



WARNING!

If these instructions are not followed exactly, a fire or explosion may be caused. This may cause property damage or loss of life and serious injury.

Do not store or use any gasoline or other flammable liquids or vapors near this or another system.

IF YOU SMELL GAS:

Do not switch on any electrical appliances.

Do not switch on any electrical switches, do not use a telephone in the same building.

Call the gas utility company immediately from outside the building. Follow these instructions.

If you cannot reach your gas utility company, call the fire department.

Only an authorized heating contractor, an appropriate service provider or the gas utility company may install and maintain the heating system.

Note: please keep these instructions safe for future use.

Logano G234X gas-fired boiler

For users

Please read carefully before use.

Contents

1	General safety instructions and explanation of symbols	3
1.1	Safety instructions	3
1.2	Symbols, explanation of	4

2	Product description	5
2.1	Intended use	5
2.2	Certification and testing mark	5
2.3	Disposal	5
2.4	Product description	6

3	Commissioning and operation	7
3.1	Before operating the appliance	7
3.2	Checking the operating pressure, top up the heating water, and bleed the system	7
3.2.1	Checking the operating pressure	7
3.2.2	Topping up the heating water and bleeding the system	8
3.3	Commissioning instructions	9
3.4	Starting up the heating system	10
3.5	Shutting off gas supply to boiler	11
3.6	Shut down the heating system	12
3.6.1	Normal shut-down	12
3.6.2	Shutting down the boiler in an emergency	13
3.7	Operating tips	13
3.8	Why is regular maintenance important?	13

1 General safety instructions and explanation of symbols

1.1 Safety instructions

Risk due to improper operation of the boiler

- ▶ Only use the boiler for its intended purpose.
- ▶ Only operate the boiler if it is in perfect condition.
- ▶ Have the heating system installed by a trained and certified installer.
- ▶ Ask your trained and certified installer to instruct you in the correct operation of your heating system.
- ▶ Read these operating instructions carefully.

Danger due to failing to consider your own safety in an emergency such as a fire

- ▶ Never risk your own life. Your own safety must always take the highest priority.

If you smell gas

- ▶ Close the gas shut-off valve.
- ▶ Open windows and doors.
- ▶ Do not operate any electrical switches or equipment such as telephones, power plugs and doorbells.
- ▶ Extinguish all open flames. Do not smoke! Do not use lighters.
- ▶ Warn all occupants of the building, but do not ring doorbells.
- ▶ If you can actually hear gas escaping, leave the building immediately. Prevent others from entering and notify the police and fire department **from outside** the building.
- ▶ **From outside the building**, call the gas utility company and approved heating contractor.

If you smell flue gas

- ▶ Switch off the heating system (→ page 12).
- ▶ Open windows and doors.
- ▶ Inform an authorized heating contractor.

Installation, conversion

- ▶ Correct and proper installation and adjustment of the burner and the control panel are the fundamental requirements for safe and economical operation of the boiler.
- ▶ The boiler may only be installed or converted by an approved heating contractor.
- ▶ Never change any parts in contact with flue gas.
- ▶ The hot water tank may only be used for heating domestic hot water.
- ▶ **Never shut off safety valves!**
Water may escape from the safety valve for the hot water system and piping when the water is being heated.

Inspection/maintenance

Heating systems must be serviced regularly for the following reasons:

- ▶ to achieve a high level of efficiency and to operate the system economically (low fuel consumption),
- ▶ to achieve a high level of operational safety,
- ▶ to maintain the cleanest combustion.
- ▶ **Recommendation for users:** take out a maintenance and servicing contract with an approved heating contractor covering annual servicing and condition-based maintenance.
- ▶ Servicing and repairs may only be carried out by an approved heating contractor.
- ▶ Have any faults repaired immediately in order to prevent further damage to the system.
- ▶ The operator is responsible for the general and environmental safety of the heating system.
- ▶ Use only genuine spare parts! Damage caused by the use of parts not supplied by Buderus is not covered by the Buderus warranty.

