

VARIO LINE AQUA THERM

COMBI
AC 105



OPERATING MANUAL with INSTALLATION INSTRUCTIONS

LOHBERGER[®]
Natural Heating. Naturally Lohberger.

Table of contents

1. Important standards / guidelines.....	3	11. Combustion	16
2. Important instructions prior to installation and start-up.....	4	Prerequisites for efficient combustion	16
3. Transport / Unpacking / Inspection.....	5	The combustion process	16
Transport securing devices	5	Clean combustion	16
Transport options	5	JETFIRE Flame convergence plate	16
4. Safety instructions.....	6	12. Fuels	17
5. Description of the appliance / Adjustment.....	6	Suitable fuels	17
Combustion chamber, firebox	6	Unsuitable fuels	17
Oven	6	Prohibited fuels	17
Oven thermometer	6	13. Start-up.....	17
Cooking surface	7	Heating up	17
Stove frame (adjustable in the stove type CLASSIC)	7	Adding Fuel	18
ADJUSTMENT OF THE STOVE FRAME	7	Air supply settings	18
Base recess	7	Heating	18
Appliance height	7	Fuel filling level	18
6. Installing the appliance.....	9	Cooking	18
Load-bearing capacity of the floor	9	Baking and Roasting	18
Floor pad as a protection against flying sparks	9	Heating in between seasons	18
Safety clearances	9	14. Maintenance and Cleaning	19
Overhead kitchen cabinets	9	Cleaning opening	19
Safety clearances flue gas pipe	9	Removing cooking plate	19
7. Chimney connection	10	Using a vacuum cleaner	19
Schematic diagram flue gas connection (Figure 13)	10	Cleaning the heat exchanger	19
The chimney	10	Cleaning the connecting piece	19
Connection stove - chimney	10	Grate	20
The necessary discharge pressure ("Chimney draught")	10	Ash pan	20
8. Combustion air	11	Oven door	20
Outdoor air supply for combustion (optional equipment)	11	Removing the oven door	20
Examples of possible connections	11	Reinstalling the oven door	20
9. Connection of the heating system.....	12	Cleaning the glass viewing window of the oven	20
Heat output to water	12	Side rails of the oven	20
Return flow temperature boost	12	Cleaning the glass viewing window of the combustion chamber	21
Temperature safety relief valve	12	Steel Cooking Plate	21
Expansion tank	12	Stoves with glass ceramic cooking surfaces	22
Safety valve	13	15. Troubleshooting.....	23
Automatic air bleed	13	16. After-sales service / How to order spare parts	24
Example of connections	13	17. Appliance dimensions.....	25
10. Operating the stove.....	14	18. Technical data.....	26
Start-up flap	14	19. Type testing / Nameplate	26
Air control	14	Warranty.....	28
Primary air control	14		
Secondary air control	14		
Grate riddling	15		
Adjustment of the grate	15		
Winter mode / Summer mode	15		
Changing between boiler and cooking operation	15		

Explanation of symbols

Important information in this manual is indicated by the following symbols:



NOTE: Instructions for correct use of the stove. It is the operator's responsibility to follow these instructions.



CAUTION: This symbol refers to particularly important notes.



DANGER: This symbol indicates important rules of conduct for avoiding injury or material damage.

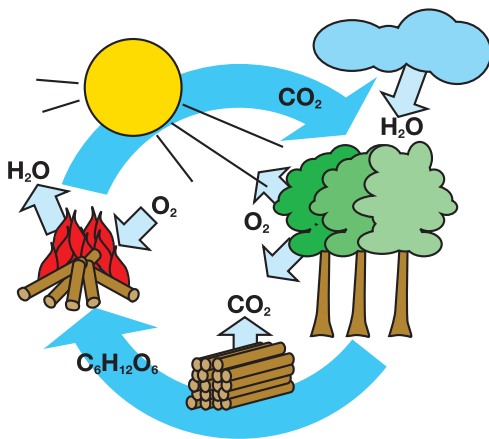
With the purchase of the solid fuel stove VARIOLINE you have selected a high-quality product made by LOHBERGER.

Apart from the beautiful and timeless design, we attach great importance to a mature combustion technology, high-quality materials as well as excellent workmanship.

Correct handling and proper care are a prerequisite for trouble-free operation and a long service life. Therefore please read the information in this operating manual carefully. With the above in mind, we believe that this appliance will give satisfactory service for many years.

Your LOHBERGER Heiz + Kochgeräte Technologie GmbH

Our contribution towards climate protection



During combustion, wood only emits the same amount of CO₂ that it previously held as a tree. It makes no difference whether the wood burns or rots in the forest.

Thus heating with wood corresponds to the natural biological cycle.

1. Important standards / guidelines

When installing and starting-up the appliance, observe the local fire prevention regulations and building regulations as well as the following standards / regulations:

ÖNORM (Austrian Standard) M7550

Central heating boiler up to 100 °C: definitions, requirements, tests, marking of conformity

ÖNORM (Austrian Standard) M 7510 / 1

Guidelines for the inspection of central heating systems.

ÖNORM (Austrian Standard) M 7510 / 2

Guidelines for the inspection of central heating systems; standard values.

ÖNORM (Austrian Standard) B8130

Safety devices.

ÖNORM (Austrian Standard) B8131

Closed water heating systems; safety requirements.

ÖNORM (Austrian Standard) B8133

Safety requirements for water heating systems.

DIN 4751 Part 1

Safety devices for heating systems with flow temperatures of up to 110°C (120°C in preparation)

DIN 4751 Part 2

Safety devices for heating systems with flow temperatures of up to 110°C (120°C in preparation); open and closed water

heating systems up to 349 kW (300000 kcal/h) with thermostatic safety device.

DIN 4751 Part 4

Safety devices for heating systems with flow temperatures of up to 120°C; closed water heating system with static heights exceeding 15 m or rated heat output over 350 kW.

DIN 1988: Drinking water supply systems on building sites (technical requirements).

ÖNORM (Austrian Standard) EN 303-5

Boiler for solid fuels, charged manually and automatically up to 300 kW. Definitions, requirements, testing and marking of conformity

TRVB H118

Technical specifications regarding preventive fire protection for automatic wood-fired heating systems.

2. Important instructions prior to installation and start-up



Before connecting the appliance to the chimney, inform the local qualified chimney sweep



Please read the information in this manual carefully before you install or start up your appliance for the first time.

Failure to do so causes the warranty to become null and void

Keep this operating manual in a safe place. Should it be lost, we will be happy to send you a new copy. You will find important information in it as regards safety, use, proper care and maintenance of the appliance, so that you can enjoy your appliance for a long time.

If there are any queries please contact our technical customer service.

The stove must not be modified, except with original stove components, provided and tested by us or by work performed by our service technicians.



With appliances equipped with heating insert the proper dissipation of the heat output to the hot water system must be ensured (radiator / reservoir).

CAUTION! CHILDREN PLAYING!

The appliance becomes very hot when it is in operation. Make sure that children are never in the immediate vicinity of the appliance when it is in use.

CORRECT INSTALLATION AND START-UP

The safety of the appliance can only be assured if it has been installed by a trained technician, in compliance with the standards and regulations applicable at the place of installation. Make sure that the requirements of the applicable laws and standards as well as the local fire protection laws and building regulations are adhered to. Please consult the local qualified chimney sweep regarding the assessment of building and technical conditions.

When operating the stove, make sure that there is an adequate supply of fresh air in the room where the appliance is located. An air exchange of at least 0.8 times per hour by means of a permanent and secure ventilation of the room must be ensured. If the windows and doors are tightly sealed or if other appliances such as extractor hoods, tumble driers, ventilators etc. draw air from the room where the appliance is located, it may be necessary to provide fresh combustion air from outside. The inlet apertures for combustion air must not be closed.

For the first 2 to 3 days run the stove with a low output. This allows the stove lining to dry out slowly and as a result it extends the service life significantly. During the first few days of operation, expansion cracks may form in the fire-clay-cladding. However, this does not impair the functioning of the appliance.

CORRECT OPERATION

Correct operation, in compliance with the installation instructions and with the operating manual as well as with the instructions regarding safety and environmental protection.

Bear in mind that the appliance is not childproof (doors, etc.) and therefore it must not be operated by children or other people who are not authorised or trained.

If the appliance is not installed properly and if the instructions (as stated in the technical documentation and operating manual) regarding the start-up and operation of the appliance are not followed, all warranty claims will become null and void.

Open the start-up flap only when heating up the stove, keep the combustion chamber door and ash door closed at all times. Avoid overheating the stove (e.g. red-hot steel hotplate). The warranty does not cover any resulting damage.

Only use suitable fuels by choosing environmentally sustainable, high-quality and dry fuels (see fuels on page 17).

Only operate our central heating stoves using a return flow temperature boost (thermal valve, motor-driven mixing valve). Faults caused by failure to follow this instruction are excluded from the warranty cover.

CHIMNEY REQUIREMENTS FOR HEATING SYSTEMS

Before starting up the appliance for the first time, the local qualified chimney sweep must certify the suitability and readiness for operation of new or existing chimneys by a declaration of conformity.

The owner must ensure that the chimney is free of obstructions (no coverings or blockages). Please point out existing faults and /or alterations in the chimney and the heating system. Because of low exhaust gas temperatures when the seasons change the chimney must be leak-free and humidity-resistant. Make sure that flue and exhaust gas can escape freely to the outside.

REGULAR CLEANING AND MAINTENANCE

To ensure the functionality and efficiency of the appliance, regular maintenance and cleaning work must be carried out on every fireplace and all the connected system components (e.g. chimney, connecting ducts, etc.). Please observe the instructions regarding maintenance and cleaning in this operating manual.

Your chimney sweep will also be happy to clean the fireplace. Only clean and properly adjusted appliances work efficiently.



CAUTION: The chimney may have become obstructed when the stove is heated up again after it has been out of use for an extended period of time. Before re-starting the stove, have the chimney inspected by a specialist (chimney sweep).

Only install genuine spare parts provided by your local specialist dealer or by our company.

Wearing parts (e.g. seals), components exposed to high thermal stress (fireclay, cast-iron parts) or broken stove parts should be replaced or exchanged as soon as possible.

Correct procedure in the event of chimney fires:

Correct procedure in the event of chimney fires:

If the fireplace, connecting duct and chimney are not regularly cleaned or if unsuitable fuels are burned, the deposits may ignite, causing a chimney fire.

Keep the stove doors closed and turn the air regulators to position „o“. Move away combustible parts from the chimney. UNDER NO CIRCUMSTANCES should you attempt to extinguish the chimney fire by applying water. The resulting sudden steam pressure is so high that the chimney could burst.



Call the fire brigade via the emergency phone number.

3. Transport / Unpacking / Inspection



Report visible faults to the supplier immediately. Later claims for damages cannot be entertained.

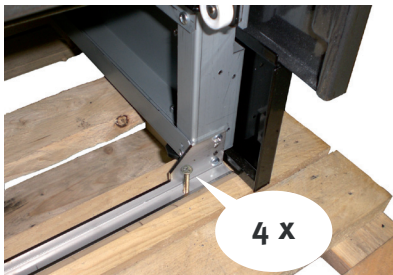


Figure 1

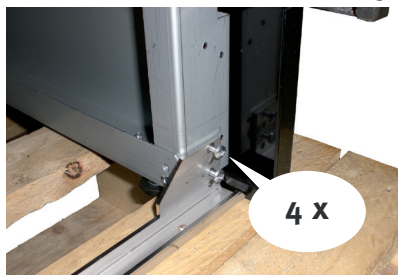


Figure 2



Figure 3



Figure 4

The packaging of your appliances provides good protection against damage in transit. Nevertheless, damage to the appliance and fittings cannot be entirely excluded.

Therefore carefully check the appliance for completeness and possible damage in transit after unpacking.

Transport securing devices

Prior to lifting the stove from the pallet used for transporting, carry out the following steps:

1. Remove the fuel drawer.
2. Remove the 4 transport-securing screws. (Figure 1)

Remove the front reinforcement bracket (Figure 2) only after the appliance is in its final location and after adjusting the height of the stove by means of the levelling feet (ensure the appliance is level and will not rock).



The reinforcement bracket at the rear of the appliance must not be removed.

Transport options

Transport on pallet:

Transport the appliance on the pallet to the installation site. Remove fuel drawer and hotplate. Remove transport securing safety devices and lift the appliance from the pallet.

Transport with a trolley:

Transporting sideways on a trolley is possible on the firebox side (Figure 3). For this, remove the fuel drawer, hotplate and transport securing devices and transport the appliance to the installation site using the trolley.

Transport by means of carrying straps (included in the delivery):

Remove the fuel drawer, hotplate and transport securing devices; hook the four carrying straps into the stove base (Figure 4). Insert the support tubes (to be provided by the customer) through the loops of the carrying straps and transport the appliance to the installation site.

Installing the appliance

1. Adjust stove height and if necessary stove frame overhang and the recess of the stove base (see adjustment on page 7).
2. Any work required connecting the flue pipe, the heating system and if necessary the combustion air supply requires a specialist following the instructions of the operating manual.
3. Carefully place the stove right up against the wall.
4. Remove the front reinforcement bracket (Figure 2).



CAUTION: With levelling feet screwed out, move the stove carefully so as not to damage the appliance or the floor covering.

4. Safety instructions



CAUTION! CHILDREN PLAYING!

