# Technical Characteristics and Dimensions

## Dimensions

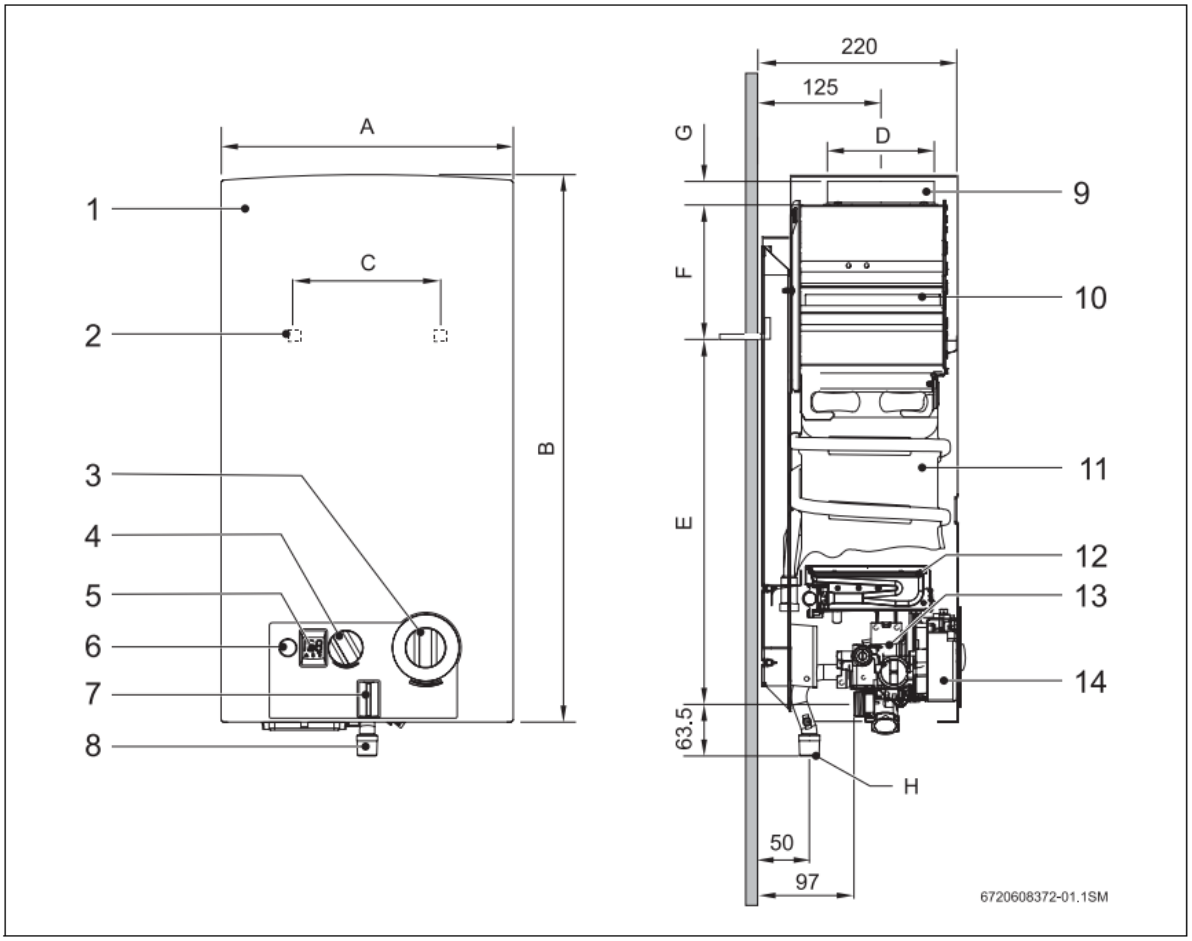


*Fig. 1*

| | | | |
|---|---|---|---|
| **1** | Front cover | **8** | Gas connection |
| **2** | Opening in rear panel for mounting on the wall | **9** | Connection collar for flue |
| **3** | Temperature/volume selector | **10** | Draught diverter |
| **4** | Gas adjustment | **11** | Copper Heat exchanger |
| **5** | Digital display | **12** | Burner |
| **6** | Switch/LED - Low water pressure indicator | **13** | Gas valve |
| **7** | LED - Burner status check | **14** | Ignition unit |

