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**SOLID FUEL  
BOILER WITH**

**TYPE 9106**

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**OPERATION AND MAINTENANCE MANUAL  
INSTALLATION MANUAL**

10/2008

# OPERATION AND MAINTENANCE MANUAL

## Dear Customer,

You have purchased a hotplate appliance which uses solid fuel. It is our utmost wish that our product serves you well. There are certain principles that need to be applied towards the operation of the product. Therefore, it is in your best interests to read this Manual carefully and apply the operation instructions contained in it.

The manufacturer has issued a Certificate of Conformity for Appliance 9106, as per Section 12 par 3 of Act 22/1997 Coll.

## Important information, mandatory guidelines and recommendations

- When starting a fire, do not use any flammable liquids, do not use any such substances to extend the nominal heat rating of the appliance.
- The appliance must not be used for the incineration of waste material, only recommended fuel types may be used.
- When the appliance is in operation, the ash receiver gate must be closed. To prevent the leakage of fumes, the combustion chamber gate may only be open when adding fuel or operating the grate.
- The appliance may only be operated by adults.
- Ash may only be put in a container made of fire-resistant material. Exercise maximum caution when handling hot ash.
- Observe fire safety.
- A damaged appliance (i.e., an appliance unfit for operation) must not be used.
- If these operating conditions are not adhered to, the appliance may become damaged. It is strictly forbidden to overload the appliance in any way.
- **There may be sudden sharp knocks (throbbing) of the metal plates inside the appliance. These events do not qualify for guarantee repair or a customer claim procedure. The above noises are caused by the inner tension in the metal plates, these noises will die away over time, depending on the frequency of the heating occasions. These defects do not put the appliance's safety or functionality at risk.**
- Any and all repairs of the appliance must be performed by certified repair staff.
- Any and all local regulations, including those regulations that refer to national and European standards, need to be adhered to during the installation of the appliance.
- Use only spare parts which have been approved by the manufacturer.
- Any unauthorised modifications of the appliance are forbidden.
- A list of authorized service centers is provided in the Warranty Certificate.
- **The appliance should be installed by an outhorised specialist. No claims are accepted in case of incorrect or amateur installation.**

## Technical Data

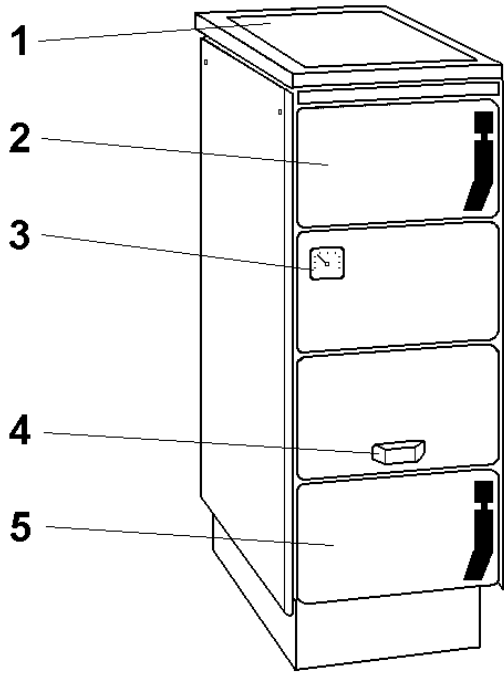
Appliance TYPE 9106 is designed for the incineration of solid fuel at periodic cycles. The appliance is to be used for floor and typical central heating systems of individual flats, small family houses, weekend houses and cottages, in conformance to the CSN EN 12815:2002 standard, as amended by A1:2005. The water inlet and outlet ports of the appliance are fitted with 1" pipes with a G-type thread. The removable steel hotplate may be used for cooking. The appliance is capable of long-term operation.