Bear in mind that certain components of the appliance (handles, filling door, flue pipe, etc.) become very hot when it is in operation and therefore represent a burn hazard. Make sure that children are never in the immediate vicinity of the appliance when it is in use.
Burn hazard!

During installation and operation

- When installing the appliance, follow each of the instructions of the operating manual.
- Pay attention to the safety gaps when installing the appliance.
- Check the flue pipe connection for leakages.
- Check the appliance for damage (e.g. glass items).
- Make sure that you never add more firewood than required for the rated heating output.
- When adding more firewood, open the door slowly and first allow the flue gas to escape up the chimney. By doing this you prevent the flue gas from entering the room.
- Do not obstruct the appliance during heating as this could lead to an explosion.

Cooking surface

- Very hot fat and oil can ignite spontaneously; prepare food with fat and oil such as potato chips only under supervision. Never use water on burning fat and oil. Put the lid on and remove the pot from the hot cooking surface.
- Do not place combustible or ignitable objects on the cooking surface which could constitute a danger when the appliance is started.

Oven

- There is a risk of burning when working with the hot oven. Use oven cloths, heatproof gloves or similar.
- Do not store items in the oven that could be hazardous when the appliance is started.
- Take care when opening the oven door. Do not bend over the opened oven door immediately. A rush of hot air or steam will escape through the open door.
- Always fully close the oven door when preparing food inside the oven.

5. Description of the appliance / Adjustment

Combustion chamber, firebox

Thanks to the proven JETIFIRE-system and separately controlled primary air and secondary air, the combustion chamber meets the stringent Austrian regulations established in the "Agreement between Federation and the Provinces according to Art. 15a B-VG (Federal Constitution Act) concerning the saving of energy", the European standard EN 12815, the Austrian standard ÖNORM M 7550, the German industrial standards DIN 18882, DIN Plus, BIMSCH, as well as the special regulations concerning efficiency and pollutant emission applicable in Regensburg and Stuttgart (Germany).

Oven

All ovens are equipped with baking tray and grid, the baking tray support rails have 4 different heights. The oven interior is fully enamelled and therefore easy to clean (cleaning instructions on pages 19-20). After cleaning the oven, leave the oven door open for a few minutes to air it.

Preheat the oven for roasting and baking to achieve an even temperature distribution.

A lively fire is necessary to maintain an oven temperature of approximately 250°C. Dry beech wood is very suitable for this purpose.

Oven thermometer

The thermometer in the viewing glass of the oven door has a display range of 20 – 400°C. The temperature markings are reference values for baking and roasting and may differ slightly from case to case.



CAUTION! Depending on the type of operation, the temperature in the oven can reach up to 400°C.

Cooking surface

Your stove is equipped with a polished steel cooking surface.

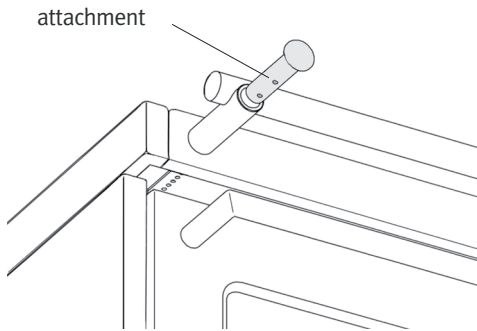


Figure 5

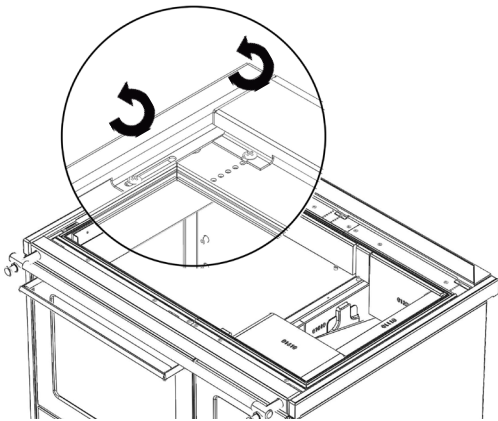


Figure 6

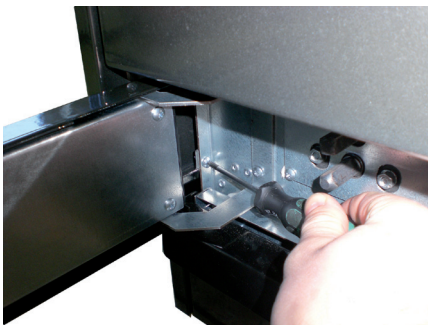


Figure 7

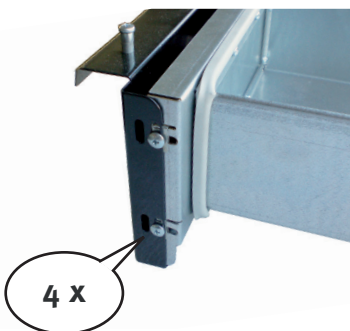


Figure 8

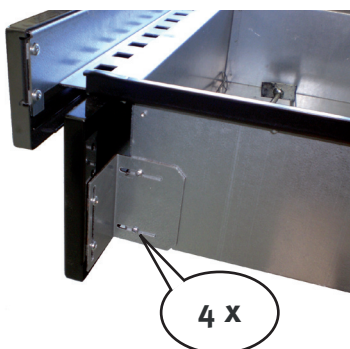


Figure 9

Stove frame (adjustable in the stove type CLASSIC)

With the stove type CLASSIC the stove frame is adjustable in its fitting to the appliance. This means you can have the stove frame flush with the working top as well as the appliance front flush with the kitchen front when installing the appliance in a fitted kitchen. Maximum overhang 3 cm.

ADJUSTMENT OF THE STOVE FRAME

With CLASSIC series, the stove frame is adjustable in its fitting on the appliance. This means that you can install the appliance in a fitted kitchen both with the stove frame flush with the working top and the appliance front flush with the kitchen front. Maximum overhang 3 cm.

- ⇒ Pull out operating handles for grate riddling and the start-up flap.
- ⇒ Slacken the Allen screws of the operating handles (bottom) slightly and unscrew to reach the required stove frame position (Figure 5).

Example:

Stove frame overhang = 2 cm ⇒ unscrew the operating handles 2 cm

- ⇒ If necessary move the headless screw of the operating handles to the second fixing point.
- ⇒ Tighten the Allen screws of the operating handles. Ensure that the start-up flap closes fully when the operating handles are pushed in.
- ⇒ Remove cooking plate(s) and slacken stove frame mounting screws (12 pieces) (Figure 6)
- ⇒ Correctly position stove frame, retighten stove frame mounting screws (12 pieces)
- ⇒ Replace cooking plate(s).

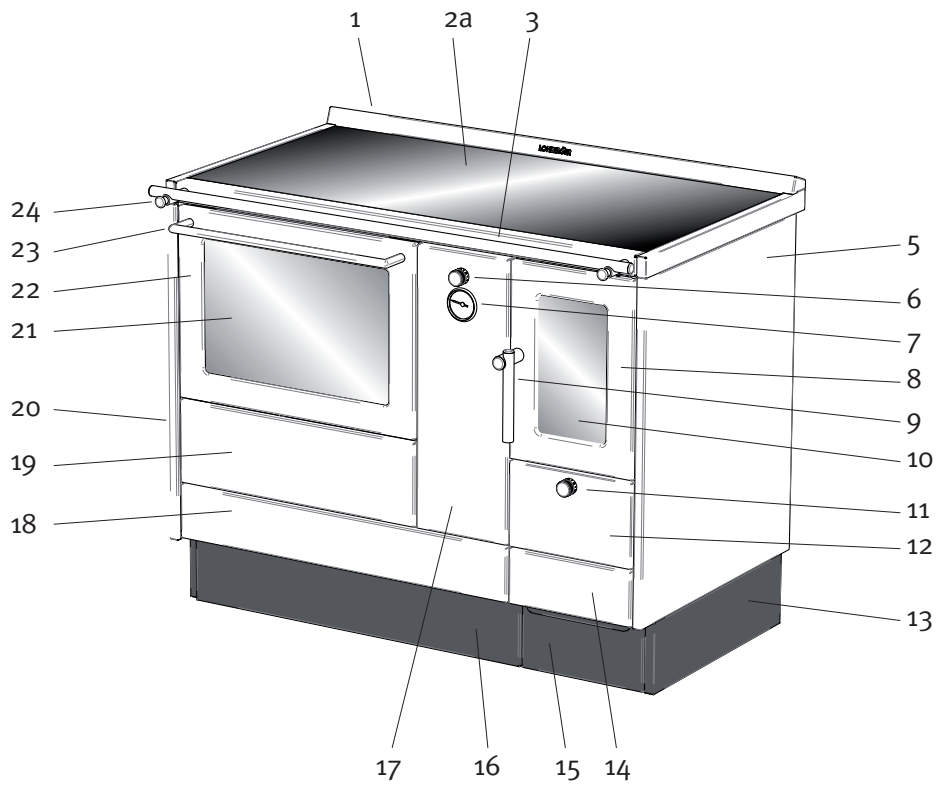
Base recess

With the design CLASSIC the base panels are adjustable in their fitting on the appliance. This means the recess of the stove base can be adjusted so that it matches the kitchen plinth when installing the appliance in a fitted kitchen.

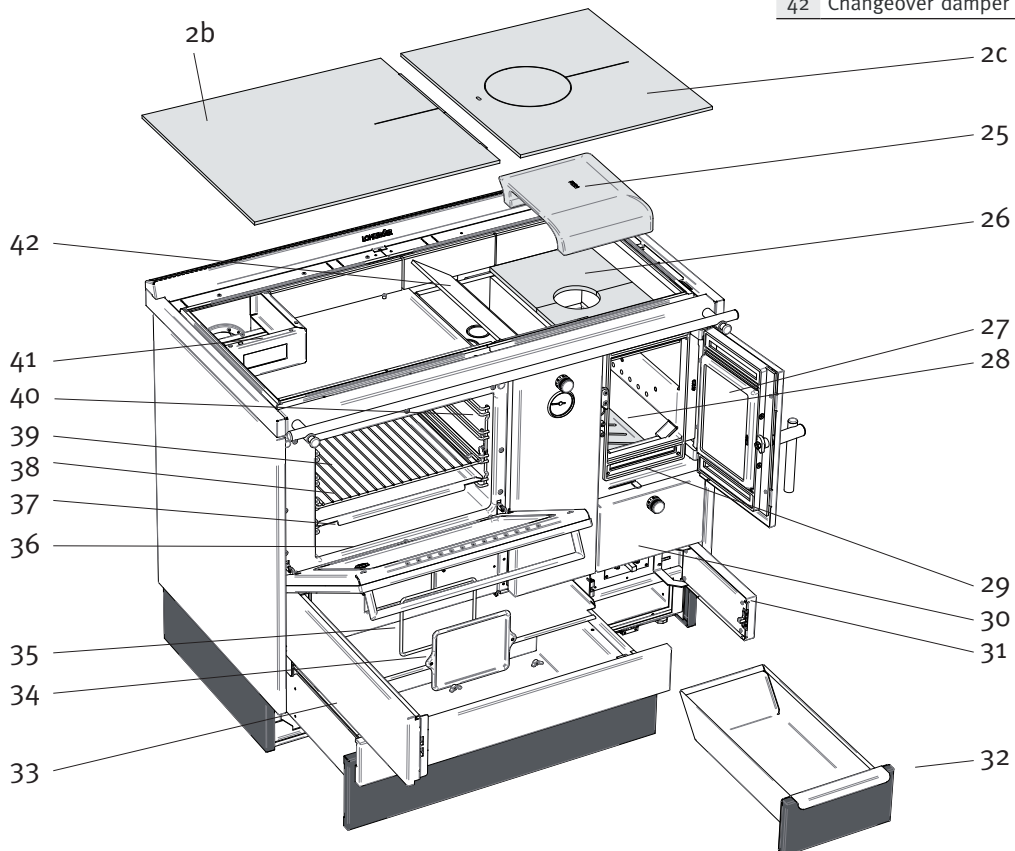
- ⇒ Open the ash door panel and slacken the mounting screw of the base panel (Figure 7), adjust to the required stove recess position (5 – 6.5 cm) and retighten the screws.
- ⇒ Remove the ash drawer, loosen the panel fixing screws (Figure 8), adjust to the required base recess position and retighten the screws.
- ⇒ Pull out the fuel drawer, loosen the mounting screws of the panel (Figure 9), adjust to the required base recess position and retighten screws.

Appliance height

The 6 levelling feet (can be adjusted with the supplied adjustable wrench) allow compensation of irregularities in the floor and adjustment to other appliances or kitchen attachments.



1	Stove frame stainless steel	14	Ash door panel	28	Cast-iron grate combustion chamber
2a	Cooking surface (Ceran, extra charge)	15	Base panel of ash drawer	29	Combustion air slider secondary air
2b	Cooking plate oven (standard)	16	Base panel of fuel drawer	30	Grate riddling / grate adjustment
2c	Cooking plate combustion chamber (standard)	17	Heat exchanger finishing panel	31	Double ball catch
3	Hand rail set stainless steel	18	Drawer panel	32	Ash drawer
5	Sidewall	19	Cleaning door	33	Fuel drawer slide
6	Control knob heating/cooking operation	20	Side wall	34	Cleaning cover
7	Thermometer	21	Oven viewing window	35	Sealing cord cleaning cover
8	Fire door panel	22	Oven door panel	36	Oven thermometer
9	Fire door handle stainless steel	23	Oven door handle, stainless steel	37	Oven with oven frame
10	Fire door viewing window (extra charge)	24	Operating handle start-up flap	38	Baking tray
11	Control knob for primary air	25	Duct plate	39	Grid
12	Regulator panel	26	JETFIRE flame convergence plate	40	Oven side rails
13	Base side panel	27	Protective plate (extra charge for glass)	41	Start-up flap
				42	Changeover damper heating / cooking operation



6. Installing the appliance



Seek the advice of the local qualified chimney sweep before installing the appliance. When installing the appliance, the technical regulations applicable at the installation site as well as country-specific regulations such as the applicable building regulations, local fire protection laws and/or additional regional regulations must be observed.



