

# Installation and Service Instructions

**Low Emissions and High Efficiency Condensing Oil Boiler**



## **CAUTION!**

Observe the safety instructions of this installation and maintenance manual before placing the boiler in operation.

## **DANGER!**

Installation, adjustment, modification, operation or maintenance of the heating system carried out by an unqualified person may result in danger to life and limb or property damage.

The directions of this installation and maintenance manual must be followed precisely.

Contact a trained and certified service company or service provider if support or additional information is required.

## **CAUTION!**

The operating manual is a component of the technical documentation and must be handed over to the operator of the heating system.

Discuss the instruction in this manual with the owner or operator of the heating system to ensure that they are familiar with all information required for operation of the heating system.

## **Logano GB125 BE US/CA**

**For trained and certified installers**

**Please read carefully prior to installation, maintenance and service**

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# 1 Safety instructions and explanation of symbols

## 1.1 Safety instructions

### If you smell flue gas

- Switch off the boiler (→ page 38).
- Open windows and doors.
- Inform an authorized heating contractor.

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

- Never close off or reduce the size of air inlet or outlet vents.

The boiler must not be operated until the obstruction has been removed.

- Ensure that no mechanical air-extraction equipment draws air from the boiler room, e.g. kitchen vent hood, clothes dryer, central vacuum system, etc.
- Inform the system operator in writing of an existing problem and associated danger.

### Danger from escaping flue gases

- Make sure that the flue pipes and seals are not damaged.
- Use silicone as sealing compound.
- Never install a barometric nor a thermally controlled vent damper with this boiler.
- Connect only one boiler to each flue system or chimney flue.
- The flue system piping must not feed into another air extraction duct.
- Do not route the flue system piping through or inside another duct, used for exhausting air or other flue gases.
- The condensate trap must be primed at all times. Failure to do so will allow combustion gases to escape into boiler room.

### Dangers posed by explosive and combustible materials

- Do not use or store combustible materials (paper, lace curtains, clothing, thinners, paints, etc.) near the boiler.
- Maintain a clearance of 16 inches from the boiler.

### Combustion air

- Keep the supply of air for combustion free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds). In that way you will prevent corrosion.

### Danger from electrical shock

- Before opening the boiler:  
Disconnect the heating system from the electrical power supply by means of the emergency shutoff switch or the heating system circuit breaker on the main fuse panel.
- It is not sufficient just to switch off the control.
- Take measures to ensure the heating system can not be switched on again unintentionally.

### Installation

- Correct and proper installation and adjustment of the burner and the controls are the fundamental requirements for safe and economic operation of the boiler.
- The boiler may only be installed and maintained by a trained and certified heating contractor.
- Do not modify any parts that carry flue gases.
- Only qualified electricians are permitted to carry out electrical work. Follow applicable code.
- The hot water tank may only be used for heating domestic hot water.
- **Never shut off safety relief valves!** Water may escape from the safety relief valve when the water is being heated.



### DANGER TO LIFE

by failure to consider your own safety in an emergency such as a fire.

- Never put yourself at risk of fatal injury. Your own safety must always take the highest priority.

### Maintenance and service

Heating systems should be regularly maintained 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 reliability,
- to maintain the cleanest possible combustion.
- **Recommendation for users:** sign a maintenance and servicing contract with a trained and certified heating contractor covering annual servicing and condition-based maintenance.
- Servicing and repairs should only be carried out by a trained and certified heating contractor.
- Have any faults immediately corrected in order to prevent damage to the system.
- Use only genuine spare parts. Damage caused by the use of parts not supplied by Buderus is not covered by the Buderus warranty.

### Instructing the customer

- Explain to the customer how the boiler works and how to operate it.
- Inform the customer that he/she must not carry out any alterations or repairs.

## 1.2 Explanation of symbols



**Warnings** 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 minimizing damage are not taken.

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



**Notes** are identified in the text by this symbol. They are bounded 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 →.

### 1.3 Standards, regulations and code compliance

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It is the installers responsibility to ensure the installation and operation of this heating system meets all applicable federal, state, and local codes.

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The boiler must be installed by a qualified installer and in accordance with all requirements of NFPA-31, "Installation of Oil-Burning Equipment". Installation must comply with all local and national legal requirements and the regulations of all institutions having legislative authority with regard to the installation of oil-fired boilers.

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### 1.4 Notes on installation and operation

When installing and operating the heating system observe the following:

- The local building codes regarding the installation
- The local building codes regarding combustion air supply and venting systems, and the chimney connection
- Regulations governing electrical connection to the mains power supply
- The regulations and standards relating to the safety systems for the water heating system

#### 1.4.1 Other important information

- Only operate the boiler with the concentric air/venting system specifically designed and approved for it.
- Follow the local code when connecting the condensate outlet to the public sewer system.

## 2 Product description

This installation and maintenance manual contains important information for the safe and correct installation, initial start-up and maintenance of this boiler.

The Logano GB125 BE oil-fired condensing boiler is generally referred to below simply as the boiler.

These installation and servicing instructions are intended for trained and certified heating contractors, who – as a result of their technical training and experience – are skilled in dealing with heating systems and DHW installations.

This boiler must be installed with one of the Buderus supplied concentric heating systems.

- Concentric direct vent side wall kit
- Concentric vertical kit
- Concentric masonry chimney kit

This boiler produces significant amounts of acidic flue gas condensate while in operation. Condensate may cause damage to sewer pipes and septic systems, and disposal may be subject to local regulations. In the absence of such regulations Buderus recommends a condensate neutralization kit.

The boiler must draw all combustion air from the outside.

### 2.1 Intended use

The boiler is designed for heating central heating system water and indirect heating of domestic hot water (e.g. in a hot water tank), for instance in single family homes or multi family buildings.

## 2.2 Product details

This boiler is an oil-fired, fan-assisted condensing boiler with modulating control of boiler water temperature.

The boiler consists of:

- Control panel
- Boiler jacket
- Boiler heat exchanger with insulation
- Burner
- Heat exchanger system

The controls monitor and control all electrical boiler components.

The boiler jacket prevents heat loss and acts as a noise insulator.

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

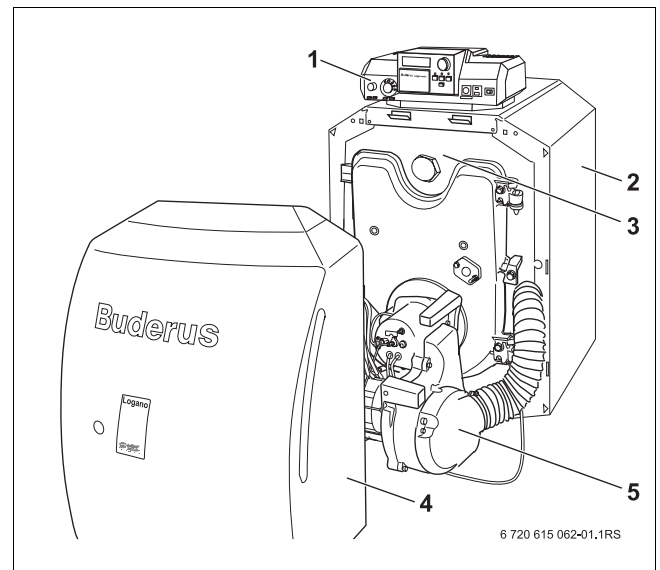


Fig. 1 Boiler with burner

- 1 Control panel - Logamatic
- 2 Boiler jacket
- 3 Boiler heat exchanger with insulation
- 4 Burner hood
- 5 Burner

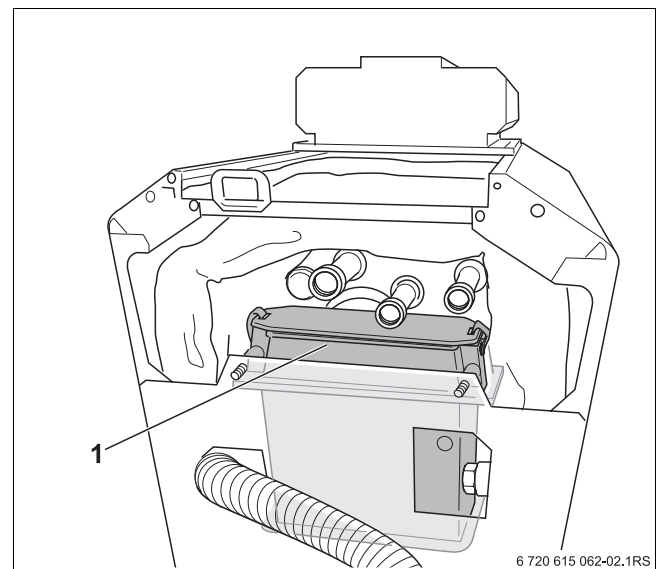


Fig. 2 Rear view with heat exchanger (thermal insulation not shown)

- 1 Secondary condensing heat exchanger system

### 2.3 Heating system water quality

Poor water quality can damage heating systems due to scale formation and corrosion (Tab. 8).



**Caution:** Risk of system damage due to unsuitable heating system water.

- If oxygen-permeable pipes are used, e.g. for radiant heating systems, the systems must be separated from the boiler by a heat exchanger. Unsuitable heating system water promotes sludge formation and corrosion. This can result in heat exchanger malfunction and damage.

### 2.4 Tools, materials and accessories

For the installation and maintenance of the boiler, you need standard tools used for central heating and DHW systems, plus metric wrenches and metric Allen wrenches.

The following may also prove useful:

- Hand truck with securing strap or Buderus boiler cart
- Wood battens
- Cleaning brushes and/or chemical cleaning agent for wet cleaning

## 2.5 Package Contents

- Upon delivery, check that the packaging is undamaged.
- Check the delivery for completeness.

Component	Qty	Packaging
Boiler heat exchanger	1	1 pallet
Boiler casing, factory-fitted to boiler heat exchanger		
Burner hood, factory-fitted to boiler heat exchanger		
Heat exchanger system		
Oil burner with factory-fitted burner door		
Air supply hose, factory-fitted		
Condensate trap	1	1 bag <sup>1)</sup>
B-kit components:	1	1 bag <sup>1)</sup>
– Conversion nipple (1¼" NPT)		
– 30 psi relief valve		
– Boiler drain (¾")		
– Pressure/temperature gauge		
– Double nipple (1¼" NPT × R1¼)		
– 90°-elbow (1¼" NPT)		
– 90°-elbow (¾" NPT)		
– Burner mounting studs and washers		
– Adjustable feet		
Logamatic control panel	1	1 box
Tigerloop oil filter and deaerator	1	1 box
Concentric vent connector	1	1 box
Technical documentation		1 bag

Tab. 1 Package Contents

1) Under the burner hood

## 2.6 Dimensions and specifications

### 2.6.1 Logano GB125 BE dimensions

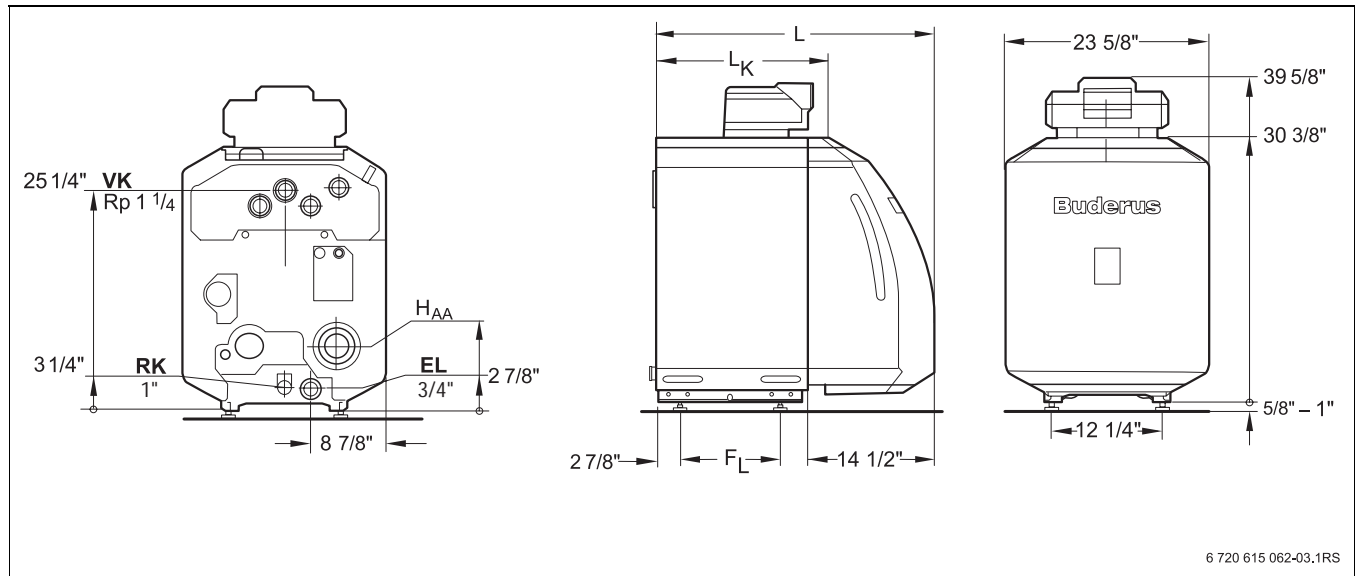


Fig. 3 Connections and dimensions (measurements in inches)

- VK** = Boiler supply
- RK** = Boiler return
- EL** = Boiler drain (connection for drain valve)

#### Dimensions and connections:

Boiler model	Unit	GB125/22 BE	GB125/30 BE	GB125/35 BE
<b>Boiler sections</b>		3	4	5
<b>Rated heat output (gross output) 131/86 °F</b>	<b>MBtu/hr</b>	76	102	124
<b>Rated heat output (net IBR rating) 131/86 °F</b>	<b>MBtu/hr</b>	67	90	109
<b>Rated heat output (gross output) 176/140 °F</b>	<b>MBtu/hr</b>	74	99	120
<b>Rated heat output (net IBR rating) 176/140 °F</b>	<b>MBtu/hr</b>	64	86	104
<b>Flue gas temperature 176/140 °F</b>	<b>°F</b>	176	176	192
<b>Boiler water content</b>	<b>gal</b>	8.7	11.8	11.8
<b>Gas capacity</b>	<b>cu.ft.</b>	1.20	1.75	1.75
<b>Oil firing rate</b>	<b>gph</b>	0.6	0.8	1.0
<b>Flue gas back-pressure</b>	<b>in. W.C.</b>	0.08" - 0.14" W.C.		
<b>Heat exchanger water pressure loss (DeltaT = 18°F)</b>	<b>ft. of head</b>	1.8'	2.0'	2.7'
<b>Maximum flow temperature<sup>1)</sup></b>	<b>°F</b>	212		
<b>Maximum operating pressure</b>	<b>psi</b>	44		
<b>Maximum time constant of thermostat and high limit safety cut-out (STB)</b>	<b>s</b>	40		

Tab. 2 Specifications

- 1) Safety manual reset high limit (safety temperature limiter, STB)  
 Maximum possible flow temperature = Safety limit (STB) - 32 °F  
 Example: Safety limit (STB) = 212 °F, maximum possible flow temperature = 212 - 32 = 180 °F  
 The safety limit must meet the national regulations of the country concerned.

