

Contents

	Page
Zirconia Sintering Furnaces	
High-Temperature Furnaces HTC 01/14 - HTCT 08/16 with SiC Rod Heating, optionally with Flap Door or Lift Door for Zirconia Sintering	4
High-Temperature Furnaces LHT with MoSi ₂ Heating Elements for Zirconia Sintering	5
High-Temperature Lift-bottom Furnace LHT/LB without and LHT/LBR with Retort for Zirconia Sintering	6
High-Temperature Lift-bottom Furnace HTC 02/16 LB with SiC Rod Heating for Zirconia Sintering	7
Burnout Furnaces	
Professional Burnout Furnaces: L 3/11 - LT 40/12 with Flap Door or Lift Door	8
Burnout Furnaces LT 5/11 HA - LT 15/11 HA with integrated Air Circulation.....	10
Compact Burnout Furnaces LE 2/11 - LE 14/11	11
Burnout Furnaces N 7/H - N 17/HR with Brick Insulation	12
Accessories	13
Process Control and Documentation	14
Maximum Chargable Number of Burnout Muffles	15



High-Temperature Furnaces HTC 01/14 - HTCT 08/16 with SiC Rod Heating, optionally with Flap Door or Lift Door for Zirconia Sintering



HTCT 08/15 with lift door



HTC 08/14 with flap door and gas supply system



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

HTC 01/14 - HTCT 08/16

Designed as table-top models with silicon carbide heating rods, these furnaces offer a variety of advantages when sintering Zirconia units. The large heating chamber, fast heat-up ramps and the apparent lack of chemical interactivity between zirconia and silicon carbide heating elements make these models the right choice for CAD/CAM manufacturing of zirconia restorations. The controller can be programmed for the individual zirconia material. The furnace is available in three different sizes. The 1 liter model can even be connected to the single phase power supply.

- Tmax 1400 °C, 1500 °C, or 1600 °C
- High-quality fibre materials, selected for the working temperature
- Housing made of sheets of textured stainless steel
- Double-walled housing for low external temperatures and high stability
- Typical cycle time for zirconia firing at 1500°C approx. 8 hours including cooling down
- Optional flap door (HTC) which can be used as work platform or lift door (HTCT) with hot surface facing away from the operator
- Adjustable air intake opening in the furnace door, exhaust air opening in the back wall
- Switching system with solid-state-relays, power tuned to the SiC rods
- Easy replacement of heating rods
- Description of the control system see page 14

Additional Equipment

- Over-temperature limit controller with manual reset for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Square saggars for charging of up to three layers see page 13
- Spacer recommended to be placed under the bottom saggars for better temperature uniformity
- Manual or automatic gas supply system



Saggars with top lid



Spacers



Over-temperature limit controller

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Max. number of crowns
		w	d	h		W	D	H ²				
HTC, HTCT 01/14	1400	90	150	130	1	470	700	750	2,2	single-phase	55	40
HTC, HTCT 03/14	1400	120	210	120	3	400	535	530	9,0	3-phase ¹	30	70
HTC, HTCT 08/14	1400	170	290	170	8	450	620	570	13,0	3-phase	40	120
HTC, HTCT 01/15	1500	90	150	130	1	470	700	750	2,2	single-phase	55	40
HTC, HTCT 03/15	1500	120	210	120	3	400	535	530	9,0	3-phase ¹	30	70
HTC, HTCT 08/15	1500	170	290	170	8	450	620	570	13,0	3-phase	40	120
HTC, HTCT 01/16	1600	90	150	130	1	470	700	750	2,2	single-phase	55	40
HTC, HTCT 03/16	1600	120	210	120	3	400	535	530	9,0	3-phase ¹	30	70
HTC, HTCT 08/16	1600	170	290	170	8	450	620	570	13,0	3-phase	40	120

¹Heating only between two phases

²Plus maximum 270 mm for models HTCT when open

*Please see page 14 for more information about supply voltage

High-Temperature Furnaces LHT with MoSi₂ Heating Elements for Zirconia Sintering



LHT 02/17

LHT 02/16 - LHT 08/18

The first-class workmanship using high-quality materials combined with ease of operation makes these models all-rounders for the dental laboratory. These chamber high-temperature furnaces are perfectly suited for the sintering of zirconia units. The open molybdenum-disilicide heating elements and the large volume of the furnace chamber provide for short process cycles and high throughput. The zirconia units are positioned in ceramic saggars. Up to three saggars can be stacked into the furnace. The top saggar should be covered by a lid in order to minimize the risk of contamination. The controller can be programmed for each individual zirconia material.



