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## Foreword

Dear Customer,

Congratulations on the purchase of your central heating stove K148. You have made the right decision, this product guarantees you:

- **High quality** by using the best, tested materials,
- **Functional safety** by using proven technology, tested to the most stringent German and European Standards (EN 12815),
- **Long life** by being built robustly.

The K148 central heating stove means you now own a modern compact unit to:

- cook, bake, roast,
- centrally heat and
- provide hot water

The unit is energy saving, environmentally friendly and simple to use. Everything you need to know about it is in the following pages plus a few additional tips as well.

Please take note of the fact that installation may only be carried out by a qualified expert, who will also be available later should you experience any problems.

### **PLEASE NOTE:**

When ordering replacement parts, the Article No. and Serial No. shown on the identification plate must be quoted.

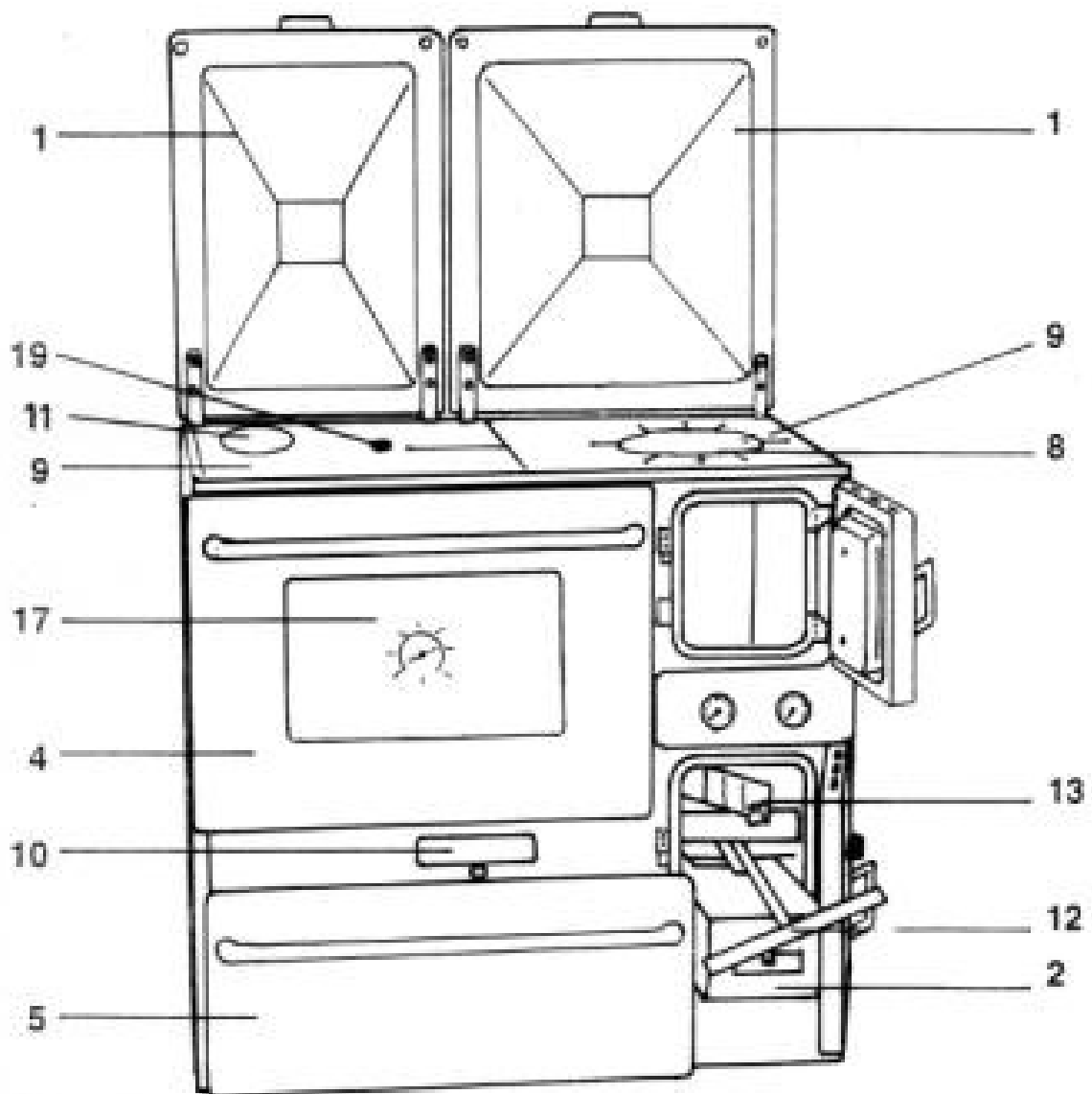
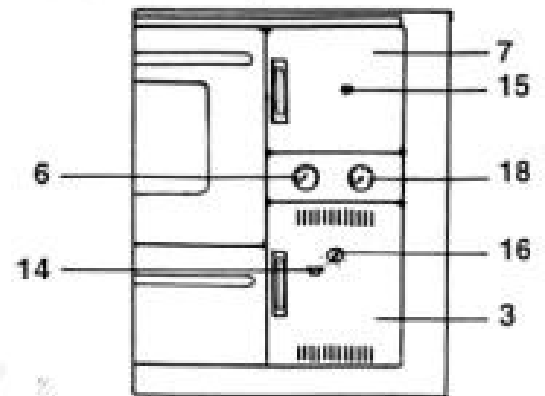
The nameplate is on the left front foot and becomes visible if the fuel trolley is pulled out (Fig. 11).

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# Assembly



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## Legend

1. Top lid (special accessory)
2. Ash pan
3. Ash door
4. Oven door
5. Fuel drawer
6. Pressure gauge
7. Fire door
8. Firebox cover
9. Hotplate
10. Cleaning door
11. Flue cover
12. Crank handle for raising and lowering grate
13. Grate door
14. Riddle bar
15. Secondary air slide
16. Temperature control
17. Thermometer (oven door)
18. Thermometer (water)
19. Central regulator

### **Stove accessories**

- Crank
- Regulator lever
- Soot scraper
- Fire iron
- Cleaning brush
- Ash pan
- Baking grid
- Baking tray
- Protective glove

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## **The most important at a glance**

The stove should on no account be heated up if there is no water or insufficient water in the heating unit or the unit is frozen up.

- The ash door should only be open when heating up. While heating the door must always remain closed, as otherwise the temperature control cannot regulate the performance and there is a danger of the stove overheating.
- The maximum operating pressure of 2.5 bar in the heating unit may not be exceeded. That is the response pressure for the safety valve.
- When adding heating water attention must be paid to the pressure limit of 1.5 bar (cold) or 2.0 bar (hot).
- Only use suitable recommended low smoke fuels and do not burn any smoke intensive waste, coal slack or fine chippings.
- When the grid is in the "DOWN" position (winter setting) fuel should only be added to the fire box in small amounts at a time.
- Do not allow the hotplate to glow and avoid cooking over.
- The chimney draught for full operation should not be below 0.12 mbar. If there are too greater draughts in a single chimney then side air vents should be incorporated.

### **IMPORTANT**

**Side air vents on chimneys with more than one stove connected not allowed.**

- Clean stove, flue and chimney regularly.
- Do not lay any flue pipes horizontally for more than 1.25 m.
- Do not reduce flue pipe diameter from pipe connection to the chimney.
- Window and doors of the base frame should not be completely airtight because of the need for combustion air intake.
- Pay attention to fire safety when erecting the stove and laying the flue pipes.
- Before operating the stove for the first time be sure to check the chimney equipment according to the instructions, or have it checked.
- Press the red button on the heat sink down firmly from time to time, to check the through flow functions. If the water flow draining out is becomes obviously weaker, then an expert must contacted to decalcify the heat exchanger.
- Do not use paper to light the stove; it creates an environmental pollution danger.

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## **1. OPERATION**

### **1.1 Commissioning an integral stove**

If the heating stove is to be integrated into an existing central heating system and the oil or gas cooker is to remain in place to cope with peak demand, then the stove can be operated as required. The oil or gas cooker, as a rule, only heats the domestic hot water while the stove is heating up and should therefore have a flue gas flap to avoid unnecessary idling losses.