We strongly recommend that the connection and the installation work (in the case of self-installation the final inspection and approval) are always carried out by a certified specialist.

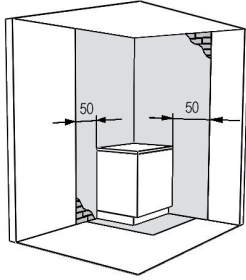


Figure 10

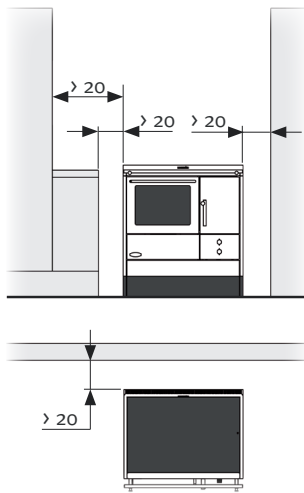


Figure 11

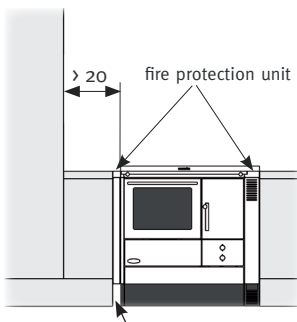


Figure 12

With fire protection unit „retrofitted“:
Gap in kitchen plinth to allow air circulation

Load-bearing capacity of the floor

Prior to installing the appliance, make sure that the substructure of the floor is suitable for the weight of the appliance. Ensure a level and vibration-free positioning of the appliance.

Floor pad as a protection against flying sparks

With combustible floors (timber flooring, synthetic materials, fitted carpet, etc.), the use of a floor pad made of steel, safety glass, tiles or similar non-combustible materials is strongly recommended

According to fire protection laws, the following minimum clearances from the combustion chamber opening must be maintained: 50 cm to the front, and 30 cm each to the left and to the right.

Safety clearances

Maintain sufficient safety clearance to combustible items (wooden panelling, furniture, curtains, etc.) around the stove. The walls in the immediate vicinity of the stove must be fireproof over the full height of the walls and over a width of at least 50 cm to either side and to the front beyond the fireplace (Figure 10). The safety clearance from items to be protected (e.g. combustible walls, walls with combustible components, tall kitchen cupboards and load-bearing walls made of reinforced concrete) is at least 20 cm (Figure 11).

When installed next to combustible materials or in a fitted kitchen or next to an electric cooker or any other appliance, a fire protection unit (fitted as standard or as an addition) must be provided (Figure 12).



The LOHBERGER fire protection units type VBS are only tested in conjunction with LOHBERGER stoves of the series VARIOLINE (stoves type AC., LM., LC., LCP..).

In this case the maximum height of the adjacent fixtures is the stove height. Fixtures exceeding the height of the stove must be at a distance of at least 20 cm.

Overhead kitchen cabinets

For stoves with a steel cooking plate it is not permissible to install overhead cabinets above the stove because the hotplate can be opened (cooking opening cover).

For stoves with a glass ceramic cooking surface, the distance must be at least 75 cm and there must be adequate rear ventilation of the overhead cabinets to avoid heat being trapped.

Safety clearances flue gas pipe

When installing the flue gas pipe, adhere to the following minimum distances from combustible building materials:

- clearance to wall 20 cm
- clearance to ceiling 40 cm.

7. Chimney connection

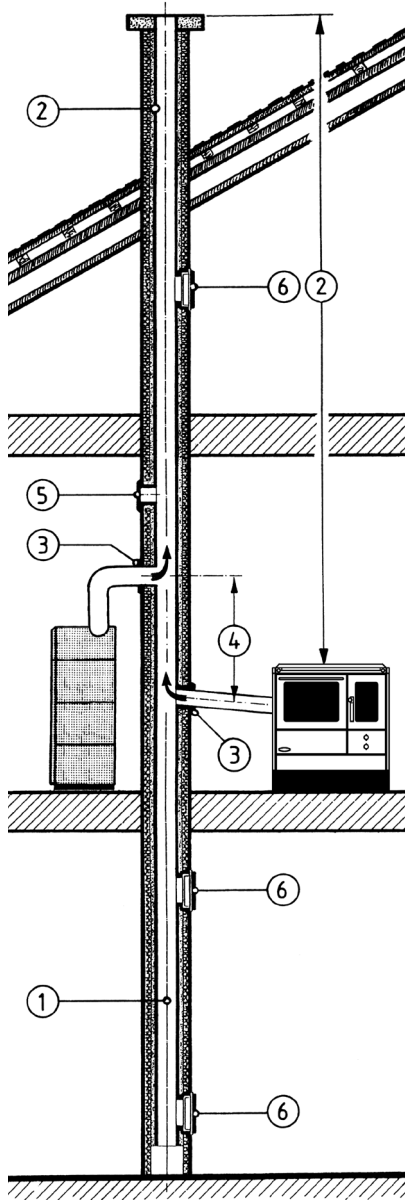


Figure 13

Schematic diagram flue gas connection (Figure 13)

Trouble-free and efficient operation is assured if the following conditions for an optimum combustion are fulfilled:

- ① Adequate condition of the chimney: good thermal insulation, smooth inner surface, no leakages
- ② Correct dimensioning of the chimney: cross section and effective height must be calculated for the intended fuels and loads.
- ③ Correct flue gas pipe connection: tight, no cross sectional constriction, slightly rising towards the chimney, not projecting into the chimney.
- ④ For shared-flue systems: maintain a minimum distance of 60 cm.
- ⑤ Seal unused connection openings with cover lids.
- ⑥ Keep sweeping and cleaning openings, usually located in the basement or attic storeys, closed at all times. Check seals from time to time and renew if necessary.

The chimney

- When installing the flue gas pipe adhere to the following minimum clearances from combustible building materials: clearance from wall 20 cm, clearance from ceiling 40 cm.
- Design and condition to suit the regulations applicable at the place of installation.
- Prior to connection, inspect for possible faults and defects.
- Effective chimney height of 5 m (from cooking plate to the chimney outlet). If the height is less, the stove must be connected with a vertical flue gas pipe of at least 1 m length. An effective chimney height of less than 4 m is not advisable.
- Uniform, square or round internal cross section, insulated to prevent cooling.
- Chimneys made of pre-fabricated components are preferable.
- Assessment of the entire flue gas system according to DIN 4705 Parts 1 and 2, with shared-flue systems according to Part 3.

Connection stove - chimney

The flue pipe is the connection between the stove and the chimney. When installing the flue, please note the following instructions:

- Make sure that the connecting piece can be cleaned (cleaning opening, from the stove-side, etc.).
- The diameter of the flue pipe must not decrease towards the chimney.
- The flue pipe must not project into the chimney.
- Vertically positioned flue pipes must not exceed a length of 125 cm if they are not insulated.
- Horizontal pipe sections must not exceed a length of 100 cm.
- The flue pipe must not descend towards the chimney, but must incline slightly upward.
- The connection between the stove and the chimney must be strong and leak-proof. In particular the connection to the masonry of the chimney must be durable and tight.

The necessary discharge pressure (“Chimney draught”)

The negative pressure prevailing in your chimney, measured in Pascal (“Pa”) is a measure of the efficiency of your chimney. The discharge pressure required for your stove is shown in the table “Technical data” on page 26 and on the nameplate of the stove.

With new chimneys you can trust the details (calculations) of the manufacturer; with older chimneys seek the advice of your chimney sweep.

- Insufficient discharge pressure would result in incomplete combustion and consequently in increased formation of soot and tar in the stove and in the chimney.
- Excessive discharge pressure on the other hand would accelerate combustion, lead to high flue gas temperatures (causing damage to the appliance) and greatly increase fuel consumption.

8. Combustion air

i The local qualified chimney sweep or your ventilation installer will be happy to provide information about the applicable technical guidelines and requirements for the use of fireplaces in combination with systems for ventilation and extractor hoods.

! Negative pressures in the room where the appliance is located (e.g. through ventilation systems, extractor hoods, etc.) may impair the functioning of the fireplace and its safety system and are therefore not permissible.

Operate extractor hoods only with re-circulated air operation. With ducted extractor hoods, an adequate supply of air must be ensured by means of separate safety equipment (e.g. contact switches on the windows, negative-pressure monitoring).

The appliance is dependent on indoor air (open-flued appliance); that means the air required for combustion is drawn from the room where the appliance is located. Therefore the room must be supplied with fresh air from the outside through an air inlet. Provide an opening that is 10-15 cm in diameter in an exterior wall in the room where the appliance is located. Install a protective grating on the outside of the air inlet. In particularly exposed locations it is advisable to provide protection against wind and rain.

If it is not possible to provide an air inlet to the outside from the room where the appliance is located, the opening can be in an adjoining room. In this case the adjoining room must have a permanent connection to the room where the appliance is installed via a ventilation grid. If there are additional heating appliances in the same room, make sure that the air inlets can supply sufficient air for combustion for the operation of all appliances.

Outdoor air supply for combustion (optional equipment)

i Even with an outdoor air supply for combustion the requirements for the operation of an appliance independent of indoor air (room-sealed appliance) are not fulfilled.

Dimensions for fitting (Figure 14)

Appliance	Lateral clearance	Clearance to floor
AC 80 (F2+B2)	42,5 *	15,5 **

For appliances with fire protection please note the increased dimension » +5 cm / +

* 7.5 cm (closed)

** Stove height 85 cm.



Please note!

- A prerequisite for the connection of fireplaces used in combination with domestic ventilation systems is that the approval of the local qualified chimney sweep is obtained.
- It is not permitted to install cut-off devices in the supply air duct (dampers, sliders, etc.). To prevent air from permanently flowing through the appliance when it is not in use, close the dampers in the appliance.
- Make sure that the outdoor air inlet is protected against blockage by means of a protective grating. We recommend a mesh size of 10 mm.
- For the supply air duct to the combustion air connecting piece it is best to use a non-combustible, flexible aluminium hose. Max. length 4 m with 3 bends.
- The supply air duct must be insulated to avoid condensation and must be protected against wind.
- The air duct must be at least 100 mm in diameter. If rectangular pipes are employed, an appropriate cross section must be maintained.
- According to the regulations for chimney sweeping and inspection ventilation systems must be checked for blockages once a year by the local qualified chimney sweep. To facilitate this, appropriate inspection doors should be provided. Please consult your local qualified chimney sweep regarding this matter.



As part of the final approval the local qualified chimney sweep must check the entire system for an adequate supply of combustion air.

Examples of possible connections

Air supply for combustion via pipe line through a basement room (Figure 15)

The combustion air is preheated with this connection option, which is favorable to a clean combustion. The routing in the basement room is easy to make.

Air supply for combustion directly from outdoor (Figure 16)

In a air supply directly through an outside wall, the combustion air is only slightly preheated, which is unfavorable to a clean combustion. There is also the danger of condensation!

Air supply for combustion from above (Figure 17)

An air supply from above may only be with tested chimney systems, a chimney calculation is mandatory!

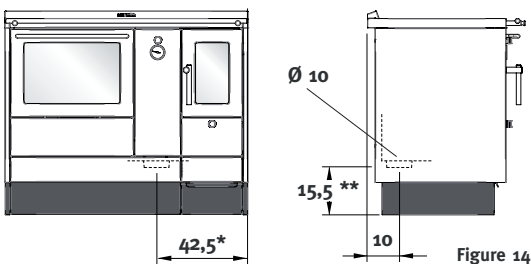


Figure 14

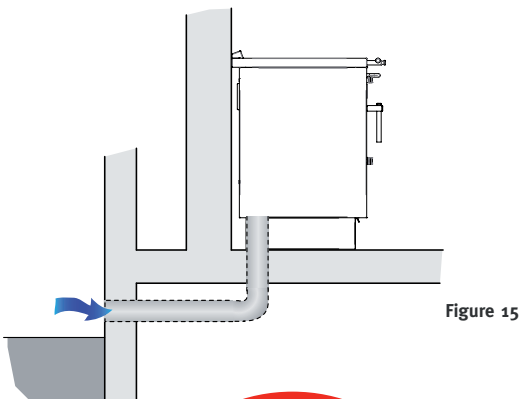


Figure 15

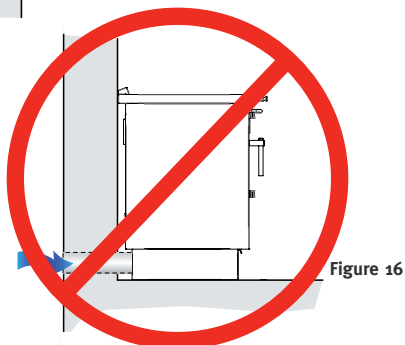


Figure 16

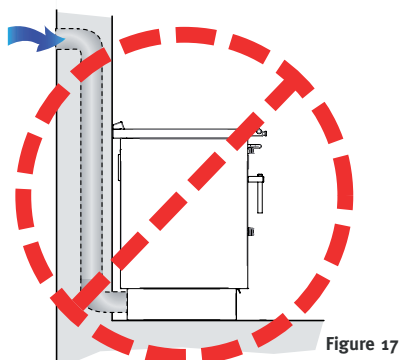





Figure 17

9. Connection of the heating system

 The connection to the heating appliance as well as the start-up may only be performed by a certified HVAC installer.