<b>Appliance with a boiler</b>	<b>TYPE 9106</b>
Nominal heat rating (NHR)	7,5 kW
Heat flow in the heating section	7 kW
Heat flow into the surrounding environment	0,5 kW
NHR efficiency	70 %
Average fume temperature (NHR)	200 °C
Mass of fume flow (NHR)	3 g/sec
Average CO content at NHR (při O <sub>2</sub> = 13%)	3 g/m <sup>3</sup>
Minimum chimney effect	10 Pa
Work surface height	850 mm
Appliance width	325 mm
Appliance depth	640 mm
Fume outlet diameter	130 mm
Height to the centre of the fume outlet	700 ±0,5 mm
Hotplate area	0,12 m <sup>2</sup>
Test fuel	wood: size 200 mm
Average consumption (wood)	3-4 kg/hr
Water maximum operation overpressure	2 bar
Water content of the heating element	16 L
Mass	110 kg
Combustion chamber volume	12 L (dm <sup>3</sup> )
Water system tie-in diameter	1"
<b>Accessories</b>	
Fire hook	1
Connection piece (1" – 1/2")	1
Drain/ fill cock	1
TH-1 regulator + regulator cover	1 + 1

**The hotplate lid is packaged separately for ease of transportation. After the appliance has been unpacked, insert the hinge pins into the openings at the rear section of the hotplate frame. The springs in the hinges assist in keeping the lid in a vertical position.**

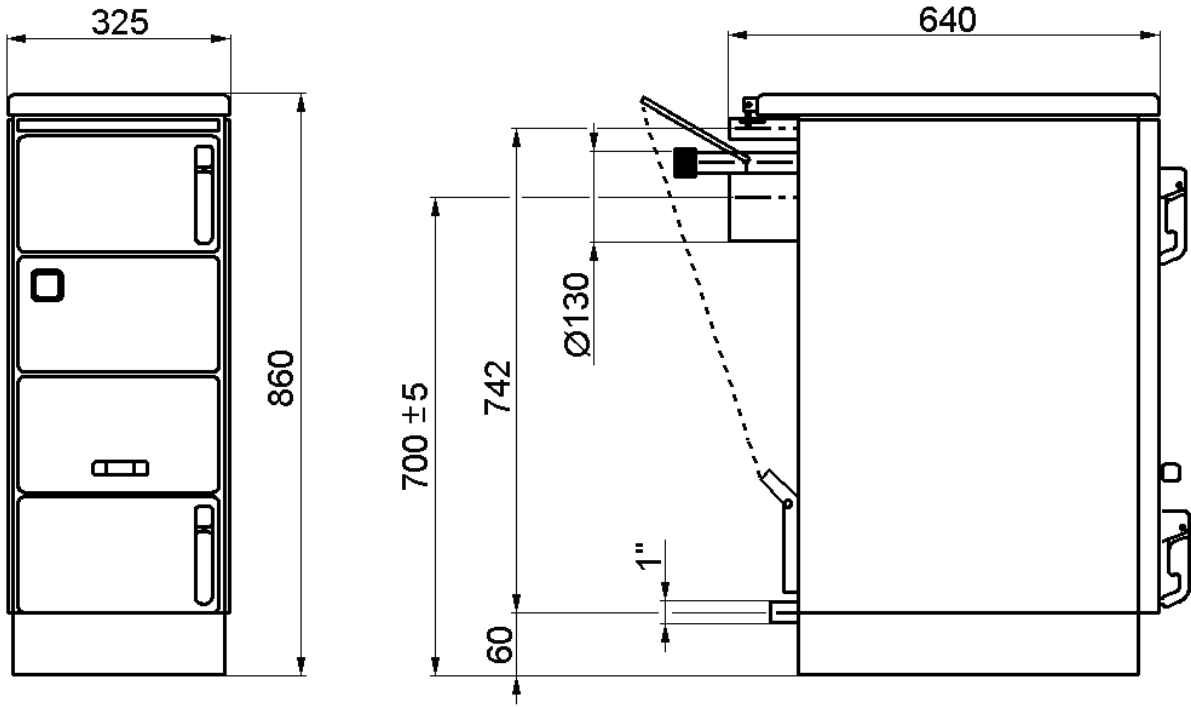
**The hotplate lid is supplied upon the customer's request.**