## Functional diagram of the heater

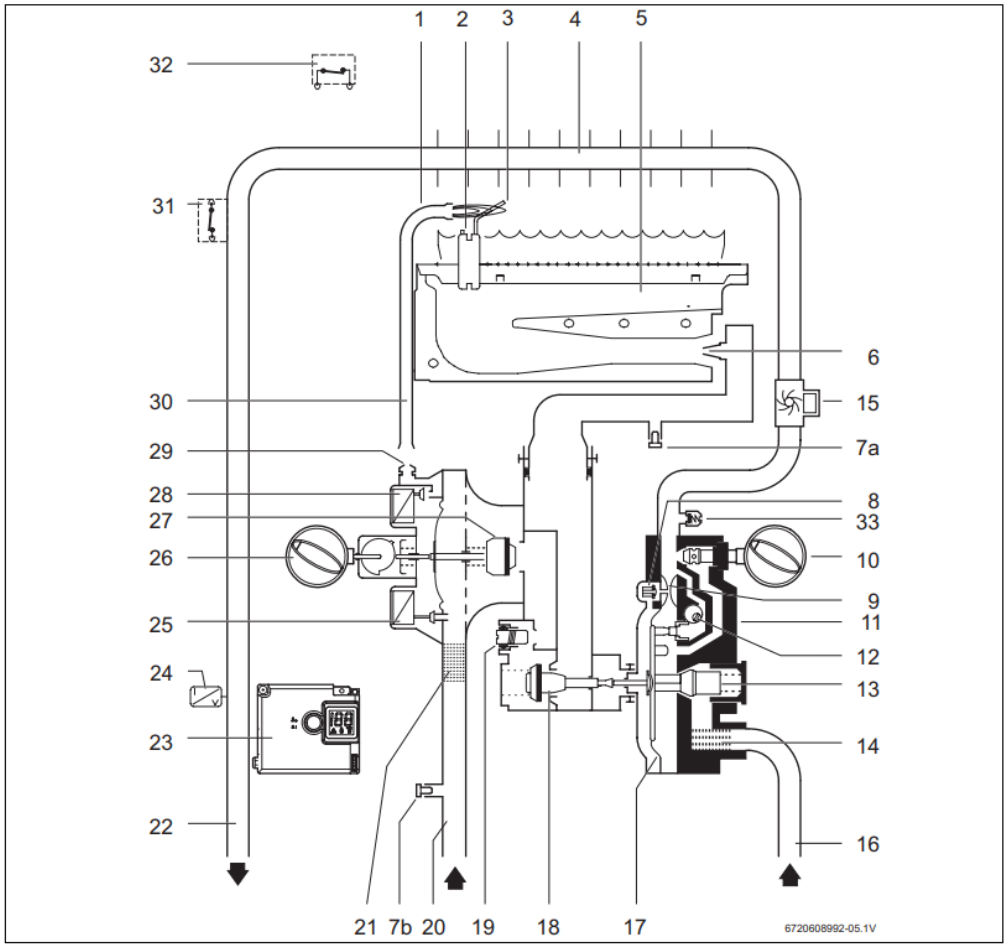


*Fig. 2 Functional diagram*

1. **Pilot burner**
2. **Ignition Electrode**
3. **Ionisation probe**
4. **Heat exchanger**
5. **Main burner**
6. **Injector**
7. **a Burner pressure test point**
   **7.b Gas inlet pressure test point**
8. **Slow ignition valve**
9. **Venturi**
10. **Temperature/volume selector**
11. **Water valve**
12. **Plunger**
13. **Water flow regulator**

14. **Water filter**
15. **Hydrogenerator**
16. **Cold water pipe**
17. **Diaphragm**
18. **Main gas valve**
19. **Maximum gas adjusting screw**
20. **Gas supply pipe**
21. **Gas filter**
22. **Hot water pipe**
23. **Ignition unit**
24. **Temperature sensor**
25. **Servo valve**
26. **Power selector**
27. **Gas valve**
28. **Pilot valve**
29. **Pilot injector**
30. **Pilot gas pipe**
31. **Overtemperature switch**
32. **Flue gas safety device**
33. **Relief Valve/Drain screw**

## Electrical diagram

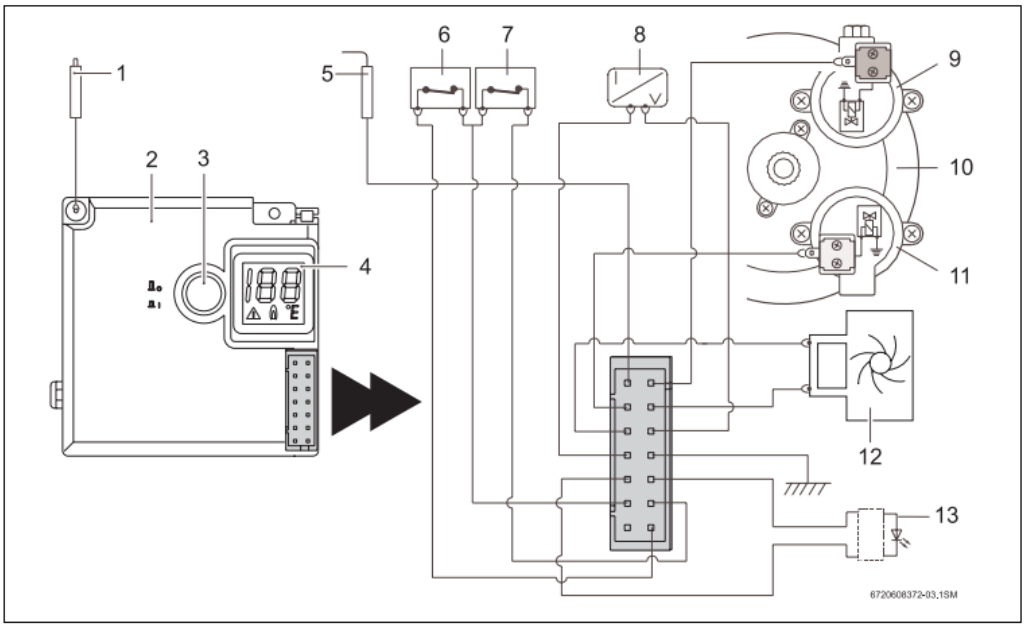


*Fig. 3 Electrical diagram*

| | | | |
|---|---|---|---|
| **1** | Ignition electrode | **8** | Temperature sensor |
| **2** | Ignition unit | **9** | Pilot solenoid (Normally Closed) |
| **3** | Switch/LED - Low water pressure indicator | **10** | Diaphragm valve |
| **4** | Digital display | **11** | Main Solenoid (Normally Open) |
| **5** | Ionisation probe | **12** | Hydrogenerator |
| **6** | Flue gas safety device | **13** | LED - Burner status check |
| **7** | Overtemperature switch | | |

## Function

This gas heater is equipped with automatic electronic ignition to simplify operation.

► To activate, just turn on the switch (Fig. 8).

After this, automatic ignition occurs whenever a hot water tap is opened. First, the pilot burner is lit and approximately four seconds later the main burner ignites. The pilot burner flame is extinguished after the main burner lights.

This is a way of saving a great amount of energy as the pilot burner only operates for the minimum necessary time to ignite the main burner.

# Regulations

Any local by-laws and regulations pertaining to installation and use of gas-heated appliances must be observed.