Risk of poisoning. Insufficient ventilation may cause dangerous flue gas leaks.

- ▶ Never close off or reduce the size of air intake and outlet openings.
- ▶ The boiler must not be operated until the obstruction has been removed.

Dangers posed by explosive and easily combustible materials

- ▶ Do not use or store easily-combustible materials (paper, lace curtains, clothing, thinners, paints, etc.) near the boiler.
- ▶ Maintain a clearance of 16.2 inches (415 mm) from the boiler.

Risk of water damage

- ▶ Do not use the appliance if any part of it has been under water.
- ▶ Call in a qualified customer service contractor immediately to check the appliance and replace any programming or gas valve components that have been under water.

Combustion air

- ▶ Keep the combustion air free of corrosive substances (e. g. halogenated hydrocarbons that contain chlorine or fluorine compounds). This will help prevent corrosion.

Danger of frost

- ▶ Make sure that the boiler room is protected from freezing.

Danger of explosion of flammable gases

- ▶ Mounting, gas and flue connection, initial commissioning, electrical connection and maintenance activities must only be carried out by an authorized heating contractor.
- ▶ Work on gas components may only be carried out by a specialist company that has the authorization to carry out this work.

Instructing the customer

- ▶ The operator must read the information on how the boiler works and have the heating system installer (approved heating contractor) explain how to operate it.

Additional important instructions

- ▶ Do not operate the appliance if any part has been under water. Contact a qualified customer service technician immediately. The service technician will check the appliance and replace the parts of the control system and gas valve that were under water.
- ▶ If the system overheats or the gas supply does not shut off, do not switch off or interrupt the power to the pump. Instead, shut off the gas supply at a location external to the boiler.
- ▶ The venting system must be inspected annually. All parts that show any signs of damage from corrosion or other causes must be replaced.
- ▶ The boiler must be serviced by qualified boiler service company once a year. The inspection must include the main burner, ignition burner, the entire venting system, and the venting openings or venting equipment. All parts that show any signs of damage from corrosion or other causes must be replaced.

1.2 Symbols, explanation of

Warnings in the text are indicated by a warning triangle and a grey background.

Signal words are used to indicate the seriousness of the ensuing risk if measures for minimising damage are not taken.

- **Caution** indicates that minor damage to property may occur.
- **Warning** means that minor injury or severe property damage may occur.
- **Danger** means that severe injury may occur. Very serious cases may result in death.



Notes are identified in the text by this symbol. They are separated by horizontal lines above and below the text.

Notes contain important additional information.

Notes do not contain any warnings or information about hazards or risks.

Cross-references to particular places in the document or to other documents are marked with an arrow →.

2 Product description

To ensure safe, economical and environmentally friendly use of the heating system, we recommend that you carefully read the safety instructions and operating instructions.

These instructions provide the operator of the heating system with an overview of the use and operation of the boiler.

2.1 Intended use

The boiler is designed for heating central heating system water and indirect provision of domestic hot water (e.g. via a hot water storage tank) in residential buildings or apartment buildings. Any other purpose is considered improper use.

2.2 Certification and testing mark

This appliance has been tested and meets the basic standards for the US and Mexican markets

2.3 Disposal

- ▶ Dispose of boiler packaging in an environmentally-responsible manner.
- ▶ All heating system components that have to be replaced should be disposed of in environmentally-responsible manner at an authorized disposal site.

2.4 Product description

The boiler is a low temperature gas-fired boiler.



The boiler is fully functional with the factory-installed aquastat. A Logamatic 2000 control can be installed in addition to the aquastat. The control unit can be ordered as an accessory from Buderus.

The boiler consists of:

- Automatic ignition unit and aquastat
- Boiler casing and front wall of boiler
- Boiler block with thermal insulation
- Burner
- Logamatic 2000 control unit (accessory)

The automatic ignition, the aquastat and, if applicable, the Logamatic 2000 control unit monitor and control all electrical components of the boiler.

