15/12 come with a fiber insulation for 1100 °C or 1200 °C.

- Tmax 1100 °C or 1200 °C
- Heating from two sides by ceramic heating plates
- Ceramic heating plates with integral heating element which is safeguarded against fumes and splashing, and easy to replace
- Highly durable cured vacuum fiber module lining
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and high stability
- Optional flap door (L) which can be used as work platform or lift door (LT) with hot surface facing away from the operator
- Adjustable air inlet integrated in door (see illustration)
- Exhaust air outlet in rear wall of furnace
- Solid state relays provide for low-noise operation
- For maximum number of chargeable muffles in the furnace models see page 16
- Defined application within the constraints of the operating instructions
- Controls description see page 15

Additional equipment

- Chimney, chimney with fan or catalytic converter (not for L 1). For burn-out of muffles and speed investment materials we recommend the use of a catalyst.
- 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



Over-temperature limiter



LT 3/11



LT 5/12

- Protective gas connection for non-flammable protective or reaction gases
- Manual or automatic gas supply system
- Please see page 14 for more accessories
- Process control and documentation with Controltherm MV software package see page 16



L(T) 3/..



L(T) 5/..



L(T) 9/..

Maximum Chargeable Number of Burnout Muffles see Page 16

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ²
		w	d	h		W	D	H ¹				
L, LT 3/11	1100	160	140	100	3	380	370	420	1.2	1-phase	20	60
L, LT 5/11	1100	200	170	130	5	440	470	520	2.4	1-phase	35	60
L, LT 9/11	1100	230	240	170	9	480	550	570	3.0	1-phase	45	75
L, LT 15/11	1100	230	340	170	15	480	650	570	3.5	1-phase	55	90
L 1/12	1200	90	115	110	1	250	265	340	1.5	1-phase	10	25
L, LT 3/12	1200	160	140	100	3	380	370	420	1.2	1-phase	20	75
L, LT 5/12	1200	200	170	130	5	440	470	520	2.4	1-phase	35	75
L, LT 9/12	1200	230	240	170	9	480	550	570	3.0	1-phase	45	90
L, LT 15/12	1200	230	340	170	15	480	650	570	3.5	1-phase	55	105

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE

¹Including opened lift door

²If connected at 230 V 1/N/PE

Burnout Furnaces with Brick Insulation



N 7/H as table-top model

N 7/H - N 17/HR

With their brick insulation and the robust table-top design, furnaces N 7/H - N 17/HR are the workhorses for the daily use in the dental laboratory. Heating elements in both sides and the bottom provide for excellent temperature uniformity even if the furnace is fully charged. The furnaces can be used for the burnout of muffles or for speed investments.



Maximum chargeable number of burnout muffles see page 16

- Tmax 1280 °C
- Three-sided heating from both sides and the 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
- Parallel swinging door which opens downward, or upward upon request
- For maximum number of chargeable muffles in the furnace models see page 16
- Defined application within the constraints of the operating instructions
- Controls description see page 15

Additional equipment

- Chimney, chimney with fan or catalytic converter
- 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
- Protective gas connection for non-flammable protective or reaction gases
- Manual or automatic gas supply system
- Please see page 14 for more accessories



Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax ²
		w	d	h		W	D	H				
N 7/H	1280	250	250	140	9	720	640	510	3,0	1-phase	60	180
N 11/H	1280	250	350	140	11	720	740	510	3,6	1-phase ¹	70	180
N 11/HR	1280	250	350	140	11	720	740	510	5,5	3-phase ¹	70	120
N 17/HR	1280	250	500	140	17	720	890	510	6,4	3-phase ¹	90	120

*These furnaces are available for main voltage of 110 V - 120 V resp. 200 V - 240 V, 1/N/PE or 2/PE

¹Heating only between two phases

²If connected at 230 V 1/N/PE

Accessories for Sintering Furnaces



Starter-Set, Ø 115 mm
 Article No.: 699001066



Sintering Dish, Ø 115 mm
 Article No.: 699001054



Spacer Ring with Ventilation Openings
 Article No.: 699001055

Charge Saggars for Sintering Furnaces LHT 02/17 LB Speed and LHT 03/17 D

For charging zirconia workpieces charge saggars are recommended. A sagger basically consists of the sintering dish as base and the spacer ring with ventilation openings. The material is highly resistant to temperature fluctuations and can be used for processes with short heat-up and cool-down times.

When charging the furnace it must be ensured that the lower charge carrier is generally resting on the spacer ring. This provides for air-circulation under this carrier and improves the temperature uniformity. It is recommended to cover upper sagger with another sintering dish as lid.

The starter set consists of a charge sagger, a spacer ring as a base and a second sintering dish as lid. The use of additional saggars (sintering dish and spacer ring) allows charging on additional levels. Both furnace models are designed to get charged with up to three charge saggars.