# Description and form factor specifications

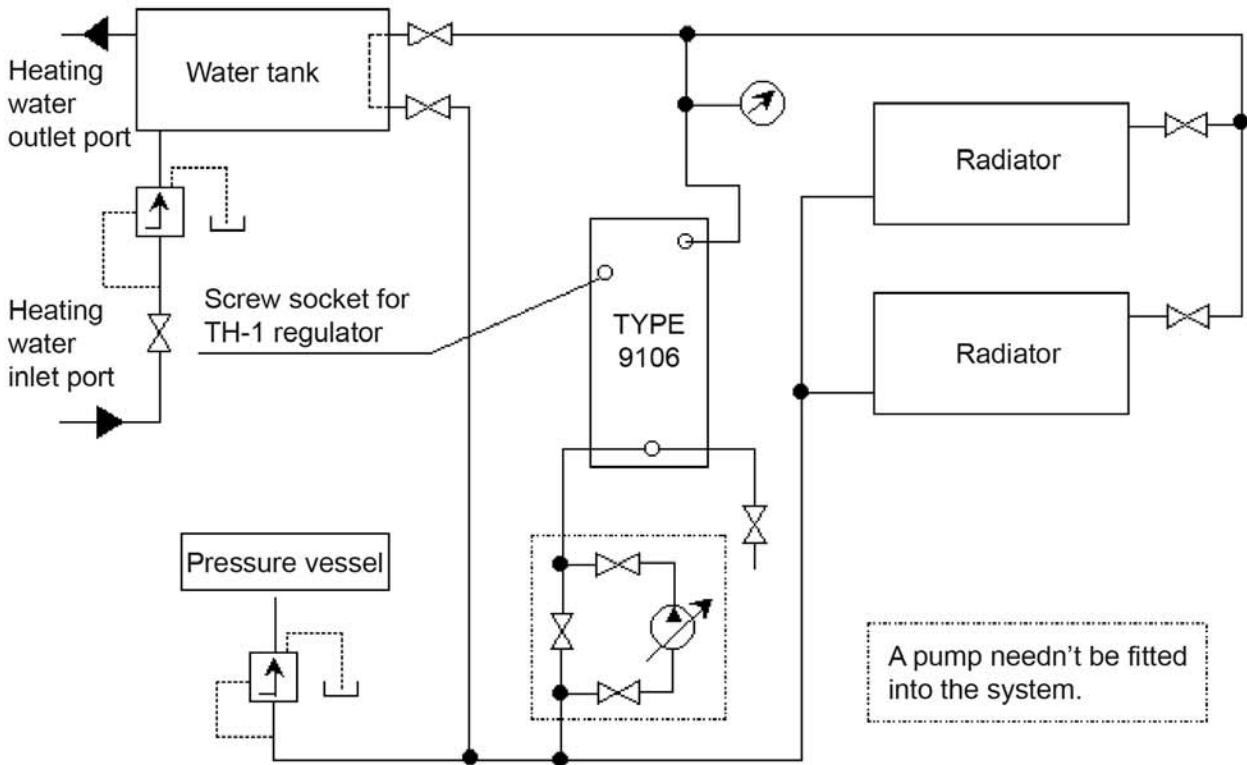


- 1. Hotplate
- 2. Combustion chamber gate
- 3. Thermometer
- 4. Grate handle
- 5. Ash receiver gate