LHT 08/17

- Tmax 1600 °C, 1750 °C, or 1800 °C
- High-quality molybdenum disilicide heating elements
- Furnace chamber lined with first-class, durable fibre material
- Housing made of sheets of textured stainless steel
- Double-walled housing with additional fan cooling for low surface temperature
- Typical cycle time for zirconia firing at 1500°C approx. 8 hours including cooling down
- Furnace sizes of 2, 4, or 8 liters
- With lift door, whereby the hot side is away from the operator
- Adjustable air inlet
- Exhaust air opening in the roof
- Type B thermocouple
- Switching system with phase-angle firing thyristors (SCRs)
- Description of the control system see page 14



Saggars with top lid

Additional Equipment

- Over-temperature limit controller with manual reset for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Square saggar for charging of up to three layers see page 13
- Spacer recommended to be placed under the bottom saggar for better temperature uniformity
- Protective gas connection
- Manual or automatic gas supply system



Spacers

Model	Tmax °C	Inner dimensions in mm			Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Max. number of crowns
		w	d	h		W	D	H				
LHT 02/16	1600	90	150	150	2	470	700	750+350	3,0	single-phase	75	60
LHT 04/16	1600	150	150	150	4	470	700	750+350	5,2	3-phase ¹	85	90
LHT 08/16	1600	150	300	150	8	470	850	750+350	8,0	3-phase ¹	100	120
LHT 02/17	1750	90	150	150	2	470	700	750+350	3,0	single-phase	75	60
LHT 04/17	1750	150	150	150	4	470	700	750+350	5,2	3-phase ¹	85	90
LHT 08/17	1750	150	300	150	8	470	850	750+350	8,0	3-phase ¹	100	120
LHT 02/18	1800	90	150	150	2	470	700	750+350	3,6	single-phase	75	60
LHT 04/18	1800	150	150	150	4	470	700	750+350	5,2	3-phase ¹	85	90
LHT 08/18	1800	150	300	150	8	470	850	750+350	9,0	3-phase ¹	100	120



Over-temperature limit controller

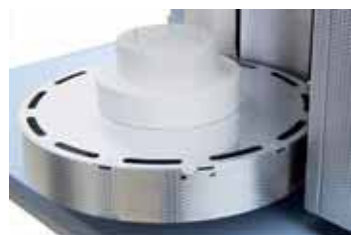
¹Heating only between two phases

*Please see page 14 for more information about supply voltage

High-Temperature Lift-bottom Furnace LHT/LB without and LHT/LBR with Retort for Zirconia Sintering



LHT 02/16 LB with a set of saggars



Lift-bottom with adjustable air inlet



Stackable saggars



LHT 16/17 LBR

LHT/LB and LHT/LBR

Furnaces LHT/LB(R) are perfectly suited of sintering zirconia units. Due to the electrically driven lift bottom, they can be charged very handily. With their all-round heating of the cylindric chamber, these furnaces achieve outstanding temperature uniformity. Model LHT 02/16 LBR is specifically recommend when possible contamination is an issue. It

is equipped with a ceramic retort positioned between the charge and the heating elements. This system provides for optimal protection of the zirconia crowns and bridges. The units can be placed in saggars made of technical ceramics. Up to three saggars can be charged and provide for high output. As additional equipment these furnaces can be furnished with a cooling system using compressed air which is induced to shorten the process cycle.

