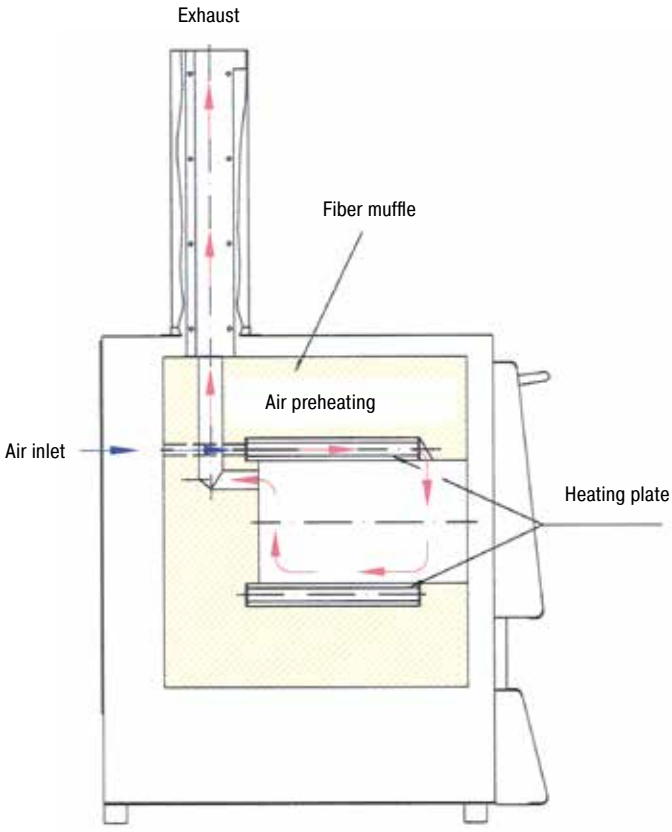
Ashing Furnaces with Flap Door or Lift Door



Air inlet and exhaust flow principle in ashing furnaces

Ashing furnace LV 3/11

Observation hole in the door as additional equipment

The ashing furnaces LV 3/11 - LVT 15/11 are especially designed for ashing in the laboratory. A special air intake and exhaust system allows air exchange of more than 6 times per minute. Incoming air is preheated to ensure a good temperature uniformity.

- Tmax 1100 °C
- Heating from two sides
- Ceramic heating plates with integral heating element which is safeguarded against fumes and splashing, and easy to replace
- Air exchange of more than 6 times per minute
- Good temperature uniformity due to preheating of incoming air
- Only fiber materials are used which are not classified as carcinogenic according to TRGS 905, class 1 or 2
- Housing made of sheets of textured stainless steel
- Dual shell housing for low external temperatures and stability
- Optional flap door (LV) which can be used as work platform or lift door (LVT) with hot surface facing away from the operator
- Solid state relays provide for lownoise operation
- 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

Ashing furnace LVT 5/11

Ashing furnace LVT 9/11

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
- Observation hole in the door
- Please see page 14 for more accessories
- Process control and documentation via VCD software package for monitoring, documentation and control see page 75

Over-temperature limiter

Model Flap door	Tmax °C	Inner dimensions in mm w	d	h	Volume in l	Outer dimensions[3] in mm W	D	H[1]	Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax[2]
LV 3/11	1100	160	140	100	3	385	360	735	1.2	1-phase	20	120
LV 5/11	1100	200	170	130	5	385	420	790	2.4	1-phase	35	120
LV 9/11	1100	230	240	170	9	415	485	845	3.0	1-phase	45	120
LV 15/11	1100	230	340	170	15	415	585	845	3.5	1-phase	55	120

Model Lift door	Tmax °C	Inner dimensions in mm w	d	h	Volume in l	Outer dimensions[3] in mm W	D	H[1]	Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax[2]
LVT 3/11	1100	160	140	100	3	385	360	735	1.2	1-phase	20	120
LVT 5/11	1100	200	170	130	5	385	420	790	2.4	1-phase	35	120
LVT 9/11	1100	230	240	170	9	415	485	845	3.0	1-phase	45	120
LVT15/11	1100	230	340	170	15	415	585	845	3.5	1-phase	55	120