 Install a drain valve in the lowest part of the water circuit.

 For connecting the heating system we recommend our “installation package” which is available as optional equipment. This package includes a return flow temperature boost, a temperature safety relief valve, a circulating pump as well as an automatic bleeding device which are pre-installed at the rear of the appliance (Figure 18).

The boiler is suitable and permissible as a heat generating device for hot-water heating systems with a flow temperature of up to 95° C and a maximum allowable working pressure of 3 bar.

The appliance must be installed following the instructions of this operating manual and in conformance with the applicable national and European standards as well as the regional regulations.

Further points to be observed:

- Heating room guidelines
- State building regulations
- Local building regulations
- Industrial regulations and local fire protection laws
- Environmental laws
- Regulations of the local power supply company.

Upon completion of the connection work a test run must be carried out during which all control and safety devices are adjusted and checked for correct functioning.

Caution: Direction of flow

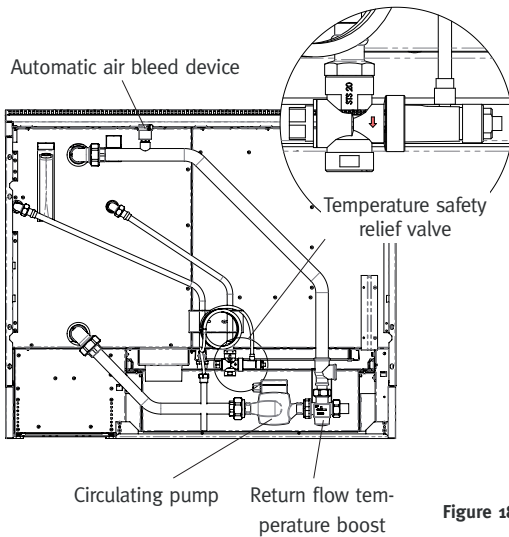


Figure 18

Heat output to water

The heat requirement during operation must exceed 1.6 kW. If the demand or heat supplied is lower, the built-in safety devices would be activated and/or the appliance would be shut down.

Return flow temperature boost

Operating temperatures that are too low (flow and return flow temperatures that are too low) will reduce the service life of the boiler significantly.

When the temperature is below the water dew point, water containing chemical substances with various types of activity condenses on the boiler surface and can accelerate corrosion. Temperatures below the dew point primarily occur in low-temperature heating installations (return temperatures down to below 25°C), in installations without a mixer, in the case of extreme light-load operation during changes in season and in constant light-load operation caused by a boiler that is dimensioned too large.

Therefore the return flow temperature must be at least 55°C at the return flow connecting piece of the appliance. The ideal return flow temperature at the boiler inlet is around 60°C. The return flow temperature boost (the pump for the return flow temperature boost must be installed in the return flow) should be mounted as near as possible to the boiler so that the mixing temperature at the mixing valve corresponds to the return flow temperature at the boiler.

Temperature safety relief valve

The heat exchanger serves to protect the boiler from overheating when the pump is stationary and must not be used to provide domestic hot water. The safety mechanisms must still be accessible after the installation. The drain must be visible for checking the temperature safety relief valve for proper functioning, therefore use the drain funnel (Figure 19).

At least once a year the temperature safety relief valve must be checked for correct operation. To do this, press the red cap against the valve and water must flow into the drain funnel. Should the safety valve drip, the seal and valve seat must be cleaned. The calcification state of the safety devices must also be checked at least once a year.

Expansion tank

If the boiler hot-water circuit is not directly connected to a heating circuit with integrated expansion tank, or if it can be disconnected from this circuit, a separate expansion tank (type-approved) is required. The installation and the calculation of the dimensions of the expansion tank must comply with DIN EN12828 and DIN EN13831. The expansion tank must be installed in rooms that are protected from frost. For further details (e.g. maximum operating temperature, etc.) refer to the information given by the manufacturer.

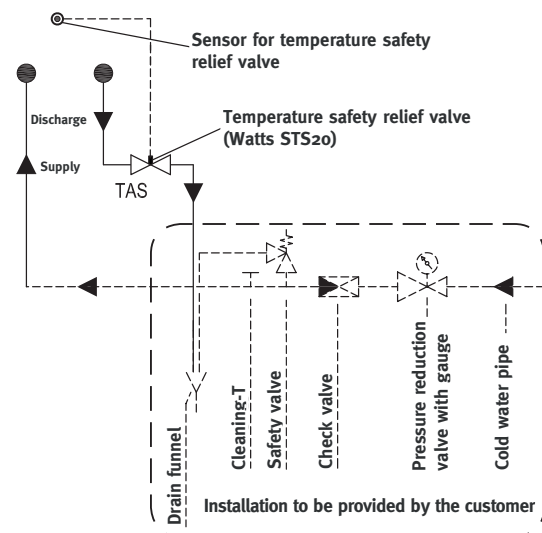




Figure 19

 The inside width of the inlet and outlet safety valves of the heat exchanger must not be less than the nominal width of its connection. It must not be possible to close off the inlet pipe manually and the outlet pipe must be free from obstructions.

 Please observe the DIN EN 12828 standards when connecting the temperature safety relief valve.

Safety valve

To prevent excess pressure, a pressure-relief safety valve must be installed. The open end of the blow-off pipe must be visible, therefore use a drain funnel.

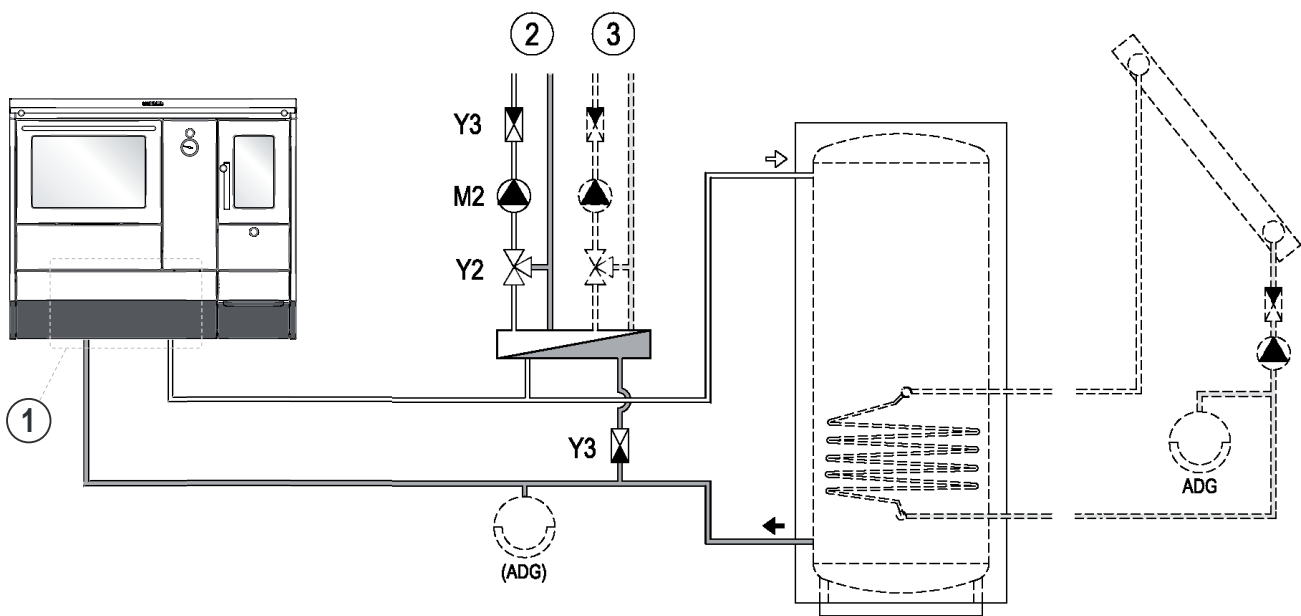
Automatic air bleed

At the connecting bend of the boiler flow pipe an automatic air bleed unit must be provided to ensure proper bleeding of the boiler and the heating system.

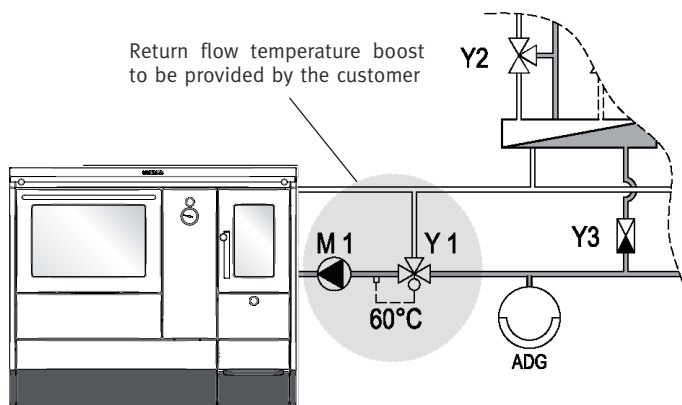
Example of connections

The following shows schematic diagrams of a heating system. Isolating devices, air bleed units and safety devices are not included. They are to be understood as non-binding examples and are not a substitute for accurate planning that takes account of the customer's requirements and hydraulic and safety requirements.

Connection with LOHBERGER installation package (optional equipment)



Connection without LOHBERGER installation package



Explanation of symbols:

- | | |
|-----|---|
| 1 | Installation package
Integrated return flow temperature boost
Circulating pump
Automatic air bleed unit
Temperature safety relief valve |
| 2 | Heating circuit |
| 3 | Additional heating circuit or boiler load circuit, if necessary |
| Y1 | Three-way thermal valve |
| Y2 | Three-way mixer |
| Y3 | Check valve |
| M1 | Circulating pump for filling the reservoir |
| M2 | Heating circuit pump |
| ADG | Expansion tank |

10. Operating the stove

Start-up flap

To facilitate initial heating, all LOHBERGER stoves are equipped with a start-up flap. Opening the start-up flap provides a direct route from the firebox chamber to the flue pipe. The flue gases then need not take the “long” route through the oven, but enter the flue pipe while still hot, rapidly establishing a flue draught. Once there is sufficient draught in the flue and the initial heating phase is completed, close the start-up flap again.

It is incorporated in the hand rail on the side opposite to the combustion chamber. Pulled out is open; pushed in is closed (Figure 20).

Caution: The start-up flap must only remain open during the initial heating phase. If the start-up-flap remains open when heating, this will cause the stove to overheat and damage stove components. An open start-up flap will also result in increased fuel consumption.

Air control

The AquaTherm appliance is fitted with an automatic output controller. This device serves to “restrict” the supply of combustion air; but this has only a limited effect on the output. It is definitely not suitable for compensating an excess of fuel. A certain amount of fuel requires a certain amount of oxygen for optimum combustion. If the wood is supplied with less air than is required for clean and efficient combustion, less energy is generated in the appliance (protecting the appliance to a great extent from overheating) – the unused “wood gas”, however, escapes through the flue.

The result: low efficiency and high environmental load.

Remedy: load the stove only up to the recommended fuel level.

i A plentiful supply of air from below means a lot of combustible wood gas (can be adjusted by means of the primary air control). Using the pre-heated secondary air (JETFIRE combustion technology) this wood gas is burned cleanly and efficiently at approx. 950°C

Primary air control

The supply of the primary air required for combustion is controlled with the rotary knob below the firebox door (Figure 21). This determines the rate of burning and therefore the heat output of the stove.

In position “0” the controller is closed, no combustion air is supplied. In position “1” minimum air supply is provided; select this position for slow-burning operation. Turning the rotary knob to position “6” means maximum air supply, necessary especially during the heating-up phase.

⇒ Air settings see Table on page 18

Secondary air control

The supply of secondary air (combustion air flowing over the fuel from the top) produces combustion that matches the fuel being used and keeps down the pollutant emissions. The secondary air flows through openings in the rear wall of the combustion chamber as well as from below and at the top along the combustion chamber door (along the viewing window, if present) over the fuel into the combustion chamber.

The secondary air is controlled with the secondary air slider which is visible in the lower area after opening the firebox door (Figure 22). Moving the slider towards the outer wall of the appliance reduces the incoming secondary air flow; moving towards the oven increases it.