Boiler model	Unit	GB125/22 BE	GB125/30 BE	GB125/35 BE
Boiler overall length (L)	inch	37 1/2"	42 3/8"	42 3/8"
Boiler block length (LK)	inch	25 3/4"	30 1/2"	30 1/2"
Combustion chamber length	inch	16"	20 1/2"	20 1/2"
Combustion chamber length	inch	10 5/8"		
Burner door thickness	inch	2 1/3"		
Distance between boiler feet (FL)	inch	16 1/8"	20 7/8"	20 7/8"
Net weight <sup>1)</sup>	lbs	423	503	503

Tab. 3 Dimensions, weight and other data for boilers without burners

1) Weight incl. packaging material approx. 6- 8 % more.

## 2.7 Conditions for operation

Maintaining the specified operating conditions will enable the boiler to provide a high level of reliability and long service life. Some details relate only to operation with Buderus Logamatic control panels.



**Caution:** Risk of system damage if operating conditions are not maintained.

Extreme divergence from the stated conditions may cause irreversible damage to individual components of the boiler as a whole.

- The information on the rating plate is definitive.

### 2.7.1 General operating conditions

Operating conditions			
Min. boiler water temperature	Operating interruption (complete boiler shutdown)	Heating circuit with heating circuit mixer <sup>1)</sup>	Min. return temperature
<b>In combination with Logamatic control for variable low-temperature operating modes, such as Logamatic 2107</b>			
no requirements operating temperatures are ensured by the Logamatic controls <sup>2)</sup>	Automatically by Logamatic controls	not required but recommended with low-temperature heating system design 130/113 °F  Required with: – Underfloor radiant heating systems – Systems with large water capacity: > 115 gal/MBH (1 MBH = 100,000 Btu/hr)	No requirements

Tab. 4 General operating conditions

- 1) A heating circuit with a mixer improves controllability and is specifically recommended for systems with several heating circuits.
- 2) If heating zones or a boiler circuit actuator cannot be regulated via the control device (for example pump logic), an operating temperature of 122 °F must be reached within 10 min of switching the burner ON by restricting the water volume flow.

### 2.7.2 Boiler room and ambient conditions

Operating conditions		Notes – Requirement in greater detail
Temperature in the boiler room	+40 to +104 °F	
relative humidity	max. 90 %	No condensation or precipitation inside the boiler room
Dust/airborne particles	–	<p><b>Excessive dust inside the boiler room must be avoided when the boiler is operating, e.g.:</b></p> <ul style="list-style-type: none"> <li>– dust from building work</li> </ul> <p><b>Combustion air supplied from outside must not be excessively loaded with dust or airborne seed; if necessary, air filters should be fitted to prevent this:</b></p> <ul style="list-style-type: none"> <li>– Air supply contaminated with dust from dirt roads and paths.</li> <li>– Air supply contaminated with dust from production and processing facilities, e.g. quarries, mines, etc.</li> <li>– Airborne particles from thistles and similar</li> </ul>
Halogenated-hydrocarbon compounds	–	<p><b>The combustion air must be free from halogen-hydrocarbon compounds.</b></p> <ul style="list-style-type: none"> <li>– Identify the source of halogen-hydrocarbon compounds and seal it off. Where this is impossible, route combustion air from areas that are not contaminated by halogenated-hydrocarbon compounds.</li> </ul>
Small animals	–	Prevent small animals from entering the boiler room, particularly through the air inlet vents – by fitting them with screens.
Fire safety	–	Maintain clearances between the boiler and flammable materials in accordance with local regulations. A minimum clearance of 16" is required. Never store flammable materials or liquids in the vicinity of the boiler.
Flooding	–	In case of an acute risk of flooding, disconnect the boiler in time from the from its fuel and power supply before water enters the room. Any general and burner components or control equipment, which come into contact with water, must be replaced before re-commissioning.

Tab. 5 Boiler room and ambient conditions

### 2.7.3 Fuel conditions

Country	All countries
<b>Fuels</b>	#2 Fuel oil ASTM D396-05 Type 2 Approved for B5 Fuel Oil
<b>Remarks</b>	The burner may only be operated with the specified fuel. Clean and service once a year. Check that the entire system functions properly at the same time. Immediately rectify any faults identified.

Tab. 6 Country-specific fuels and remarks

### 2.7.4 Power supply conditions

Operating conditions		Notes – Requirement in greater detail
Mains supply voltage	110 - 120 V	The outer casing/boiler must be grounded for safety reasons and in order to function correctly.
Circuit breaker	10 A	
Frequency	60 Hz	
Enclosure rating	–	IP 40 (protected against contact by entry of foreign objects > 0.04 inches Ø (> 1 mm Ø), no water proofing)

Tab. 7 Power supply

### 2.7.5 Hydraulic conditions and water quality

Operating conditions		Notes – Requirement in greater detail
Operating pressure (above atmospheric)	15 – 44 psi	Maximum 30 psi with the supplied safety valve.
Permissible testing pressure	45 – 58 psi	
Safety temperature limitation by TR temperature control	122 – 194 °F	
Safety temperature limitation by manual reset high limit (STB)	212 °F	
Water quality	–	The heating system may only be filled and topped up with water of domestic water quality. We recommend a pH level of 8.2 – 9.5.

Tab. 8 System configuration and water quality

## 2.8 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.

### 3 Moving the boiler

This chapter details how to move the boiler safely.



**Caution:** Risk of system damage from impact shocks!

Fragile components could be damaged.

- Observe the transport instructions on the packaging.



Protect boiler connections from damage and dirt if the boiler is not installed immediately.



Dispose of packaging in an environmentally responsible manner.

#### 3.1 Reducing the boiler weight for handling purposes

If required, you can reduce the weight of the boiler by removing the burner hood and door.

- Unscrew the burner-hood screws.
- Lift burner hood slightly and draw forwards to remove.
- Before removing the burner door: unplug the burner plug from the burner control unit.

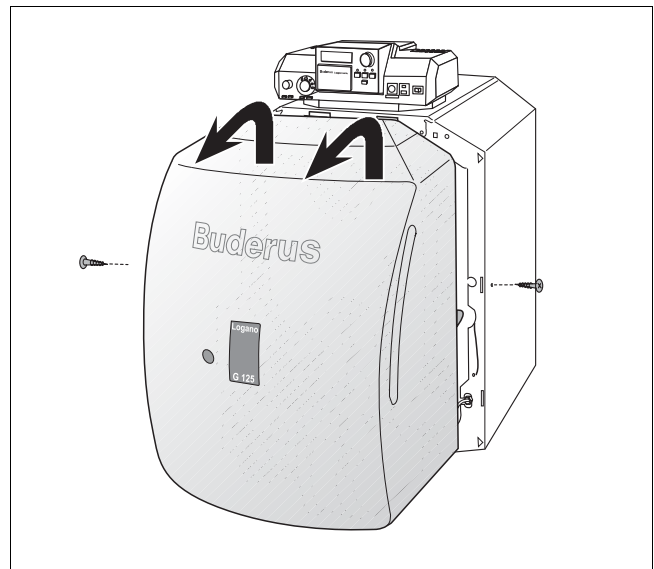
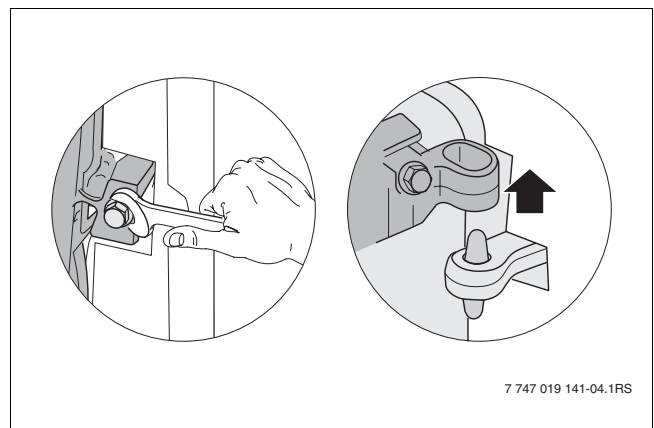


Fig. 4 Removing burner cover



Prevent the burner door from falling over and damaging the burner and blast tube.

- Unscrew two hex-head bolts at the sides.
- Open burner door.
- Lift the burner door off its hinges.



7 747 019 141-04.1RS

Fig. 5 Removing the burner door

### 3.2 Lifting and carrying the boiler



The boiler is secured to the pallet by 2 screws for transportation purposes.

The boiler can be held and carried at the grip positions shown (Fig. 6).

- Undo the transit screws.



**Warning:** Risk of injury from carrying heavy loads.

- Always lift and move the equipment with the assistance of another person using the handle positions shown.

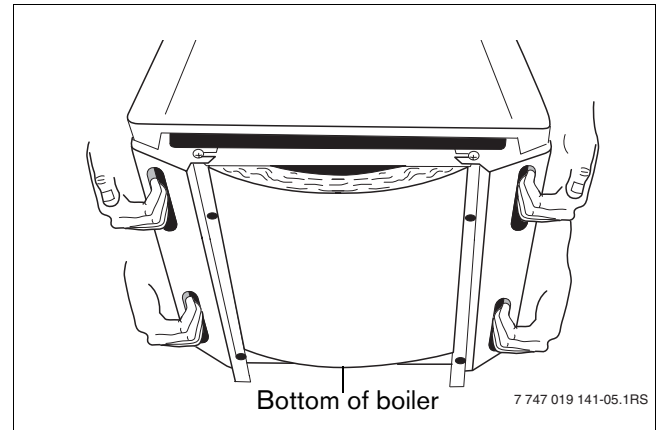


Fig. 6 Lifting and carrying the boiler

### 3.3 Moving the boiler with hand truck



**Warning:** Risk of injury if load is inadequately secured during transportation.

- Use suitable means of transportation, e.g. the Buderus boiler hand truck with strap.
- Secure the load against falling.



You can order the boiler hand truck from your Buderus distributor.

Moving the boiler with hand truck (Fig. 7)

- Place the hand truck (e.g. boiler trolley or sack truck) at the back of the boiler.
- Secure boiler to hand truck using strapping.
- Move the boiler to the installation location.



The boiler trolley can also be used to facilitate work on the underneath of the boiler, e.g. fitting the adjustable feet (→ Chapter 4.3, page 18).

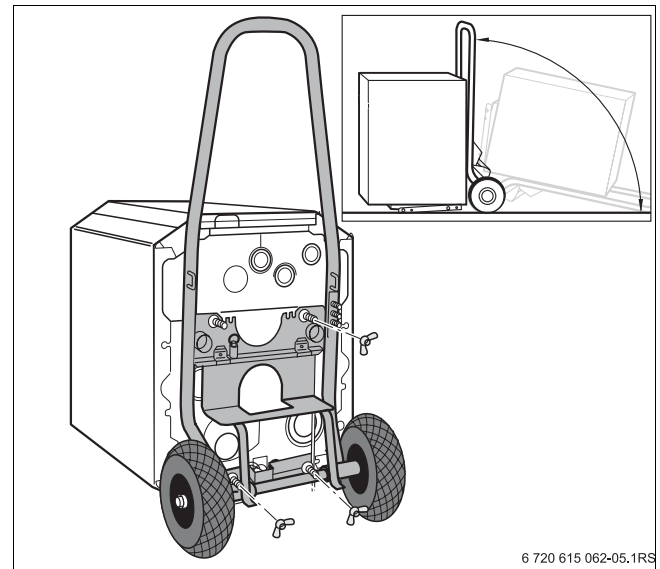


Fig. 7 Moving the boiler with a boiler hand truck

## 4 Placing the boiler

This chapter describes how to install and place the boiler in the boiler room.



**Caution:** Risk of system damage due to freezing.

- Install the heating system in a frost-free room.

### 4.1 Wall clearances

Wherever possible, position the boiler with the recommended wall clearances. Reducing the minimum clearances makes the boiler more difficult to access.

The boiler base or foundation must be perfectly flat and level.

The burner door is factory-fitted with the hinges on the right. The burner door can be converted to left hand closing.

Dimension	Wall clearance	
A	Recommended	40"
	minimum	27"
B	Recommended	27"
	minimum	16"
C	Recommended	28"
	minimum	20"
D	Recommended	16"
	minimum	6"
L	→ Chapter 2.6.1, page 10	

Tab. 9 Recommended and minimum wall clearances (dimensions in inches)



The boilers are designed for a side clearance of 6".

Where applicable, allow extra wall clearances for additional components such as DHW tank pipe connections, flue silencer, other flue components, etc.



**Warning:** Risk of fire from flammable materials or liquids.

- Clearances less than 6" must comply with local and statutory codes.
- Make sure that there is a sufficient clearance between combustible materials and the chimney connection as specified by NFPA 31 (distance of 18").
- The floor must comply with the requirements of NFPA 31.

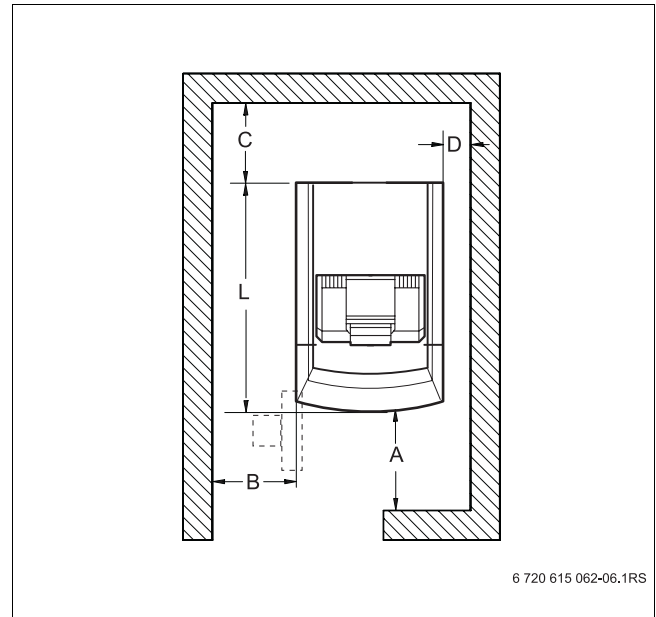


Fig. 8 Wall clearances in the boiler room (boiler positioned on the right-hand side)

## 4.2 Reversing the burner door

The burner door is factory-fitted with the hinges on the right – the burner door opens to the right. You can change the burner door hinges over to the left-hand side if required to suit the installation site.