[1]Including exhaust tube (Ø 80 mm)
*Please see page 73 for more information about supply voltage
[2]If connected at 230 V 1/N/PE rsp. 400 V 3/N/PE
[3]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

Ashing Furnaces with Integrated Exhaust Gas Cleaning

Ashing furnace L 40/11 BO

The ashing furnace L ../11 BO is specially designed for processes in which larger sample quantities have to be incinerated. Fields of application are e.g. the ashing of food, thermal cleaning of injection molding tools or the determination of annealing loss. Another application is the debinding of ceramic products, e.g. after additive production.

The ashing furnaces have a passive safety system and integrated exhaust gas post combustion. An exhaust gas fan extracts flue gases from the furnace and simultaneously supplies fresh air to the furnace atmosphere with the result that sufficient oxygen is always available for the incineration process. The incoming air is guided behind the furnace heating and preheated to ensure good temperature uniformity. Exhaust gases are led from the furnace chamber to the integrated post combustion system, where they are postburned and catalytically cleaned. Directly after the incineration process (up to max. 600 °C) a subsequent process up to max. 1100 °C can take place.

- Tmax 600 °C for the incineration process
- Tmax 1100 °C for the subsequent process
- Three-side heating (both sides and bottom)
- Ceramic heating plates with embedded heating wire
- Only fiber materials are used which are not classified as carcinogenic according to TRGS 905, class 1 or 2
- Dual shell housing made of structured stainless steel provides for low outer temperature and high stability
- Steel collecting pan protects the bottom insulation
- Spring-assisted closing of the furnace door (flap door) with mechanical locking against unintentional opening
- Thermal/catalytic post combustion, integrated in the exhaust channel, up to 600 °C in function
- Temperature control of post combustion can be set up to 850 °C
- Monitored exhaust air
- Inlet-air preheated through the bottom heating plate
- 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

- Process control and documentation via VCD software package for monitoring, documentation and control see page 75

Model	Tmax	Inner dimensions in mm			Volume	Outer dimensions[2] in mm			Max. weight of hydrocarbons	Max. evaporation rate	Connected load	Electrical	Weight
	°C	w	d	h	in l	W	D	H[1]	in g	g/min	kW	connection*	in kg
L 9/11 BO	1100	230	240	170	9	415	575	750	75	1.0	7.0	3-phase	60
L 24/11 BO	1100	280	340	250	24	490	675	800	150	2.0	9.0	3-phase	90
L 40/11 BO	1100	320	490	250	40	530	825	800	200	2.5	11.5	3-phase	110

[1]Including exhaust tube (Ø 80 mm)

*Please see page 73 for more information about supply voltage

[2]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.

Weighing Furnace incl. Scale and Software for Determination of Combustion Loss

This weighing furnace with integrated precision scale and software, was designed especially for combustion loss determination in the laboratory. The determination of combustion loss is necessary, for instance, when analyzing sludges and household garbage, and is also used in a variety of technical processes for the evaluation of results. The difference between the initial total mass and the combustion residue is the combustion loss. During the process, the software included records both the temperature and the weight loss.

Weighing furnace L 9/11/SW

- Tmax 1100 °C or 1200 °C
- Heating from two sides
- Ceramic heating plates with integral heating element which is safeguarded against fumes and splashing, and easy to replace
- Only fiber materials are used which are not classified as carcinogenic according to TRGS 905, class 1 or 2
- Dual shell housing made of sheets of textured stainless steel
- Optional flap door (L) which can be used as work platform or lift door (LT) with hot surface facing away from the operator
- Adjustable working air inlet in the door
- Exhaust air outlet in rear wall of furnace
- Solid state relays provide for lownoise operation
- Delivery includes base, ceramic plunger with base plate in the furnace lining, precision scale and software package
- 4 scales available for different maximum weights and scaling ranges
- Process control and documentation for temperature and combustion loss via VCD software package for monitoring, documentation and control see page 75
- Defined application within the constraints of the operating instructions
- Controls description see page 72