⇒ Air settings see Table page 18

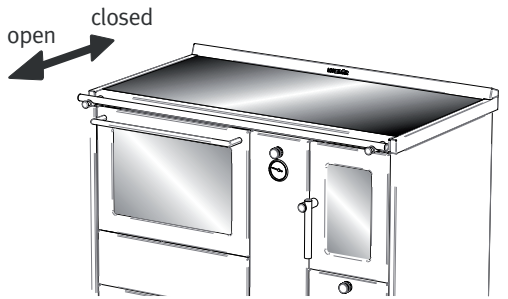


Figure 20

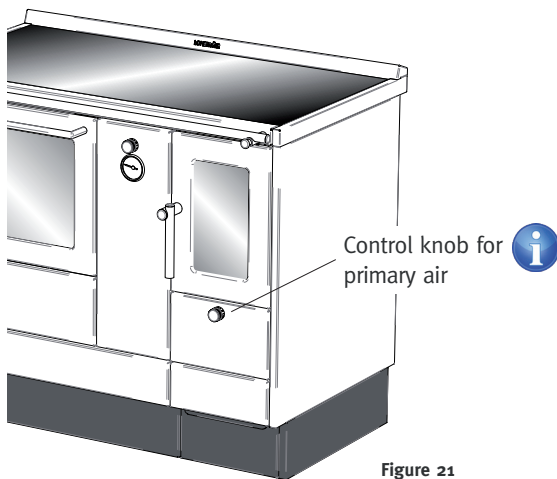


Figure 21

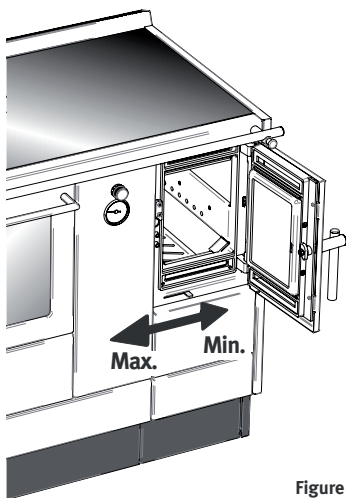


Figure 22

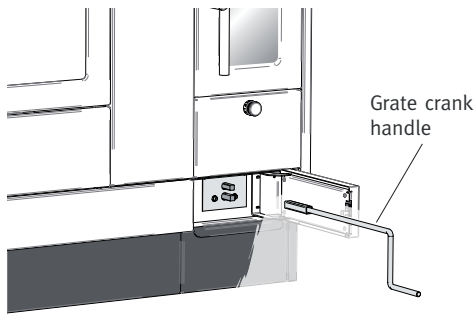


Figure 23

Grate riddling

To remove ash from the grate use the grate crank handle from the ash drawer (Figure 23). To do this, push the grate crank handle onto the upper square spigot and turn as required. However, if the air slits of the grate are very clogged by slag, crusts or other combustion residues, completely remove the grate and clean it.

Adjustment of the grate

Thanks to the lifting grate the filling height can be adjusted as desired. The lifting grate is adjusted by means of the grate crank handle (Figure 24). The crank is pushed onto the lower square spigot above the ash drawer. Turning it clockwise moves the grate upwards. Turning it anti-clockwise moves the grate downwards.

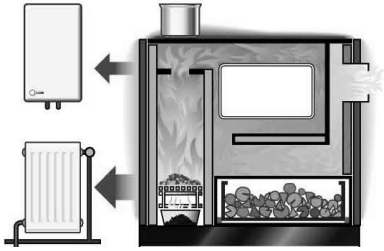


Figure 24

Winter mode / Summer mode

WINTER MODE (Figure 24)

With the grate at the lowest position (full firing) maximum heat is supplied to the heating system, the output is sufficient for cooking, the output for baking is lower.

SUMMER MODE (Figure 25)

The top position of the grate (shallow firing) is especially suitable for cooking and baking with a reduced supply of heat to the heating system.



Even in SUMMER MODE make sure that the heat output to water is sufficiently dissipated as the heat output to the water circuit is reduced but not stopped completely.

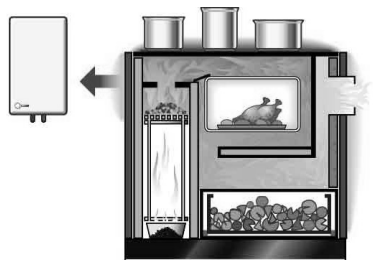


Figure 25

Changing between boiler and cooking operation

The control knob above the boiler thermometer is used to select boiler operation or cooking operation. To do this, turn the knob to the symbol for the desired operation (Figure 26).

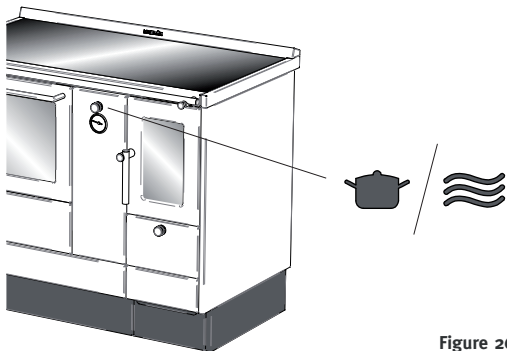


Figure 26

BOILER OPERATION (Figure 27):

With this operating mode maximum heat is supplied to the heating system. The heating gases are taken through a tube heat exchanger, and the radiated losses to the room where the stove is installed (via the cooking surface or the oven) and consequently the heat output to the room are reduced.

COOKING OPERATION (Figure 28):

For cooking and baking the heating gases are led to the cooking surface and around the oven. The increased radiating surface area increases the heat output to the room where the appliance is located. The boiler output is reduced through exclusion of the tube heat exchanger, but not entirely stopped.



Even in the mode COOKING OPERATION make sure that the heat output to water is sufficiently dissipated as the heat output to the water circuit is reduced but not stopped completely.

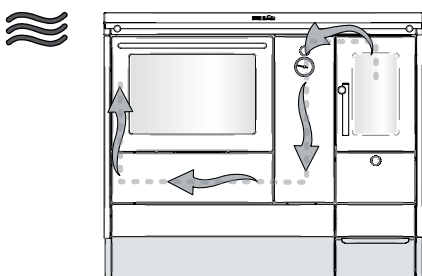


Figure 27

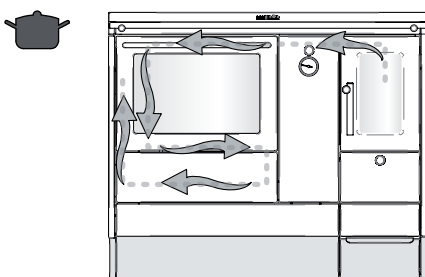


Figure 28

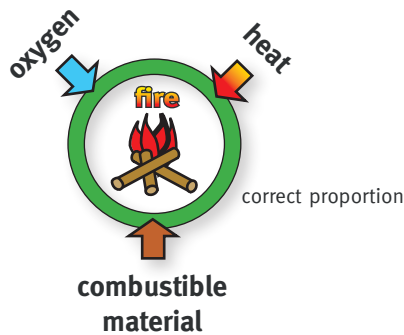


Figure 29

Prerequisites for efficient combustion:

- sufficient amount of combustible material
- oxidising agent, mostly oxygen
- enough heat to reach the ignition temperature or to maintain the minimum temperature required for combustion
- the correct proportion of the combustible material to ambient air or to the reactive gas

The combustion process

The combustion process takes place in three stages:

1. Drying stage

In this stage all the moisture still in the wood is evaporated. This occurs at temperatures of approx. 100°C. During pre-ignition, the wood must be supplied with heat (using small pieces of firewood). When it dries, the firewood shrinks until cracks are formed which accelerate the drying process.

2. Degasification stage

After the drying process, with temperatures rising from 100° to approx. 300°C, the degasification of the wood starts. High-energy, combustible gases, consisting of various chemical components, are released (hydrocarbons). The burn-off of these volatile components, which account for about 80 % of the wood, is recognisable from the long yellow flames that shoot up from the wood. The real combustion process begins with the ignition of the gases that are produced at about 225°C (ignition temperature) and with the release of heat. For this to happen, enough oxygen must also be supplied. The final stage of the combustion is reached at about 300°C. Now the greatest amount of heat is released, with flame temperatures of up to 1100°C.

3. Burn-out stage

After the volatile components have been burnt-off, the charcoal begins to burn and is degasified at temperatures of about 500 to 800°C without forming soot. This process can be recognised by the short, translucent small flames. All three stages can occur at the same time from the inside to the outside of a piece of wood.

Clean combustion

The first prerequisite for keeping pollutant emissions as low as possible is that only dry wood is used.

The heating-up phase, which produces significant quantities of decomposition products, must be completed as fast as possible by using small pieces of kindling wood in order to reach the high temperatures quickly.

Reducing the air supply during the degasification stage has a detrimental effect as the wood degasification continues even without further supply of air and without flames (smouldering). As a result large amounts of the substance of the wood can be expelled without generating heat and are released into the environment without having been burnt-off or deposits such as tar and soot are formed on the walls of the combustion chamber and in the flue gas pipes.

Even during the burn-off phase the air supply must not be restricted completely as this would create the hazard of carbon monoxide fumes.

When continuing the heating process, make sure that not too much wood is added. The amount of wood should always match the heat requirements.

JETIFIRE - FLAME CONVERGENCE PLATE

The JETIFIRE Flame convergence plate, which serves as a cover for the combustion chamber (Figure 30), in conjunction with the pre-heated secondary air supply through the firebox door, results in a higher combustion temperature and thus in a less polluting and more effective combustion.

The flame convergence plate, like the stove itself, should be cleaned of combustion residues from time to time. Make sure that the flame convergence plate is replaced in the correct position.

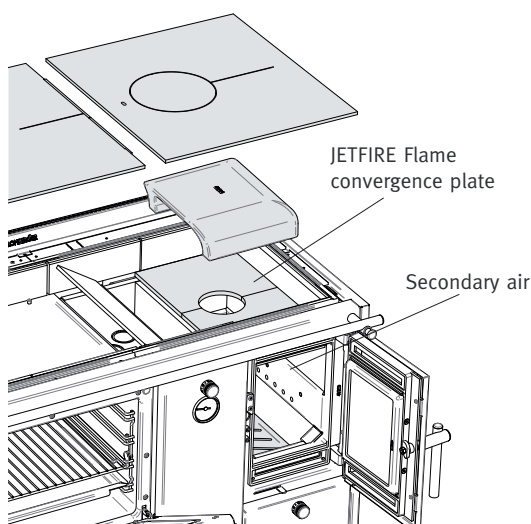


Figure 30

12. Fuels



Figure 31

Storage of wood	moisture content %	calorific value kWh/kg
green wood	50	~2,3
stored for one winter	40	~2,7
stored for one summer	18-25	~3,4
air dried	15-20	~4,2

Table 1



Figure 32



How to heat with brown coal (lignite) briquettes:

The fuel is best ignited with a high combustion temperature. To facilitate this, place a suitable number of fire starter cubes, or paper or kindling wood onto the grate in the firebox. Add two to three small pieces of firewood or two to three briquettes and light the fire. Close the firebox door; turn the air regulator to "maximum" position. As soon as the wood and the briquettes are burning, adjust the air supply to suit your heating requirements. More lignite briquettes can be placed onto the glowing embers as required once the flames have died down.



Failure to observe these instructions will invalidate any warranty

Suitable fuels

FIREWOOD (LOGS)

Firewood (Figure 31) should have a moisture content of approx. 20 % of the dry weight, a length of 1/3 m and should be split into small pieces. This way, the firewood quickly catches fire and produces a higher heat output than the same volume of large logs. Spruce wood, fir wood or alder wood should be allowed to dry out for at least 2 years, hardwood as long as 3 years (under a roofed shelter).

The effect of the water content in wood on the calorific value is shown in Table 1:

LIGNITE BRIQUETTES

In addition to wood, lignite briquettes (Figure 32) can also be burned. Lignite briquettes have the following advantages: high calorific value, long-lasting heat, a consistent quality, readily available at DIY-stores, fuel dealers etc. and the 10-25 kg bundles are easy to transport and store.

Calorific value of lignite briquettes: 5,83 kWh/ kg

Unsuitable fuels

Moist wood, bark waste, sawdust, fine wood chips, brushwood, wood-wool, wood shavings. Use paper only in small amounts to kindle a fire. The burning of such fuels results in significant pollutant emissions, large amounts of ash, and the heat output is comparatively low.

Prohibited fuels

Surface-treated wood (veneered, painted, impregnated, etc.), particle board, all types of household waste (packaging waste), plastic materials, newspapers, rubber, leather, textiles, etc.

Burning these materials is harmful to the environment and is therefore prohibited by law. Furthermore, damage to the appliance and the chimney can occur. Burning coal products other than lignite (brown coal) is also forbidden. The appliance has not been tested for use with these fuels; therefore damage to the appliance cannot be ruled out and is not covered by warranty.


13. Start-up

After completion of the assembly and connecting work and prior to the first start-up, a few actions are still required:

- Steel cooking plate: ensure a 2 mm gap all round between the plate and the stove frame to prevent discoloration of the stainless stove frame when heating.
- Open the firebox door and the ash door, pull out the ash drawer and take out the multi-purpose wrench.
- Wipe off the corrosion protection applied to the steel cooking plate (see page 21)
- Before each start-up, make sure that the appliance is ready for use (water level, water pressure, temperature, controls, safety devices etc.)

After you have familiarised yourself with the operating procedures for the stove, the first start-up can begin.

Heating up

- Open the start-up flap, turn the knob for the primary air to position 6 and fully open the slider for the secondary air.
- Open the firebox door
- Turn the operation mode control to Cooking operation 
- Put 2 small pieces of firewood onto the grate
- Place a piece of starter between the pieces of firewood and add more firewood on top
- Close the firebox door, open the ash door a little bit and allow wood to develop a lively fire.



Close the start-up flap and the ash door after approximately 15 minutes.

Adding Fuel

- Add more fuel according to the table (see air supply settings).
- Turn primary air supply for the required heat output.
- Adjust secondary air supply for the required type of fuel.

When adding fuel we recommend:

1. short intervals (every 30-50 minutes)
2. small pieces of firewood

Air supply settings

Table 2 shows the recommended settings for the air supply (after the operating temperature has been reached). The indicated values for the settings are approximate values. The setting of the air slider that suits the heating requirements of the room is established by experimenting. See Table 3 to learn more about the recommended amount of firewood to be added and burning times.