Number of required charge levels in overview:

- 1 level: Starter set which includes 2 sintering dishes and 2 spacer rings
- 2 levels: Starter set + 1 sintering dish + 1 spacer ring
- 3 levels: Starter set + 2 sintering dishes + 2 spacer rings



Safe charging on up to three levels



Charge Sagger, 110 x 75 x 30 mm
 Article No.: 699000279



Lid for Charge Sagger
 Article No.: 699000985

Charge Sagger for Sintering Furnaces HTCT 01/16 and LHT 01/17 D

Placing the zirconia product in charge saggars provides for optimum utilization of the furnace chamber. Up to three saggars can be stacked in the furnaces. The integrated air slots ensure a better air circulation of the charge. The upper sagger can be closed with a separate ceramic lid.



Safe charging on up to three levels

Note: The accessories described above are designed for cold charging and discharging. Removing the accessories in hot condition is not possible.

Accessories for Preheating Furnaces



Article No.:
631000140

Chimney for connection to an exhaust pipe.



Article No.:
631000812

Chimney with fan, to remove exhaust gas from the furnace better. The B 400 - P 480 controllers can be used to activate the fan automatically (not for models L(T) 15.., L 1/12, LE 1/11, LE 2/11).*



Article No.:
631000166

Catalytic converter with fan for removal of organic components from the exhaust air. Organic components are catalytically oxidized at about 600 °C, broken into carbon dioxide and water vapour. Irritating odors are thus largely eliminated. The B 400 - P 480 controllers can be used to switch the catalytic converter automatically (not for models L(T) 15.., L 1/12, LE 1/11, LE 2/11).*

* Note: If other controller types are used an adapter cable for connection to mains supply has to be ordered separately. The device will be activated by plugging in the socket.

Select between different **bottom plates** and **collecting pans** for protection of the furnace and easy loading (for models L, LT and LE on pages 9 - 11).



Ceramic ribbed plate, Tmax 1200 °C



Ceramic collecting pan, Tmax 1300 °C



Steel collecting pan, Tmax 1100 °C

For models	Ceramic ribbed plate		Ceramic collecting pan		Steel collecting pan (Material 1.4828)	
	Articel No.	Dimensions in mm	Articel No.	Dimensions in mm	Articel No.	Dimensions in mm
L 1, LE 1	691601835	110 x 90 x 12,7	-	-	691404623	85 x 100 x 20
LE 2	691601097	170 x 110 x 12,7	691601099	100 x 160 x 10	691402096	110 x 170 x 20
L 3, LT 3	691600507	150 x 140 x 12,7	691600510	150 x 140 x 20	691400145	150 x 140 x 20
LE 6, L 5, LT 5	691600508	190 x 170 x 12,7	691600511	190 x 170 x 20	691400146	190 x 170 x 20
L 9, LT 9, N 7	691600509	240 x 220 x 12,7	691600512	240 x 220 x 20	691400147	240 x 220 x 20
LE 14	691601098	210 x 290 x 12,7	-	-	691402097	210 x 290 x 20
L 15, LT 15, N 11	691600506	340 x 220 x 12,7	-	-	691400149	230 x 330 x 20

General Accessories

Heat-resistant **gloves** for protection of the operator when loading or removing hot materials, resistant to 650 °C or 700 °C.



Article No.:
493000004

Gloves, Tmax 650 °C.



Article No.:
491041101

Gloves, Tmax 700 °C.



Article No.:
493000002 (300 mm)
493000003 (500 mm)

Various **tongs** for easy loading and unloading of the furnace.

Process Control and Documentation

Nabertherm has many years of experience in the design and construction of both standard and custom control system. All controls are remarkable for their ease of use and even in the basic version have a wide variety of functions.

Functionality of the Standard Controllers	R 6	3216	B 400 B 410	C 440 C 450	P 470 P 480
Number of programs	1	1	2	10	50
Segments	1	8	4	20	40
Extra functions (e.g. fan or autom. flaps)			2	2	2-6
Maximum number of control zones	1	1	1	1	3
Drive of manual zone regulation			●	●	●
Auto tune		●	●	●	●
Status messages in clear text			●	●	●
Data entry via jog wheel and buttons			●	●	●
Keypad lock			●	●	●
User administration			●	●	●
Skip-button for segment jump			●	●	●
Program entry in steps of 1 °C or 1 min.	●	●	●	●	●
Start time configurable (e.g. to use night power rates)			●	●	●
Switch-over °C/°F	○	○	●	●	●
kWh meter			●	●	●
Operating hour counter			●	●	●
Real-time clock			●	●	●
Set point output			●	●	●
NTLog Basic for Nabertherm Controller: Recording of process data with USB-flash drive			●	●	●
Interface for MV software			○	○	○

● Standard
 ○ Option



B 410/C 450/P 480



B 400/C 440/ P 470

Data saving via Nabertherm Controller with NTLog

NTLog allows for recording of process data of the connected Nabertherm Controller (B 400, B 410, C 440, C 450, P 470, P480) on a USB stick.