#### **The cooker should be turned off**

If the oil or gas central heating boiler is not connected, then the flow and return bypass on the stove should be set so that the domestic water cooker usually installed or the storage cooker next to it can be supplied with heat – that is if the stove is integrated after the mixer and not between the cooker and the mixer. The domestic water temperature is then directly dependent on the flow temperature. The latter is also the case for the preferred arrangement between mixer and cooker or direct connection of the heating stove to the flow and return lines of the existing system. In all cited installation cases, the cooker should have a safety valve.

### **1.2 Important operating parts**

#### **Grate crank**

The height of the grate can be altered for winter or summer operation.

The crank supplied (12) is used for raising and lowering (Fig. 4). The summer operation (grate position "UP") ensures a high cooking capacity while at the same time low water heating capacity.

#### **Grate door (13)**

At the "DOWN" winter position, the grate door is used for lighting and for removing cinders and slag. The grate door can be opened by turning the catch (Fig. 5).

#### **Riddle arrangement**

The grate can be riddled in any height position using the riddle bar (14). When it is hot then the regulator lever can be used (Fig. 6).

**Please do not tip any hot ashes into the dust bin or outside.**

#### **Temperature controller (16)**

The Temperature control regulates the rate of burning through the air intake and thereby the stove's heating level.

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## Central regulating unit (19)

Using the regulator lever, the central regulating unit can be set (Fig.7). Three settings are available:

- I. Lighting and cooking in summer
- II. Heating
- III. Roasting and baking, cooking in winter

## Thermometer and pressure gauge

There are two indicators between the fire door and the ash door (Fig. 8).

- The thermometer (18) shows the outlet temperature in °C.
- The pressure gauge (6) measures the pressure in the central heating unit in bar.

## Firebox Cover (8)

The firebox cover can be lifted with the lid lever and fuel can be comfortably added from above (Fig. 9).

The firebox cover is the hottest part of the hotplate.

## Secondary air slide (15)

The air intake for the winter position of the grate can be regulated by the secondary air slides for afterburning the flue gases.

Keep the slide closed for summer setting (Fig. 10).

## Fuel trolley (5)

The fuel trolley is on rails and by lifting can be taken out completely (Fig. 11).

### ATTENTION

**Do not store easily combustible material (paper etc) in the fuel trolley.**

The ash door or the fire door may be opened or closed during operation using the protective glove.

## 1.3 Lighting

### When the grate is in "DOWN" position (winter setting)

Leave the ash door, the fire door and the grate door open, using a fire lighter or wood shavings and small pieces of firewood lay them on the grate. Light through the grate door and shut the fire door (Fig. 13).

When the wood is burning well, add fuel through the fire door. Only close the ash door after about 5 minutes and open the secondary air slide. The required heat output can now be selected on the temperature controller (16).

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## **When the grate is in the "UP" position (summer setting)**

The procedure is identical to when it is in the "DOWN" position but it is lighted through the fire door (Fig. 14). If the outside temperature is over +15 °C smoke could come out because of the low chimney draft. A small fire of wood shavings in the chimney base, as a pilot fire can help.

### **ATTENTION**

**In the interests of air pollution prevention no paper should be used when lighting and the combustion chamber should be fuelled with two to three charges at intervals of 10 to 25 minutes and not all at once.**

### **WARNING**

**When the heating stove is operating, any air/moisture extractor must be switched off in the room where the stove is installed to avoid any danger of extracting flue gas from the stove.**

## **1.4 Heating and slow burning**

### **Heating with wood**

- Central control unit (19) to "II"
- Secondary air slide (15) "OPEN"

Lay long and thick pieces of wood in at least two charges on thick embers. Split firewood improves the burning quality and controllability. Hardwood is more productive than softwood. If the chimney draught is not sufficient (possibly high outside temperature) and the up draught is regulated by the temperature controller, the ash door can be left open for a short time after the wood has been put on, to get the fire going.

### **Slow burning with wood**

The rate of burning is set using the temperature control (16), so that the required temperature is maintained.

**Using wood, particularly softwood, it is only possible to have limited slow burning.**

### **Heating with coal**

- Central control unit (19) to "II"
- Secondary air slide (15) "OPEN"

Only add coal after a strong basic ember glow is established and then in at least two charges with a period of about 15 minutes between each.

### **Slow burning with coal**

Only turn the temperature control (16) back when little yellow flames establish themselves in the coal layer that has been added. Lignite and hard coal briquettes are particularly suitable for overnight slow burning.



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## 1.5 Heating between seasons and during the summer

If the chimney draught is poor because of high outside temperatures, then the flue gases cannot be drawn off completely.

Therefore:

- central control to "I",
- put on less fuel,
- do not turn temperature controller back too far and
- riddle more often, to keep the draught in the stove going

## 1.6 Cooking

Only use pots with solid flat bottoms and lids that fit.

### Cooking in winter

- Grate position "DOWN"
- temperature control to "3"
- central control to "II" or "III"
- secondary air slide "OPEN"

At warmer times of the year, the stove will mostly only be used to cook, roast or bake and to prepare domestic hot water. Here the "UP" grate position is used, to ensure that the room where the stove is located and the hot water tank do not become overheated.

If the hotplate is not hot enough, the ash door can be opened as an **exception**. If the heat capacity of the domestic water boiler is exceeded then the excess energy is let off through the heat sink (closed circuit).

**This must not be allowed to be a regular situation.**

## 1.7 Roasting and baking

### Roasting and baking in winter

- Grate position "DOWN"
- central control to "III"
- secondary air slide "OPEN"

Close the top lids, if possible. A lively fire is necessary **to roast**. Wood is particularly suitable, to keep the oven temperature over 200 °C. The roasting oven temperature can be controlled by adding fuel and by using the temperature control.

A weak fire is sufficient **for baking**. Turn the temperature control down and only add a little fuel. The baking oven should in any case be preheated and do not use tinfoil tins.

### Roasting and baking in summer

- Grate in position "UP"
- central control to "III"
- secondary air slide "CLOSED"

Otherwise the same instructions as above.

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**If the roasting oven temperatures goes over 300 °C, turn the temperature control back and open the roasting oven door on the catch.**

## **Oven lining**

Place tinned or round shaped cakes on the roasting rack on the bottom shelf. To quick roast use the top shelf.

## **1.8 Care and cleaning**

The period of time between cleaning the stove and the flue pipes depends largely on the type of fuel used, the draught and the mode of operation. It should certainly be cleaned if:

- heating performance drops,
- the fuel burns poorly despite powerful air intake (open ash door)
- smoke occasionally comes out of the doors or there is a smell of flue gas in the room) or
- the time for heating is excessive.

Unnecessary escape of dust can be avoided if all opening on the stove remain closed, if they are **not** actually being used for accesses at the time.

- Take the hotplate out (Fig. 15) and clean out the chimney connection (Fig. 16). The hotplate can remain in place while cleaning for the upper smoke connection areas.
- sweep soot and ashes from the oven roof into the draught shafts
- Clean the three shafts alongside and behind the oven from top to bottom with the soot scraper and sweep afterwards with the soot brush (Fig. 17).
- Clean the hotplate (preferably outdoors) and put back in place.
- Pull out the fuel draw, open the cleaning door and place the ash pan crosswise under the cleaning door. Now scrape the soot and fly ash into the ash pan using the soot scraper (Fig. 18). Close the cleaning door again afterwards.
- Clean cinders, slag and other residues off the grate in the "DOWN" position using the fire iron.
- Only clean the exterior enamel surfaces when the stove is cold and only with water or soapy water and afterwards rub dry.
- remove burnt on cooking remains from the hotplate using a metal spatula and if necessary apply graphite, oven black or acid free oil.

## **Cleaning the roasting oven**

The roasting oven should be cleaned each time after it has been used and avoid long periods between cleaning. The oven should still be hand warm when it is cleaned.

Burnt on residues are first softened by laying damp cloth on them. It is easier to use a proprietary brand of oven cleaner. Wire brushes or wire wool or similar are not to be recommended for cleaning enamel objects, as they scratch the enamel. The oven should remain open for some minutes after cleaning to give it an airing, which avoids any unpleasant smells the next time it is heated.