Heating

When only embers are left on the grate, new fuel should be added evenly over the whole grate. To do so, spread the embers evenly over the grate and then more fuel can be placed on top.


Fuel filling level

Please note that your stove should only be filled up to the secondary air vents at the side walls and the rear wall of the combustion chamber and not above the air vents of the upright grate behind the combustion chamber door, as this would obstruct the air flow in the combustion chamber. On stoves with viewing windows this will result in soot deposits and darkening of the glass (ceramification, not covered by warranty). In any case, this will lead to incomplete and inefficient combustion and subsequently to low efficiency with all appliances.

Cooking

For cooking change the operating mode to cooking . Cooking is best done on a hot but not red-hot stove plate. Overheating is synonymous with wasting of fuel. The highest stove plate temperature is in the immediate vicinity of the heat exchanger (above the boiler thermometer). This area is therefore ideally suited for rapid initial cooking. The edge zones with lower temperatures can be used for slow cooking or keeping warm. You are best advised to use pots with a thick, flat base and a fitting lid.

Baking and Roasting

Set the operating mode button to . For baking and roasting, evenly distributed heat is needed. To achieve this evenness and a high enough temperature, the oven must be preheated to the temperature that suits the food to be baked, with the start-up flap closed. When the oven has reached the required temperature put the items to be baked inside. However, do not let the fire burn too fiercely; only add fuel in small quantities. The desired temperature in the oven can be achieved by adjusting the supply of the combustion air (secondary and primary air regulator). Place high cake tins on the rack in the bottom groove. Cakes in tins can be baked at a moderate heat (180 – 200°). A baking tray with flat cakes or biscuits can be put in using either of the grooves. In this case increasing the heat to 200 - 220° is recommended. For roasting much higher temperatures are needed, preheating is essential.

Heating in between seasons

When outdoor temperatures are above 15°C, it may occur that due to low chimney draught the fire does not burn very well. This will result in an increased build-up of soot in the flue passages of the appliance and in the chimney.

To reduce the build-up of soot when heating in between seasons, increase the primary air supply, poke the fire more often and add fuel more frequently (smaller pieces of wood).

Type of fuel / firing mode	Rated heat output (~20 Pascal)	
	Primary air	Secondary air
Beech wood / shallow firing	6	max.
Beech wood / full firing	6	max.
Lignite briquettes / full firing	6	min.

Table 2

Type of fuel / Mode of firing	Adding of fuel	Burning time
Beech wood / shallow firing	approx. 2,3 kg (2-3 pieces of firewood)	approx. 60 min.
Beech wood / full firing	approx. 3,8 kg (4-5 pieces of firewood)	approx. 60 min.
Lignite briquettes / full firing	approx. 5,6 kg	approx. 120 min.

Table 3

14. Maintenance and Cleaning

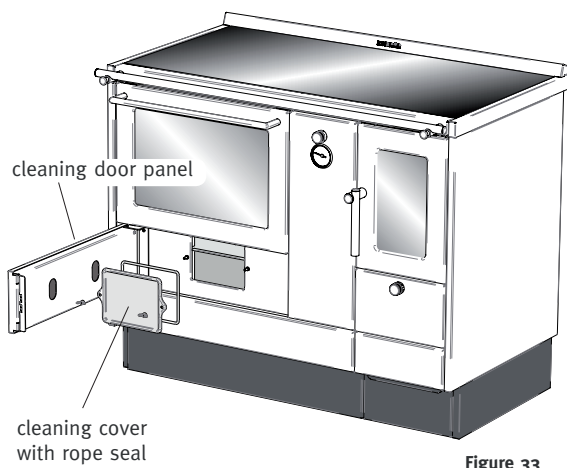


Figure 33

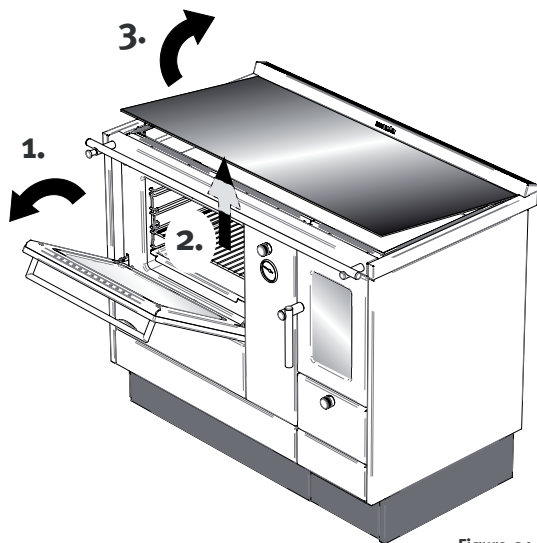


Figure 34

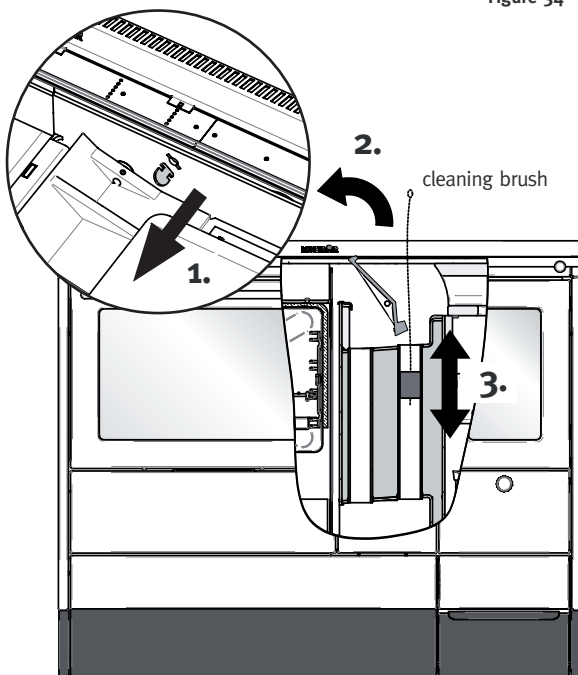


Figure 35

Regular maintenance and care or cleaning of the appliance, the flue gas ducts, the connecting piece and the chimney are particularly important for the operational safety, efficiency and maintaining the value of the appliance.

A thorough cleaning should be performed after each heating period and after a long period of non-use (see Important instructions, page 4). When used frequently or when using poor-quality fuels, correspondingly more often.

- Remove cooking plate and clean it, in particular the underside. With glass ceramic hobs, clean the bottom with a hand brush, and for steel cooking plates use a wire brush.
- Remove the grate and brush it. Clear out clogged grate slits.
- Remove and sweep flue gas pipe(s).
- Clean combustion chamber walls and flue gas ducts with the ash shovel.
- Brush start-up flap and fixture and check that it operates correctly.
- Remove ash pan and empty it. Sweep the ash pan enclosure.
- Use the ash shovel to clean the flue gas ducts accessible after removing the cleaning cover.
- Check the sealing cords of the cooking plate and of the cleaning cover; replace them if required.
- Clear the secondary air vents of the protective plate of the firebox door using a wire brush.
- When cleaning chrome, anodised or enamel surfaces, use only gentle (non-alkaline) cleaning agents and no abrasive cleaning tools. The same applies to cleaning the oven.
- When reinstalling the various appliance components (flue gas pipe, cooking plate, grate, cleaning cover, ash pan) ensure they are correctly positioned and function as required and / or that there are no leaks.
- When positioning the cooking plate, make sure there is a 2 mm wide gap to the stove frame all round.

Cleaning opening

The cleaning door panel is secured by a ball catch and swivels open (Figure 33). The cleaning cover behind it is attached to the stove front with 2 wing nuts and should be removed to clean the flue gas ducts. Before replacing the cover, check the rope seal of the cleaning cover for tightness and replace it if necessary.

Removing cooking plate

To remove the cooking plate first open the oven door (Figure 34). Insert the supplied multi-purpose wrench into the opening below the stove frame, push the cooking plate upwards and take it out.

Using a vacuum cleaner

Allow the appliance to cool down completely and only use a vacuum cleaner with an "Ash Box" accessory – FIRE HAZARD.

Cleaning the heat exchanger

To clean the tube heat exchanger, take out the cooking plate. Remove the change-over damper stop on the rear wall of the heat exchanger (Figure 35). Swing open the change-over damper by means of the operating mode control. Remove deposits from the heat exchanger pipes using the supplied cleaning brush.

Cleaning the connecting piece

Take out the cooking plate and clean the exhaust gas pipe connection and the connecting piece with a suitable brush or use the vacuum cleaner (only with an "Ash Box" accessory – fire hazard). Provide cleaning openings for long connecting pieces and angled pieces.

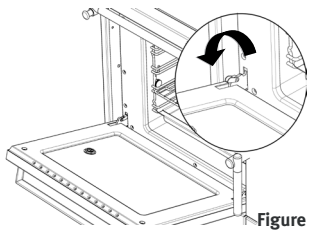


Figure 36

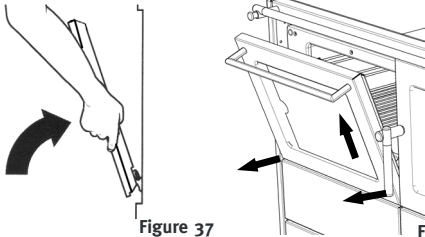


Figure 37

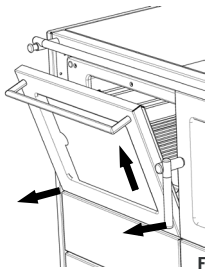


Figure 38

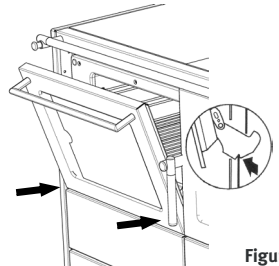


Figure 39

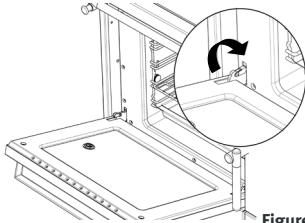


Figure 40

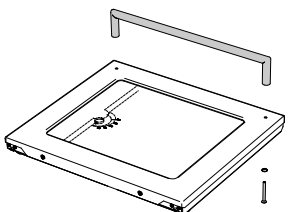


Figure 41

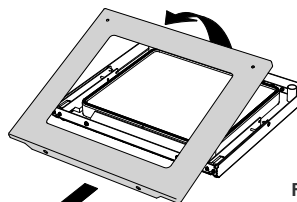


Figure 42

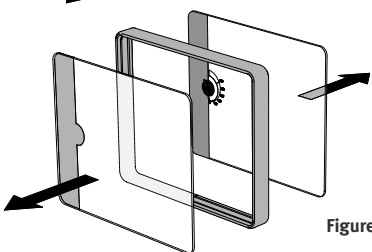


Figure 43

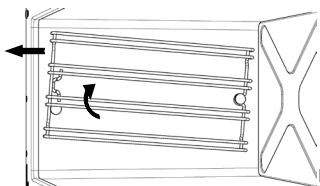


Figure 44

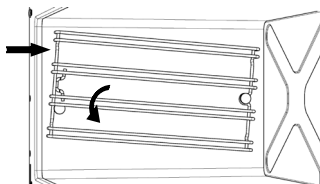


Figure 45

Grate

The ash can be removed from the grate quite easily by riddling the grate. However, if the air slits are very clogged by slag, crusts or other combustion residue, completely remove the grate and clean it. To do this, open the combustion chamber door and the ash door, pull out the ash drawer, lift the grate from below and pull it out through the combustion chamber door.

After the cleaning, push the grate through the combustion chamber door as far as the rear fireclay, lower it at the back and once more push it back as far as it goes. Then do the grate riddling.

Ash pan

Empty the ash pan at regular intervals and early enough. The pile of ash must not obstruct the primary air vents in the ash pan.



The ash can still contain live embers: Dispose of the ash only into metal canisters.

Oven door

To allow the oven to cool down, the oven door can be fixed at an angle of approximately 70°. The oven door can be completely removed. This is a real advantage when the oven is to be thoroughly cleaned.

Removing the oven door

- Fully open the oven door. Fold the clips in the door hinges forward (Figure 36).
- Hold the oven door at the sides using both hands. Lift the door slightly and pull the hinges forwards from the door openings (Figures 37+38).

Reinstalling the oven door

- Hold the oven door with both hands at the sides and insert the hinges into the corresponding openings in the oven. The hinge will engage (Figure 39).
- Fully open the oven door slowly. Again fold back the clips on the door hinges. Close the oven door (Figure 40).

Cleaning the glass viewing window of the oven

If the appliance is overheated or if a gasket is damaged, the inside of the glass viewing window of the oven may become fogged. To clean it, please proceed as follows:

- Remove oven door as described and place it on a clean surface, undo the handle screws (2x) and remove the oven door handle (Figure 41).
- Swivel open the oven door panel on the handle side and move it forwards to remove it (Figure 42).
- Remove the viewing window glazing unit and the silicone gasket (Figure 43).

CAUTION: Remember the correct position of the silicone gasket

- Carefully clean the glass. To do so, use gentle cleaning agents (e.g. soapy water) and a soft cloth.
- Reassemble the parts in reverse order.

Side rails of the oven

The side rail assemblies of the oven can also be removed for ease of cleaning.

Removal:

Lift the side rail assembly at the front and take it out of the oven (Figure 44).