This appliance must be installed in accordance with the manufacturers installation instructions, AS5601, NZ5261 and all Local Building & Gas fitting regulations

It is recommended that for sanitary fixtures used for the purpose of personal hygiene, that a temperature limitingl device be fitted (such as a tempering valve) as per AS3498.

This appliance must not be installed in a bedroom, bathroom, toilet, or combined living/sleeping room as per AS5601 5.12.5.2

Failure to install this appliance in accordance with these installation instructions will void the warranty.

# Installation

## Selection of the place of installation

**Requirements regarding the place of installation**

- Comply with the specific instructions for each State.
- Install the gas heater in a well-ventilated location where it will not be exposed to temperatures below zero. Ensure combustion gases are flued to outside atmosphere in accordance with AS5601.
- To avoid corrosion, the combustion air must be free from harmful substances. Examples of particularly corrosive substances: halogenated hydrocarbons contained in solvents, paints, glues, hairsprays and various domestic detergents. If necessary, take adequate measures.
- Install the appliance in accordance with the minimum installation clearances indicated in Fig. 4.
- The gas heater must not be installed over a heat source.
- Do not obstruct the openings at top and bottom of appliance.
- Top and bottom areas must be clear from any obstacles at least 30 cm.

In case of a frost risk:

- Turn off the heater.
- Drain the heater (see section 5.7)

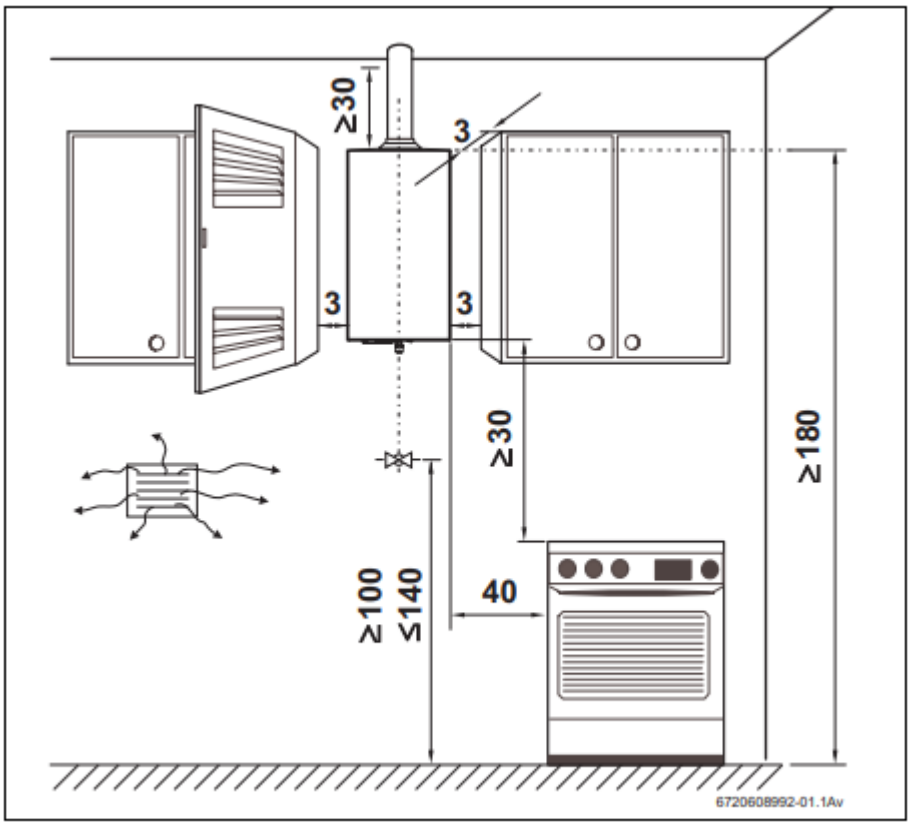


*Fig. 4 Minimum clearances*

**Surface temperature**

The maximum surface temperature of the heater is less than 85 °C, with the exception of the flue piping. No special protection measures are required for flammable construction materials or built-in furniture items.

**Air intake**

The place where the heater is to be installed must have an adequate air supply as per AS5601.

**Heater mounting**

- Remove the temperature/flow selector and the gas selector knobs.
- Unscrew the cover fixing screws.
- With a simultaneous movement forwards and upwards, release the cover from the two lugs at the back.
- Fix the heater vertically, using the provided screw hooks and plugs or use fixings appropriate for the material & weight.

**Water connection**

It is advisable to purge the water pipes before connection, because the presence of dirt may reduce the flow and, in extreme cases, cause a blockage.

- Identify the cold water pipe (Fig. 5, item A) and the hot water pipe (Fig. 5, item B), so as to avoid any possible cross-connection.
- Connect the water pipes to the water valve using the connection accessories provided.