## 1.9 Causes of faults

Your stove is built to the latest technical know-how. Nevertheless faults may occur, which are caused by the chimney, fuel or the heating and plumbing.

Fault	Check / Rectify
Stove smokes - in summer  - in winter  - when commissioning	- open the ash door briefly. High outside temperatures cause poor chimney draught. - warm up chimney with a paper fire in the chimney or warm up in stove. - open the ash door briefly. - do not use damp or smoke intensive fuel. - fill the fire box slowly, bit by bit. - when was the stove last cleaned? - a short period with some smoke when the stove is first commissioned is quite normal and will soon disappear.
Stove does not draw properly	- is the draught from the chimney too weak? - is the pipe connection from oven to chimney leaking? - are all cleaning doors on the chimney and on the stove properly closed? - is the fresh air intake guaranteed in the room where the stove is installed? Doors and windows should not be absolutely air tight. - is the chimney leaking or overloaded?
Too little heat when cooking and roasting	- is the temperature control set at "3"? - briefly open the ash door.
Too much heat when cooking and roasting	- is the temperature control turned down? - add less fuel.
Operating temperature not reached	- was energy rich fuel used (Fuel)? - is the installation properly dimensioned? - was enough fuel added?
Grate jams when riddled	- has slag been removed? - have nails or building timber possibly got jammed?
Bubbling sounds	- are the radiators turned up? - has the circulating pump broken down? - is the installation ventilated?
Heat sink actuated	- is the ash door closed? - if necessary wind the grate up.
Condensation water in stove	- is the fuel too damp? - is the return water temperature too low?

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## **2. ARRANGEMENT**

For installation and for connection of flue, the requirements of the Fire Regulations (FeuVO in Germany) apply, as well as local building regulations such as the following technical standards DIN 4705, EN 13384, DIN 18160, EN 1856-2 and EN 15287. In order for the stove to function correctly the chimney to which you want to connect the stove must be in good condition.

### **NOTE**

**The room must reach the so-called room capacity ratio of 4 m<sup>3</sup> per kW nominal heat capacity. If this is not possible, then it has to be connected to other rooms on an air flow sense, i.e. with rooms with outside doors or windows and air vents in the connecting doors or walls to the installation room.**

### **2.1 Fire safety**

All flue pipes must be capable of withstanding up to +400 °C.

If the stove is to be installed on a floor of combustible material such as wood or plastic etc., then a floor plate must be installed which is larger than the footprint of the stove from the fire door to each side by at least **30 cm** and to the front of the fire door by at least **50 cm**. The walls to the sides and back of the stove cannot be of combustible material nor can they be clad in combustible material, where the distance is less than **20 cm** from the stove.

The bottom edge of wall cupboards above the stove must be at least **70 cm** above the hotplate surface. The side distance from wooden or plastic furniture parts must also be more than **20 cm**. These safety distances can be reduced to 10 cm if the special distance connections are also supplied.

Care should be taken that the smoke pipe is at least **40 cm** from combustible building materials such as wooden or plastic cladding or door frames or wallpaper. This distance can be reduced by half, if the smoke pipe is insulated so that any part of the building is prevented from being heated to above +80 °C.

In addition local building regulations have also to be complied with.

### **2.2 Chimney attachment**

The connecting pipe between the stove and the chimney should have the same cross section as the pipe connection on the stove. The chimney cross section should be consistent and as far as possible square or round. House chimneys should be insulated.

This applies particularly to the smoke pipe and sheet metal chimneys. They should be provided with good heat insulation at points where there is the possibility of being exposed to cooling. Modern chimneys from prefabricated parts or multilayer construction are preferred, in as far as they are approved by the local building authority. Horizontal smoke pipe runs of over 0.5 m long must rise by ten degrees to the connection with the flue. Pipes which are not heat protected or are not vertical, should not longer than 1.25 m.

The effective flue height from the middle of the pipe connection to the top of the chimney must be at least 5 m.

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Should the height be less than the stove must be connected to a vertical flue pipe which is not less than 1 m in length.

**Connecting to a flue of less than 4 m is not permitted by law.**

As the chimney stack draught depends on a number of factors, a side vent device can be inserted at least 40 cm above the base to avoid overloading the fire and to avoid soot build up. Side air devices can only be introduced into rooms where burning stoves are installed. If there are a number of fire points in different rooms with a common chimney stack then they are not permitted.

**In addition to the points listed here, notice should be taken of DIN EN 13384, DIN 18160, EN 1856-2 and EN 15287.**

The necessary combustion air can only be fed to the stove and the flue gases removed through the chimney if an air exchange of at least 0.8 times per hour is guaranteed (doors, windows, air duct).

**Before connecting the stove seek advice from a chimney sweep.**

### **2.3 The heating stove for open and closed systems**

Heating stove model K148 is only allowed to operate with heat sink in closed systems according to EN 12828. If it is connected to an open system then our guarantee for corrosion damage becomes invalid.

Heating stove model K148, is suitable for open systems if a heat exchanger for the heat sink is incorporated.

Further directions on central heating units are given in section 4.

Heating stoves for solid fuel can only be operated in closed systems with a flow independent heat sink with the safety valve mounted above the stove set at 2.5 bar.

The heat sink has to work in conjunction with the heat exchanger with large fires and low heat loss of heating and domestic water which does not exceed the permissible highest value of pressure in the heating pocket. The safety valve must therefore be checked regularly. This is done by depressing the red button for a short time. Water must pass through the valve while this is happening.