The boiler casing and the front wall of the boiler prevent heat loss and reduce noise.

The boiler block transfers the heat generated by the burner to the boiler water. The insulation prevents energy loss.

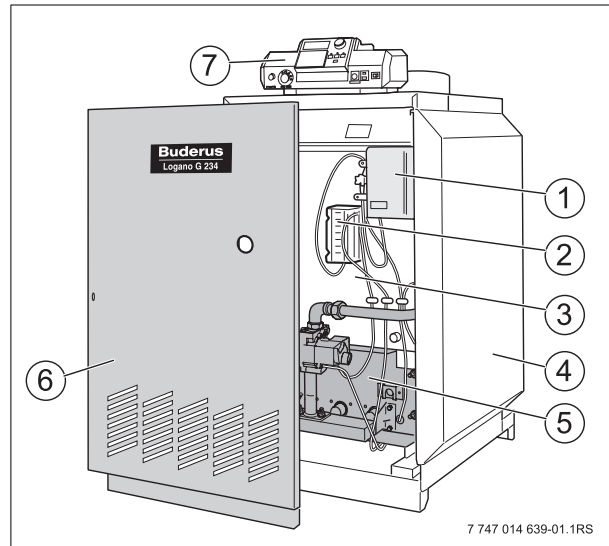


Fig. 1 G234X boiler

- 1 Aquastat
- 2 Burner control unit
- 3 Boiler block with thermal insulation
- 4 Boiler casing
- 5 Burner
- 6 Front wall of boiler
- 7 Logamatic 2000 control unit

3 Commissioning and operation

3.1 Before operating the appliance

Before commissioning the appliance, make sure that

- the operating pressure is sufficient
- the fuel supply has been turned on at the main shut-off valve, and
- the heating system emergency shutoff switch is in the ON position.

3.2 Checking the operating pressure, top up the heating water, and bleed the system

The water used for filling the heating system loses a substantial amount of volume in the first few days due to the release of its gas content. This causes air pockets to form and the heating water starts to make noises.

- ▶ With new heating systems, check the operating pressure daily at first, topping off the heating water and bleeding the radiators if needed.
- ▶ Later on, check the operating pressure monthly, topping off heating water and bleeding the boiler and radiators if needed.

3.2.1 Checking the operating pressure

Your heating contractor will have set the system to the required operating pressure of at least 15 psi (1 bar) and entered the setting in Tab. 1, page 8.

- ▶ Read the current operating pressure and temperature from the temperature/pressure gauge.
- ▶ If the temperature/pressure gauge needle drops below the minimum pressure marker of 15 psi (1 bar), the operating pressure is too low. Add water to the system.

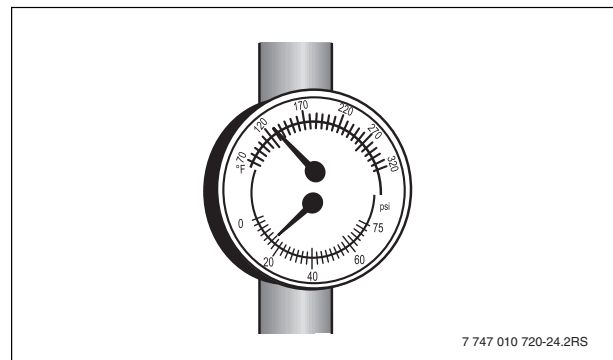


Fig. 2 Pressure/temperature gauge

3.2.2 Topping up the heating water and bleeding the system

Ask your heating contractor to show you where the boiler fill & drain valve for topping off the heating system is located in your heating system.



WARNING: Health risk from contaminated drinking water!

- ▶ It is imperative that you observe all regulations and standards applicable in your country regarding prevention of drinking water contamination.