Reinstallation:

Engage the side rail assembly at the rear, then push downwards at the front (Figure 45).

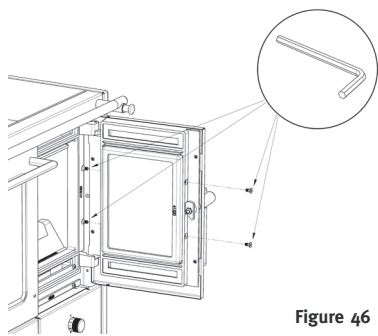


Figure 46

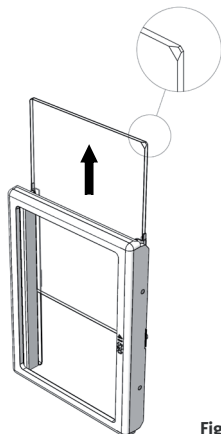


Figure 47

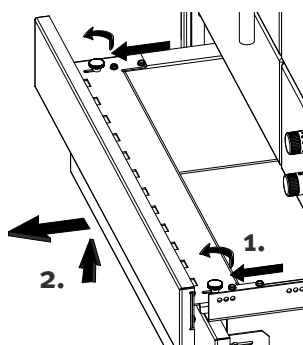


Figure 48

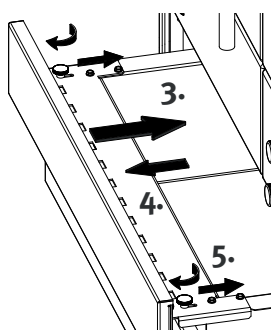


Figure 49

Cleaning the glass viewing window of the combustion chamber

To clean the glass viewing window use gentle cleaning agents (e.g. soapy water) and a soft cloth. In adverse weather conditions or as a result of incorrect operation or the use of unsuitable fuels the inside of the combustion chamber window may become fogged. For cleaning, please proceed as follows:

- Open the combustion chamber door.
- Undo the 4 Allen screws (Figure 46).
- Lift the window glazing unit up and then carefully remove it downwards.

CAUTION: The glass protrudes at the top.

- The middle glass pane can then be removed upwards (Figure 47).

Assembly

- During assembly the bevelled edge of the reinstalled viewing window pane must be on the side of the fixed pane. The bevelled edge indicates the side with a special IR coating which reduces heat radiation through the viewing window.
- Reinstall the complete glazing unit in reverse order to the disassembly.

Unhinging the firewood storage drawer

In order to pull out the firewood storage drawer, loosen the two knurled-head screws and slide them to the front (1.). Now the drawer can be removed by lifting it slightly (2.)

To insert the drawer, place it onto the runner and close the drawer to the stop position (3.). Open the drawer a little (4.), push the knurled-head screws to the back and screw them tightly (5.).

Steel Cooking Plate

DIRECTIONS FOR THE CARE AND PROTECTION OF THE STEEL COOKING PLATE

The bright polished steel cooking plate was oiled before packing for protection from corrosion.

First Heating

Before heating for the first time, wipe the corrosion protection off the cooking plate. Open a window during the first heating, as the corrosion protection produces an unpleasant but harmless smoke and odour for a short time.

At the same time, a discoloration typical for steel when subjected to heat occurs on the cooking plate in the region from the hottest area to the edge. This discoloration will become more uniform every time the cooking plate is heated again.

Cleaning

The best time to clean the cooking plate is when it is still warm after heating. It can be cleaned with standard scouring agents in powder or liquid form. Stubborn baked-on residues can be removed with the cleaning fleece provided (caution: pay attention to the direction of the polish lines of the steel cooking plate; not suitable for glass ceramic surfaces, enamel or plastics).

Afterwards, wipe the cooking plate with a damp cloth and let it dry. This is, of course, quickest while the stove is still warm. Finally, grease lightly with acid-free oil (e.g. sewing machine oil, gun oil or margarine). Do not leave any pots or pans standing on the cold cooking plate as this would lead to rust stains that are difficult to remove.

Protection against corrosion

If the stove is left unused for an extended period of time, it is advisable to grease the cooking plate with acid-free oil or some margarine after cleaning. It goes without saying that it should be wiped off the cooking plate again before the next use.

By following these instructions, you will prevent the formation of rust and the development of unsightly spots on the cooking plate, and the stove will keep its good appearance.

Take care that the expansion gaps of the steel cooking plate are always kept free of deposit build-ups, so that the plate can expand when subjected to heat. Burned-on food or fuel residues in the gaps can cause the steel cooking plate

to warp.

Stoves with glass ceramic cooking surfaces

WHAT IS CERAN® ?

Glass ceramic cooking surfaces by the Mainz-based company SCHOTT (Germany) are extremely temperature-resistant and withstand even abrupt temperature shocks up to 750°C.

CERAN® is insensitive to normal mechanical loads in the kitchen. The 4 mm thick glass ceramic also transmits heat very well. It allows radiated heat to pass with almost no loss, but hardly conducts any heat to the sides.

CERAN® cooktop panels are easy to clean and allow you to enjoy the beauty of real flames.

CARE AND PRACTICAL TIPS FOR GLASS CERAMIC COOKING PLATES

Clean your glass ceramic cooktop panel thoroughly before initial use, then regularly while it is warm (not hot) or cold. Avoid repeated burning-in of contaminants.

For cleaning we recommend:

- Kitchen paper towels or a clean cloth
- Razor blade scraper (Caution: only for the top. On no account must it be used to remove combustion residue from the (rough) underside of the plate as this would scrape off irregularities – which in turn would result in scratches (“predestined fracture points”).
- Commercially available glass ceramic cleaners.

The degree of contamination determines the choice of cleaning agents:

- Use a moist cloth to wipe off contamination that is not burnt-on.
- All coarse and firmly adhering contamination is easily removed with the razor blade scraper; spots of scale, watermarks, grease splashes and metallic-looking discolorations are best cleaned with commercially available glass ceramic cleaning agents.

All traces of cleaning agents must be thoroughly wiped off moist after cleaning (even if their instructions are different), since they could have a corrosive effect when reheated. As a final step, wipe it dry. When correctly used, the glass ceramic cooking surface will retain its attractive appearance.

WHAT IF...?

... a chemical cleaning agent alone is not sufficient?

Check to see whether the razor blade scraper gets you there much more quickly.

... metallic looking discolorations appear on the cooking zones over time?

Unsuitable cleaning agents were mainly used. At this stage, the discolorations can only be removed with difficulty using Sidol®, alcohol or scouring pads.

... the surface has scratches or minor chippings?

These blemishes caused by scratching or baked-on substances cannot be repaired. However it does not impair the serviceability of your stove in any way.

... wenn dunkle Flecken entstanden sind?

If cleaning with the razor blade scraper, Sidol®, alcohol or scouring pads does not yield any improvement, it is probably abrasion of the decoration caused by unsuitable cleaning agents or the scouring action of the bases of pots.

WHERE CAN THE CLEANING AGENTS BE BOUGHT?

Cleaning agents for glass ceramic surfaces are available e.g. in department stores (electrical appliance section), electrical appliance shops, chemist's shops, supermarkets and in shops specialising in kitchens.



- Never use abrasive or harsh cleaning agents such as grill and oven sprays, stain and rust remover, scouring powder, sponges with abrasive surface.
- Scratches can also arise when for instance grains of sand from the cleaning of vegetables are dragged over the cooking surface with the pot.
- The bases of pots and pans can have edges and burrs, which can leave unsightly traces when pushed around or have an abrasive effect on the glass ceramic surface. This applies particularly to cast iron cooking utensils and enamel pots.
- Always place the pots on the stove with the base clean and dry. Avoid enamel cooking ware becoming dry during cooking.
- Do not use (usually too soft) aluminium pots and pans on your glass ceramic cooking panel. As the glass ceramic is significantly harder than most aluminium alloys, this cookware could leave unsightly traces on the glass ceramic surface which can be virtually unremovable once they have become burnt-in.
- Keep away from the hot cooking surface any items that can melt, e.g. plastics, aluminium foil, and in particular sugar and food with a high sugar content.
- If anything has accidentally burnt in on the cooking surface, it must be removed immediately (while hot) with the razor blade scraper to avoid surface damage.
- Damage through sugar or food containing sugar can be prevented in advance by cleaning your glass ceramic cooking surface with Ceran® fix or Collo Profi, either always or before preparing food with a high sugar content. These agents form a silicone film on the glass ceramic cooking surface which not only protects but also makes your cooking surface even “smoother”, giving a water repellent and dirt deflecting quality. However, the silicone film is not resistant to high temperatures such as occur in the cooking zones and must be always reapplied.

15. Troubleshooting

A combination of factors is a prerequisite for ensuring a trouble-free operation of the stove:

Stove: Correct assembly, connection and start-up.

Handling and Care: Regular cleaning of the stove, flue pipe and chimney according to the instructions in the operating manual.

Chimney: Correct dimensions, flawless condition.

Fuel: Use of the recommended types of fuel of an adequate quality and dryness.

Weather conditions: No downdraft in the chimney.

The following list contains possible problems and their causes, helping you to find solutions to remedy them:

Problem	Possible cause	Solution
Grate riddling is jammed.	Ash or combustion residues are jammed between the grate and the grate bracket.	Clear the grate using the ash stoker, clean grate and combustion chamber
	Ash pan overflowing, ash is piled up to the grate	Empty ash pan, clean the firebox and ash pan enclosure.
	The grate is not in its correct position.	See grate on page 19.
Smoke escapes during heating up or when heating	Chimney still cold or stale air in the chimney.	Light ball of paper in the stove or in the chimney and allow it to burn out.
	Chimney draught too low.	Have the chimney dimensions assessed by a qualified chimney sweep (if necessary install a chimney draught inducer blower).
	The fuel used is too smoky, moist or of poor quality.	See fuels on page 17.
	Flue gas ducts, connecting pipes or chimney excessively sooty or blocked.	As soon as possible, thoroughly clean the stove and the connecting ducts; have the chimney swept.
	Start-up flap is not open.	Open start-up flap.
	Extractor hood is in operation.	Reduce the speed of the extractor hood. Provide sufficient supply of outside air by opening windows or doors.
	Insufficient combustion air (fresh air) from outside	Open windows or doors to ensure sufficient supply of outside air.
Discolorations on the stove frame or on the panels and handles	Chimney draught too high	Have the chimney dimensions assessed by a qualified chimney sweep.
Cooking plate warped	Excessive chimney draught.	Have the stove plate aligned or replaced. Seek the advice of your chimney sweep, if necessary install a damper.
Stove frame or stainless steel components discoloured		Clean surfaces; seek the advice of your chimney sweep, if necessary install a damper.
Oven distorts, enamel cracks		Minor enamel damage does not impair the functionality. If there is significant chipping, contact customer service; consult the chimney sweep, if necessary install a damper.
Oven glass viewing window becomes cloudy		Clean glass viewing window or replace it; consult your chimney sweep, if necessary install a damper.
Temperature too low (stove fails to heat properly)	When adjusting the flue gas connection the original opening was not sealed or not sealed correctly.	Screw on the galvanized covering plate firmly.
	Incorrect air setting (too low, not suitable for the fuel used)	See Table "Air supply settings" on page 18.
	Fuel used is incorrect, too moist or inferior quality.	See Fuels on page 17.
	Chimney draught too low, often weather-induced, stale air in the chimney.	Have the chimney assessed by a qualified chimney sweep with regard to dimensioning, condition and leaks.
	Leaks in the connection between stove and chimney, wall duct not cleanly incorporated into the chimney, chimney cleaning door leaks;	Loosen the connection, remove loose masonry, neatly brick the wall duct in the chimney, fit the connecting pipes with sealing cord in the wall duct, seal the chimney cleaning door (see flue pipe connection page 10).
	Connecting pipes are not squarely or insufficiently pushed together.	Loosen the connection and install neatly aligned and properly pushed together.
	Stove, connecting pipes or chimney severely sooted-up or blocked.	Thoroughly clean combustion chamber, ash space, flue gas ducts and connecting pipes. Have chimney swept.
	Open cleaning cover opening (cover not screwed back on after last cleaning)	Screw cleaning cover back on.
	Steel cooking plate is not correctly positioned	Correctly position steel cooking plate – make sure that there is a 2mm gap to the stove frame all round.
	Output controller faulty	Replace the faulty output controller.
	Insufficient combustion air (fresh air) from outside	Open windows or doors to ensure the necessary air supply from the outside.

Temperature too high (hazard from overheating)	Incorrect air setting (air setting too high, not matched to the fuel used).	See table "Air supply settings" on Page 17.
	Firebox and ash door open.	Close the doors immediately.
	Excessive chimney draught.	Seek the advice of your chimney sweep, if necessary install a damper.
	Output controller on the ash door faulty or controller flap jammed.	Replace the faulty output controller or clean the ash door.
	Incorrect fuel in use	See fuels on page 17.
Steel cooking plate becomes rusty	Moisture in the room air may be the reason for a light rust film over the entire cooking surface (steam from the water boiler, cooking vapour)	Sand down the surface and treat with non-acidic grease. Damp-clean only when it is still warm.
	Rust stains, rust rings are caused by pots boiling over, food remains, wet cookware etc.	After cooking, wipe and treat the cooking surface, rub off rust stains. Do not use the cooking surface as a storage area. See "Stoves with steel cooking plate" on page 21.
Oven fails to heat up	Start-up flap is open.	Close start-up flap.
	Incorrect chimney draught.	Contact your chimney sweep.
	Output controller faulty	Replace output controller.
Oven viewing glass becomes cloudy.	Stove overheating	See fault indication "Excessive temperature", take out oven door, remove viewing glass, remove frame gasket, clean viewing glass.
	Faulty gasket.	Replace complete frame gasket or viewing glass unit.