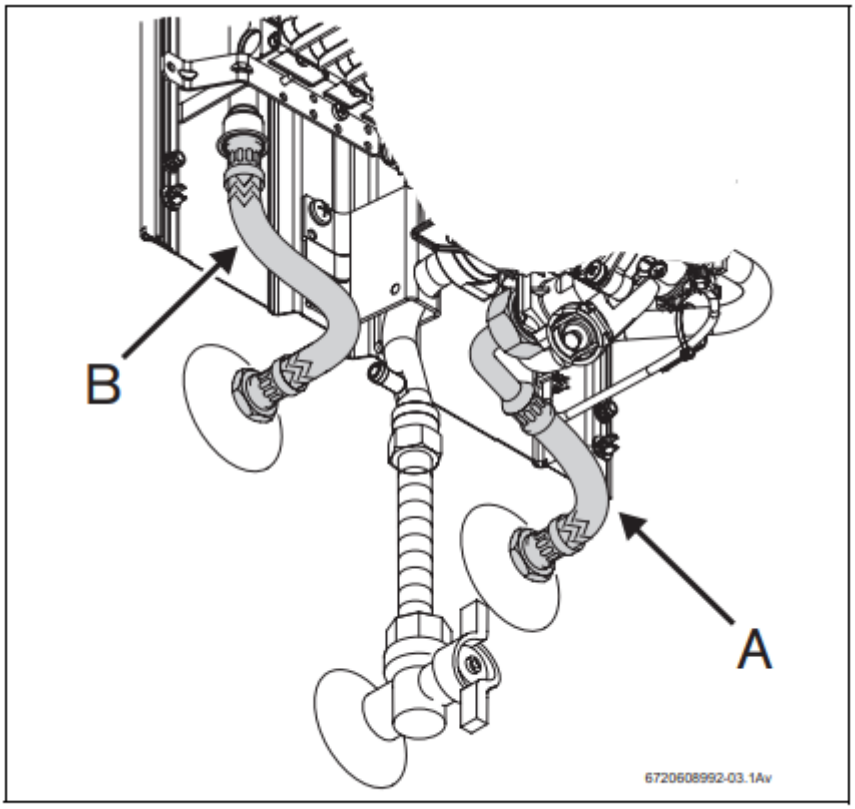


*Fig. 5 Water connection*

**CAUTION:**

If fitting an isolating valve to the water inlet line it must be a Gate or Ball Valve, a Stop Cock or Non-Return Valve must not be fitted.

## Hydrogenerator operation

The hydrogenerator (hydrodynamic generator or HDG) is located in the water circuit between the water valve and the heat exchanger. This component has a turbine that rotates when water flows past its blades. This movement is transmitted to an electric generator which powers the heater ignition unit.

The electrical voltage value supplied by the HDG is approximately 3.0 VAC.

**Pressure Relief**

The pressure relief (Fig. 2, pos. 33) will release pressure from the system whenever the value exceeds 1500 kPa.

## Gas connection

### Gas regulator

The appliance is supplied with a gas pressure regulator that must be installed on the heater before attaching the gas supply line (see Fig. 6).

- Use sealing tape to assure the complete tightness of the installation.

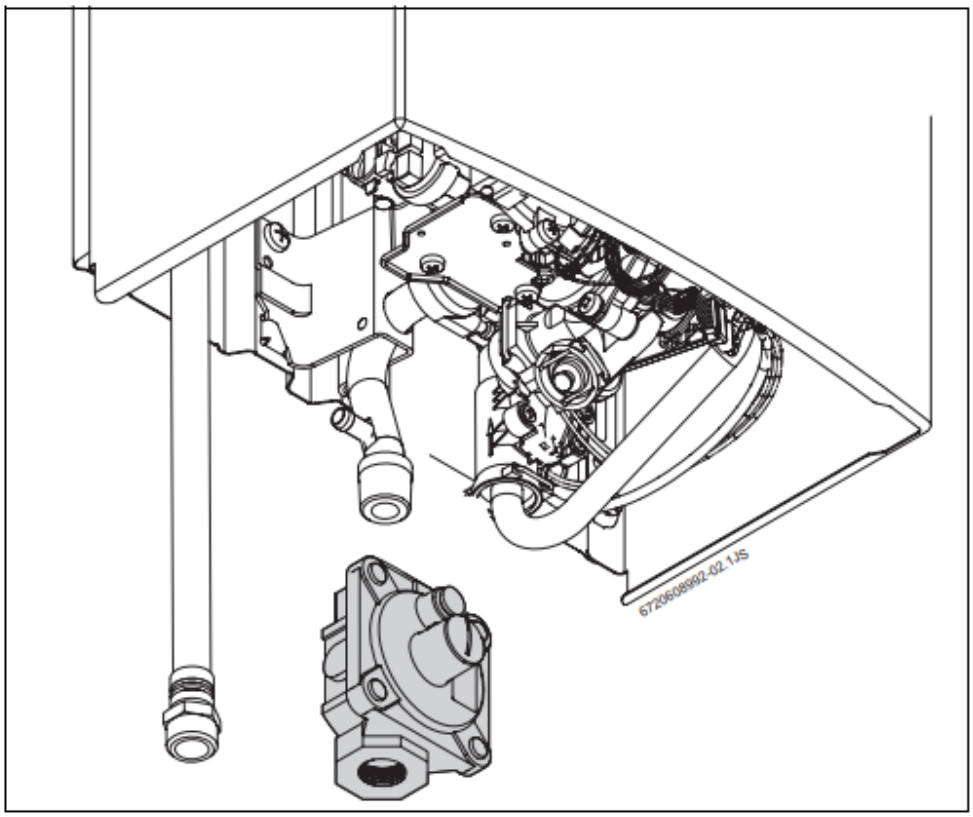


*Fig. 6 Gas regulator*

### Testing

- Turn on the gas and water cocks and check all connections for leaks. If all connections are sound then follow procedures set out in Section 6 for adjustment of Gas Pressures.

# Operating instructions

## Digital display - description

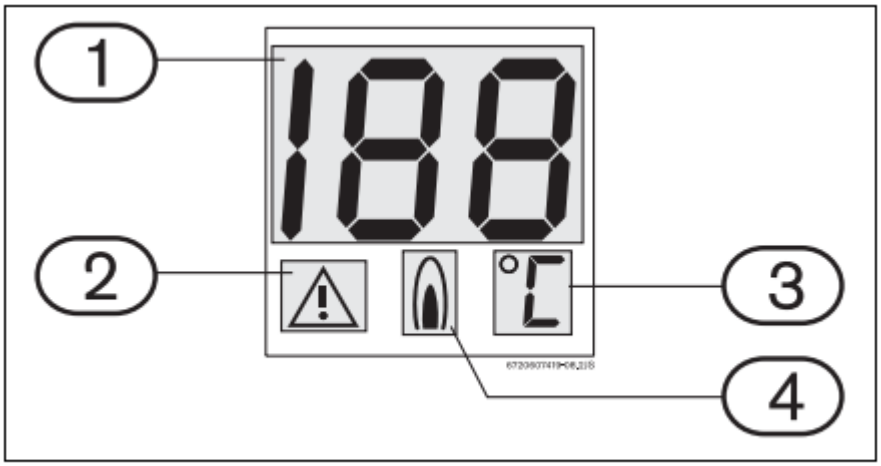


*Fig. 7 Digital display*

**1** Temperature/error code

**2** Malfunction indicator

**3** Temperature measurement units

**4** Heater in operation (burner turned on)

**Before starting up the heater**

- Check if the gas indicated on the rating plate is the same as the one used at the location.
- Open the gas valve.
- Open the water valve.