CAUTION: Risk of damage to system due to temperature stress!

If you fill the heating system when it is hot, the resulting temperature stress can cause stress cracks. The boiler will then leak.

- ▶ Only fill the heating system when it is in a cold state. Maximum permissible supply temperature 100 °F (38 °C).

- ▶ Connect the hose to the water tap. Push a hose filled with water onto the hose connection of the boiler fill & drain valve, fasten with a hose clip and open the valve.
- ▶ Slowly fill the heating system. Observe the temperature/pressure gauge while filling.
- ▶ Turn off the water tap and the boiler fill & drain valve once the required operating pressure has been reached.
- ▶ Bleed the heating system via the purge valves on the heating bodies.
- ▶ Top up with water if the pressure drops as a result of bleeding the system.
- ▶ Remove the hose from the boiler fill and drain valve.



CAUTION: Risk of system damage due to frequent topping up!

If you have to top off the boiler water frequently, the heating system may suffer damage from corrosion or scale buildup, depending on the water quality.

- ▶ Ask your trained and certified installer if the local water can be used untreated or whether it needs to be treated.
- ▶ Notify your heating contractor if you find you need to top up your heating system frequently.

Operating pressure	
Design operating pressure (optimum setting)	_____ psi
Maximum heating system operating pressure (standard = 30 psi/2bar)	_____ psi

Tab. 1 Operating pressure (entered by system installer)

3.3 Commissioning instructions

For your safety, read before commissioning.



DANGER: Risk of fatal injury due to not observing the start-up instructions and resulting incorrect operation!

- ▶ If these instructions are not followed exactly, a fire or explosion may be caused. This can cause significant property damage or risk to life and limb.
- ▶ Observe the start-up instructions.



DANGER: Risk of explosion!
If you smell gas there is a danger of explosion.

- ▶ Close the gas shut-off valve.
- ▶ Open windows and doors.
- ▶ Do not operate any electrical switches or equipment such as telephones, power plugs and doorbells.
- ▶ Extinguish all open flames. Do not smoke! Do not use lighters.
- ▶ Warn all occupants of the building, but do not ring doorbells.
- ▶ If you can actually hear gas escaping, leave the building immediately. Prevent others from entering and notify the police and fire department **from outside** the building.
- ▶ **From outside the building**, call the gas utility company and approved heating contractor.

- A *This unit is fitted with an ignition module that automatically starts the pilot burner. Do not attempt to ignite it manually.*
- B *Check for an odor of gas around the heating system. This test must also be conducted at floor level, because some types of gas are heavier than air and may accumulate at floor level.*
- C *Switch on the ON/OFF switch on the gas valve by hand only. Never use a tool as assistance. If you cannot actuate the ON/OFF switch on the gas valve by hand, do not attempt to repair it. Contact a qualified customer service technician. Any attempt to use force or to repair the valve may cause a fire or explosion.*
- D *Do not operate the appliance if any part is under water. Contact a qualified customer service technician immediately. The service technician will check the appliance and replace the parts of the control system and gas valve that were under water.*

3.4 Starting up the heating system

STOP! First read the safety instructions on page 9 of these instructions.

- ▶ Set thermostat to the lowest value.
- ▶ Shut off the heating system from the power supply.
- ▶ Close main gas shut-off.
- ▶ Unscrew left and right screws [1] in the side panels, lift front wall of boiler [3] up, pull outward and remove to the front.