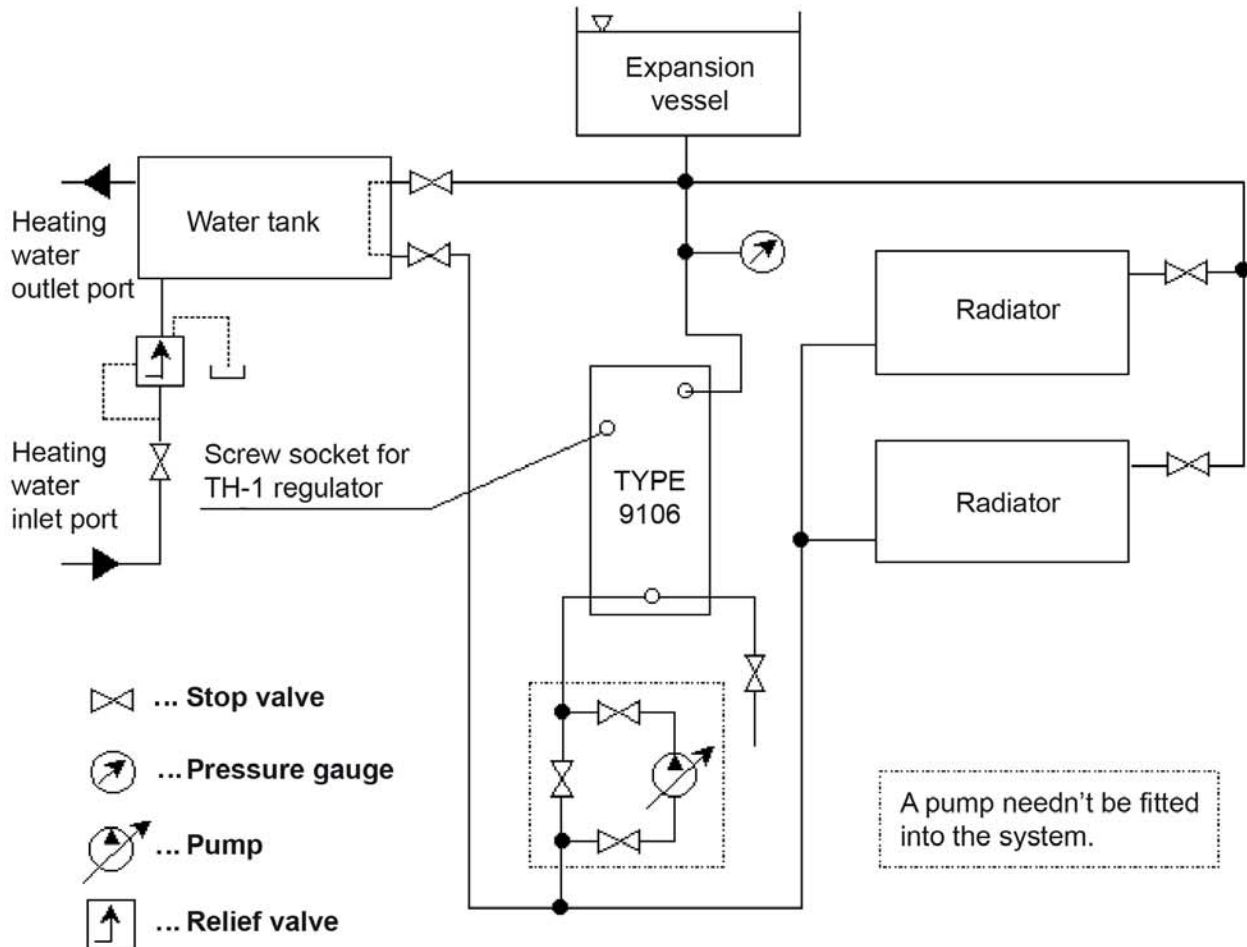
Figure 1



### APPLIANCE CONNECTION TO A PRESSURE VESSEL SYSTEM



### APPLIANCE CONNECTION TO AN EXPANSION VESSEL SYSTEM



# Operation Instructions

## Fuel

This appliance is designed for incineration of the following solid fuels:

- Wood (test fuel)
- Recommended fuels – brown coal, wood waste material, brown coal briquettes, biomass, common commercial fuels

Make sure the fuel is dry. Incineration of high calorificity fuels is not recommended as they reduce the life expectancy of the appliance.

## Grate

The appliance is fitted with a sliding grate which is operated with a handle. Operate the grate in order to allow the unburned fuel remnants into the ash receiver; this, in turn, allows higher intake of incineration (i.e., primary) air into the combustion chamber. To operate the grate, hold the lever and pull it back and forth repeatedly. Pieces whose size prevents them from falling through the grate openings may be removed after the fire has extinguished. During heating, operate the grate using the fire hook.

## Air Inlet Port Regulation

The volume of incoming air is adjusted with the TH-1 regulator, which constitutes an integral part of the appliance. The regulator unit facilitates the operation of the appliance, maintains the selected heating output, and prevents the appliance from overheating. The operation of the regulator is based on the water temperature inside the system. As the temperature of the heating water rises, the device limits the inlet of the primary air, and vice versa. When the appliance is in operation, an inlet of primary air must be provided; the inlet must not become blocked. The room where the appliance is located must not be fitted with air extraction systems unless an appropriate source of ventilation air is provided.