- Tmax 1600 °C or 1700 °C
- High-quality molybdenum disilicide heating elements
- Furnace chamber lined with first-class, durable fiber materials
- Outstanding temperature uniformity due to all-round furnace chamber heating
- Tubular plasma ceramic retort for the LBR version to prevent a certain level of contamination and to improve temperature uniformity
- Furnace chamber with a volume of 2 or 16 liters, table with large footprint
- Typical cycle time for zirconia firing at 1500°C approx. 8 hours including cooling down
- Spacers to lift-up the saggars already installed in the table
- Precise, electric spindle drive with push button operation
- Housing made of sheets of textured stainless steel (non-rusting design)
- Adjustable air inlet through the floor
- Exhaust air vent in the roof
- Type B thermocouple
- Switchgear with thyristor
- Description of the control system see page 14

Additional Equipment

- Over-temperature limit controller with manual reset 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
- Protective gas connection
- Manual or automatic gas supply system, particularly effective in the LBR version with retort
- Forced-Air Cooling Package for model LHT 02/LBR for shorter process cycles

The forced-air cooling package can be installed in models LHT 02/16 LBR and LHT 02/17 LBR. The furnace will be equipped with a quick lock for compressed air and a valve which can be activated by means of the extra function in the controller. To protect the charge, the cooling air will be injected behind the ceramic retort in the furnace chamber. Cooling times can be cut by about 45 minutes.

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
		Ø	h		W	D	H				
LHT 02/16 LB, LBR	1600	Ø 120	130	2	540	610	740	3,0	single-phase	85	85
LHT 02/17 LB, LBR	1700	Ø 120	130	2	540	610	740	3,0	single-phase	85	85
LHT 16/16 LB, LBR	1600	Ø 260	260	16	650	1250	1980	12,0	3-phase	410	120
LHT 16/17 LB, LBR	1700	Ø 260	260	16	650	1250	1980	12,0	3-phase	410	120

*Please see page 14 for more information about supply voltage



Plasma ceramic retort for protection of the heating elements and to avoid charge contamination in the LHT 02/16 LBR

High-Temperature Lift-bottom Furnace HTC 02/16 LB with SiC Rod Heating for Zirconia Sintering



HTC 02/16 LB with SiC heating



SiC heating elements with the advantage of chemical interactivity with the zirconia restoration.

The model HTC 02/16 LB is the perfect choice for sintering zirconia crowns and bridges. It combines the advantages of our models HTC with SiC heating and the models LHT/LB with electrically driven table. The apparent lack of chemical interactivity between the silicon carbide heating elements and the zirconia restoration as well as the handy charging of the electrically lifted table make it the right partner for the daily use in the dental laboratory.

Product Features, different from LHT/LB(R)

- Tmax 1600°C
- SiC heating rods with long service life
- Furnace chamber with a volume of 2 liters, table with large footprint
- Type S thermocouple

Model	Tmax °C	Inner dimensions in mm		Volume in l	Outer dimensions in mm			Connected load kW	Electrical connection*	Weight in kg	Max. number of crowns
		Ø	h		W	D	H				
HTC 02/16 LB	1600	Ø 120	130	2	540	610	740	3,0	single-phase	85	70

*Please see page 14 for more information about supply voltage

Professional Burnout Furnaces L 3/11 - LT 40/12 with Flap Door or Lift Door



LT 3/11



L 5/12

L 3/11 - LT 40/12, L 5/13 - LT 15/13

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 40/12 come with a fibre insulation for 1100 °C or 1200 °C. Models L 5/13 - LT 15/13 are insulated with robust light-weight refractory bricks and achieve 1300 °C.



Adjustable air inlet integrated in the door

- Tmax 1100 °C, 1200 °C or 1300 °C
- Heating from two sides by ceramic heating plates (heating from three sides for models L 24/11 - LT 40/12)
- Ceramic heating plates with integral heating element which is safeguarded against fumes and splashing, and easy to replace
- Heating elements on support tubes for L 5/13 - LT 15/13
- Highly durable cured vacuum fibre module lining for L 3/11 ff.
- Brick insulation for L 5/13 - LT 15/13 with excellent heat-up ramps
- Housing made of sheets of textured stainless steel
- Double-walled 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 lownoise operation
- For maximum number of chargable muffles in the furnace models see page 15
- Description of the control system see page 14

Additional Equipment

- Chimney, chimney with fan or catalytic converter
- Over-temperature limit controller with adjustable switch-off temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Protective gas connection on the rear wall of furnace
- Manual or automatic gas supply system
- Please see page 13 for more accessories



Over-temperature limit controller



LT 3/12



L 9/13 with robust brick insulation and Tmax. of 1300 °C

Burnout muffles see page 15



L(T) 3/..