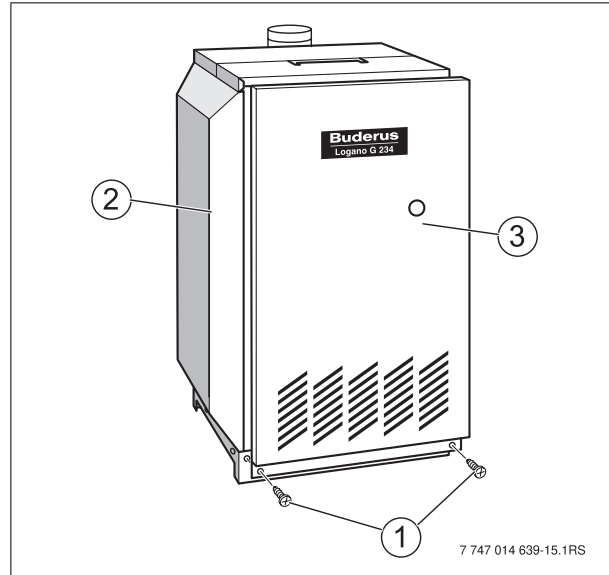


Fig. 3 Remove front wall of boiler

- 1 Locking screws
- 2 Boiler casing
- 3 Front wall of boiler

- ▶ Turn the gas valve ON/OFF button [1] clockwise to the OFF position. Do not use force.
- ▶ Wait five (5) minutes until all gas residues have dissipated. Finally check whether there is any smell of gas, including at floor level. If you smell gas, STOP! Follow instructions in section "B" of the safety instructions (→ page 9).
If you do not smell gas, go to the next step.



This unit is fitted with an ignition module that automatically starts the pilot burner. Do not attempt to ignite it manually.

- ▶ Turn gas valve ON/OFF switch [1] counterclockwise to ON position. Do not use force.
- ▶ Replace front wall of boiler (→ Fig. 3).
- ▶ Open main gas shut-off.
- ▶ Switch on electric power to heating system.

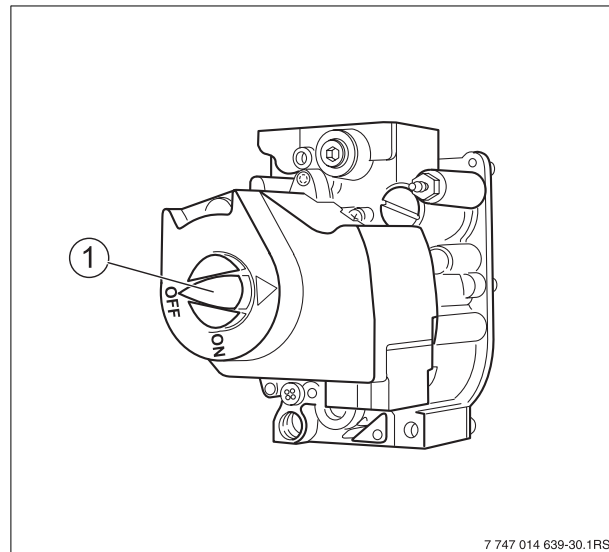


Fig. 4 Gas valve

- 1 ON/OFF button (at OFF position)

- ▶ Set thermostat to desired room temperature.
- ▶ If the heating system does not start up, follow the instructions "Shutting off gas supply to boiler" on page 11. After that, inform a customer service technician or the gas utility company.

3.5 Shutting off gas supply to boiler

- ▶ Set thermostat to the lowest value.
- ▶ Disconnect the heating system from the power supply before carrying out maintenance work.
- ▶ Unscrew left and right screws [1] in the side panels, lift front wall of boiler [3] up, pull outward and remove to the front.