## Regulator Installation and Adjustment:

Put the cover onto the regulator and mount the unit to the screw socket of the appliance unit. Use oakum for sealing. Turn the unit with a size 32 open wrench so that the eyelet for the lever is positioned above and the cover points to the fume outlet. Install the lever into the regulator body; secure the lever with an M5 screw. When set at the minimum aperture, "30", the lever should be elevated at a 30° angle. Using the regulation knob to set the "30" value at the reference point on the surface of the regulator. Tighten the chain and drive the hook through the split pin on the air inlet port latch. The latch must be closed, with the chain tightened. The regulation function is performed via the regulation knob, on positions from 30 through 100. The position of "100" corresponds to a temperature of the heating water of approximately 95°C; the air inlet latch must be closed at this position. The die-pressed scale serves for informative purposes only. Regulator settings must be verified in operation. The regulator unit does not require any major maintenance. It is recommended that the operator keep the regulator clean.

## Appliance Hotplate

The hotplate is designed for warming food, or keeping it warm. Use pots with a flat bottom, the whole area of which rests on the hotplate. When you intend to use the hotplate for cooking, leave only one radiator unit active; the function of the other heating elements should be suspended.

## Initiation Flap

The controls of the initiation flap are located near the fume outlet port in the back wall of the appliance. The flap introduces these operation modes:

Initiation mode – the control lever is retracted (flap open)

Heating mode – the control lever is extended (flap closed)

## Operation

During the start of the first fire, provide sufficient ventilation in the room because the protective paint coating and remains of fats are being burned.

Prior to starting a fire, open the combustion chamber gate and verify that the grate is clean. To start a fire, use slim splinters of soft wood placed on sheets of paper. Put larger pieces of wood on the splinters. Open the initiation flap and chimney flaps.

Start a fire in the fuel and close the combustion chamber gate. Add more wood after the supply has burned. After a bed of hot material has been created, other fuel may be added. Bear in mind that adding too much fuel too early may have a detrimental effect on the incineration process. Supply additional fuel manually or with a suitable shovel.

The output of the appliance is adjusted by the regulator; it also depends on the frequency of the grating. Clean the grate with the fire hook occasionally. If the appliance releases smoke during the addition of fuel, close the air inlet port. The entire combustion chamber may be used for incineration. Make sure the fuel does not fall outside the chamber during addition. In adverse chimney effect conditions or in bad weather conditions, use small, dry logs of wood.

### Long-term Operation

The appliance may be in unattended operation for an extended period of time as follows: after the base layer of hot material, fill the fuel chamber and turn the primary air regulator by unhinging the chain from the split pin of the latch. The appliance may be left to operate for more than 12 hours.

## Cleaning and Maintenance

### Cleaning the combustion chamber and fume duct

In order to maintain the good operating parameters of the appliance, clean the unit regularly. Always clean the combustion chamber when the appliance is not in use.

Before repeated heating after a longer hiatus of operation, it is necessary to check the flow of the fume duct, smoke pipe and the chimney. Regular maintenance is to be performed by a service technician once a year.

Remove the hotplate and clean the unburned remnants from the grate using a spade and a fire hook. Use the hook to remove the hood located behind the third plate on the grate bed. Use the opening underneath to push the soot into the ash receiver. Empty the ash receiver. After the cleaning procedure has been completed, put the appliance into its initial condition; be careful of the correct position of the sealing rope and hotplate in the frame.

### Cleaning the Outer Surfaces

Always clean the appliance after it has cooled.

- Clean the enamel surface with a wet cloth, or a sponge, and wipe it dry. Never apply scouring products, as they might erode the enamel surface. To remove heavier dirt, use detergent cleaning products.
- Do not expose the hotplate to water, if possible, as corrosion might develop. Clean the plate dry. If a wet cloth with detergent is used for cleaning, remember to dry the hotplate afterwards. It is recommended to apply a thin layer of vegetable oil occasionally.