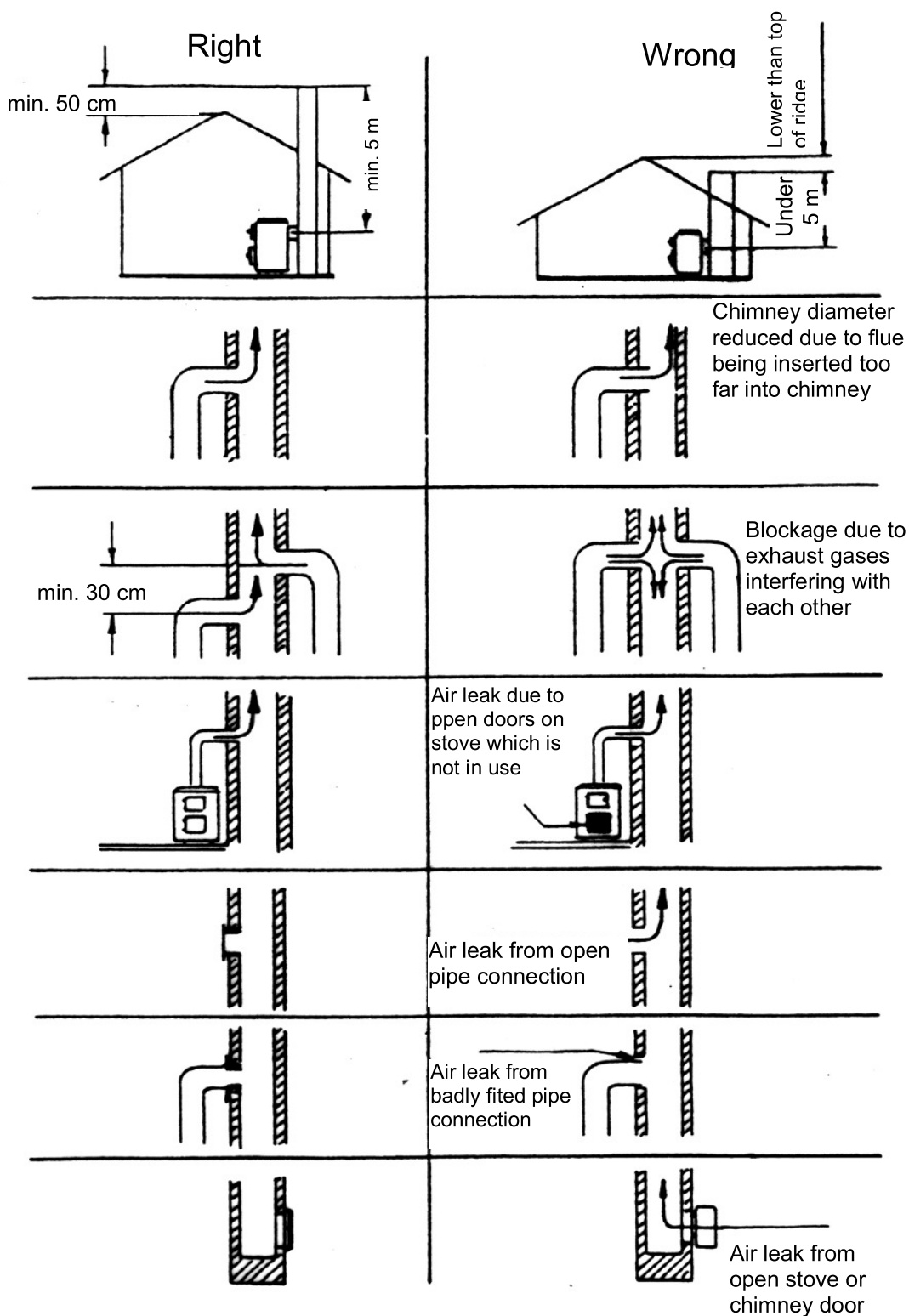
#### **ATTENTION**

**The stove may only be heated up (even in testing) if:**

- it is connected to a central heating system completely filled with water and**
- The functioning of the thermal safety valve and the safety valve have been established and inspected, if it connected to a closed system.**

### **2.4 Spacer connection and accessories**

If the stove is to be integrated in a fitted kitchen, then the interface to a floor mounted cupboard with a counter has to have a spacer connection which can be supplied by the factory. The available spacer connections are tested to EN with the stove and comply with building regulation requirements relating to fire protection.



### Action in case of chimney fire!

If a chimney is not cleaned often enough, or if the wrong type of fuel is used (e.g. damp wood) or the air flow is maladjusted the chimney may catch fire. In this case close the air supply to the fire chamber and call the fire brigade.

**Never try to extinguish it yourself using water!**

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## **3. INSTALLATION**

### **3.1 Installing the top lid**

The top lid hinge spigots are inserted into the plug holes (Fig. 20).

Should the top lids not be parallel, then the spacers supplied with the accessories should be pushed on to the appropriate spigot as required.

### **3.2 Choice of pipe connection direction**

The pipe is mounted on the **back** of the stove by the factory.

If a flue gas vent is required on the **side** of the stove, then the following steps must be taken:

- removed the pipe connection from the back of the stove (Fig. 21).
- undo the flue hole cover on the side wall about 10-15 turns. **Do not take the screw out completely.** Then push the cover down until the fixing bracket is free and the flue hole cover can be removed (Fig. 22).
- Cut out the aluminium insulation with a knife (Fig. 23).
- Take out the perforated insulating material, if necessary cut it out (Fig. 24).
- Hold the counter cover of the flue hole cover on the inside side wall firmly with the hand through the rear flue hole opening and removed the flue hole cover (Fig. 25).
- Use the counter cover for the flue hole not being used (Fig. 26), close the flue hole opening with the flue hole cover previously taken off (Fig. 27) and insulate. Use the insulating material previously removed from the side wall.
- Close the back wall opening with the blind cover supplied (Fig. 28).
- Mount the pipe connection on the selected connection point.

### **3.3 Installation of the heat exchanger and the heat sink**

The heat exchanger and the heat sink are not part of the standard scope of supply of the central heating stove. If required it can be retrofitted. The following is required:

- Insert the heat sink probe in the fully into the immersion shell (Fig. 29 + 30 C).
- clamp the protective tube firmly in the immersion shell (Fig. 29 + 30 D).
- To install the heat exchanger only the blind flange on the back of the stove needs to be removed and the heat exchanger connected in its place (Fig. 30 A + 31).

#### **ATTENTION**

**The heat exchanger has to be firmly bolted to the heating pocket (Fig 31).  
Screw thread bolts can strip if too much force is used.**

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### 3.4 Installing the stove bar

Two screws underneath the front on the stove frame are already installed for attaching the stove bar (Fig. 29).

- open fire door and oven door
- unscrew screws
- lay one end of the bar on the fire door (Fig. 29).
- First screw the bar on at the other end.

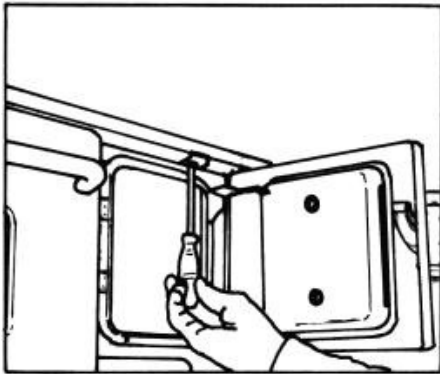


Fig. 29

## **4. INSTRUCTIONS**

### **4.1 General information**

The following directions and instructions concern questions of fundamental importance. It is further presupposed that the installer of a heating plant has the necessary technical and craftsman's basic knowledge for the task. This is naturally also the assumption where the stove is being incorporated as an integrated stove into an existing system.

Heating stoves with heat exchangers are only suitable for closed systems with a heat sink.

Stoves without heat exchangers should be used with a heat sink.

The regulations according to EN 12828, EN 12831 and EN 12897 apply.

We do however recommend using the external heat sink in conjunction with a domestic water boiler even for open systems, to control the stove's boiling function when there is a limited heating requirement of hot water.

### **4.2 Important Notes**

The heating stove must be put in place using a spirit level to ensure correct adjustment.

Threaded pipe connectors, straight or angled, should be used to for the flow and return connections. Sleeves fittings or welding should not be used.

Horizontal pipe exits from the heating stove are to be in 1"-diameter. Reductions can only be made in vertical connections.

The filling and emptying cock should always be located at the lowest point of the system in the return connection.



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Up to a static height of 10 m, the capacity pressure expansion vessel is dependent on the water capacity of the system as follows:

Water content Litre	Vessel size Litre
up to 111	12
112 - 167	18
168 - 231	25
232 - 324	35
325 - 463	50
464 - 741	80

There should no manually operable shut off valves installed between the expansion vessel and the stove.

A ventilation section at least 0.5 m above the highest circulation point in closed systems with a diameter of at least 1" should be arranged and a ventilation valve provided at the upper end.

In gravity systems the rise and fall of horizontal pipes should be at least 0.5 cm/m.

Radiators with more than 25 ribs or plate heat exchangers over 1.5 m long should be diagonally connected to the flow and return pipes.

Where there is a lower distribution ventilating valve it must be provided on each radiator. The radiators should not be inclined towards the ventilation. As radiators are usually at the same level on the floor where the stove is installed, these radiators should all be connected to a circulating pump as matter of course.

If however a pure gravity plant has to be executed without pumps, then the centre of the radiator should not be lower than the centre of the boiler.

In the simplest installation case, the circulation pump is connected to the mains by a switch and runs continuously during the heating period, while the water capacity of the stove is regulated by an integrated temperature controller.

The pumps can however also be controlled from a maximum-thermostat in the domestic water boiler, to ensure a minimum temperature for the domestic hot water.

It is also possible to switch the circulating pumps through a room thermostat. In this case however the gravity circulating domestic water boiler should not have a capacity of less than 260 l, if there are no other radiators on gravity circulation are connected.

Independently of the control types described above, the heating circulation and/or boiler loading pump should primarily be controlled through a thermostat with a fixed switch on temperature of between 50 and 55 °C, situated immediately at the stove's return flow connection following an adjustable bypass close to the stove between the flow and return lines, to avoid a low temperature operation of the stove boiler.

In the installation unit which can be supplied as an accessory there is a thermal boiler monitor integrated as a continuous regulating valve. The pump controls mentioned above are then not needed.

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Care should be taken when calculating the heat requirement that not only the heat requirement should be taken into consideration but that not only the heating stove itself radiates but a poorly or none insulated boiler gives off heat in the room where it is installed.

Besides the frequently used cookers with built in heat exchangers and double shelled cookers, which are also supplied in insulated versions, it is also possible to use the domestic water unit with a through flow boiler.

As the pipes of a through flow boiler become calcified quickly where the water is hard, they should only be used in areas where the water is very soft, that is very low in lime or only in conjunction with a water softener.