L(T) 5/..



L(T) 9/..

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
		w	d	h		W	D	H				
L or LT 3/11	1100	160	140	100	3	380	370	420+165 ¹	1,2	single-phase	20	60
L or LT 5/11	1100	200	170	130	5	440	470	520+220 ¹	2,4	single-phase	35	60
L or LT 9/11	1100	230	240	170	9	480	550	570+290 ¹	3,0	single-phase	45	75
L or LT 15/11	1100	230	340	170	15	480	650	570+290 ¹	3,6	single-phase	55	90
L or LT 24/11	1100	280	340	250	24	560	660	650+335 ¹	4,5	3-phase	75	95
L or LT 40/11	1100	320	490	250	40	600	790	650+335 ¹	6,0	3-phase	95	95
L or LT 3/12	1200	160	140	100	3	380	370	420+165 ¹	1,2	single-phase	20	75
L or LT 5/12	1200	200	170	130	5	440	470	520+220 ¹	2,4	single-phase	35	75
L or LT 9/12	1200	230	240	170	9	480	550	570+290 ¹	3,0	single-phase	45	90
L or LT 15/12	1200	230	340	170	15	480	650	570+290 ¹	3,6	single-phase	55	105
L or LT 24/12	1200	280	340	250	24	560	660	650+335 ¹	4,5	3-phase	75	110
L or LT 40/12	1200	320	490	250	40	600	790	650+335 ¹	6,0	3-phase	95	110
L or LT 5/13	1300	200	170	130	5	440	470	520+220 ¹	2,4	single-phase	42	45
L or LT 9/13	1300	230	240	170	9	480	550	570+290 ¹	3,0	single-phase	60	50
L or LT 15/13	1300	230	340	170	15	480	650	570+290 ¹	3,6	single-phase	70	60

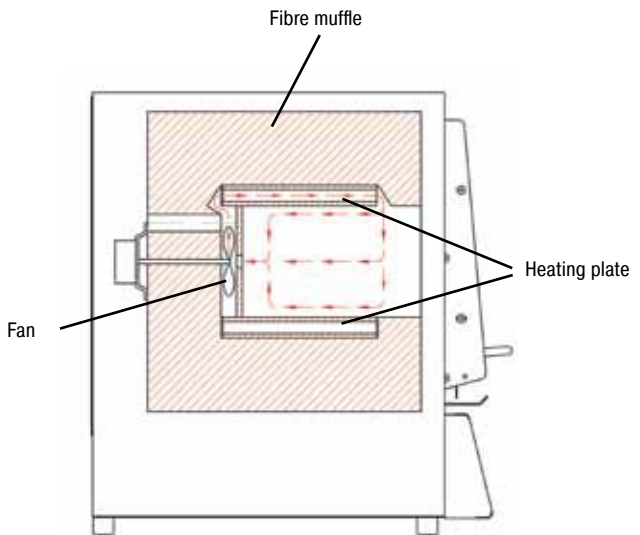
¹Including opened lift door for LT models

*Please see page 14 for more information about supply voltage

Burnout Furnaces LT 5/11 HA - LT 15/11 HA with integrated Air Circulation



LT 5/11HA with air circulation



Air-circulation fan in rear wall of furnace

LT 5/11 HA - LT 15/11 HA

The LT 5/11 HA - L 15/11 HA series is based on the burnout furnace L 3/11 ff.. They are additionally equipped with an air recirculation system which provides for perfect heat transfer to the muffles and very good temperature uniformity. In combination with the precisely working controller, they can be even used for Titanium implants. Especially in the low temperature range uniform heating rates are achieved.