## Turning the heater on and off

**Turning on**

- Press the switch , position .

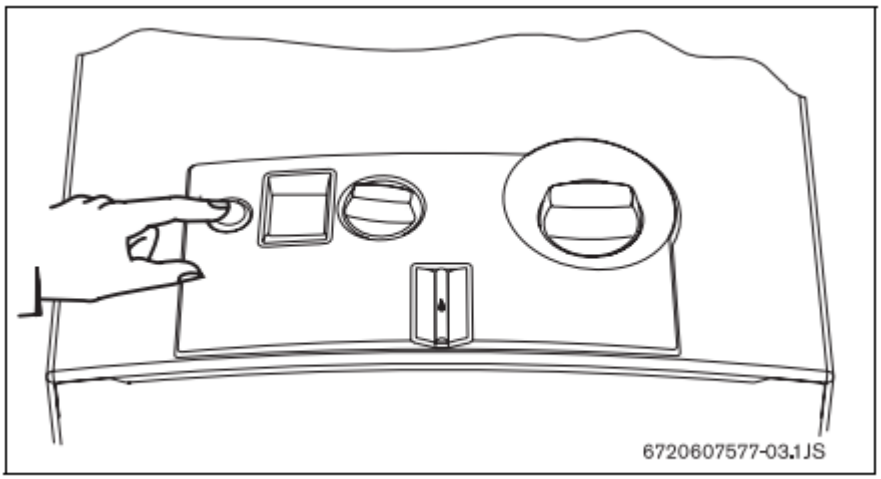


*Fig. 8*

Turn Hot Tap on, LED light on = Main burner on

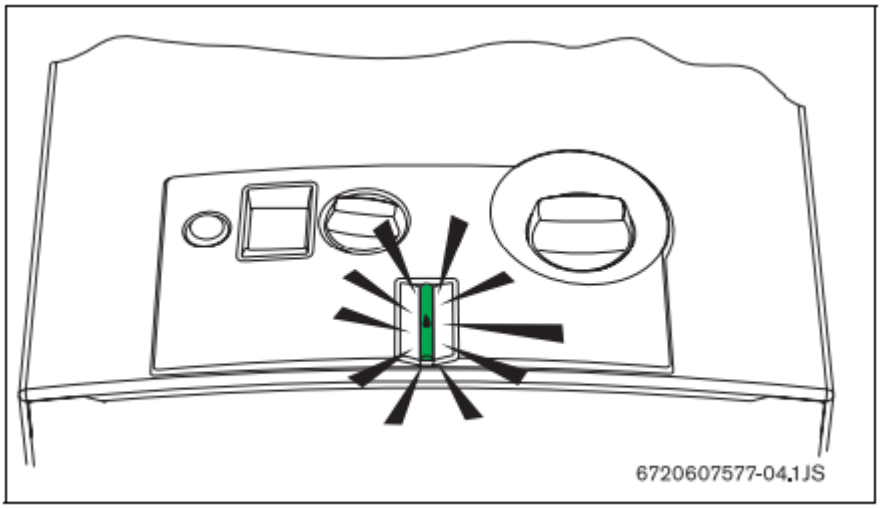


*Fig. 9*

**Turning off**

- Press the switch , position

## Water flow

If the red LED starts flashing during operation, check the water flow.

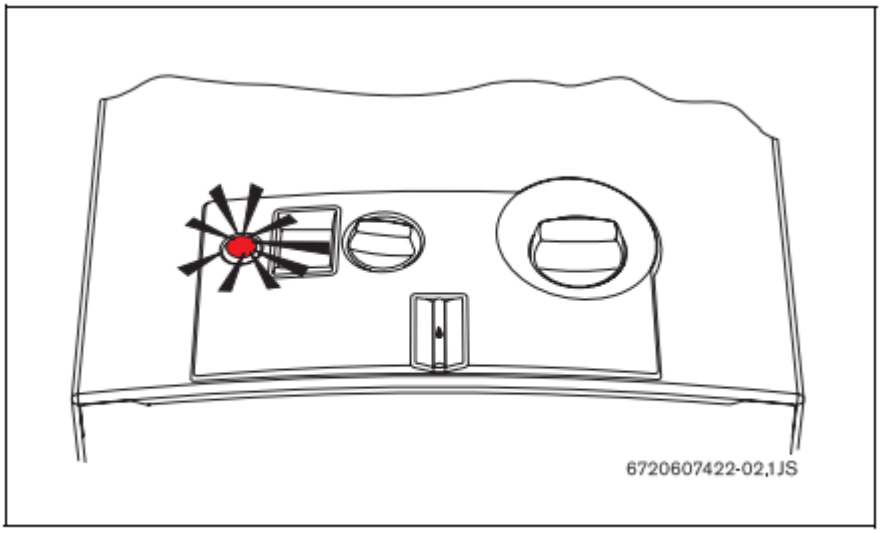

*Fig. 10*

**Gas adjustment**

Lower water temperature. Use less gas.