Heating radiator pipes in pumped heating systems can use  $1\frac{1}{2}$ " pipe. It is recommended that a circulation pump that can be regulated is incorporated where the delivery capacity can be adjusted to the circumstances prevailing. The pump should be installed in the return flow line. The direction of flow is important.

For exchange purposes if a repair is necessary, cut-off valves should be built in before and after the pump.

Expansion vessels, boiler and pipes, which are installed in the loft must be well protected against freezing.

If an installation is not used for some time in winter, it should be emptied. Radiators, ventilation valves or other cut off devices should be opened.

Before commissioning installation water must be fed through the filling and emptying cock until water flows out of the overflow on the open expansion vessel. In the case of a closed system, an over pressure of 1 to 1.5 bar must be created. In any case attention has to be paid to slowly filling the system and the exhausting air through the integrated ventilation valve before the above mentioned static pressure is reached or before the expansion vessel overflows.

The closed system is recommended if possible for corrosion safety reasons. Corrosion damage to domestic water boilers and stove boilers in open systems and to radiators because unhindered ingress of oxygen to the hot water cannot be excluded in the long term.

No domestic water may be taken from the heating circuit. Taking domestic water is only permitted indirectly through intermediate heat exchangers (double shelled boilers or through flow boilers).

The safety flow and return as well as the pipes to and from the domestic water boiler may not be less than 1" diameter. Closed systems require a safety valve with an opening pressure of 2.5 bar built into the flow line.

The manufacturer does not give a guarantee on corrosion damage to stove boilers, if non-ferrous metals are used in the hot water circulation in open systems, in cases where no suitable corrosion protection medium in accordance with the manufacturer's recommendations.

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### 4.3 Integrating in an existing unit

The stove with integrated heat exchanger for the heat sink is suitable for incorporating in existing units which are constructed as closed systems.

The safety valve on the central heating boiler in the cellar cannot cover the heating stove as well. A separate safety valve should in any case be provided near the heating stove.

It is absolutely necessary to consume, respectively to store up the energy of the added cooker. A buffer reservoir of 50 litres per kW water output is normally sufficient for buffering.

## **5. TECHNICAL DATA**

### **5.1 Fuel**

Low smoke, trouble-free operation of the stove and a supply of heat at the nominal level with a chimney draught of 12 Pa are only guaranteed when you use the following fuels and no others.

Only use natural, dry chopped firewood with a remaining humidity of max. 20% and lignite (brown coal) briquettes.

<b>Fuel type</b>	<b>Thermal content approx.</b>	<b>Comment</b>
Lignite briquettes	19,500 kJ/kg	Slow burning only possible to a limited extent
Hardwood air dry	14,600 kJ/kg	
Softwood air dry	11,500 kJ/kg	

No slack and no in chips or smoke intensive rubbish to be burnt.

Non-permitted fuels include:

Rubbish, fine chips, pellets, bark, parts of chipboards, coal slack, damp wood or wood treated with preservative, paper, cardboard or similar. For lighting use wood shavings or barbecue lighters. Never use liquid fire starters!

#### **PLEASE NOTE:**

**The first time the stove is heated there may be some smoke and an unpleasant smell. Make sure that the room is well ventilated (open windows and doors) and heat for at least an hour at the maximum nominal heat load. If the maximum temperature is not reached the first time the stove is heated, then there may be further unpleasant smells at a later date.**

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## 5.2 Heating output data

The following table shows burn time, water output and heat emission (to the room where it is installed) of your stove under normal conditions according to EN 12815 concerning the charge quantities and control setting for the fuel materials coal and wood.

### Output table according to EN 12815:2005

Model 148	Fuel *	Temperature control setting	Secondary air	Quantity	Total output kW	Water output kW	Heat emission to room kW **
Nominal thermal capacity at 12 Pa	Coal	3	OPEN	11 kg / 2h	23	16,5	6,5
	Wood			7 kg / 1h	23	16,5	6,5

\* coal                     $H_u = 5.41 \text{ kWh/kg}$   
wood                     $H_u = 4.05 \text{ kWh/kg}$  (residual moisture max. 20 %)

\*\*with closed top lid

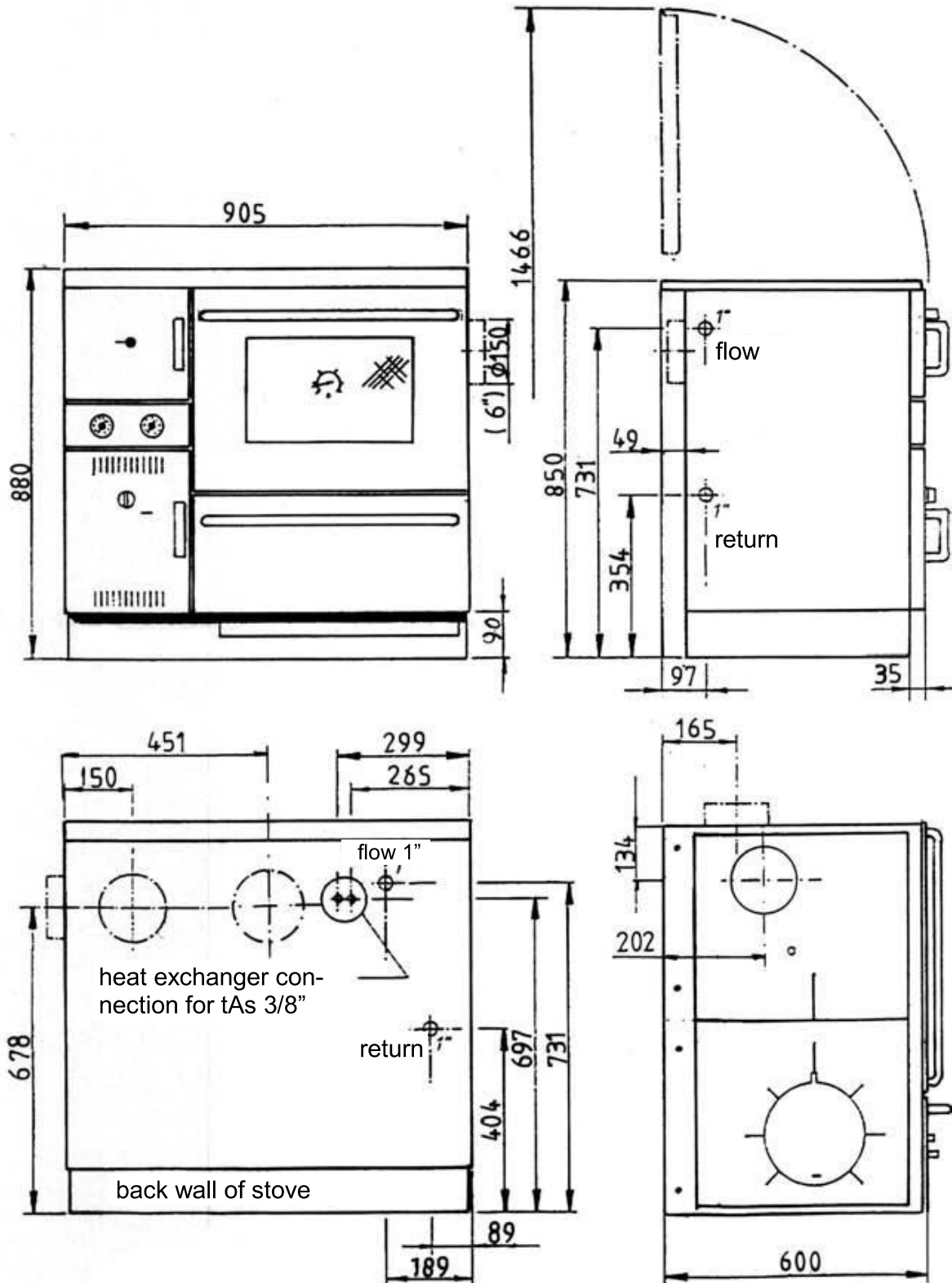
If coal is used which is not the common domestic grain then the amount of draw needed for nominal heat load (NHL) increases and it is necessary to riddle ore frequently.

The stove combustion chamber holds around 30% more fuel than shown in the capacity table. Burning time increases accordingly.