- Tmax 1100 °C
- Heating from two sides by ceramic heating plates
- Ceramic heating plates with integral heating element which is safeguarded against splashing, and easy to replace
- Highly durable cured vacuum fibre module lining
- Housing made of sheets of textured stainless steel (non-rusting design)
- Double-walled housing for low external temperatures and stability
- With lift door (LT), whereby the hot side is away from the operator
- Exhaust air outlet in rear wall of furnace
- Solid state relays provide for lownoise operation
- Circulation fans for better heat transmission and distribution, particularly during heating and cooling
- For maximum number of chargable muffles in the furnace models see page 15
- Description of the control system see page 14



Over-temperature limit controller

Additional Equipment

- Chimney, chimney with fan or catalytic converter
- Over-temperature limit controller with adjustable switch-off temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Please see page 13 for more accessories



Burnout muffles see page 15

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
		w	d	h		W	D	H ¹				
LT 5/11HA	1100	200	160	130	5	440	470	520+220	2,4	single-phase	36	60
LT 9/11HA	1100	230	230	170	9	480	550	570+290	3,0	single-phase	46	60
LT 15/11HA	1100	230	330	170	15	480	650	570+290	3,6	single-phase	56	75

¹Including opened lift door

*Please see page 14 for more information about supply voltage

Compact Burnout Furnaces LE 2/11 - LE 14/11



LE 4/11



LE 6/11

LE 2/11 - LE 14/11

With their unbeatable price/performance ratio, these compact muffle furnaces are perfect for burnout in the dental laboratory. They convince by very fast possible heating ramps and attractive design. Quality features like the double-walled furnace 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
- Multilayered insulation with fibre plates in the furnace chamber
- Housing made of sheets of textured stainless steel (non-rusting design)
- Double-walled 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 lownoise operation
- Compact dimensions and light weight
- Controller mounted in side space (under the door on the LE 2/11 and LE 4/11 to save space)
- For maximum number of chargeable muffles in the furnace models see page 15
- Description of the control system see page 14



Burnout muffles see page 15

Additional Equipment

- Chimney, chimney with fan or catalytic converter
- Over-temperature limit controller with adjustable switch-off temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Protective gas connection on the rear wall of furnace
- Manual gas supply system
- Please see page 13 for more accessories



Over-temperature limit controller

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
		w	d	h		W	D	H				
LE 2/11	1100	110	180	110	2	275	380	350	1,8	single-phase	10	25
LE 4/11	1100	170	200	170	4	335	400	410	1,8	single-phase	15	35
LE 6/11	1100	170	200	170	6	510	400	320	1,8	single-phase	18	35
LE 14/11	1100	220	300	220	14	555	500	370	2,9	single-phase	25	40

*Please see page 14 for more information about supply voltage

Burnout Furnaces N 7/H - N 17/HR 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.

- Tmax 1280 °C
- Three-sided heating from both sides and the floor
- Heating elements on support tubes ensure free heat radiation and a long service life
- Floor heating protected by heat-resistant SiC plate
- Multilayer 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 15
- Description of the control system see page 14



Burnout muffles see page 15

Additional Equipment

- Chimney, chimney with fan or catalytic converter
- Over-temperature limit controller with adjustable switch-off temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the oven and load
- Protective gas connection on the rear wall of furnace
- Manual or automatic gas supply system
- Please see page 13 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
		w	d	h		W	D	H				
N 7/H	1280	250	250	120	7	720	640	510	3,0	single-phase	60	180
N 11/H	1280	250	350	140	11	720	740	510	3,6	single-phase	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

¹Heating only between two phases

*Please see page 14 for information on supply voltage

Accessories



Article No.:
631000140

Chimney for connection to an exhaust pipe.



Article No.:
631000141

Chimney with fan, to remove exhaust gas from the furnace better. The P 330 controller can be used to activate the fan automatically.



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 P 330 controller can be used to switch the catalytic converter automatically.