Requirement: the burner hood must have been removed first (→ Chapter 3.1, page 14).

- Removing the burner door (→ Chapter 3.1, page 14).
- Unscrew the hinge-pin bolts [1] and remove the hinge pins [2].
- Fix the hinge pins [2] on the left-hand side of the boiler using the hinge-pin bolts.

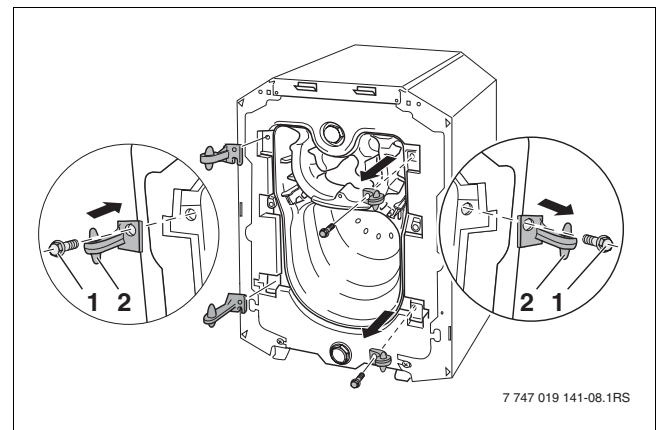


Fig. 9 Reversing the burner door (boiler heat exchanger attachments)

- 1 Hinge bolts
- 2 Hinges

- Unscrew the hinge-barrel bolts [1] and remove the hinge barrels [2].
- Fix the hinge barrels [2] on the left-hand side of the burner door [3] using the hinge-barrel bolts.
- Hang the burner door [3] by locating the hinge barrels [2] on the hinge pins [4].
- Check that the heat exchanger baffles are placed horizontally (→ Chapter 6.3, page 34).
- Close the burner door [3] and secure with the two hexagon-head bolts. Tighten the hexagon-head bolts evenly (approx. 90 lb ins) so that the burner door seals properly.



If the burner door hinges have been changed over to the left-hand side, the burner cable must be disconnected from the burner before opening the burner door.

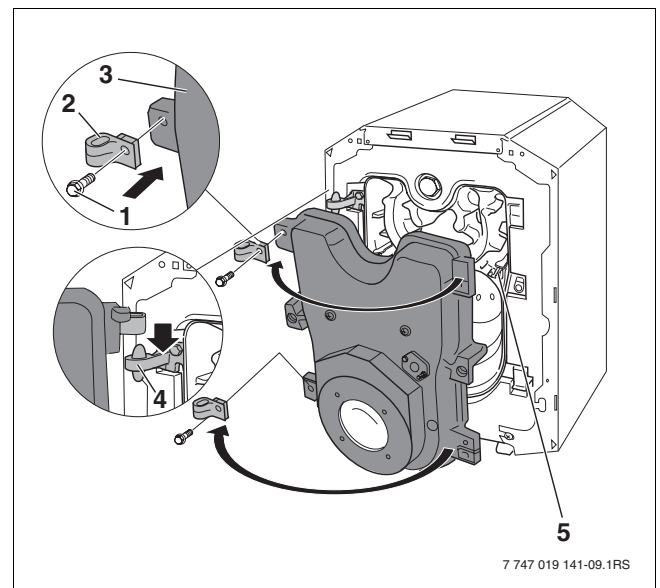


Fig. 10 Reversing the burner door (door attachments)

- 1 Hinge-barrel bolts
- 2 Hinge lobes
- 3 Burner door
- 4 Hinges
- 5 Heat exchanger baffle plates

### 4.3 Mounting the adjustable feet (included with B-kit)

Level the boiler by turning the adjustable feet to prevent air pockets becoming trapped inside the boiler.

Requirement: the burner hood or burner door panel must have been removed first (→ Chapter 3.1, page 14).



If the boiler is mounted on top of a horizontal hot water tank the adjustable feet are not used.

- Tilt the boiler with the aid of a hand truck or trolley (→ Chapter 3.3, page 15) or place a wooden batten underneath to jack it up.
- Screw in adjustable feet [2] 1/4" – 1/8".
- Gently set the boiler down.

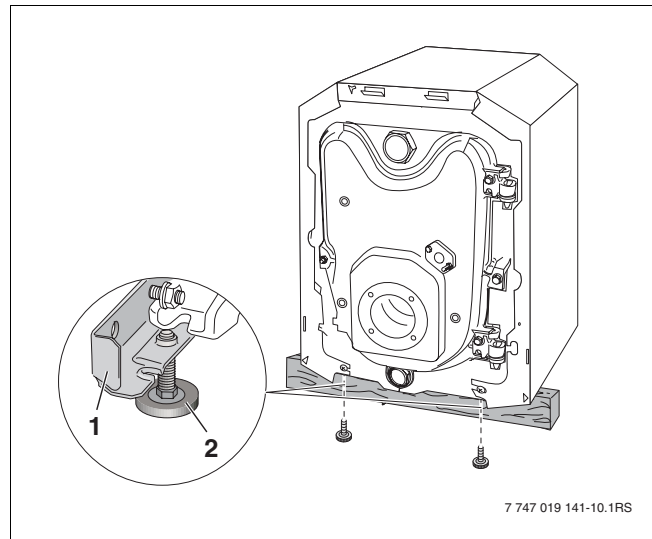


Fig. 11 Fitting the adjustable feet  
(burner not shown)

- 1 Angle bracket
- 2 Adjustable feet

### 4.4 Positioning and leveling the boiler

- Position the boiler in its final location.
- Level the boiler by rotating the adjustable feet as required and using a level.



Protect boiler connections from damage and dirt if the boiler is not to be installed immediately.

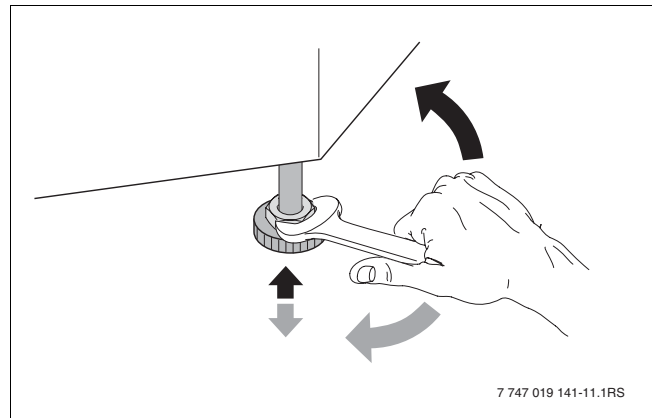


Fig. 12 Leveling the boiler

## 5 Boiler installation

This chapter details how to install your boiler correctly. This involves the following steps:

- Connecting the venting system
- Providing air supply for combustion
- Connecting the water pipes
- Making the electrical connections
- Connecting the fuel supply



**Danger:** Risk of fatal injury from toxic flue gases.

- Never connect more than one boiler to a flue system – regardless of whether the flue is vertical or horizontal.
- Common venting appliances can cause damage to property and personal injury.
- Do not route the flue system through another flue system that is in use, e.g. a masonry chimney connected to a wood stove.
- Follow the instructions of the flue pipe manufacturer.



The boiler must be installed by a trained and certified installer in accordance with all requirements of NFPA-31, "Installation of Oil-Burning Equipment". Installation must comply with all local and national codes applicable to the installation of oil-fired boilers.

In Canada, the requirements of CSA/CGA-B149.1 and 2 Installation Codes apply.



The GB125 boiler is approved for zero (0") clearance between its concentric vent pipe and combustibles.



Because of the tight construction of modern houses, this boiler must draw all air supply for combustion from outside (RLU).

### 5.1 Flue pipe installation

The overall burner air supply/boiler flue pipe system conforms to the types of oil combustion equipment listed in the table below.

Observe the national standards and regulations for operating oil-fired appliances.

Installation Type	Combustion air supply and flue system
I	Concentric combustion air supply and flue pipe exiting horizontally through external wall. Combustion air supply and flue systems are part of the combustion equipment.
II	Concentric combustion air supply and flue pipe system exiting vertically through roof. Combustion air supply and flue systems are part of the combustion equipment.
III	Vent pipe installed inside a masonry chimney. The space around the vent pipe is used for combustion air.

Tab. 10 Types of installation

GB125		
Max. back pressure at air intake	in W.C.	0.83"

Tab. 11 Air intake piping back pressure

## 5.2 Test ports

Flue gas readings and combustion air temperature readings are taken exclusively at the dedicated testing ports.

Follow the directions in the instructions for the Logatop BE oil burner.

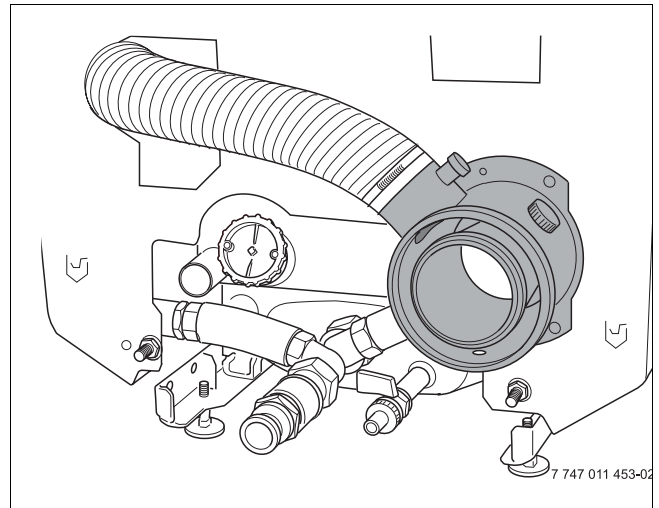


Fig. 13 Fitting the flue/air pipe socket

### Choice of installation site for side-wall flue termination

Choosing the right location for siting the terminal is critical to proper functioning of the appliance. As well as the minimum clearances (→ Fig. 14), the following rules must be observed:

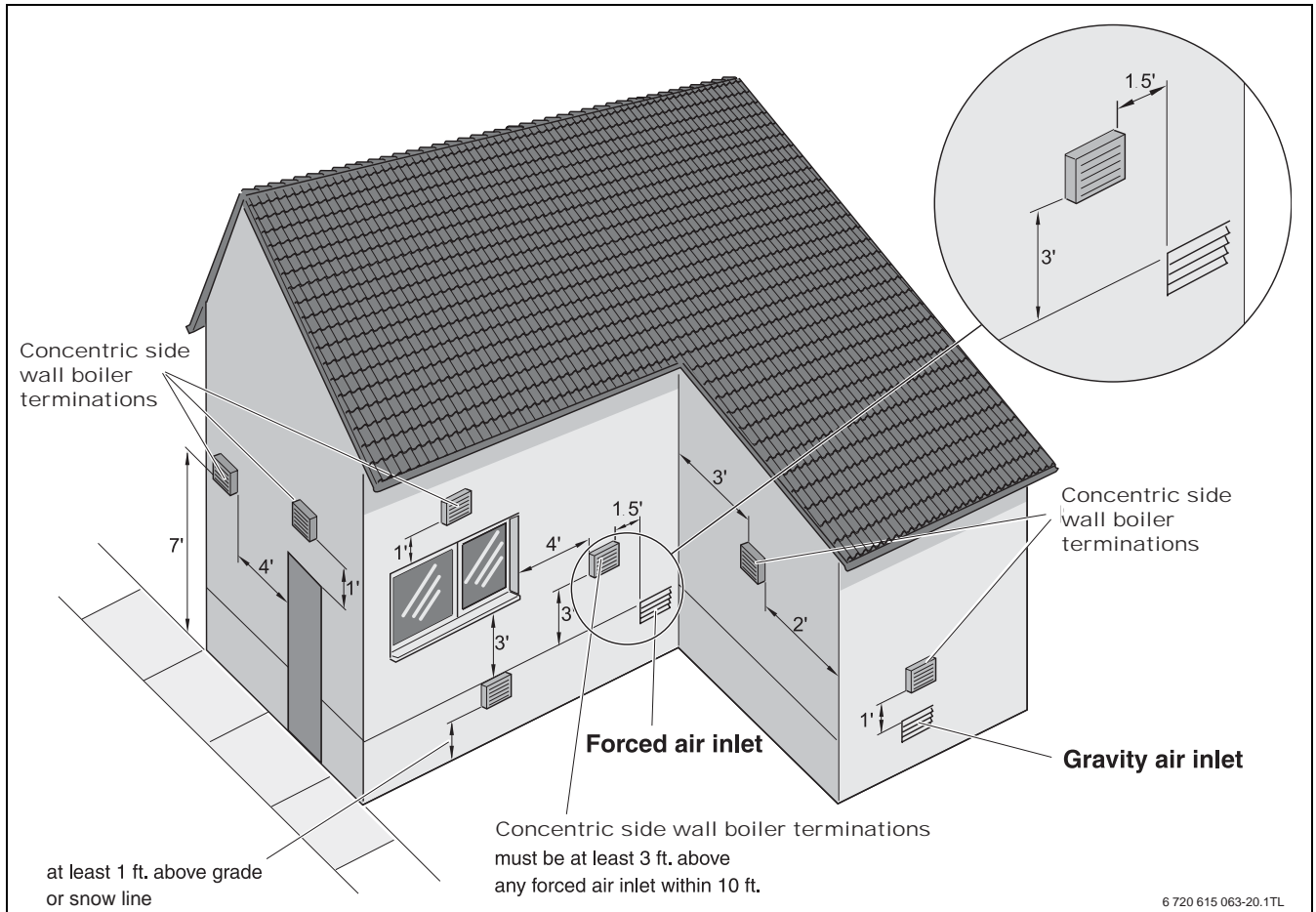
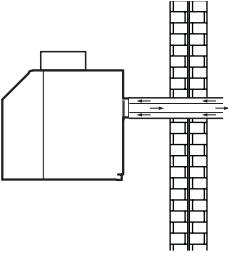
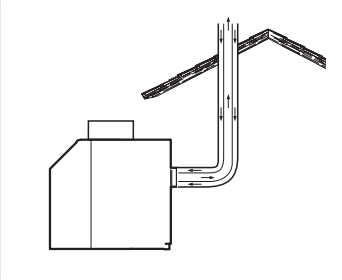
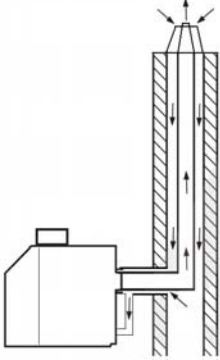


Fig. 14 Minimum clearances for side wall terminations

1. The termination should not face the prevailing wind direction.
2. The termination must be installed in such a way that the flue gases can disperse freely without re-entering the building.
3. The termination must be at least 2 ft from adjacent buildings and it must not be possible for the flue gas to enter adjacent buildings.
4. Where the building adjoins public walkways, the termination must be located at least 7 ft above ground. Make sure that freezing condensate does not constitute a hazard.
5. The termination must never be located below building overhangs, roof eaves, porches, enclosed spaces or lower parts of the building which could prevent unrestricted outflow of the flue gases.
6. The termination must never be located within 3 ft of inside corners of buildings and never less than 2 ft from outside corners of buildings.
7. If there is a fan-assisted air intake vent within 10 ft, the termination must be at least 3 ft above it.
8. The termination must be at least 4 ft below, 1 ft above or 4 ft horizontally from doors, windows or air inlet vents.
9. The termination must be at least 1 ft. above ground and snow line, and protected from falling and accumulating snow, ice, leaves or debris.
10. The termination should be at least 3 ft from any type of building opening, oil tank filling or venting apparatus, and 6 ft from gas meters and similar equipment.
11. The position of the termination should be chosen so that the last horizontal section of pipe slopes downwards to the inside by  $\frac{1}{4}$ " per ft. The flue terminal itself must also be inclined at  $\frac{1}{4}$ " per ft to the inside so that any condensate drains inwards.