### 5.3 Dimensions, output values, flue gas values

Model	K148
Registration	CE, 15a B-VG, VKF
External dimensions W x H x D (without lid)	See dimensional drawing 5.4
Height with top lids open	
Height with top lids closed	
Fire box W x D	234 x 421 mm
Fire box height min / max	280 / 470 mm
Hearth plate W x D	845 x 430 mm
Heating door opening W x H	180 x 200 mm
Oven W x H x D	460 x 360 x 420 mm
Flow and return connection	R1", backwards and sideways
Flue gas connection	150 mm ø
Water content in heating pocket	18.5 l
Operating pressure max	2.5 bar
Waterside pressure loss in heat pocket At a flow of                   0.75 m <sup>3</sup> /h: 1.5 m <sup>3</sup> /h:	4 mbar 8 mbar
Required delivery pressure at NHL	12 Pa
Flue gas temperature at flue gas connection at NHL	204 / 249 °C
Flue gas mass flow at NHL wood / brown coal	32,9 / 37,2 g/sec
Room heat capacity with coal for the room with favourable, less favourable and unfavourable heating conditions ac- cording to DIN 18893 / Tab. 2.  Continuous heating Timed heating	165 / 95 / 65 m <sup>3</sup> 114 / 68 / 46 m <sup>3</sup>
Operating temperature at regulator setting 1 / 2 / 3	45 / 60 / 80 °C
Weight gross / net	236 / 215 kg
CO (13% O <sub>2</sub> )	≤ 0,11 %
Dust (13% O <sub>2</sub> )	≤ 40 mg/m <sup>3</sup>
Efficiency (wood)	≥ 84 %

## 5.4 Dimensional drawing



We reserve the right to make changes which relate to technical advances and / or to an improvement in quality. We accept no liability for printing errors and changes which occur after printing.

## 5.5 Brief instructions and figures

	Heating up	Heating	Cooking	Roasting/ Baking
Central control	I	I	Winter II or III, Summer I	III
Secondary air slider	CLOSED	OPEN for coal, ¼ OPEN for slow burning	OPEN	OPEN
Temperature control	Setting 3	According to need	Setting 3	Roasting: Setting 3, Baking: According to need