Article No.:
699000252

Spacers, Tmax 1600 °C

We recommend not to place the charge directly on the bottom of the furnace. Ceramic spacers can be put under the first saggar to provide for an optimal air flow under the charge with the result of an improved temperature uniformity.



Article No.:
699000279 (saggars)
699000985 (lid)

Square Saggars for Furnaces HTC and LHT, Tmax 1600 °C

In order to use the overall furnace chamber the dental restorations should be charged in a ceramic saggars. Up to three saggars can be stacked on top of each other in the furnace. Each saggars has cut-outs for better ventilation. The top saggars should be closed with a lid made of ceramics also.



Article No.:
699000280 (saggars)
699000984 (lid)

Round Saggars (Ø 115 mm x 35 mm) for Furnaces LHT/LB(R), Tmax 1600 °C

These saggars are perfectly suited for furnaces LHT/LB and LHT/LBR. The zirconia restorations are placed in the saggars. Up to three saggars can be stacked on top of each other in order to use the overall furnace chamber.



Article No.:
699000281

Sintering Pellets (100 g pack), Tmax 1600 °C

Depending on the type of zirconia restoration the saggars can be filled with a bed of sintering pellets. These small balls smoothly adapt to the shape of the zirconia restoration and allow the unit to shrink in the pellets.

Select between different **base plates** and **collecting pans** for protection of the furnace and easy loading.



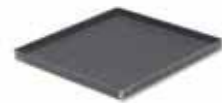
Ceramic ribbed plate, Tmax 1200 °C

for models	Article No.
LE 2	691601097
L 3, LT 3, LV, LVT 3	691600507
LE 4, LE 6, L 5, LT 5, LV 5, LVT 5	691600508
L 9, LT 9, LV 9, LVT 9	691600509
LE 14	691601098
L 15, LT 15, LV 15, LVT 15	691600506
L 24, LT 24	691600874
L 40, LT 40	691600875



Ceramic collecting pan, Tmax 1300 °C

for models	Article No.
LE 2	691601099
L 3, LT 3, LV 3, LVT 3	691600510
LE 4, LE 6, L 5, LT 5, LV 5, LVT 5	691600511
L 9, LT 9, LV 9, LVT 9	691600512



Steel collecting pan, Tmax 1100 °C

for models	Article No.
LE 2	691402096
L 3, LT 3, LV 3, LVT 3	691400145
LE 4, LE 6, L 5, LT 5, LV 5, LVT 5	691400146
L 9, LT 9, LV 9, LVT 9	691400147
LE 14	691402097
L 15, LT 15, LV 15, LVT 15	691400149
L 24, LT 24	691400626
L 40, LT 40	691400627

Heat-resistant **gloves** for protection of the operator when loading or removing hot materials, resistant to 650 °C or 900 °C.



Article No.:
493000004

Gloves, Tmax 650 °C.



Article No.:
491041101

Gloves, Tmax 900 °C.



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

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

Process Control and Documentation



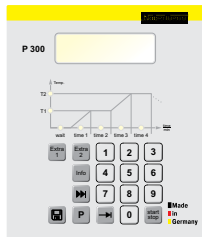
B 180



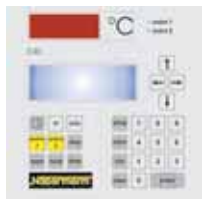
P 330



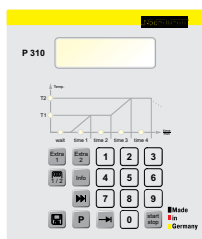
B 150



P 300



C 40/C 42



P 310

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.

Standard Controllers

Our extensive line of standard controllers satisfies most customer requirements. Based on the specific furnace model, the controller regulates the furnace temperature reliably. The standard controllers are developed and fabricated within the Nabertherm group. When developing controllers, our focus is on ease of use. From a technical standpoint, these devices are custom-fit for each furnace model or the associated application. From the simple controller with an adjustable temperature to the control unit with freely configurable control parameters, stored programs, PID microprocessor control with self-diagnosis system and a computer interface, we have a solution to meet your requirements.