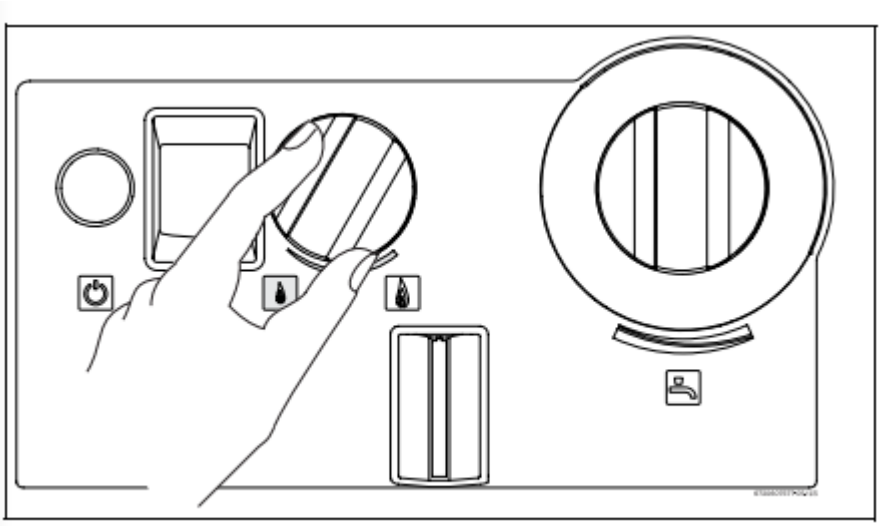
*Fig. 11*

Higher water temperature. Use more gas.

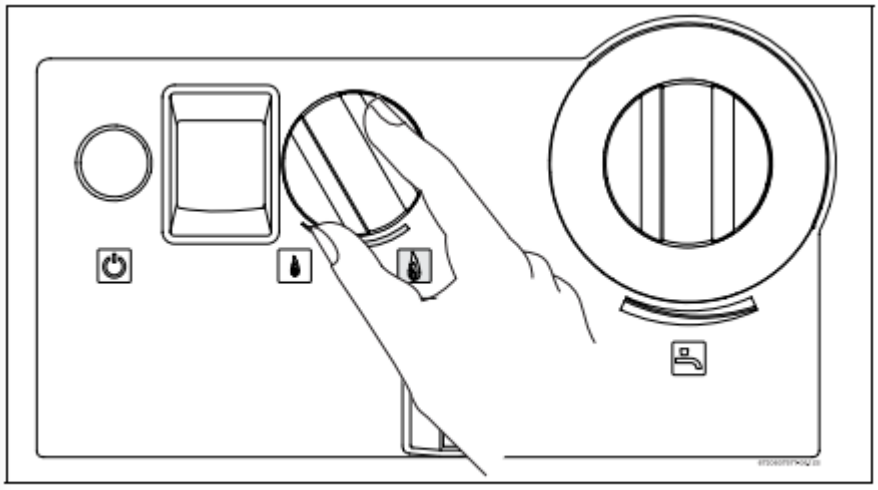

Fig. 12

**Temperature/flow adjustment**

- Turn anti-clockwise

Increases flow and decreases water temperature.

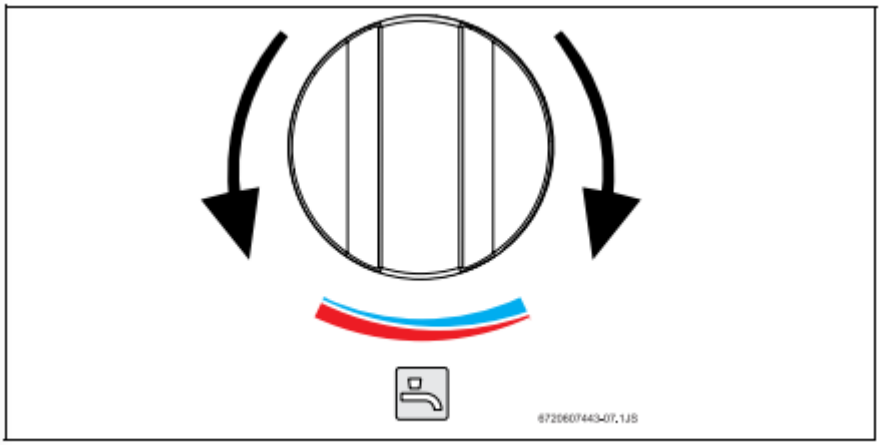

Fig. 13

- Turn clockwise.

Decreases flow and increases water temperature.

Regulating the temperature to the minimum required value reduces energy consumption.

## Draining the appliance

There are two ways to drain the appliance if there is a risk of freezing.

After turning off the inlet water valve and gas supply, open a hot water tap to relieve pressure then proceed as follows:

**Water valve draining (see fig 14)**

- Remove the fixing lock from the filter screw cap (no. 1) situated in the water valve.

• Remove the filter screw cap (no. 2) from the water valve.

• Empty all the water contained in the heater.

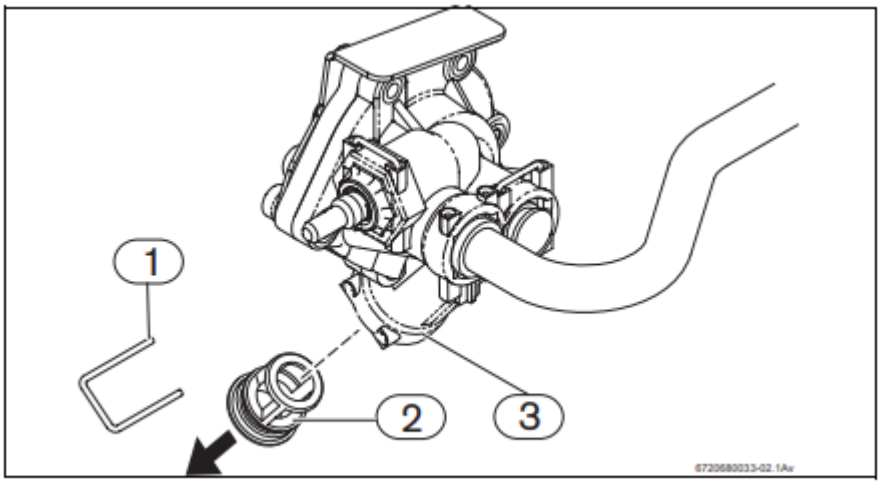


*Fig. 14 Draining*

1. Lock
2. Filter screw cap
3. Water valve

**Cold water inlet pipe drain (see fig 15)**

• Remove the pressure relief screw (no. 1) situated in the water inlet pipe.