## 6. FIGURES

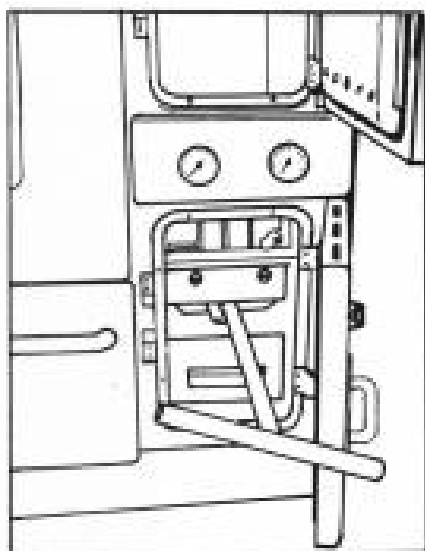


Fig. 4

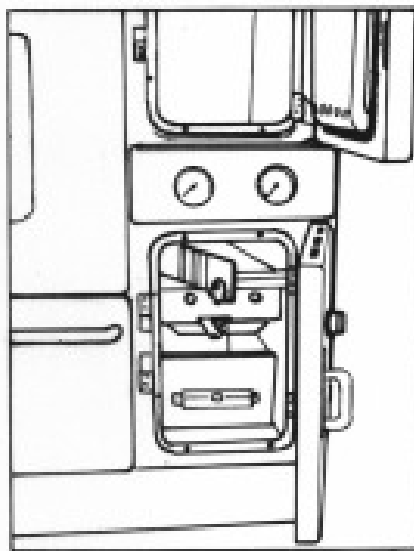


Fig. 5

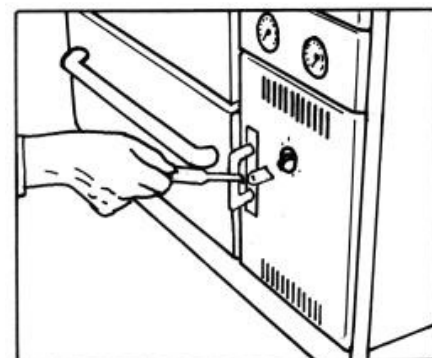


Fig. 6

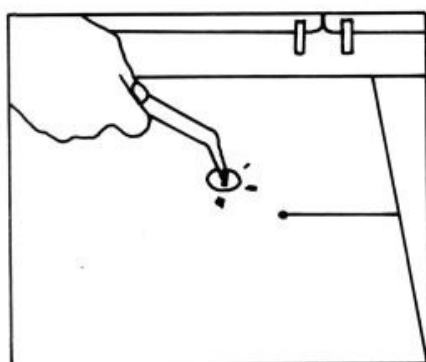


Fig. 7

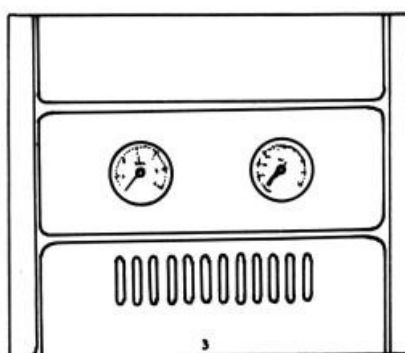


Fig. 8

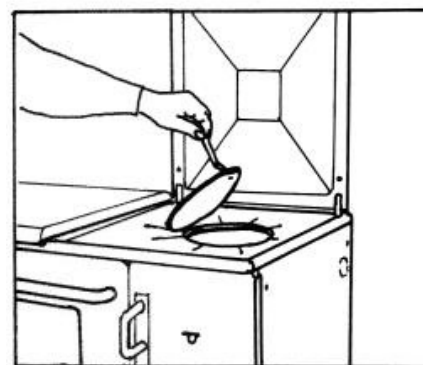


Fig. 9

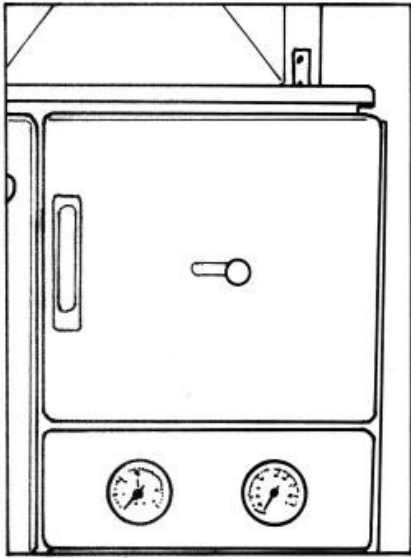


Fig. 10

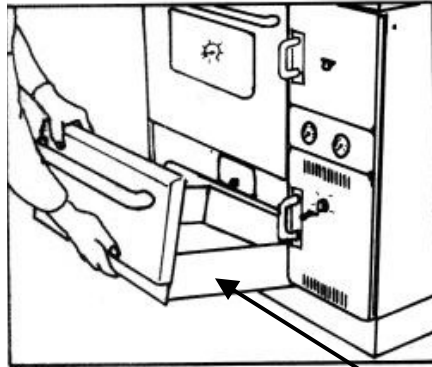


Fig. 11

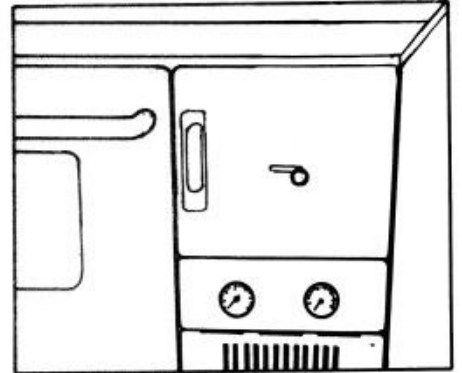


Fig. 12

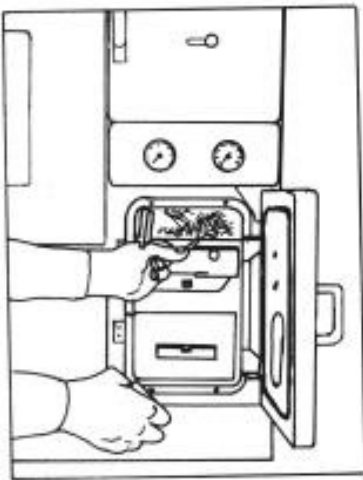


Fig. 13

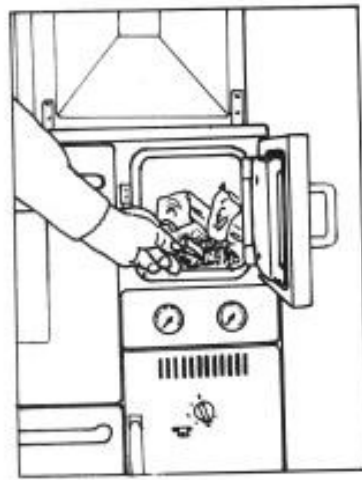


Fig. 14

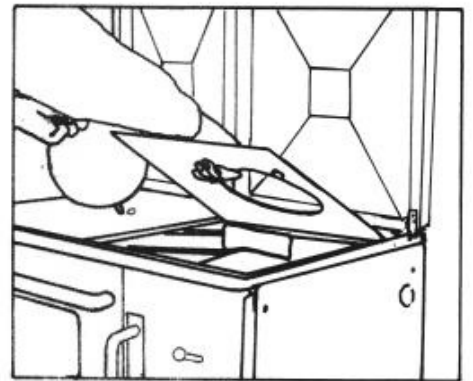


Fig. 15

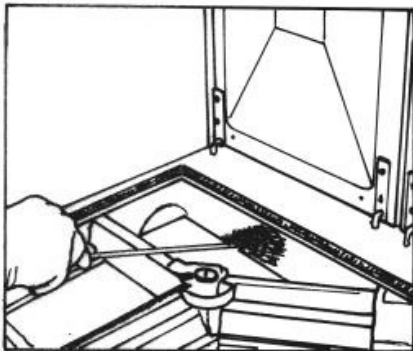


Fig. 16

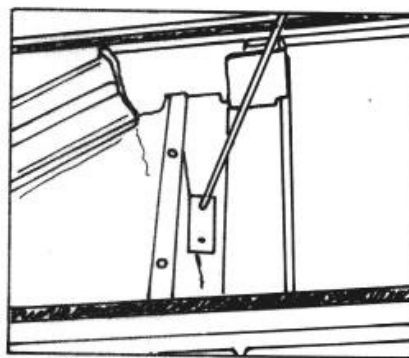


Fig. 17

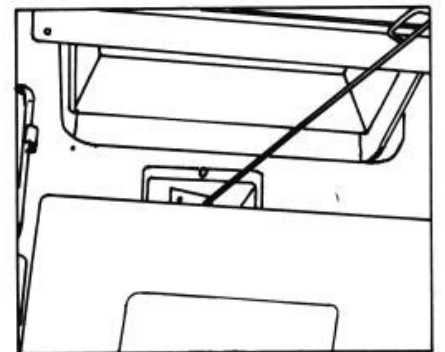


Fig. 18



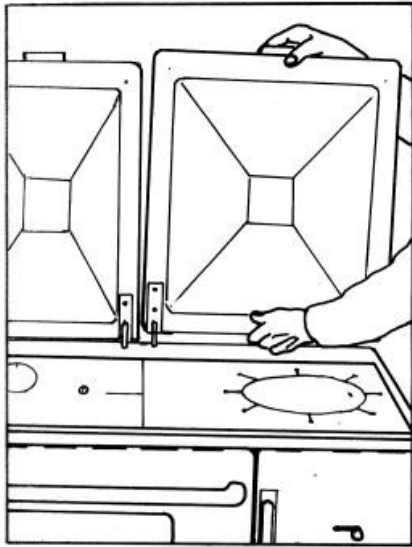


Fig. 20

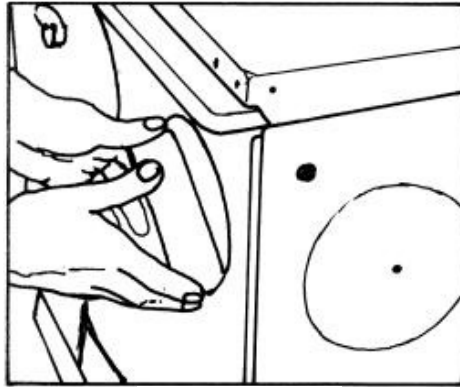


Fig. 21

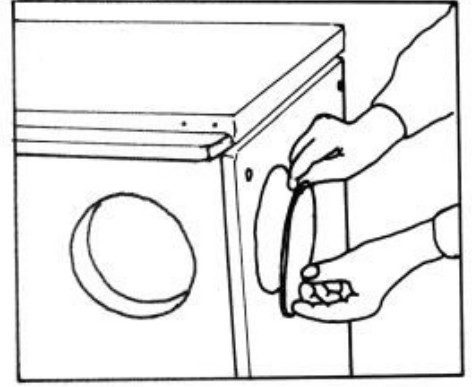


Fig. 22

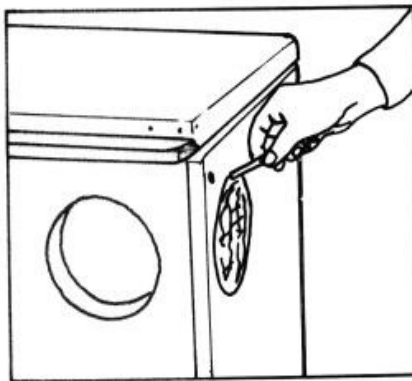


Fig. 23

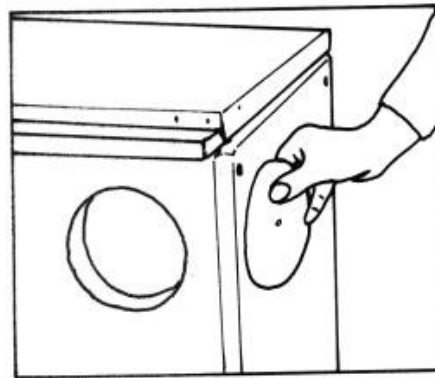


Fig. 24

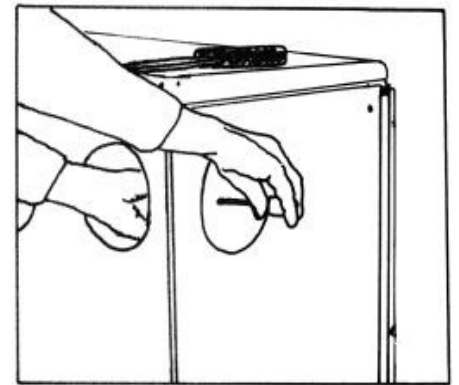


Fig. 25

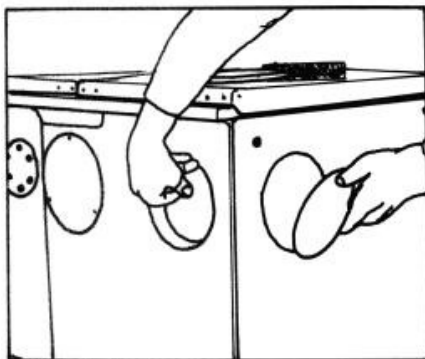


Fig. 26

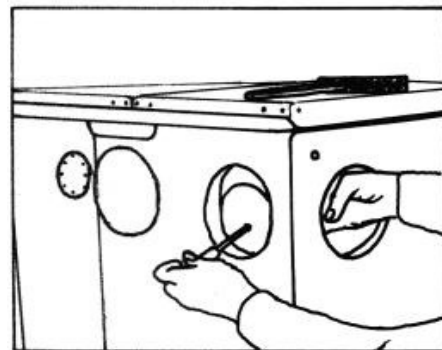


Fig. 27

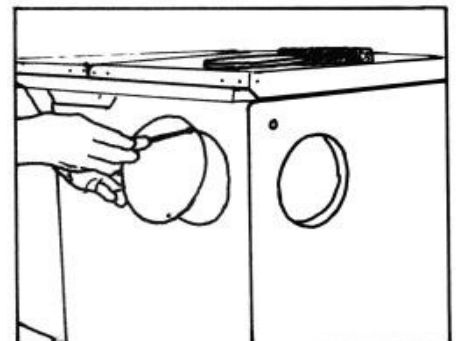


Fig. 28

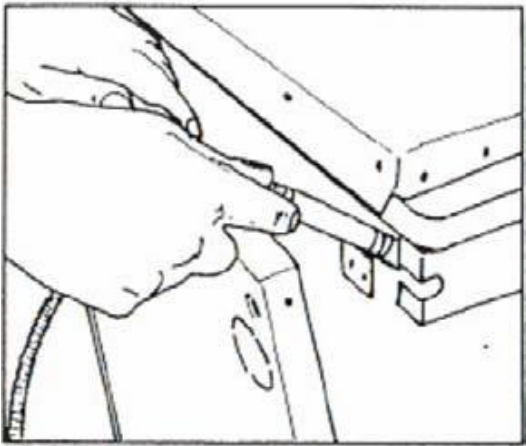


Fig. 29

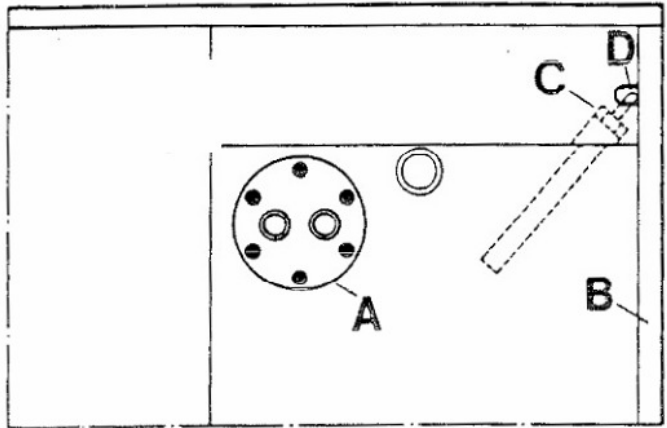


Fig. 30

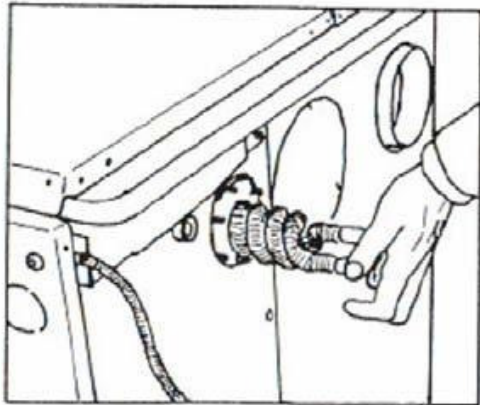


Fig. 31

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## **7. SAFETY MEASURES**

1. The stoves are tested to EN 12815 (see identification plate).
2. For installation and for flue gas connections, the requirements of the Fire Regulations (FeuVO in Germany) apply, as well as local building regulations such as the following technical standards DIN 4705, EN 13384, DIN 18160, EN 1856-2 and EN 15287. In order for the stove to function correctly the chimney to which you want to connect the stove must be in good condition.
3. Before first use and before connecting to the chimney, you must read the Instructions for Use carefully and inform the local authority responsible for approving heating systems.
4. While installing the stove you are recommended to wear clean cotton gloves, in order to avoid leaving fingerprints which can be difficult to remove afterwards.
5. In the interests both of clean air, and of the safe functioning of the stove, the fuel quantities listed in the Instructions for Use should never be exceeded, and the doors of the stove must be shut during use to avoid the risk of overheating, which can lead to damage to the stove. Damage due to this cause is not covered by the guarantee.
6. The stove doors must remain shut at all times while the stove is in use.
7. Permitted fuels are:
  - Natural chopped firewood (up to 35 cm max. in length)
  - Lignite (brown coal) briquettes (see permitted fuels in the Instructions for Use)
8. Never use liquid fire starters. Use either special firelighters or wood shavings.
9. Burning rubbish, fine chips, bark, coal slack, parts of chipboards, damp wood or wood treated with preservative, paper, cardboard or similar is not permitted.
10. The first time the stove is heated there may be some smoke and an unpleasant smell. Make sure that the room is well ventilated (open windows and doors) and heat for at least an hour at the maximum nominal heat load. If the maximum temperature is not reached the first time the stove is heated, then there may be further unpleasant smells at a later date.
11. All controls and settings must be used as indicated in the Instructions for Use. When the stove is hot, please handle only using the implements or protective gloves provided.
12. If the stove is not working correctly, or if the chimney is not drawing properly, smoke may appear when the fire door is opened. It is very important to only open the fire door slowly, initially just a crack, then wait a few seconds before opening fully. In addition, before opening the fire door to top up the fuel, make sure that only glowing material is present: there must not be any visible flames.