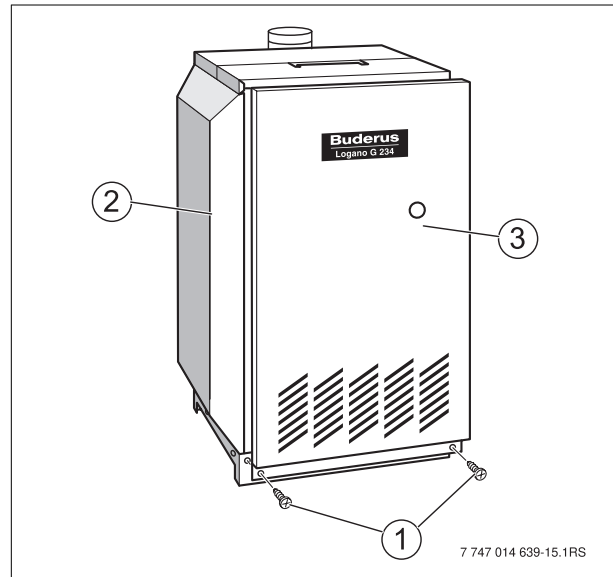


Fig. 5 Remove front wall of boiler

- 1** Locking screws
- 2** Boiler casing
- 3** Front wall of boiler

- ▶ Turn the gas valve ON/OFF button [1] clockwise to the OFF position. Do not use force.
- ▶ Close main gas shut-off if necessary.
- ▶ Replace front wall of boiler (→ Fig. 5).

Flame roll-out switch

The boiler is equipped with a flame roll-out switch. If the flue duct in the boiler is blocked, the flame roll-out switch responds.

Do not try to light the boiler in this case. Inform a qualified service company. The flue duct in the boiler must be checked for blockage and the flame baffle replaced. The flame roll-out switch is for one-time use only. Do not try to use it again.

Flue gas monitoring switch

The boiler is equipped with a flue gas monitor. If the flue gas escape of the boiler is blocked the flue gas monitoring switch reacts. The flue gas monitoring switch is mounted directly on the draft hood.

Do not try to light the boiler if the flue gas escape of the boiler is blocked. Inform a qualified service company. The flue gas path must be searched for blockages. In order to start the boiler up again, the flue gas monitoring switch must first be reset.

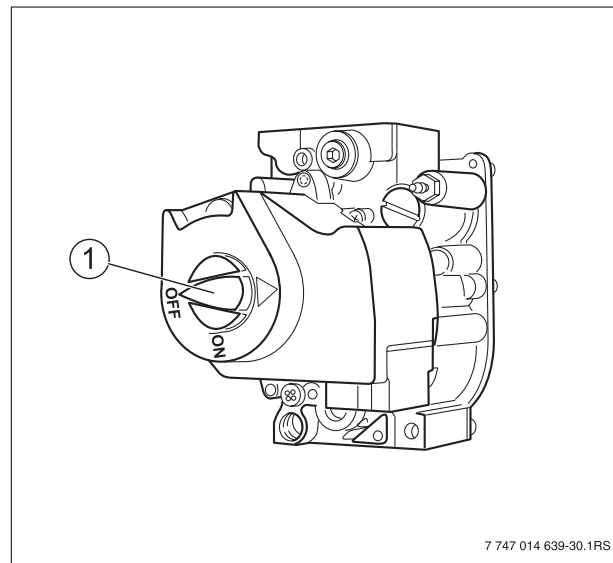


Fig. 6 Gas valve

- 1** ON/OFF button (at OFF position)

3.6 Shut down the heating system



CAUTION: Risk of system damage due to freezing!

If the heating system has been switched off, it may freeze in cold weather conditions.

- ▶ Leave the heating system switched on as long as possible.
- ▶ Protect your system from freezing by draining the boiler, the heating system and hot water pipes at the lowest point.

3.6.1 Normal shut-down

With aquastat:

- ▶ Switch off the on/off switch ("OFF" position). This switches off the boiler and all its components (e.g. burner).
- ▶ Further shut-down procedure refer to aquastat documentation.
- ▶ Shut off fuel supply by closing main valve.