• Drain all the water contained in the heater.

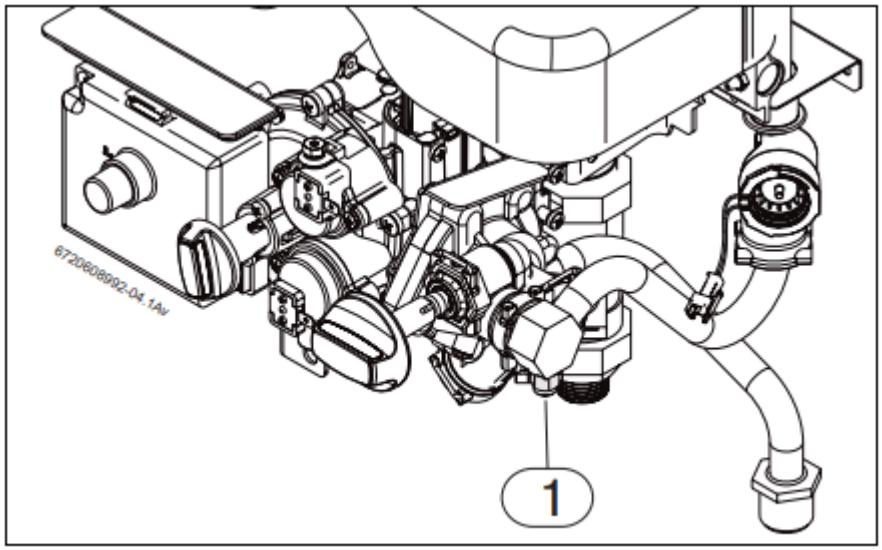


*Fig. 15 Draining*

1. pressure relief screw

# Commissioning

### Inlet pressure adjustment

**DANGER:** The following procedures must only be performed by a qualified technician.

Burner pressures have been adjusted in the factory, however adjustment may be required upon installation.

Attach a manometer to the inlet pressure test point located on the gas inlet pipe.

Inlet gas pressure should be adjusted at the appliance regulator to 1.13 kPa for Natural Gas and 2.75 kPa for LP gas.

These measurements must be set while the unit is operating.

## Burner pressure adjustment

### Accessing the adjusting screw

- Remove the front cover from the heater (see 4.3).

### Connecting the manometer

- loosen the burner test point captive screw (Fig. 16).
- Connect the manometer to the burner pressure measuring point.

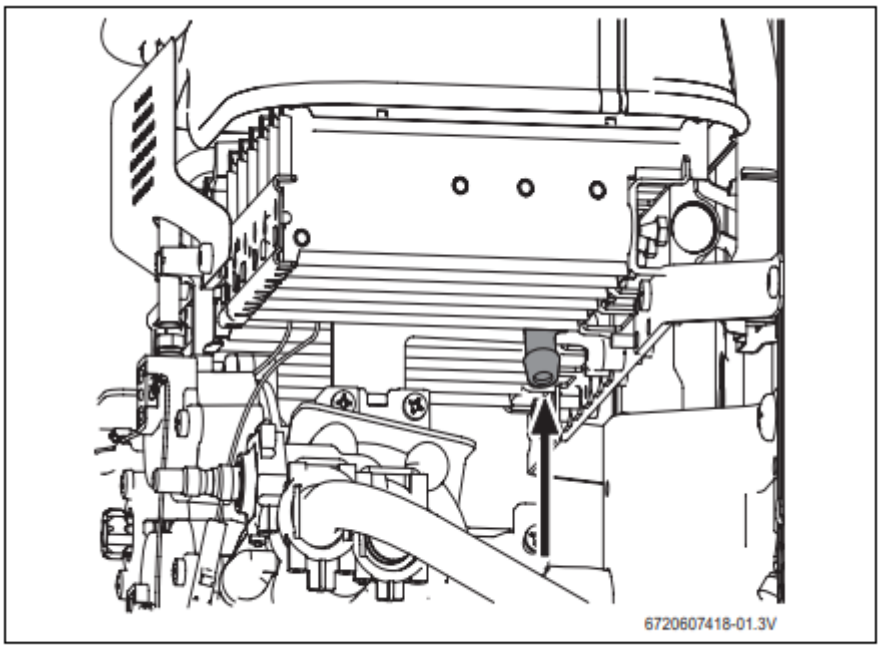


*Fig. 16 Pressure measurement point*

### Maximum gas flow adjustment

- Remove the seal from the adjusting screw (Fig. 17).

• Turn on the heater with the gas selector set to the left (maximum position).

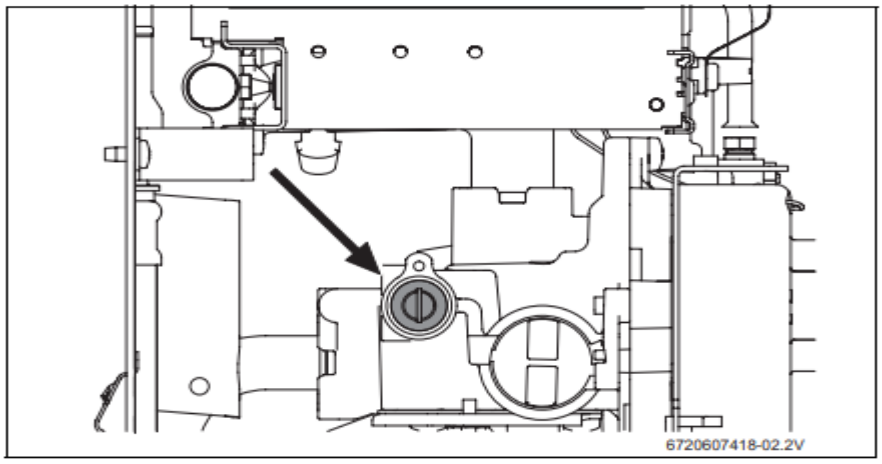


*Fig. 17 Maximum gas flow adjusting screw*

• Open various hot water taps.