The process documentation with NTLog Basic requires no additional thermocouples or sensors. Only data recorded which are available in the controller.

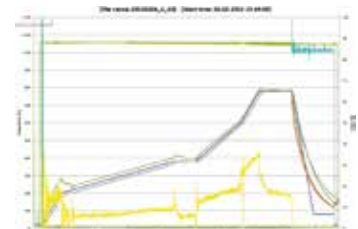
The data stored on the USB stick (up to 80,000 data records, format CSV) can afterwards be evaluated on the PC either via NTGraph or a spreadsheet software used by the customer (e.g. MS Excel).

For protection against accidental data manipulation the generated data records contain checksums.

Visualization with NTGraph

The process data from NTLog can be visualized either using the customer's own spreadsheet program (e.g. MS-Excel) or NTGraph. With NTGraph Nabertherm provides for a user-friendly tool free of charge for the visualization of the data generated by NTLog. Prerequisite for its use is the installation of the program MS Excel (version 2003/2010/2013). After data import presentation as diagram, table or report can be chosen. The design (color, scaling, reference labels) can be adapted by using eight prepared sets.

NTGraph is available in seven languages (DE/EN/FR/SP/IT/CH/RU). In addition, selected texts can be generated in other languages.



NTGraph, a freeware for the easy-to-read analysis of recorded data using MS Excel

Controltherm MV Software for Control, Visualisation and Documentation

Documentation and reproducibility gain increased attention with steadily rising quality standards. The powerful Nabertherm software Controltherm MV provides for an optimum solution for the control and documentation of one or more furnaces as well as charge data on basis of Nabertherm controllers.

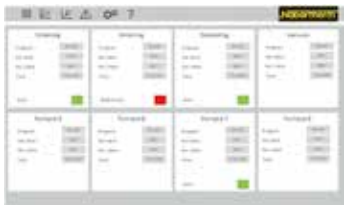
In the basic version one furnace can be connected to the MV-software. The system can be extended to 16 multi-zone controlled furnaces. Up to 400 different heat treatment programs can be stored. The process will be documented and filed. Process data can be read-out graphically or in table format. A data transfer to MS-Excel is also possible.

For furnaces which are not controlled via a Nabertherm controller, the furnace temperature can be documented with the MV-software. We deliver an extension package as additional equipment.

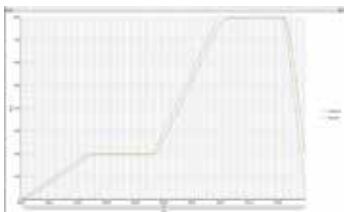
With respect to the individual version, three, six or even nine independent thermocouples can be connected. Independent of the control system, the values of each thermocouple will be read-out and evaluated by the MV-software.



Controltherm MV Software for Control, Visualisation and Documentation



Clear display of connected furnaces



Graphical display of setpoint and actual values

Features

- Simple installation without specific knowledge
- Available for controllers B 400/B 410/C 440/C 450/P 470/P 480
- Suitable for PC with operating system Microsoft Windows 8/8.1 (32/64 Bit), Windows 7 (32/64 Bit), XP with SP 3
- All Nabertherm controllers with interface connectable
- Manipulation protected storage of temperature curves of up to 16 furnaces (also multizone-controlled), depending on the version of MV-software
- Redundant storage on a network server possible
- Programming, archiving and printing of programs and graphics
- Free input of descriptive charge data text with comfortable search function
- Data exportable into Excel format for further evaluation
- Start/stop of the controller from the local PC
- Selectable languages: German, English, French, Italian or Spanish

Maximum Chargeable Number of Burnout Muffles

The table below indicates the maximum number of burnout muffles that can be charged in our different muffle furnaces.



L(T) 3/..



L(T) 5/..



L(T) 9/..

Model	Muffle type			
	Size 1 x (Ø 37 mm)	Size 3 x (Ø 55 mm)	Size 6 x (Ø 72 mm)	Size 9 x (Ø 88 mm)
LE 1	6	4	1	1
LE 2	8	6	2	2
LE 6	20	9	4	2
LE 14	35	20	12	6
L 1	6	4	1	1
L 3	12	6	2	2
L 5	20	9	4	2-3
L 9	36	16	9	4
L 15	54	24	12	6

The whole World of Nabertherm: www.nabertherm.com

Please visit our website

www.nabertherm.com and find out all you want to know about us - and especially about our products.

Besides news and our current calendar of trade fairs, there is also the opportunity to get in touch directly with your local sales office or nearest dealer worldwide.

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