16. After-sales service / How to order spare parts

AUSTRIA (Head office)

LOHBERGER Heiz u. Kochgeräte Technologie GmbH
Landstraße 19
5231 Schalchen
Telephone: +43 (0)7742/ 5211-199
Telefax: +43 (0)7742/ 58765-199
E-Mail: service@lohberger.com

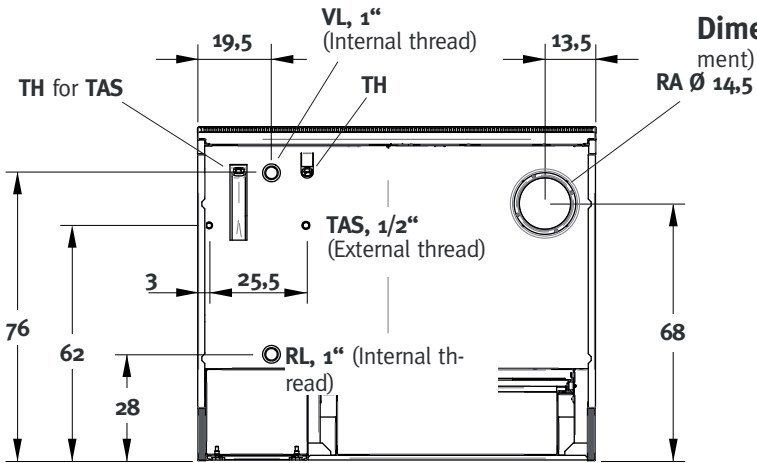
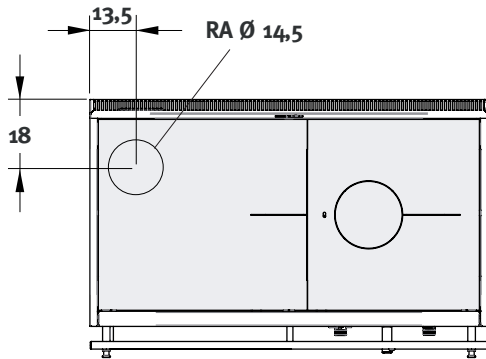
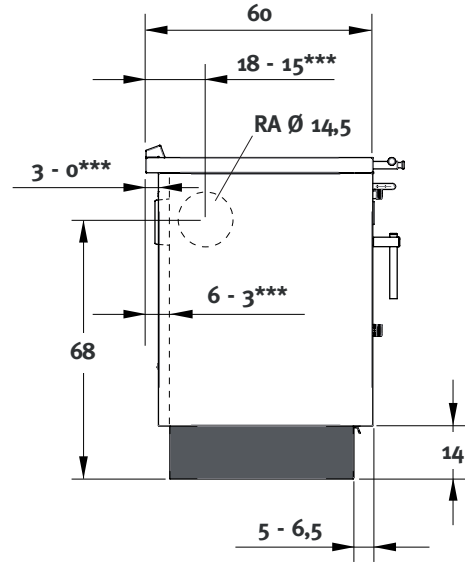
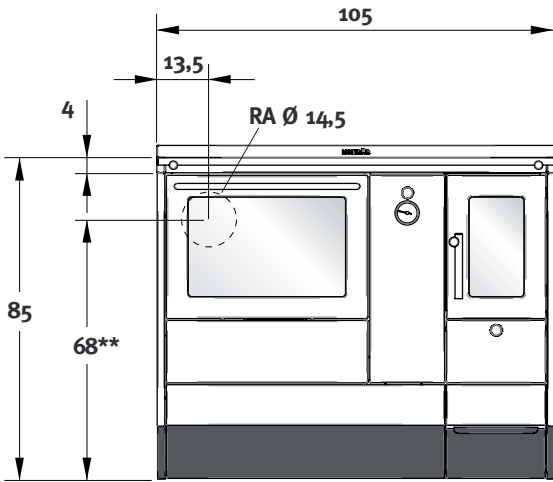
Please note:

To enable our customer service to deal with repairs and supply spare parts quickly and to your satisfaction, we require the following information with your service request:

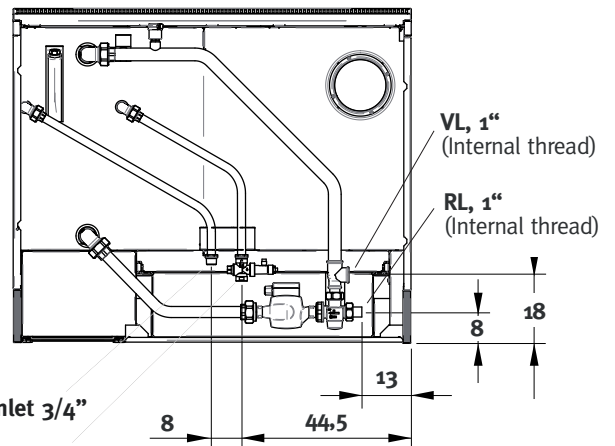
- Your correct address
- Your telephone and fax number or email address (if available)
- The exact appliance designation (see nameplate)
- When can our customer service call on you?
- The purchase date
- An exact description of the problem or the type of service you are requesting
- Please have your invoice ready at hand

In this way you help us to save time and money and also to serve you more efficiently.

17. Appliance dimensions



Dimensions with installation package (optional equipment)



- VL Boiler flow
- RL Boiler return flow
- TH Immersion sleeve
- TAS Temperature safety relief valve
- RA Flue pipe connection

* For appliances with fire protection please note the increased dimension. ⇒ + 5 cm / + 7,5 cm (closed design)!

** Flue pipe connection with an appliance height of 85 cm

*** Measurements dependent on the adjustment of the stove frame (0-3 cm)

Example:

Stove frame overhang front = 0 cm ⇒ flue pipe connection at the side = 18 cm

⇒ clearance installation wall to rear wall stove = 6 cm

18. Technical data

			AC 105
			F ₃ +B ₃
Fuel filling door opening	Width x height	mm	185 x 245
Fuel filling space	Width x depth	mm	233 x 405
Fuel filling height	grate top /bottom position	mm	100 / 250
Oven	Width x height x depth	mm	420 x 290 x 410
Cooking surface	Width x depth	mm	1008 x 507
	Area	m ²	0,51
Ash drawer	Stove	litre	4,5
Fuel storage container	Stove	litre	34,5
Fuel consumption	Heat output min./ max.	kg / h	2,3 / 3,8
Central heating insert	Water content	litre	25
Operating pressure	Max.	bar	3
Operating temperature	Max.	°C	95
Baking tray	Width x depth	mm	400 x 400
Baking tray / Grid	Width x depth	mm	400 x 400
Weight	packaging included	kg	345
Packaging		kg	ca. 30 – 40



Output data:

Data for chimney calculation

Rated heat output / Full firing	wood / lignite	kW	14 / 13,5
Water heating capacity	wood / lignite	kW	10,5 / 9,5
Room heating capacity	wood / lignite	kW	3,5 / 4
Rated heat output / Shallow firing	wood	kW	8,8
Water heating capacity	wood	kW	7,5
Room heating capacity	wood	kW	1,3
Flue gas temperature	wood / lignite	°C	182 / 160
Flue gas mass flow rate	wood / lignite	g/s	11,3 / 11,9
Required draught pressure	wood / lignite at rated heat output	mbar	0,20 / 0,21

Table 4

19. Type testing / Nameplate

		
Heiz+Kochgeräte Technologie GmbH A-Schalchen, Landstrasse 19		
Heizungsherd Varioline AquaTherm Combi		DIN EN 12815:2005
FABRIK. NR. 31070010		
Clearance to combustible components:	lateral 20 cm rear 20 cm front 80 cm	
when using the fire protection unit BSE	lateral 0 cm	
Total heat output	14 kW	
Room heating capacity	3,5 kW	
Water heating capacity	10,5 kW	
Average exhaust gas temperature	182 °C	
Permissible fuels:	Firewood Lignite / brown coal briquettes	
Average CO-emission (relating to 13 % O₂)	0,07 %	
Energy efficiency	87,1 %	
Shared flue systems are not permissible.		
Testing centre	TGM-Versuchsanstalt, 1200 Wien	
Test report number	TGM-VA HL 7813	

The Lohberger Pellet module was successfully tested by the Technical University of Vienna according to the current European Standards.

Test report number: TGM-VA HL 7813

The appliance is in conformance with the emission values according to art.15a B-VG (Austrian law) for protective measures and energy saving. Furthermore, amongst others the following exhaust gas limits according to the following German standards are complied with: Regensburger Norm, Stuttgarter Norm and Münchner Verordnung.

EG - Declaration of conformity

The manufacturer

LOHBERGER Heiz + Kochgeräte GmbH
Landstraße 19
5231 Schalchen
Austria

hereby declares that the room heating appliance, operating on wood or brown coal briquettes (lignite),

VARIOLINE AquaTherm Combi AC 105

is in conformity with the requirements of the following European Directives:

EG-Construction products directive 89/106/EWG with mandate M129

and with the following European harmonised standards

DIN EN 12815:2001+A1:2004:2005

The room heating appliance for solid fuels was tested for conformity with the requirements of the standard by the licensed testing centre:

TGM
Technologisches Gewerbe-Museum
Staatliche Versuchsanstalt - Heizung und Lüftung
Wexstraße 19-23
1200 Wien
Austria

The originals of the test certificates shall be retained by the manufacturer.

Place, Date

Schalchen, 20 May 2010

Signed by

Manfred Huber, Managing Director

Legally binding signature



The safety guidelines as given in the installation and operating instructions supplied with the appliance must be observed.

Warranty

These warranty conditions are valid in all European countries where LOHBERGER appliances are sold by local specialist dealers. Warranty claims must always be directed to a local LOHBERGER specialist dealer or the dealer from whom you have bought the appliance.

WARRANTY

Grundsätzlich gewährt Lohberger für nachweisbare Material LOHBERGER grants a 3-year full warranty on verifiable defects in material or workmanship. Warranty claims will not be accepted in any case after five years following the manufacture of the appliance. Certain restrictions apply to some models and parts: for appliances with central heating insert the warranty depends either on correct specialist installation of a return flow temperature boost or the installation of a control cabinet (AME.4).

Exceptions

The warranty does not apply to the normal wear and tear on an appliance used for heating. These parts include for instance: Fireclay - Changes in colour or expansion cracks due to the heating process can never be completely ruled out. However, they do not impair the functioning of the appliance as long as the fireclay remains in the firebox.

Glass panes (breakage of glass because of external action, changes on the surface due to thermal influences such as partly sintered fly ash or soot on the surface of the glass front)

Discolouring of paint due to overload or thermal stress

Seals (e.g. hardening or breakage due to thermal or mechanical stress)

Surface coatings (frequent cleaning or cleaning with abrasive cleaning agents)

Cast iron parts

(Cast parts subjected to high thermal load such as JETFIRE flame convergence plate and grate)

Pellets - Conveying device

Tilting grate, ignition element and temperature sensor of the Lohberger pellet module

START OF WARRANTY

The start of warranty is the time the appliance is handed over to the user. Please keep this user manual as well as the warranty card with the invoice in a safe place at all times. A prerequisite of our warranty obligation is that the appliance has been installed and connected according to our instructions and the applicable EN/DIN /Austrian standards and that it has been operated and correctly maintained according to our instructions.

REPAIRS

We will carefully check your appliance and establish whether the warranty claim is justified. If yes, we will decide in which way the defect should be corrected. In the event of a repair we will have it carried out correctly and competently on location or in our works. This does not affect the start of the warranty determined by the handover; if it is necessary to replace the appliance, the warranty period starts anew. If you send in your appliance for repair please enclose the proof of purchase.

COSTS

LOHBERGER accepts all costs for the duration of the warranty. Should we decide that your appliance is best repaired in our works, you will bear the transport costs and assume the responsibility for the transport.

LIABILITY EXCLUSION

We cannot accept any liability for the loss or the damage of an appliance through theft, fire, vandalism or similar causes. Indirect or direct damages caused by a supplied appliance or arising from the delivery of an appliance are excluded from the liability unless the delivery was performed by LOHBERGER or by a transport company commissioned by LOHBERGER.

We cannot assume any liability for damages caused by chemical or electrochemical effects (e.g. pollutants in the combustion air, condition of heating water not in compliance with the VDI guidelines – e.g.: “calcification”, etc.) or as a result of installation not in accordance with the technical regulations or the LOHBERGER documentation.

We will accept liability for visible paint and enamel damages that can be attributed to manufacturing defects only if such defects are brought to our attention in writing within 14 days following the handover of the appliance.

Modifications of the appliance or tampering by persons who are not authorised by us will invalidate our warranty obligation. Adjustment and conversion work are subject to billing.

Slight variations in colour due to printing process. Subject to technical alteration, misprints and changes to dimensions.

LOHBERGER[®]

Natural Heating. Naturally Lohberger.

LOHBERGER HEIZ U. KOCHGERÄTE TECHNOLOGIE GMBH

Landstraße 19, 5231 Schalchen, Austria

Telephone: +43(0)7742/5211-0 / Telefax: +43(0)7742/5211-109

office@lohberger.com

www.lohberger.com