4 scales available for different maximum weights and scaling areas

Additional equipment

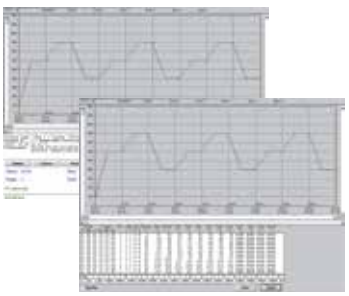
- Chimney, chimney with fan or catalytic converter
- Over-temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load
- Observation hole in the door
- Please see page 14 for more accessories

Over-temperature limiter

Model flap door	Tmax °C	Inner dimensions in mm w	d	h	Volume in l	Outer dimensions[3] in mm W	D	H	Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax[2]
L 9/11/SW	1100	230	240	170	9	415	455	740	3.0	1-phase	50	75
L 9/12/SW	1200	230	240	170	9	415	455	740	3.0	1-phase	50	90

Model Lift door	Tmax °C	Inner dimensions in mm w	d	h	Volume in l	Outer dimensions[3] in mm W	D	H[1]	Connected load kW	Electrical connection*	Weight in kg	Minutes to Tmax[2]
LT 9/11/SW	1100	230	240	170	9	415	455	740+240	3.0	1-phase	50	75
LT 9/12/SW	1200	230	240	170	9	415	455	740+240	3.0	1-phase	50	90

[1]Including opened lift door
*Please see page 73 for more information about supply voltage
[2]If connected at 230 V 1/N/PE rsp. 400 V 3/N/PE
[3]External dimensions vary when furnace is equipped with additional equipment. Dimensions on request.



Software for documentation of the temperature curve and combustion loss using a PC

Scale type	Readability in g	Weight range in g	Weight of plunger in g	Calibration value in g	Minimum load in g
EW-2200	0.01	2200 incl. plunger	850	0.1	0.5
EW-4200	0.01	4200 incl. plunger	850	0.1	0.5
EW-6200	0.01	6200 incl. plunger	850	-	1.0
EW-12000	0.10	12000 incl. plunger	850	1.0	5.0

Exhaust Systems/Accessories

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 B400 - P480 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 B400 - P480 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.

Exhaust torch to burn exhaust gases which are generated during the process. The torch is gas-fired and will be operated with propane gas. If a catalytic post combustion cannot be used for the process this torch is recommended.

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

Square saggar for furnaces LHTC and LHT, Tmax 1600 °C

The load is placed in ceramic saggars for optimal utilization of the furnace space. Up to three saggars can be stacked on top of each other in the furnace. Each saggar has cut-outs for better ventilation. The top saggar should be closed with a lid made of ceramics also.

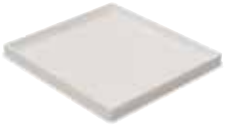
Article No.:
699001054
(sintering dish)
699001055
(spacer ring)

Round saggar (Ø 115 mm) for furnaces LHT/LB, Tmax 1650 °C

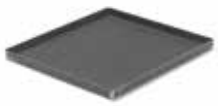
These saggars are perfectly suited for furnaces LHT/LB. The load is placed in the saggars. Up to three saggars can be stacked on top of each other in order to use the overall furnace chamber.

Select between different **bottom plates** and **collecting pans** for protection of the furnace and easy loading (for models L, LT, LE, LV and LVT on pages 4 - 13).

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, LV 3, LVT 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, LV 5, LVT 5	691600508	190 x 170 x 12.7	691600511	190 x 170 x 20	691400146	190 x 170 x 20
L 9, LT 9, LV 9, LVT 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, LV 15, LVT 15, N 11	691600506	340 x 220 x 12.7	-	-	691400149	230 x 330 x 20
L 24, LT 24	691600874	340 x 270 x 12.7	-	-	691400626	270 x 340 x 20
L 40, LT 40	691600875	490 x 310 x 12.7	-	-	691400627	310 x 490 x 20

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