• Using the adjusting screw (Fig. 17), regulate the gas pressure until the values indicated in the table 6 are achieved.

• Seal the adjusting screw once again.

**Minimum gas flow adjustment**

The minimum gas flow adjustment is performed automatically after the adjustment of the maximum gas flow.

*Table 6 Burner pressure*

| | | **Natural gas H** | **LP gas** |
|---|---|---|---|
| **MAX Burner** | GWH10 | 0.69 | 2.00 |
| **Pressure (kPa)** | GWH13 | 0.66 | 1.90 |
| | GWH16 | 0.44 | 2.20 |

## Conversion to a different type of gas

Only use **original conversion parts.**

The conversion must only be performed by a qualified technician. Original conversion kits are supplied with assembly instructions.

# Maintenance

**DANGER**: Failure to perform maintenance procedures can lead to appliance malfunction, errors, service calls and loss of warranty.

To ensure that gas consumption and the environmental load (pollution, etc.) remain as negligible as possible over time, we recommend the appliance be maintained on an annual basis.

These jobs can only be done by a Bosch authorised service agent.

> Maintenance must only be performed by a qualified technician. Maintenance information is contained in a service manual available to licenced technicians upon request from Bosch.

## Flue gas safety device

**DANGER**: The probe must never be turned off, modified or replaced with a different part under any circumstances.

### Operation and precautions

This probe verifies the condition of flue gas evacuation and, in case of malfunction, it automatically turns off the heater. This prevents combustion gases from entering the room where the gas heater has been installed. The probe restarts after a reset period.

If the heater turns off during operation:

- Ventilate the room.
- After 10 minutes, turn on the heater once again.

Call a qualified technician if the same thing happens again.

**DANGER**: The user must never touch the flue gas safety device

### Maintenance*

If the probe malfunctions, proceed as follows:

- Unscrew the probe fixing screw.
- Detach the ignition unit terminal.
- Replace the faulty part and re-assemble in reverse order.

### Operating check*

To check the correct operation of the flue gas safety device, proceed as follows:

- Remove the combustion gases flue pipe.
- temporarily replace it with a pipe (approximately 50 cm long) blocked at one end.
- The pipe must be installed vertically.
- Turn on the heater at nominal power and with the temperature selector adjusted to maximum temperature.

In these conditions, the heater must turn off no more than two minutes afterwards, at most. Remove the pipe and replace the flue pipe.

* These procedures must be performed by a qualified installer/service agent.

## Problems

### Problem/cause/solution

Assembly, maintenance and repairs must be performed by qualified technicians only. The following chart offers solutions to possible problems.

| Problem | Cause | Solution |
|---|---|---|
| The heater does not ignite and digital display is turned off. | Switch turned off. | Check switch position. |
| Slow and difficult ignition of the burner. | Reduced water flow. | Call a qualified technician. |
| Red LED in switch flashes. | Reduced water flow. | Call a qualified technician. |
| Water at low temperature. | | Check the temperature selector and adjust it according to the de water temperature. |
| Water is not heated, no flame. | Insufficient gas supply. Gas Cylinders may be empty | If sufficient gas appears to be av call a qualified technician. |
| Digital display shows **“E9”**. | Temperature limiter has tripped | Wait 10 minutes and restart the If the problem persists, call a qu technician. |
| Digital display shows **“A4”**. | Flue gas safety device has tripped | Vent the area. Wait 10 minutes a restart the heater. If the problem persists, call a qualified technici |
| Incorrect temperature information in the appliance digital display. | Insuficient contact of the temperature sensor. | Call a qualified technician. |
| Digital display shows “**E1**”. | Water temperature sensor has tripped (outlet water temperature above 85 °C). | Reduce the water temperature u the gas and/or temperature adju selector. If the problem persists, qualified technician. |
| Digital display shows “**A7**”. | Temperature sensor incorrectly connected. | Call a qualified technician. |
| | Temperature sensor defective. | Call a qualified technician. |

| | | |
|---|---|---|
| Digital display shows “**F7**” or “**E0**”. | Blocked Heater. | Turn the heater off and on, if the problem persists, call a qualified technician. |
| Digital display shows **“EA”**. | There is spark but the main burner | Check: |
| | does not ignite, heater blocked.No ionisation probe signal . | • Gas supply, position of valves, LP gas cylinders. |
| Digital display shows “**F0**”. | Power was activated with a hot water tap running. | Turn the water off and on. If the persists, call a qualified technici |
| Reduced water flow. | Insufficient water supply pressure. | Call a qualified technician. |
| | Dirty taps or mixers. | Call a qualified technician |
| | Gas valve blocked. | Call a qualified technician |
| | Heat exchanger blocked (limescale). | Call a qualified technician |

## Environmental protection

Environmental protection is a basic company strategy of Bosch. The quality of our products, profitability and environmental protection are equal-ranking goals for us. Laws and regulations concerning environmental protection are strictly observed. We use the best possible technology and materials, under economic considerations, to protect the environment.

### Packaging

We participate in the recycling program of the respective country to ensure optimal recycling. All of our packaging materials are environmental-friendly and can be recycled.

### Old appliances

Old appliances contain valuable materials that should be recycled. The assemblies can be easily detached and synthetic materials are marked accordingly. The assemblies can therefore be sorted out and passed on for recycling or disposal.

**Warning**

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.

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