### 5.3 Installation options

The GB125 boiler is approved with the following venting systems available from Buderus:

Types of installation		Description
I	Concentric combustion air and vent pipe exiting horizontally through external wall.	 <p>Horizontal direct vent concentric combustion air and venting pipe system</p>
II	Concentric air supply and flue pipe system exiting vertically through roof.	 <p>Vertical concentric combustion air and venting pipe system</p>
III	Flue system comprising back-vented flue pipe in chimney.	 <p>Flue pipe inside an existing masonry chimney similar to a liner. Chimney chase used as a raceway to bring in combustion air. Concentric piping of flue and combustion air from chimney to the boiler.</p>

Tab. 12 Installation options



Installation type III may not be suitable for homes with a double flue chimney where the second flue is used with a second combustion appliance.

Table 13 shows the maximum permissible vent length for the different types of systems.

<b>Maximum length of flue pipe (ft)</b>				
<b>Plastic flue system DN 80/125</b>				
	Boiler size	I direct vent	II vertical vent	III masonry chimney
GB125	22	17	51	82
	30	17	64	67
	35	17	71	74

Tab. 13 Maximum flue pipe lengths



For installation details see the Installation Instructions of the different venting systems.

## 5.4 Installation of Water Connections



**Caution:** due to leaking connections.

- Install the piping connections to the boiler without having undue stress on the near boiler piping.

### 5.4.1 Installing B-Kit

The relief valve and pressure/temperature gauge are installed into the supply manifold as described below:

- Use the 1-1/4" BSP x NPT conversion nipple and install the unmarked end into the supply (VK) connection of the boiler. This side also has longer thread length and the thread is straight (BSP).
- The conversion nipple is marked on the 1-1/4" NPT side with pink color and a NPT stamping in the pipe.

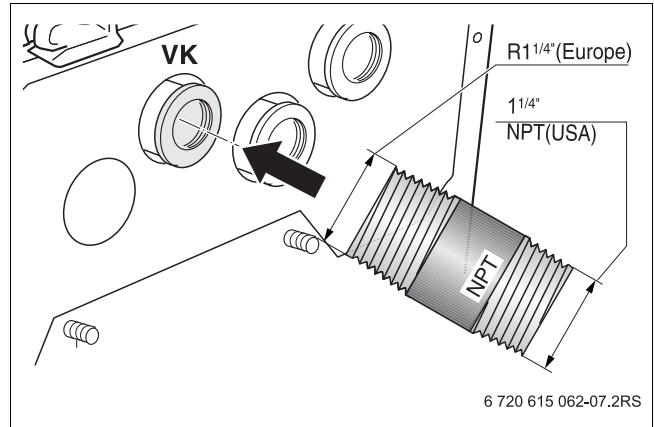


Fig. 15 Measuring thread length on 1-1/4" conversion nipple

- Install 90° elbow 1-1/4" on conversion nipple.
- Install supply manifold into elbow and orient in desired direction (Fig. 16).
- Install 90° elbow, relief valve and pressure/temperature gauge.



The pressure relief valve can only be installed after the hydrostatic test (Chapter 5.5, page 26) has been completed. Use the supplied 3/4" 90° elbow to ensure that the relief valve discharge is installed horizontally.



We recommend, especially in older, large volume systems, to install a dirt filter in the return connection to the boiler to reduce waterside debris build-up.

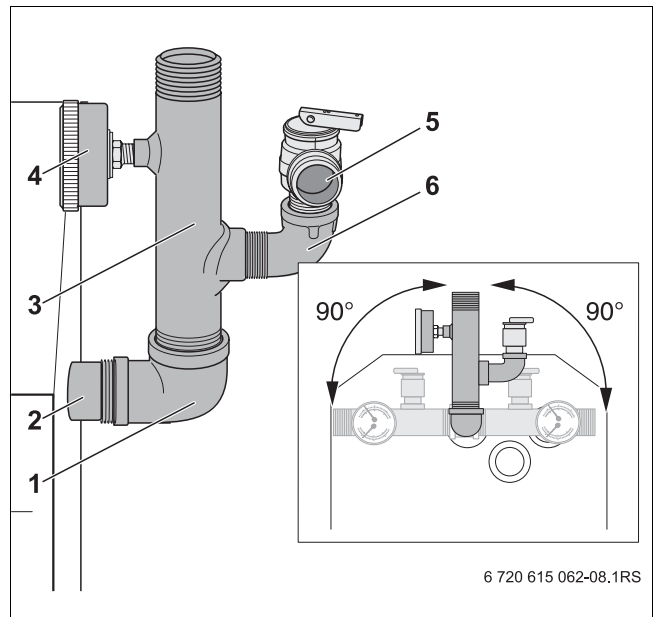


Fig. 16 B-Kit Installation

- 1 90 degree 1 1/4" NPT elbow
- 2 (Conversion) nipple
- 3 Supply manifold
- 4 Pressure/temperature gauge
- 5 Relief valve
- 6 90 degree 3/4" NPT street elbow

### 5.4.2 Installation of boiler drain (included in B-Kit)

- Seal boiler drain to connection EL.



Install a fill connection in the supply piping to the boiler.

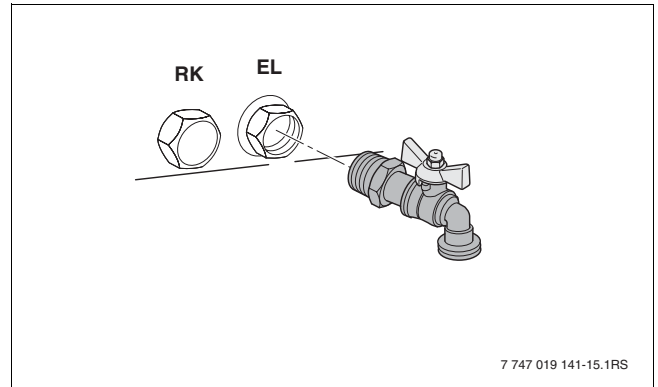


Fig. 17 Installation of boiler drain

**RK** Return  
**EL** Drain

### 5.4.3 Installation of system components

See the installation diagram for installation of the heating system components.

For more installation examples refer to Chapter 10, page 51.



**Caution:** Risk of system faults from excessive flue gas temperature. The boiler drain connection (EL) must never be used for any other purpose than to drain the boiler heat exchanger.



For draining of the secondary heat exchanger system, install a boiler drain at the lowest point of the piping.

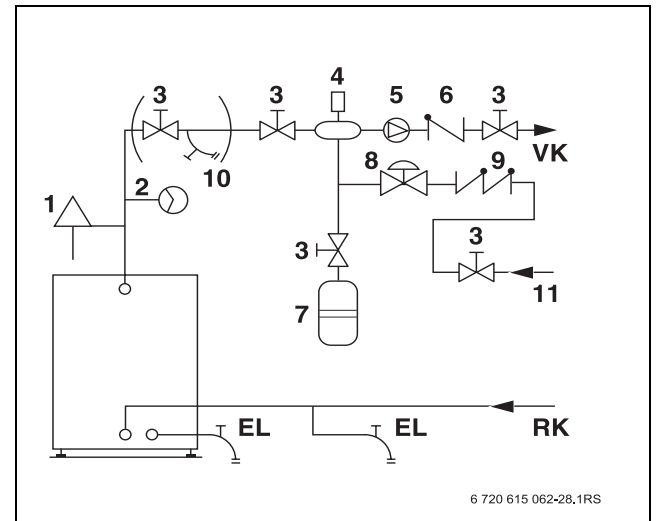


Fig. 18 Installation diagram

- 1 Pressure relief valve
- 2 Pressure/temperature gauge
- 3 Ball valve
- 4 Air eliminator (in main supply)
- 5 Heating pump
- 6 Flow check valve (back flow preventer)
- 7 Expansion tank
- 8 Automatic feed valve
- 9 Flow check valve (back flow preventer)
- 10 Purge station
- 11 Water supply
- VK** Supply
- EL** Drain
- RK** Return

### 5.5 Filling heating system and checking for water leaks

The boiler is tested for leaks at the factory. To make sure that no leaks occur during operation, the heating system must be checked for leaks before commissioning.



**Caution:** Risk of system damage due to excess pressure when testing for leaks! Pressure, control and safety equipment may be damaged by excessive pressure.

- When you carry out a leakage test, make sure that no pressure, control or safety equipment that cannot be isolated from the boiler water chamber is fitted.



**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 and leaks.

- Only fill the heating system when cold (the flow temperature should be no more than 100 °F).
- Pay attention to the water quality as specified in the operator's log, and record the volume and quality of the water used to fill the system.

Carry out the leak test at 1.5 times the normal operating pressure and in accordance with the local regulations.

Maximum operating pressure	Maximum testing pressure
30 psi (with safety valve supplied)	45 psi

Tab. 14 Maximum testing pressure

- Seal off connection for safety valve (→ Fig. 16, page 24) and all other unused connections with plugs.
- Isolate the expansion tank from the system by closing the valve.
- Open the mixing and shut-off valves on the heating water (primary) side.
- Slowly fill the boiler with tap water.

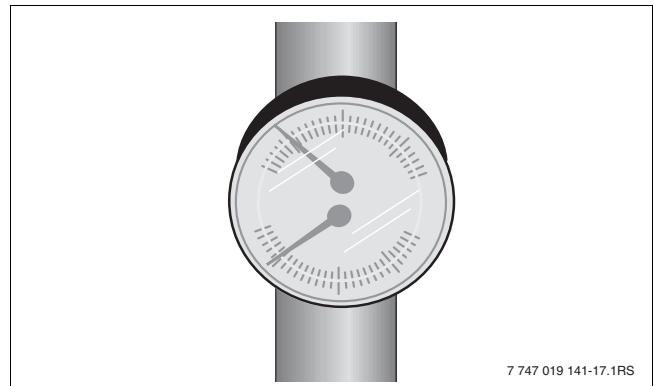


Fig. 19 Pressure/temperature gauge



**Warning:** Health risk from contaminated domestic water.

- Always observe the regulations and standards applicable in your jurisdiction for the prevention of contamination of drinking water (e.g. by water from heating systems).

- Bleed secondary heat exchanger using the bleed valve [1].
- Slowly fill the heating system. Observe the pressure gauge.
- Check the connections and pipework for leaks.
- Bleed the system via the radiator bleed valves (if applicable).
- Top with water if the pressure drops as a result of bleeding the system.
- Fit the safety valve (→ Fig. 16, page 24).
- When no leaks are found, remove pressure and uninstall the plugs. Install relief valve and open valve to expansion vessel.

## 5.6 Connecting the fuel supply

- Install the oil line per local code.

The furnished Tigerloop oil filter must be installed on the outside of the boiler using the supplied mounting bracket.

- Inspect the existing oil line and replace if necessary. Check swing direction on burner door and reverse door swing if desired.
- Drill 4 holes in the jacket panel using the Tigerloop mounting bracket (Fig. 21, [7]) as a template.
- Secure mounting bracket to boiler side panel.
- For a 3/8" oil line, install a 3/8" flare x 3/8" NPT adapter [1] in the inlet and a 1/4" x 3/8" NPT adapter [2] in the outlet of the Firomatic valve [3].
- Install the Firomatic in Tigerloop.
- Install the vacuum gauge in its adapter [6] and screw into the oil line feeding the burner.
- Connect the return oil line from the burner using the G3/8" x 1/4" NPT adapter [5] back to the oil filter.
- Secure oil filter assembly to the mounting bracket.
- Attach oil lines.
- Check entire oil line assembly for leaks.

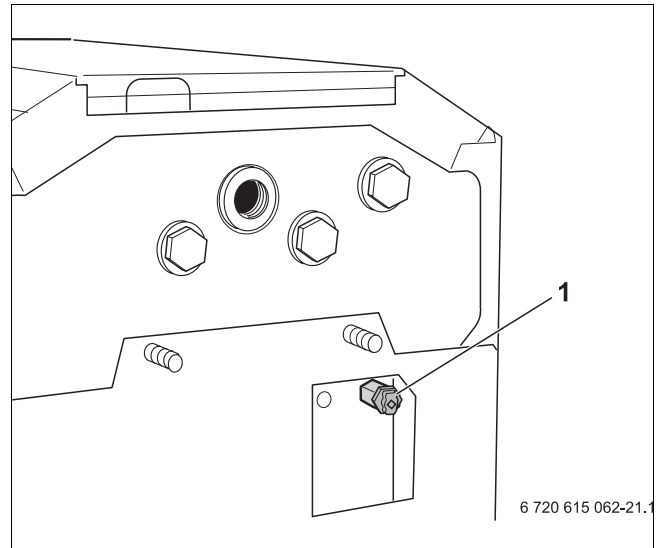


Fig. 20 Bleeding the heat exchanger

- 1 Bleed valve on heat exchanger (secondary heat exchanger)

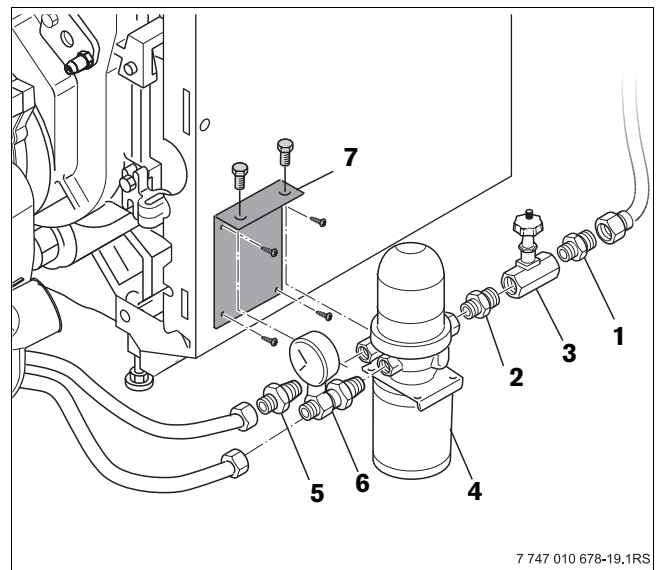


Fig. 21 Tiger loop oil filter

- 1 Flare-NPT adapter (3/8" NPT)
- 2 1/4" x 3/8" NPT adapter
- 3 FiroMatic valve
- 4 Oil filter (Tiger loop)
- 5 NPT adapter (G 3/8" (60) x 1/4" NPT)
- 6 Vacuum gauge
- 7 Mounting bracket

## 5.7 Condensate trap



Ensure that the condensate trap and piping are installed that fluids drain away freely, and backup into the boiler is prevented.