## Troubleshooting

- Fire may not be started
- check the cleanliness of the fume duct, smoke pipe and chimney
  - check the settings of the initiation flap, TH-1 regulator, combustion chamber and ash receiver gates
- Appliance overheats
- stop operation – do not add fuel, disable the TH-1 regulator, leave the fire to burn out
- Fire in the chimney
- never put out with water
  - close all combustion air intake ports, and, if possible, cover the chimney opening on the roof
  - contact your local Chimney Authority to assess the condition of the chimney after the fire
  - contact the manufacturer of the appliance

## Customer Complaints

Should you discover a defect during the warranty period, never repair it yourself. Raise a warranty claim at the retail outlet where you purchased the appliance or a warranty service center. Provide your warranty certificate, fully completed. A warranty claim may only be raised if all the warranty conditions have been met. After-warranty repairs are performed by the manufacturer or at authorized service centers.

## Utilization and Disposal of Packaging Material

- Corrugated paper, sheet paper
- sale in recycling centers
  - disposal in recycling containers (paper)
- Wood
- other uses
  - disposal in the local waste disposal dump
- PVC straps, bags, wrapping
- disposal in recycling containers (plastic)

## Disposal of the Appliance after the Useful Lifetime

This appliance contains valuable material which should be used repeatedly. Please dispose of the appliance at your local recycling center or at the official dump approved by your community center.

### NOTE:

The manufacturer hereby reserves the right to provide minor changes and modifications to the product, based on innovation or technical changes of the product, which do not alter the operation of the product in any way.



# INSTALLATION

Depending on the design properties and nature of application, this solid fuel appliance shall be installed into an environment defined by Czech Standard CSN 33 2000-3:1995 – generic environment.

The requirements on the input of primary air shall be seen as conformed to if the appliance is installed into a room of a minimum volume of 20 cubic meters. If necessary, and depending on the use of the appliance, or when other heat appliances are operated in the room simultaneously, ventilate the room. In the case of the risk, even temporary, of inflammable gas formation or in the case of work with a possible risk of fire (explosion), the appliance shall be put out of operation at sufficient notice. That is, let the fuel on the grate burn out with the combustion chamber gate closed. If regulation grilles for primary, ventilation or heating air regulation are used, they shall be positioned so that the danger of clogging in these units is eliminated.

## **Connection of the Appliance to the Chimney**

A prerequisite for correct operation of the appliance is a chimney with a sufficient draw. Try to have the connection between the appliance and the chimney as short as possible. Any smoke ducts made of tin pipes and longer than 2,000 mm must be firmly fastened. The entire system must be connected correctly and tightly, in the direction of the smoke travel. Individual pipes must overlap at a minimum of 80 mm. The chimney connection shall be fitted with a metal socket, the inner diameter of which shall be equal to the outer diameter of the pipes. Position the appliance in order to allow appropriate access for cleaning the smoke duct and chimney.

The connection of the appliance to the smoke duct shall meet the requirements of Czech Standard CSN 73 4201:2008. A revision report by the local Chimney Authority must be issued for the chimney. The appliance installation shall meet the fire safety requirements of Czech Standard CSN 06 1008:1998.

The appliance may be connected to a shared chimney. All chimneys and smoke ducts to which solid fuel appliances are connected must be swept six times per year (in conformance with Ministry of the Interior Decree 111/82 Coll.). Regular operation, especially when using wet fuel, leads to the accumulation of soot and tar in the chimney stack. Any negligence of regular chimney inspection and/or sweeping increases the risk of fire inside the chimney.

## **Safety Instructions**

The minimum safe distance from Class B, C<sub>1</sub> or C<sub>2</sub> inflammable material is 750 mm in the direction perpendicular to the opening gate, and 200 mm in all other directions. In terms of Class C<sub>3</sub> inflammable material, or in material of which the inflammability has not yet been established, the distances shall be doubled. No objects from inflammable materials may be positioned on the appliance or at a distance shorter than the minimum safe distance from the appliance. When the appliance is installed on a floor made from inflammable material, it shall be positioned on a flameproof, thermally insulated pad which extends the ground plan of the appliance as follows:

- No less than 600 mm in front of the fuel addition gate
- No less than 300 mm from the sides of the fuel addition gate

A protective screen is to be used when the prescribed safe distance parameters may not be adhered to for space limitations. The protective screen shall constantly be positioned between the appliance and the protected material, at a distance of 30±5 mm from the protected material. The protective screen shall exceed the protected material to the nearest wall (ceiling) of flameproof material, at a minimum of 300 mm on the upper side and 150 mm on the sides.