13. Do not place any flammable items in the warming drawer or on the surface of the stove.
14. When in use, all surfaces and particularly the glass doors and handles and other controls can become very hot. Make children, young people, older people and animals aware of this danger, and keep them away from this source of heat when the stove is

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being used. Use the protective gloves or the implements provided. Children and young people under 16 must not use the stove unless supervised by an adult who is responsible for them.

- 15.** Make sure that the ash pan is always fully pushed in, until it touches the back. Never remove ashes while still hot (fire risk).
- 16.** In spring and autumn the chimney may no longer draw correctly, so that gases produced by combustion are not completely removed. The fire chamber should then be filled with a small quantity of fuel, ideally with wood shavings, and lit under supervision, in order to stabilise the chimney draught. The grate must be clean.
- 17.** After each prolonged period of use for heating, have the stove checked by a professional. The flues and pipes for the evacuation of fumes must also be thoroughly cleaned.
- 18.** If repairs or replacements are necessary, please contact your supplier with the necessary article numbers and serial numbers in good time. Only original WAMSLER replacement parts may be used.
- 19.** Work such as installation, setup, commissioning and services, as well as repairs, must only be carried out by qualified personnel (heating system or space heating technicians). Intervention by non-qualified persons invalidates the warranty and guarantee.
- 20.** As the solid fuel oven/stove draws the air required for combustion from the surrounding room, you must ensure that sufficient air can be drawn in through non-sealed windows and outside doors. It can be assumed that this is provided by a room volume of at least 4 m<sup>3</sup> per kW nominal heat capacity. If the volume is less than this, then air vents can be used to provide access to further air in other rooms (min. 150 cm<sup>2</sup>).
- 21.** You must ensure that the correct safety distance is maintained from all flammable components and materials – to the side, rear and front. These distances can be found in the Instructions for Use or the identification plate.
- 22.** The fire chamber must not be modified.
- 23.** Connection to a chimney whose functional height is less than 4 m, or if multiple stoves are installed, 5 m, is not permitted. A maximum of two other fires can be connected to the chimney which is to be connected the stove.
- 24.** If the chimney catches fire immediately close all doors and openings and call the fire brigade. Do not attempt to extinguish the fire yourself. Afterwards have the chimney thoroughly checked out by a professional.
- 25.** Solid fuels naturally create soot, so it is always possible that the window glass will become dirty: this does not mean there is a malfunction.

## 8. EC-DECLARATION OF CONFORMITY



### **WAMSLER Haus- und Küchentechnik GmbH**

Manufacturer: **WAMSLER Haus- und Küchentechnik GmbH,  
Gutenbergstr. 25, D-85748 Garching, Germany**

Product description: **Solid fuel stove**

Typ: **K 148**

The products listed above conform to the requirements of the following European Directive:

**89/106/EC: Construction Products Directive**

This is attested by test reports No. RRF 15071327 and 15092017 of 30/08/2007 and 16/11/2009 from the state-accredited test centre RRF, test centre D-Essen (notified body number 1625), tested under EN 12815.

Munich 16.11.09

Managing Director

i.V.

Technical Director

This declaration certifies conformity to the above-named Directives but does not provide any guarantee of product characteristics. The safety notices in the product documentation supplied must be adhered to. This declaration is no longer valid if the equipment is modified by a third party.

The dimension information shown is only for information! We reserve the right to make changes to the construction if these improve the technical level or the quality!