- The boiler has the potential to produce significant amounts of condensate which must be drained and disposed off properly.
- Follow all applicable codes and regulations covering the disposal of condensate originating from combustion appliances.
- Ensure that untreated condensate is only passing through hoses and piping suitable for very low pH levels.
- If the building is connected to a municipal sewage system, observe the rules and regulations for disposal into the system.
- If the building is connected to a septic system, a neutralizer is recommended to avoid damage to the system.
- Ensure the siphon is always filled with fluid to avoid unpleasant odors.

### 5.7.1 Installing and filling the trap and neutralizer

- Install the nut on the boiler condensate drain (Fig. 22, [4]).
- Install the o-ring on the boiler condensate drain pipe.
- Merge the siphon with the boiler condensate drain and tighten the nut [4].
- Connect the drain hose from the siphon to the neutralizer, and from there to the drain. Follow the instructions provided with the neutralizer.
- If fluid cannot be drained away by gravity, install a condensate pump.
- Fill the siphon with water through the service cover [5].



**Warning:** Danger of life from flue gas poisoning

A dry siphon or leaky condensate connections can release flue gases into the building.

- Check the siphon fluid level regularly and fill with water if needed.

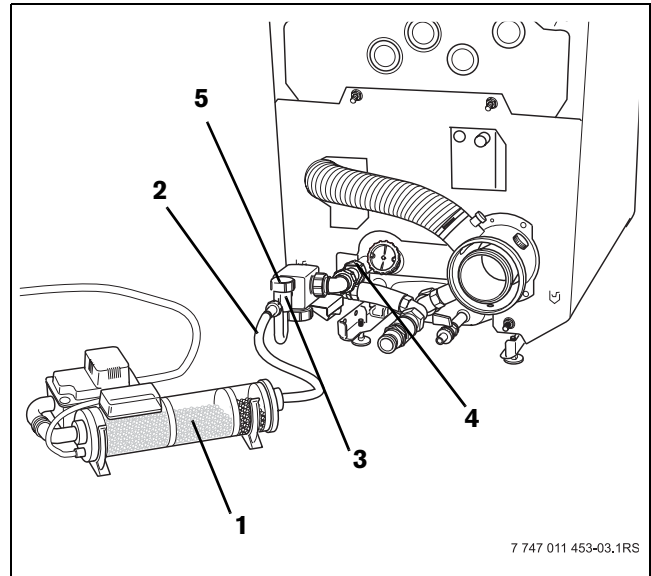


Fig. 22 Rear of the boiler with condensate siphon and neutralizer

- 1 Condensate neutralizer
- 2 Acid proof drain hose
- 3 Siphon
- 4 Nut on boiler condensate drain
- 5 Siphon service cover

## 5.8 Electrical connections

This section only applies to boilers using Buderus controls.



**Danger:** Risk of fatal injury from electric shock!

- Electrical work may only be carried out by qualified technicians.
  - Before opening any electrical equipment, isolate it from the power supply and take steps to ensure it can not be inadvertently reconnected.
  - Follow the installation instructions.
- To remove top rear boiler jacket, remove 2 mounting screws.

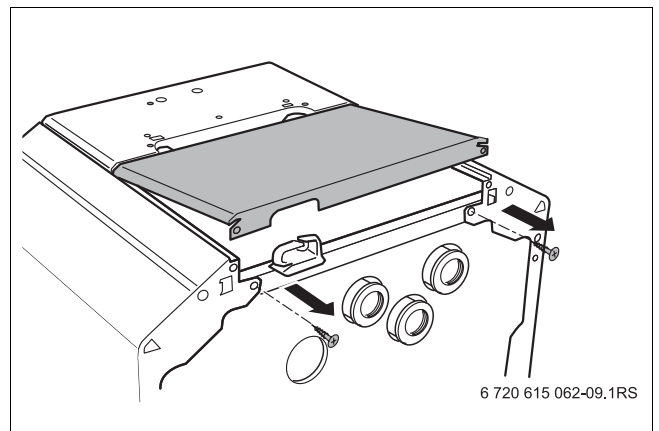


Fig. 23 Removing rear boiler cover and cover plate

### 5.8.1 Logamatic control installation

- Position the tabs [2] of the control unit in the slots [3].
- Slide the control forward towards the burner door.
- Snap the flexible catches [1] into place in the knock-outs provided [4].

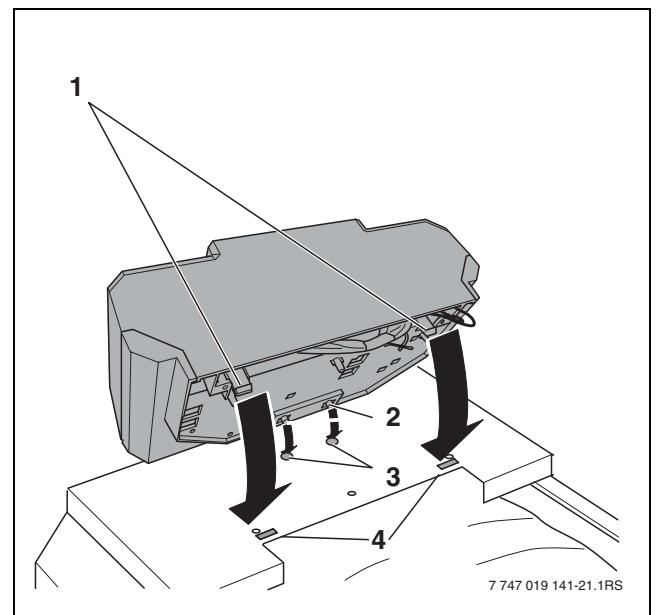


Fig. 24 Fitting the controls

- 1 Flexible catches
- 2 Tabs
- 3 Slots
- 4 Knock-outs

- Remove the top cover of the controls.
  - Unscrew the cover screws [1].
- Secure the programming unit with self-tapping screws [2].

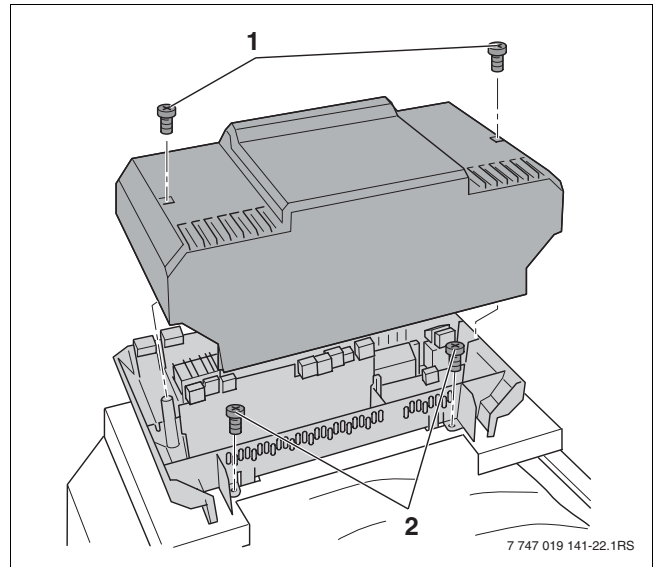


Fig. 25 Cover, removing

- 1 Cover screws
- 2 Self-tapping screws

### 5.8.2 Fitting the temperature sensor assembly



**Caution:** Capillary tubes can get damaged from severe kinking or sharp burrs.

- Route capillary tubes carefully, avoiding bending them excessively.
- Feed the capillary tubes and the sensor lead [2] through the cable entry in the front boiler top panel [1] to the sensor well [3].
- Roll up surplus capillary tubes and sensor lead and lay flat on the thermal insulation.
- Feed the burner cable [4] through the cable entry in the front boiler top panel [1] to the programming unit.
- Connect the burner cable [4] to the programming unit as indicated by the terminal markings.

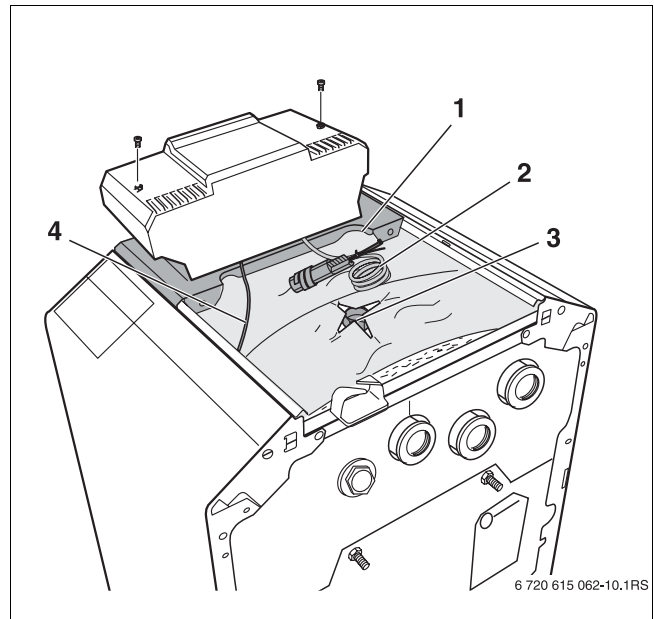


Fig. 26 Routing and connecting cables

- 1 Cable entry in the front boiler cover
- 2 Capillary tube and sensor cable
- 3 Boiler sensor well
- 4 Burner cable

- Insert the temperature sensor assembly and balancing spring [3] in the immersion sleeve [1] and push fully home. The plastic coil [2] is pushed back automatically.
- Push the sensor retaining clip [4] (supplied with the programming unit) sideways onto the top of the well.



Ensure good contact between the sensor surfaces in the well [1] to ensure reliable heat conduction. Use the balancing spring [3].

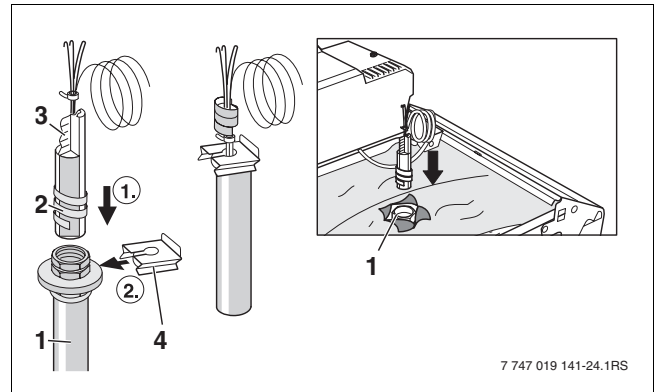


Fig. 27 Fitting the temperature sensor assembly

- 1 Immersion sleeve (sensing point)
- 2 Plastic coil
- 3 Balancing spring
- 4 Sensor retaining clip

### 5.8.3 Power connection and connections of additional components

Establish a permanent connection to the mains power supply in accordance with the locally applicable regulations.



**Warning:** Fire hazard from hot boiler components.

Hot boiler components may damage electrical cables.

- Make sure that all cables are routed through the cableways provided or on the outside of the boiler's insulation material.
  - Make sure the boiler is electrically grounded to NEC or CEC requirements.
- Route all cables through the cable entries above the insulation jacket to the control panel and connect in accordance with the wiring diagram (→ Chapter 12, page 62).
  - Remove blind connector from "Abgasüberwachung" Fig. 28.
  - Insert flue gas safety limiter (STB) connectors in socket labeled "Abgasüberwachung" as shown in Fig. 29.
  - Connect green burner plug in the socket labeled "Brenner".



The flue gas safety limiter (STB) arrives tripped and must be reset before commissioning.

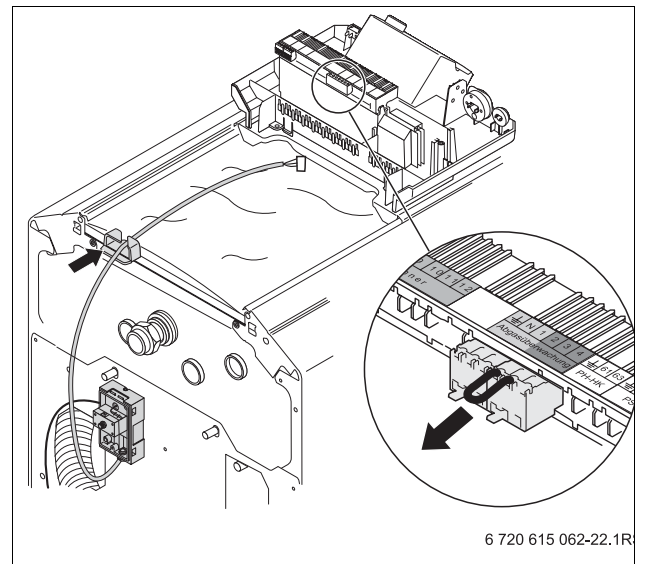


Fig. 28 Routing the flue-gas safety temperature limiter and burner cables above the insulation to the control panel

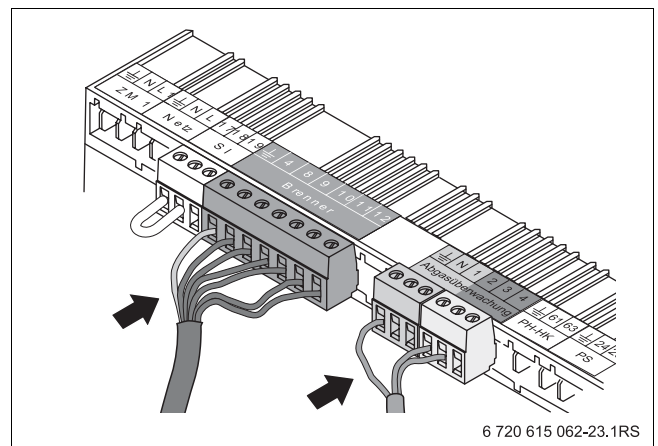


Fig. 29 Connecting the burner cable and flue-gas safety temperature limiter cable inside the control panel

### 5.8.4 Fitting cable strain relief

Secure all cable runs with cable ties (included with the control):

- Insert the cable ties together with the cable from the top into the slots in the frame (step 1).
- Slide the cable ties downward (step 2).
- Push against the ties (step 3).
- Flip the toggle up (step 4).