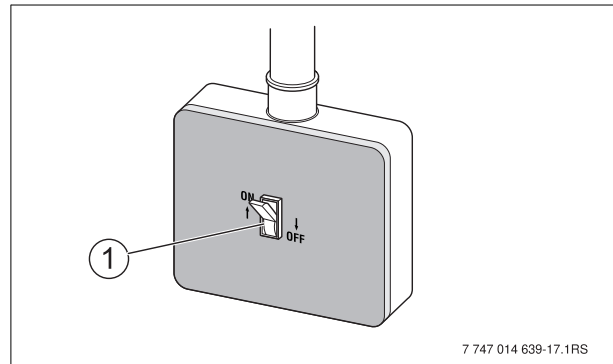


Fig. 7 Heating system shut-down (with aquastat)

- 1 Main power switch

With Logamatic 2000 control unit (accessory)

- ▶ Switch off the on/off switch ("0" position). This switches off the boiler and all its components (e.g. burner).
- ▶ Shut off fuel supply by closing main valve.

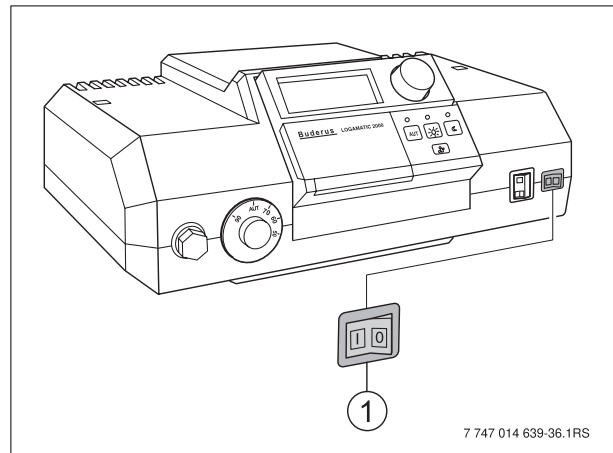


Fig. 8 Shutting down heating system (with Logamatic 2000 control unit)

- 1 Main power switch

3.6.2 Shutting down the boiler in an emergency



Use the heating system emergency shut-off switch located outside the boiler room or the heating system circuit breaker for emergency shutdown.

Action in an emergency

Behavior in an emergency, e.g. a fire:

- ▶ Never risk your own life. Your own safety must always take the highest priority.
- ▶ Shut off fuel supply by closing main valve.
- ▶ Disconnect the heating system from the electrical power supply by means of the emergency shutoff switch or the appropriate circuit breaker.

3.7 Operating tips

The right fuel

To ensure it operates properly, the heating system requires fuel of the correct type and grade.



CAUTION: Risk of system damage from use of incorrect fuel!

- ▶ Only use the fuel specified. The correct fuel is entered in Tab. 2 by the heating system installer.

Consult your heating engineer if you want to convert your heating system to a different fuel or run the boiler on fuel with different specifications.

Only use this fuel type
<div style="border-top: 1px solid black; width: 80%; margin: 0 auto; text-align: center;"> Stamp/Date/Signature </div>

Tab. 2 Fuel to be used (entered by heating system installer)

Notes about the boiler room



CAUTION: Risk of boiler damage from contaminated combustion air!

- ▶ Keep the combustion air free of corrosive substances (e. g. halogenated hydrocarbons that contain chlorine or fluorine compounds). This will help prevent corrosion.
- ▶ Prevent heavy accumulation of dust.



CAUTION: Risk of system damage from water!

- ▶ In the event of severe risk of flooding, disconnect the boiler from its power supply and shut off the fuel supply before water enters the boiler room.
- ▶ After the flood has subsided, ask your installer to check the heating system before starting it up again.
- ▶ All parts that have been in contact with water must be replaced by a qualified heating contractor.

3.8 Why is regular maintenance important?

Heating systems should be regularly maintained for the following reasons:

- to achieve a high level of efficiency,
- to operate the system economically (low fuel consumption),
- to maintain the cleanest combustion.



CAUTION: Risk of damage to system due to lack of or inadequate cleaning and maintenance!

- ▶ Have your heating system inspected, cleaned and maintained by a heating contractor once a year.
- ▶ We recommend you sign a contract covering an annual inspection and maintenance on an as-required basis.

Notes

Notes

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