Assignment of Standard Controllers to Furnace Families

	HTC	LHT 02/16 - LHT 08/18	LHT/LB-LHT/LBR	N 7/H - N 17/HR	LE 2/11 + LE 4/11	LE 6/11 + LE 14/11	L 3 - LT 40
Catalog page	4	5	6	8	9	9	10,12
Controller							
B 180	●						●
P 330	○						○
R 6					●		
B 150				●		●	
P 300				○		○	
P 310			●				
C 40/42		●	○				

Functionality of the Standard Controllers

	P 300	P 310	R 6	B 150	C 40	C 42	B 180	P 330
Number of programs	9	9		1	9	9	1	9
Segments	40	40		2	18	18	2	40
Extra functions (e.g. fan or autom. flaps)	2	2			2	2		2
Maximum number of control zones	1	2	1	1	1	1	1	1
Status messages in clear text	●	●		●	●	●	●	●
Start time configurable (e.g. to use night power rates)	●	●		●	●	●	●	●
Operating hour counter	●	●		●	●	●	●	●
Auto tune	●	●		●			●	●
Program entry in steps of 1 °C or 1 min.	●	●		●	●	●	●	●
Keypad lock				●				
Skip-button for segment jump	●	●		●				●
Drive of manual zone regulation		●			●			
Interface for MV software	○	○		○	●	●	○	●
Programmable power outlet								●*
kWh meter	●	●		●	●	●	●	●
Real-time clock					●	●		●
Data input via number pad	●	●			●	●	●	●

- Standard
- Option

* Not for model L(T)15..

Mains Voltages for Nabertherm Furnaces

- Single-phase: all furnaces are available for mains voltages from 110 V - 240 V at 50 or 60 Hz.
- Three-phase: all furnaces are available for mains voltages from 200 V - 240 V or 380 V - 480 V, at 50 or 60 Hz.

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. This software is also perfectly suitable for retrofitting in order to comply with new norms and directives. Generally, all Nabertherm controllers with integrated interface can be connected to the MV-software.

In the basic version one furnace can be connected to the MV-software. The system can be extended to four, eight or even 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.

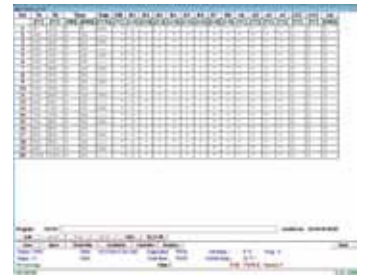
Furnaces which are not controlled via a Nabertherm controller can be also documented with the MV-software. We deliver an extension package as optional equipment. With respect to the individual version, three, six or even nine independent thermocouples can be connected. Independent of the control system, the values of each thermocouple will be read-out and evaluated by the MV-software.

Features

- Simple installation without specific knowledge
- All Nabertherm controllers with interface connectable
- Manipulation protected storage of temperature curves of up to one, four, eight or 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 (only with Nabertherm controllers mit interface)
- Selectable languages: German, English, French, Italian or Spanish
- 400 additional programs storable (only with Nabertherm controllers with interface)



Controltherm MV Software for Control, Visualisation and Documentation



Data input in table format if used together with Nabertherm controllers

Maximum Chargable Number of Burnout Muffles

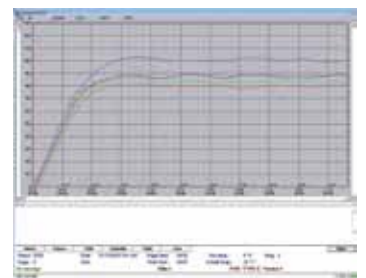
The table below indicates the maximum number of burnout muffles that can be charged in our different muffle furnaces.



L(T) 3/..

L(T) 5/..

L(T) 9/..



Graphical display of set and actual temperature curve

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 2	8	6	2	2
LE 4	20	9	4	2
LE 6	20	9	4	2
LE 14	35	20	12	6
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
L 24	63	30	12	9
L 40	104	40	24	15
N 7	36	16	9	4
N 11	54	24	12	9
N 17	78	36	18	15