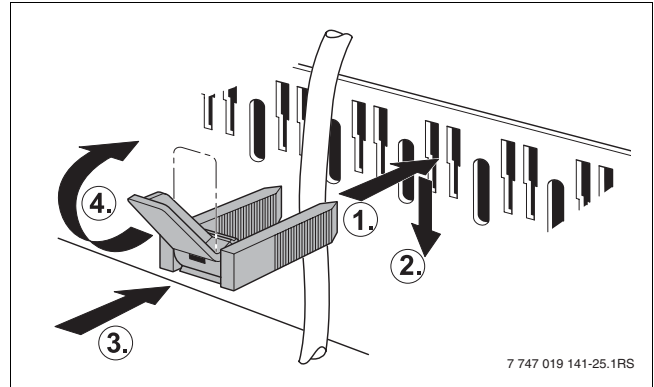


Fig. 30 Securing cables with cable ties

### 5.9 Install the back boiler cover

- Place the programming unit cover [1] in position and secure with screws.
- Fit the rear boiler top panel [2].

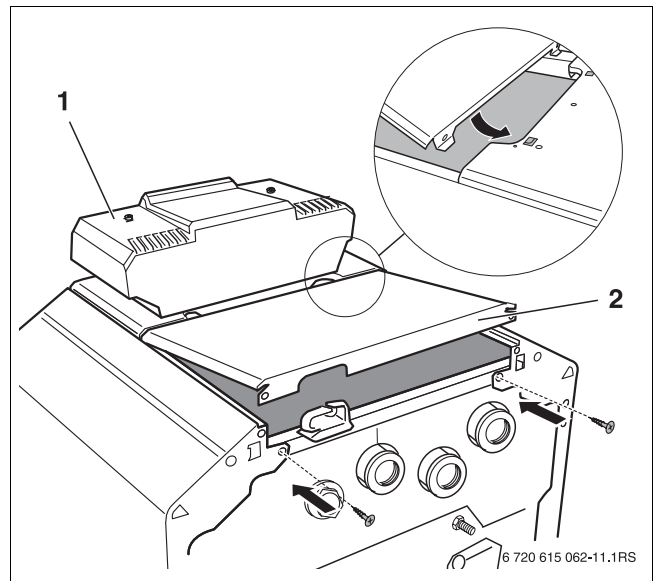


Fig. 31 Fitting the rear boiler cover

- 1 Programming unit cover
- 2 Rear boiler cover

## 6 Placing the heating system in operation

This chapter describes the initial start-up procedure regardless of the installed control device.

- Complete the start-up protocol during this process (→ Chapter 6.9, page 37).

Further information on boiler room conditions and requirements, combustion air supply and flue systems and boiler operation can be found in Chapter 2.7, page 11.



**Warning:** Risk of boiler damage from excessive dust and air contamination.

- Do not operate the boiler when there is potential for a lot of dust being drawn into the combustion air supply.
- Fit an air filter if the supply of combustion air contains large quantities of dust (e.g. from unpaved roads and tracks or dusty workplaces such as quarries, mines, etc.) or airborne particles.

### 6.1 Bringing the system up to operating pressure

Bring the system up to the normal operating pressure before commissioning.



**Caution:** Risk of damage to system due to material stress caused by temperature differentials.

- Only fill the heating system when cold (the flow temperature should be no more than 100 °F).
- Top up the heating water or drain via the boiler fill and drain valve until the required operating pressure has been reached: minimum 15 psi, maximum 30 psi positive pressure (depending on safety valve fitted).



**Warning:** Health risk from contaminated domestic water.

- Observe all national standards and regulations regarding prevention of domestic water contamination (e.g. by water from heating systems).
- Bleed the heating system while filling.

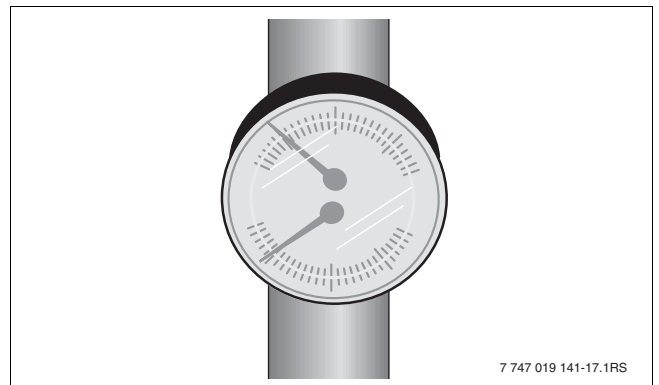


Fig. 32 Pressure/temperature gauge for showing operating pressure and supply temperature

### 6.2 Testing relief valve

- Make sure that no people are in the discharge area of the pressure relief valve.
- Raise the lever on the pressure relief valve.

The pressure relief valve must open and release pressure. If the safety valve fails to release excess pressure, it must be replaced, because otherwise system components may be damaged by excessive operating pressure.

### 6.3 Checking position of heat exchanger baffles

Prior to commissioning, check that the heat exchanger baffles are in a horizontal position.

- Disconnect electrical supply to burner by shutting down the controls or disengaging the emergency shut off switch.
- Open burner door by removing the two hexagon-head bolts at the sides.
- Slightly withdraw the heat exchanger baffles [1] from the heat exchanger.
- Adjust the heat exchanger baffles [1] to a horizontal position and push them back into the heat exchanger.
- Close the burner door and secure with the two hex head bolts (tighten to approx. 90 inch - lbs.). Tighten the hex bolts evenly to properly seal the burner door.
- Reactivate the controls.

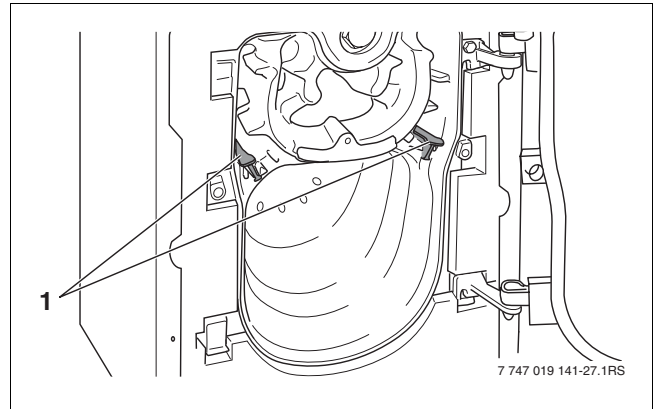


Fig. 33 Opening the burner door

1 Flue gas baffles in the heat exchanger

### 6.4 Preparing the heating system for operation

- Turn on the fuel supply at the main shut-off valve.
- Switch on the heating system emergency shut-off switch and/or the appropriate circuit-breaker.

### 6.5 Starting up the control and the burner

For further start-up steps, follow the burner start-up sequence. Refer to the burner documentation for details.



The flue gas safety limiter (STB) comes tripped and must be reset prior to start-up. To reset unscrew cap on the side of the housing and depress green button. Replace cap.

Turn the control power switch to the ON position (2). The burner starts up if the system is calling for heat or if you set the controls to manual mode (→ Controls servicing instructions).

- Select "Manual" mode
- Set the boiler-water temperature control [1] to the desired temperature.



The GB125 comes equipped with 2 baffles at the lower position. Do not install additional baffles (Fig. 33).

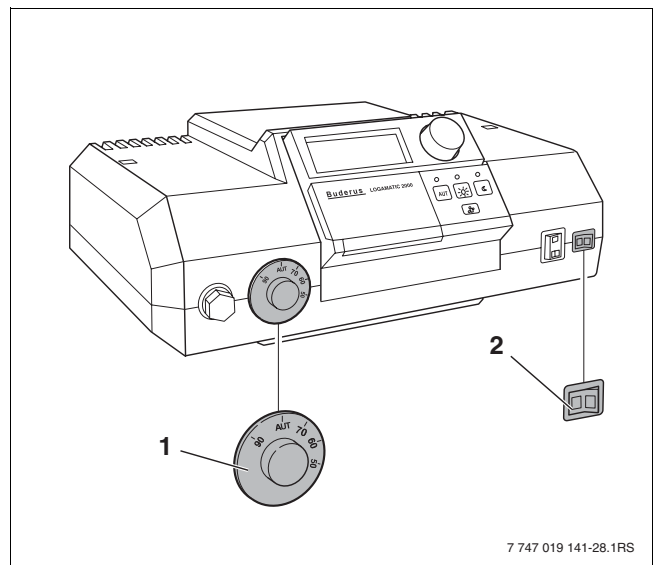


Fig. 34 Switching on the control

1 Boiler water thermostat  
2 On/off switch

## 6.6 Taking measurements

Allow burner to operate for 15 to 20 minutes before a combustion test. Earlier combustion tests can lead to incorrect readings as a result of burning off the sealant rope. We recommend checking the burner after a few weeks of operation.



Incorrect burner adjustment can cause contamination of the boiler (e.g. soot). Faults may occur more often than normal.

- Always check combustion with the following instruments.
- Never adjust burner visually.

Required instruments:

- CO<sub>2</sub> measuring equipment
- Draft measuring equipment
- Oil pressure gauge
- Stack thermometer
- Smoke tester
- Check the combustion chamber pressure at the pressure testing port [1].
- Check the breeching draft at a test port in the vent connector.

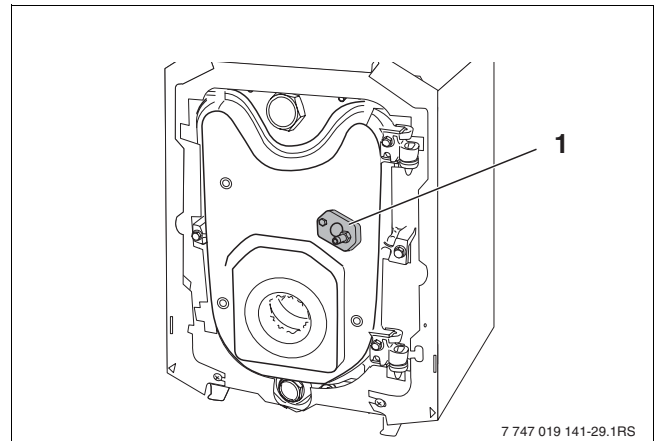


Fig. 35 Pressure test port on burner door

1 Pressure test port

### 6.7 Checking the manual reset high limit (STB)

The temperature safety cut-out interrupts the power supply if the maximum permissible flow temperature is exceeded.

To enable a boiler reset and re-starting, the fault must be removed and the system must have fallen back below the limit.

- Check the function of the manual reset high limit.  
(→ programming unit maintenance instructions)

### 6.8 Replacing the burner hood

- Position the burner hood on the hooks on the boiler outer casing.
- Secure the burner hood with the two screws at the sides.



**Danger:** Risk of fatal injury from electric shock!

- Only operate the boiler with the burner hood fitted.

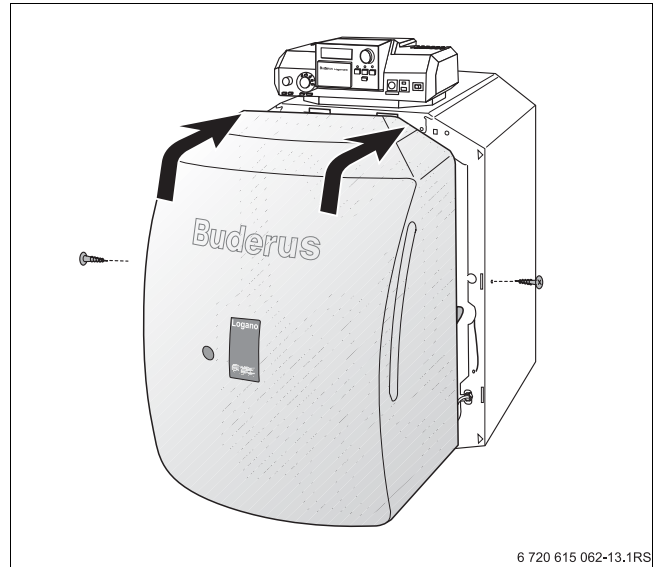


Fig. 36 Fitting the burner hood

## 6.9 Commissioning log

- Initial and date the commissioning operations carried out.

	Commissioning operations	Page	Readings taken	Comments
1.	Fill heating system and check for leaks – Heating system pressure	26	<input type="checkbox"/> _____ psi	
2.	Fill trap with water		<input type="checkbox"/>	
3.	Bringing the system up to operating pressure <ul style="list-style-type: none"> <li>● Bleeding heating system</li> <li>● Testing relief valve</li> <li>● Adjust the expansion vessel pressure (→ expansion vessel documentation)</li> </ul>	33	<input type="checkbox"/> _____ psi	
4.	Checking combustion air supply and flue system		<input type="checkbox"/>	
5.	Checking position of heat exchanger baffles	34	<input type="checkbox"/>	
6.	Documentation	34	<input type="checkbox"/>	
7.	Start up the burner (→ burner documentation)	34	<input type="checkbox"/>	
8.	Checking the manual reset high limit (STB)	36	<input type="checkbox"/>	
9.	Adjust the programming unit settings to suit the customer's requirements (→ programming unit documentation)		<input type="checkbox"/>	
10.	Inform operator, hand over technical documentation		<input type="checkbox"/>	
	Confirmation of properly completed commissioning		Company stamp/signature/date	

Tab. 15



Inform the customer about the correct fuel and correct operating pressure. Enter the details in the table (→ boiler operating instructions).

## 7 Shutting down the heating system



**Caution:** Risk of system damage from 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.

### 7.1 Normal shut-down

- With Buderus controls: switch off the on/off switch [1] on the controls (position "0"). This switches off the boiler and all its components (such as the burner).
- Shut off fuel supply by closing main valve.

### 7.2 Shutting down the heating system in an emergency



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

#### 7.2.1 Action in an emergency

Explain to the customer what to do in an emergency, e.g. a fire.

- Never put yourself at risk of fatal injury. Your own safety must always take the highest priority.
- Turn "off" the main isolating fuel valve.
- Disconnect the heating system from the electrical power supply by means of the emergency shutoff switch or the heating system circuit-breaker.