## **Connecting the Appliance and the Boiler**

Prior to putting the boiler into operation as per the connection diagram, fill the water system of the boiler with water. Check the water level in the boiler. Any sort of shock during filling is a defect which indicates incorrect installation, air present in the system, or an insufficient amount of water in the system. If necessary, some antifreeze may be added to the water system. To attain better heat transfer, consider fitting the system with a pump. To extend the useful life of the appliance, it should be equipped with a device to ensure that the intake water temperature during consolidated operation does not drop below 65°C.

### **Note:**

- The drain/fill cock is a part of the appliance; the pressure gauge is not included in the appliance. The installation of the cock (must be located in the lowest section of the system) and the pressure gauge (this should be located as close to the appliance as possible) shall conform to Czech Standard 07 0240:1993.
- A primary intake air regulator is included in the appliance.
- The projected design of the heating system should be based on a maximum operation rating of 5,5 kW.
- To drain excess heat from the boiler, a radiator may be used.

### **Warning of Places with a Possible Risk of Burns:**

- hotplate, hotplate frame
- combustion chamber gate

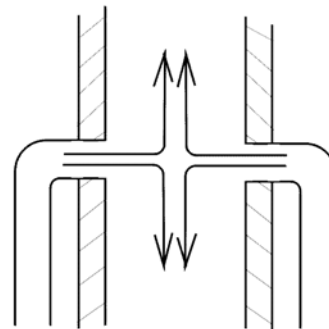
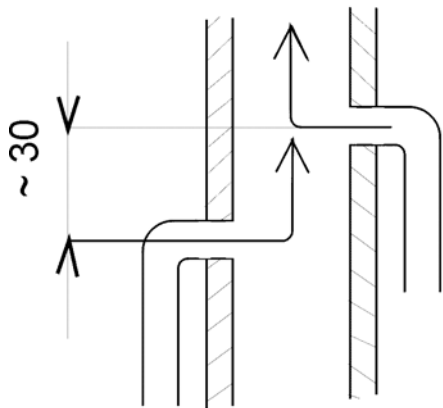
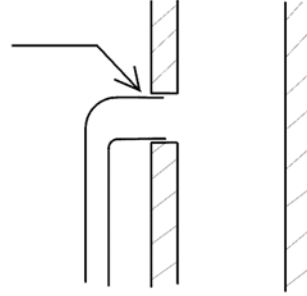
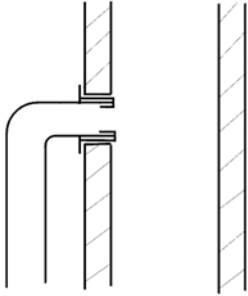
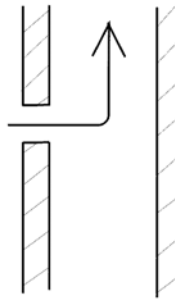
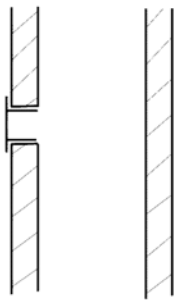
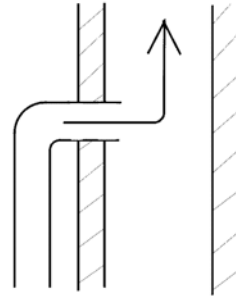
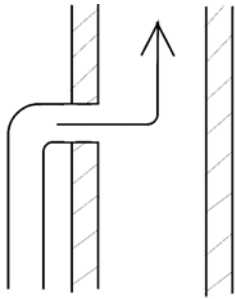
### **Note:**

**KVS Ekodivize strongly recommend that their range cooker should be covered by the uninsulated lid only after the cooker ceased its operation. That means when the food is being cooked on the hob, and fuel is still being added for heating purposes, or the burner is simply on, the lid must be kept in the raised position. It can be lowered to cover the hob only when the cooker is not in operation or finishing its operation (no fuel has been added, the cooker is cooling down and the fire in the burner is burning down).**

## Connection of the Smoke Pipe to the Chimney

properly

improperly





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