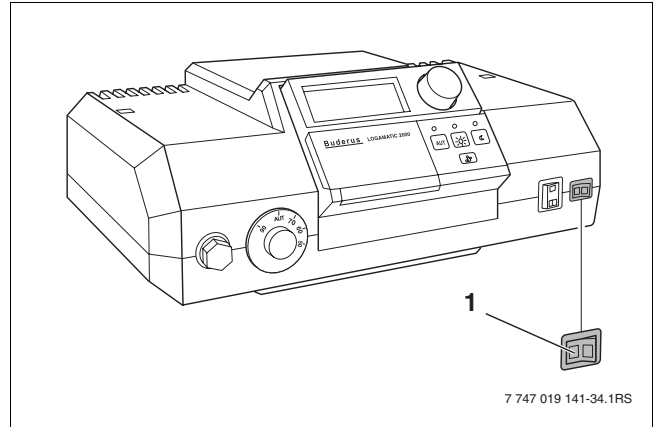


Fig. 37 Switching off the heating system (Logamatic)

1 On/off switch

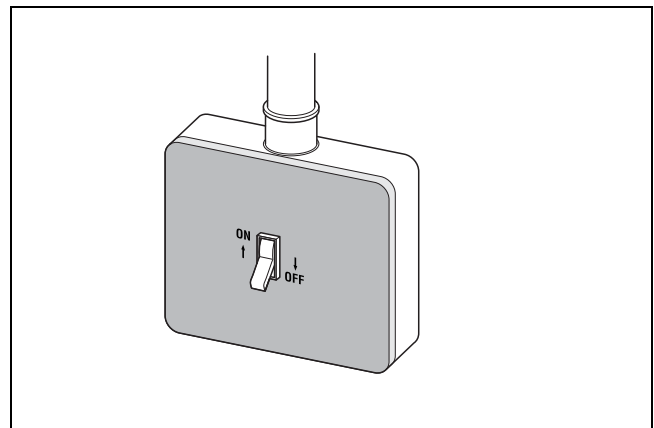


Fig. 38 Heating system emergency shutoff switch

## 8 Heating system servicing

### 8.1 Why is regular servicing important?

Heating systems should be regularly maintained 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 reliability,
- to maintain the cleanest possible combustion,
- to ensure reliable operation and long service life.

Servicing work may only be carried out by a trained and certified service technician. If parts are replaced, only Buderus-approved components may be used. A service must be carried out once a year. The results of the services must be recorded in the servicing and maintenance log.



Spare parts can be purchased from your Buderus distributor using the parts list. (Chapter 11, "Spare parts", page 53)

### 8.2 Preparing the boiler for servicing



**Danger:** Risk of fatal injury from electric shock.

- Before opening up the boiler, isolate it completely from the mains power supply and ensure the power cannot be inadvertently reconnected.
- Shut down the heating system. (→ Chapter 7.1, page 38)
- Remove burner hood from boiler. (→ Chapter 3.1, page 14).
- Disconnect electrical power to burner.

### 8.3 Cleaning the boiler

The boiler can be cleaned with brushes and/or by a wet method. Cleaning equipment is available from your Buderus wholesaler.



**Warning:** Risk of burns from touching hot boiler parts!

- Wear appropriate protective gloves or use pliers.

- Open burner door by removing the two hexagon bolts on the sides.

#### 8.3.1 Cleaning the boiler with cleaning brushes

- Note the position of the heat exchanger baffles [1] for later.
- Remove the heat exchanger baffles [1] from the heat exchanger.
- Clean the heat exchanger baffles [1] with one of the two cleaning brushes.

- Clean the hot gas flues by turning the round cleaning brush.
- Clean the combustion chamber with a flat brush. Remove the debris from the combustion chamber, the hot gas flues and the flue connection.
- Refit the heat exchanger baffles in their original positions.



**Warning:** Risk of life from leaking flue gases. Follow these instructions carefully to ensure safe operation of the system after completing the cleaning.

- Check sealing rope on burner door. Replace damaged or hardened gasket cord.



You can obtain suitable gasket cord from your local Buderus wholesaler.

- Close the burner door and secure with the two hexagon-head bolts (tighten to approx. 90 lb ins). Tighten hexagon-head bolts evenly.

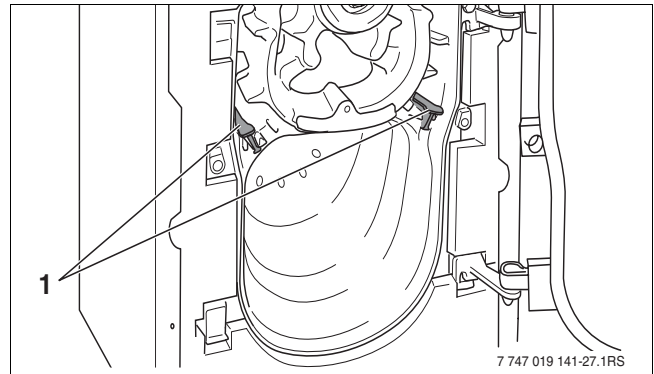


Fig. 39 Opening the burner door

1 Flue gas baffles in the heat exchanger

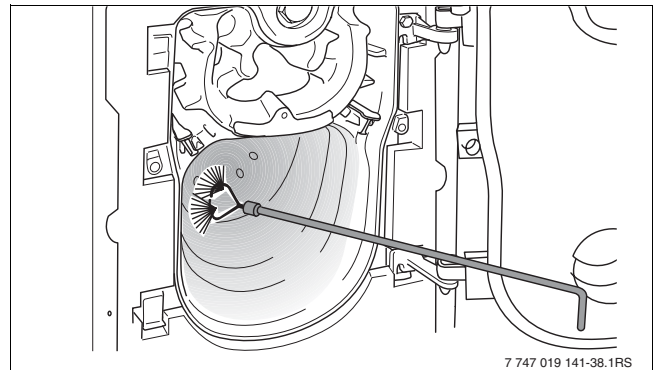


Fig. 40 Brushing out the combustion chamber

- Seal the pressure testing nozzle for the combustion chamber pressure.

### Recommissioning after cleaning with brushes

When the boiler is recommissioned after cleaning with brushes, proceed as follows:

- Plug burner cable connector into burner.
- With balanced flue operation, attach combustion air hose to the burner.
- Prepare the heating system for operation.

### 8.3.2 Wet cleaning (chemical cleaning)

When wet cleaning, use a Buderus approved cleaning agent appropriate for the degree of soiling (soot or scale). Follow the same sequence as described in Chapter 8.2, page 39 and Chapter 8.3, page 40.



Observe the instructions for use of the cleaning agent. You may need to proceed differently from the method described here in some circumstances.



**Caution:** Risk of damage from corrosion and short-circuit.

- When wet cleaning protect electrical components including the flue gas safety limiter (STB) from moisture and chemicals.
- Cover the programming unit with foil to prevent spray getting into the programming unit.
- Spray cleaning agent evenly into the heat exchanger heater flues.
- Close burner door and start up the heating system.
- Heat the boiler to a temperature of at least 160 °F.
- Shut down the heating system.
- Brush out the heat exchanger heater flues.
- Start up the heating system again (see above).

### 8.4 Cleaning the heat exchanger system

- Remove the rear boiler top panel [2].
- Remove the thermal insulation [1].

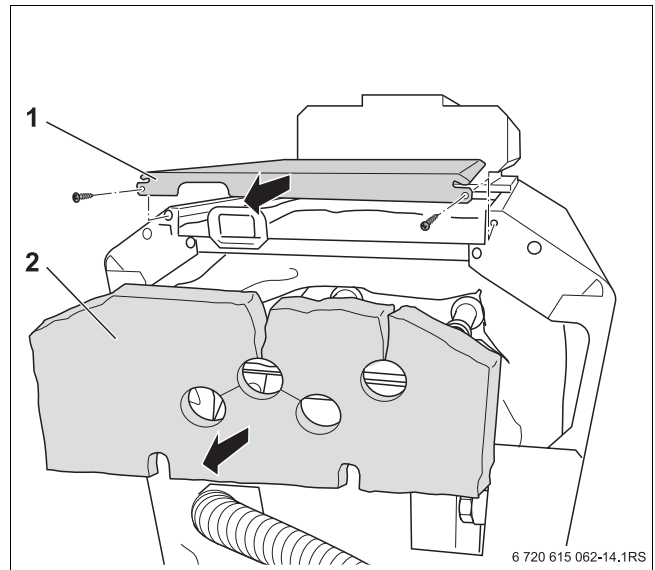


Fig. 41 Opening up the heat exchanger system

- 1 Thermal insulation
- 2 Rear boiler cover

- Undo the quick-release catches [1] for the cleaning access cover [2].
- Remove the cleaning access cover [2] and gasket from the heat exchanger system.



Do not remove the strap around the bottom of the secondary condensing heat exchanger on the GB125/30 and 35 unless instructed by a technician.

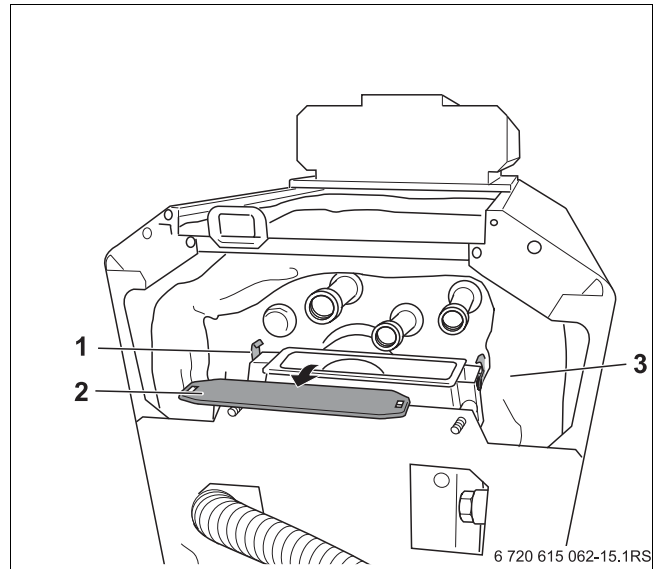


Fig. 42 Opening up the heat exchanger system

- 1 Quick-release catches
- 2 Cleaning cover
- 3 Thermal insulation

- Clean the inside of the heat exchanger system with plastic cleaning brush [1] (brush available separately).
- Vacuum out visible and loose combustion residue under the cleaning access cover.
- Check the gasket of the cleaning access cover and replace if damaged or hardened.



**Danger:** Risk of fatal injury from escaping flue gases!

- When refitting the cleaning access cover, take care to ensure it is seated correctly and seals properly!



**Caution:** Risk of system damage due to use of incorrect brushes!

- Use only the cleaning brushes suitable for the heat exchanger system.



Avoid damaging the flue gas temperature sensor.

Wet cleaning can also be carried out in addition. Follow the same procedure as described for cleaning with the brush.



**Caution:** Risk of system damage from chemical cleaning agents!

- When wet cleaning the heat exchanger, use only water or cleaning agents approved by Buderus.
- Refit cleaning access cover and gasket.
- After completing cleaning, check any connections that were disconnected for leaks.



Observe the instructions of the cleaning agent. Under some circumstances you may have to proceed differently from the method described here.



**Caution:** Risk of system damage from corrosion and short-circuit.

- When wet cleaning protect electrical components including the flue gas safety limiter (STB) from moisture and chemicals.

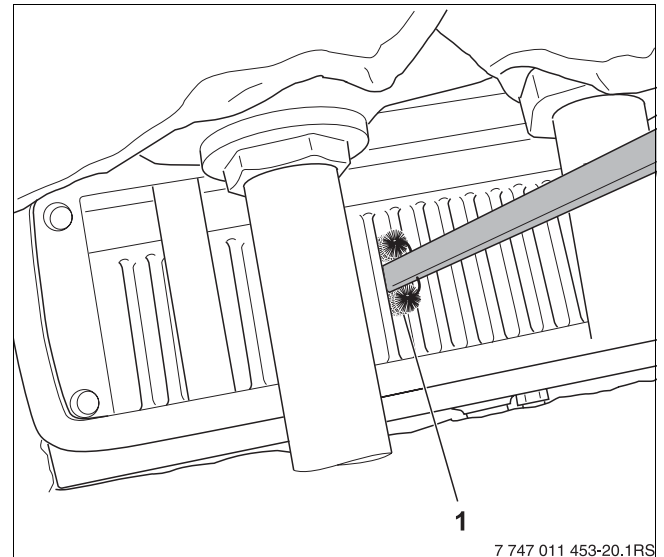


Fig. 43 Brushing out the heat exchanger system (viewed from above)

- 1 Plastic cleaning brush (available separately)

### Cleaning the condensate collector



**Warning:** Risk of injury from acid burning!  
The condensate in the condensate collector and the trap can reach a pH level of 2.

- Always wear suitable clothing and protective goggles when cleaning.

- Open the condensate collector clean-out cover [1].
- Remove condensate residues.
- Securely replace the condensate collector clean-out cover [1].

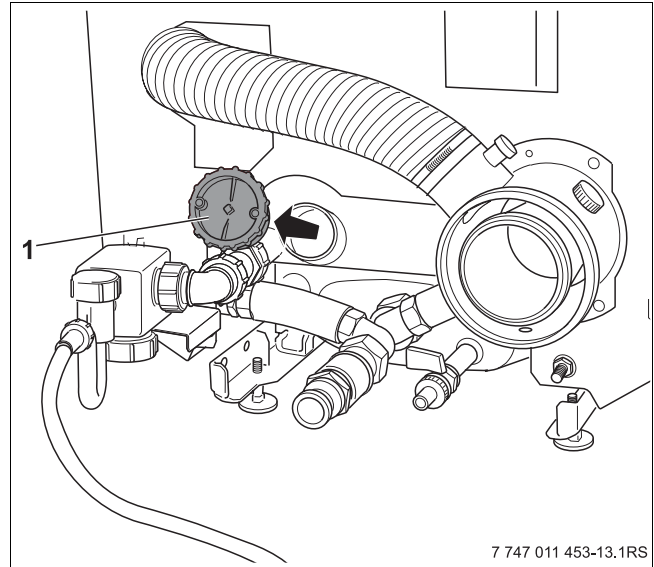


Fig. 44 Cleaning the condensate collector

1 Clean-out cover

### 8.5 Cleaning the neutralizer unit and trap

The procedure for cleaning the neutralizer unit is described in a separate instruction manual.

- Disconnect the condensate pipes from the trap.
- Remove deposits in the trap and refill with water.
- Refit the condensate pipes.



**Warning:** Danger of life from flue gas poisoning!

A dry siphon or leaky condensate connections can release flue gases into the building.

- Check the siphon fluid level regularly and fill with water if needed.

## 8.6 Checking the air supply hose

- Disconnect the corrugated hose [2] from the burner intake silencer [3] by undoing the special hose clip [1] and check for dirt.
- If dirty, clean the corrugated hose [2] with a vacuum cleaner.

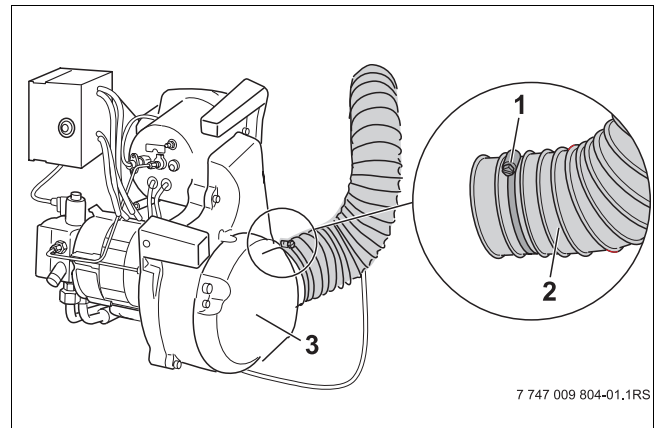


Fig. 45 Inspecting the corrugated hose

- 1 Special hose clip
- 2 Corrugated hose (air supply for combustion)
- 3 Intake silencer

## 8.7 Check heating system operating pressure

In sealed systems, the operating pressure must be 15 - 30 psi (1 - 2.1 bar).

- Check system pressure.
- If the pressure gauge shows less than 15 psi, the operating pressure is too low. Add water to the system.



**Caution:** Risk of system damage due to frequent topping up.

If you have to top up the heating water frequently, the heating system may suffer damage from corrosion or scaling, depending on the water quality.

- Ensure that your heating system is bled properly.
- Check the heating system for leaks and proper operation of the expansion vessel.



**Warning:** Health risk from contaminated domestic water.

- Observe all national standards and regulations regarding prevention of domestic water contamination (e.g. by water from heating systems).

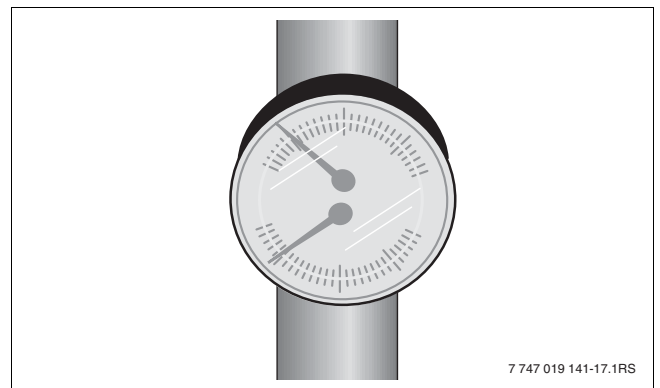


Fig. 46 Pressure/temperature gauge for showing operating pressure and supply temperature



**Caution:** Risk of damage to system due to material stresses caused by temperature differentials.

- Only fill the system when cold (the flow temperature at the temperature/pressure gauge should be no more than 100 °F).

- Add water through the feed valve.
- Bleed the heating system.
- Check the operating pressure again.

### 8.8 Testing relief valve

The functioning of the safety valve must be checked at regular intervals (every 1-3 years depending on local regulations).

- Make sure that no persons are in the discharge area of the pressure relief valve.
- Raise the lever on the pressure relief valve.

The pressure relief valve must open and release pressure. If the safety valve fails to release excess pressure, it must be replaced, because otherwise system components may be damaged by excessive operating pressure.

### 8.9 Concentric combustion air supply and flue pipe

- Check concentric combustion air supply and flue pipe for dirt and leaks. Measure CO/CO<sub>2</sub> levels in boiler flue socket using annular gap method.
- Check that the condensate outlet is not blocked because, if it is, the condensate may run into the boiler and cause corrosion.

### 8.10 Air supply system

- If the CO<sub>2</sub>/CO levels are too high, check the air supply system for blockages.

### 8.11 Inspection and maintenance reports

- Initial and date the servicing operations completed.

The inspection and servicing logs can also be used as copy masters.

	Service work	Page	Date: _____	Date: _____	Date: _____
1.	Check general condition of the heating system		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Visual inspection and function check of the heating system		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Checking fuel and water-carrying components of the system for: – Leaks during operation – Leak test – Visible signs of corrosion – Signs of ageing		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Check the combustion chamber and the heating surface for contamination; shut down the system for this step	38	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Check condensation heat exchanger for: – Dirt contamination – Damaged or hardened gaskets	42	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Check burner (→ burner documentation)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Check combustion air supply and flue pipe for – Function and safety – Leaks – Blockages in the air supply system – In the case of a concentric combustion air supply and flue gas pipe, blockage of the condensate outlet – Clean the condensate drain pipe and trap		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Check the operating pressure, relief valve and expansion tank inlet pressure	45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Check function of DHW cylinder and sacrificial anode (→ DHW cylinder documentation)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Check programming unit settings (→ programming unit documentation)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Record the final checks of the inspection work, incl. measurements and test results		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Confirmation of properly completed servicing		Company stamp/signature	Company stamp/signature	Company stamp/signature

Tab. 16 Servicing log

	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature

Tab. 17 Servicing log (continued)



If any condition requiring maintenance work is identified in the course of servicing, that work must be carried out as required.

On-demand maintenance procedures		Page	Date: _____	Date: _____	Date: _____
1.	Shutting down the heating system	38	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Remove and clean heat exchanger baffles	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Cleaning heat exchanger heater flue (heating surfaces) and combustion chamber and afterwards refitting heat exchanger baffles in original positions	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Checking seals/cord gaskets on burner door and burner and replacing as necessary	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Inspect and clean condensation heat exchanger system, replace gaskets if necessary	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Combustion air supply and flue system – Clean air supply system – In the case of concentric combustion air supply and flue pipe, clean the condensate outlet	40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Start up the heating system	34	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Final check of the servicing work		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Checking safe and proper functioning in operation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confirmation of properly completed servicing			Company stamp/ signature	Company stamp/ signature	Company stamp/ signature

Tab. 18 Maintenance log

	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Company stamp/ signature	Company stamp/ signature	Company stamp/ signature	Company stamp/ signature	Company stamp/ signature	Company stamp/ signature	Company stamp/ signature

Tab. 19 Maintenance log (continued)

## 9 Troubleshooting

Two type of fault are distinguished:

- Burner faults and
- Control and heating system faults.

If there is a burner fault, the fault indicator lamp on the burner comes on (→ burner documentation). Such faults can generally be reset by pressing the reset button on the burner. Programming unit and heating system faults are indicated on the programming unit display if it has one. More detailed information can be found in the programming unit documentation.

### Correcting burner faults



**Caution:** Risk of system damage from pressing the reset button too frequently!

Too many resets can damage the burner's ignition transformer.

- Do not press the reset button more than three times in a row.
- If the fault does not reset after the third attempt, try to localize and rectify the fault with the help of the burner documentation.
- Notify a service engineer if necessary.

- Press reset button [1] on burner.



**Caution:** Risk of system damage due to freezing!

The heating system can freeze up in cold weather if it has been disabled by a fault shutdown.

- Rectify the fault immediately and restart the heating system.
- If this is not possible, protect your heating system against freezing by draining the boiler, the heating system and hot water pipes at the lowest point.

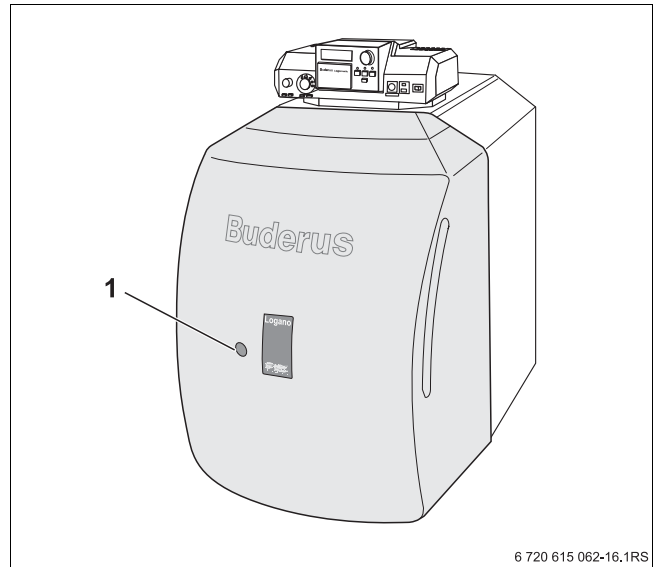


Fig. 47 Resetting the burner

- 1 Reset button

# 10 Examples of installations

## Explanation of abbreviations

KR	Return valve or check valve	SH	Heating circuit adjuster mixing valve
MAG	Expansion tank	SV	Pressure relief valve air eliminator
PH	Heating pump	THV	Thermostatic radiator valve zone valves
PW	Hot water pump	WH	Water compensation pipe (diversion) bypass

Tab. 20

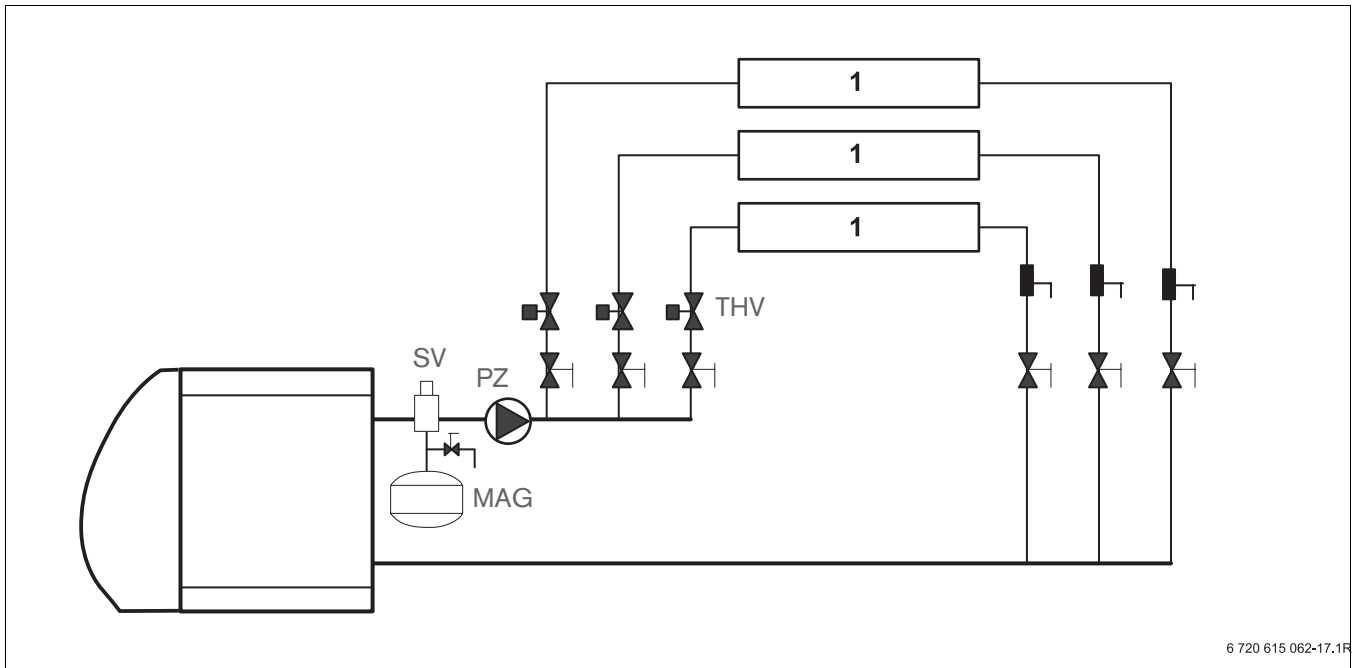


Fig. 48 Multiple circuits with zone valves

1 Baseboard

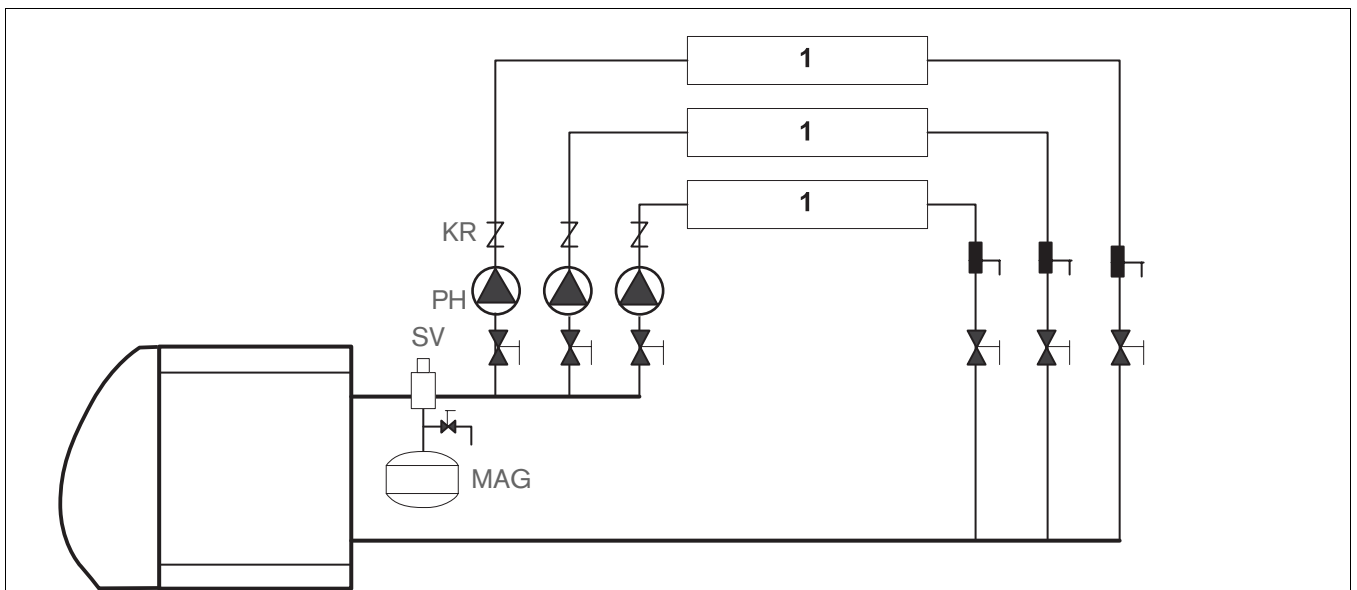


Fig. 49 Multiple heating circuits with heating pumps

1 Baseboard

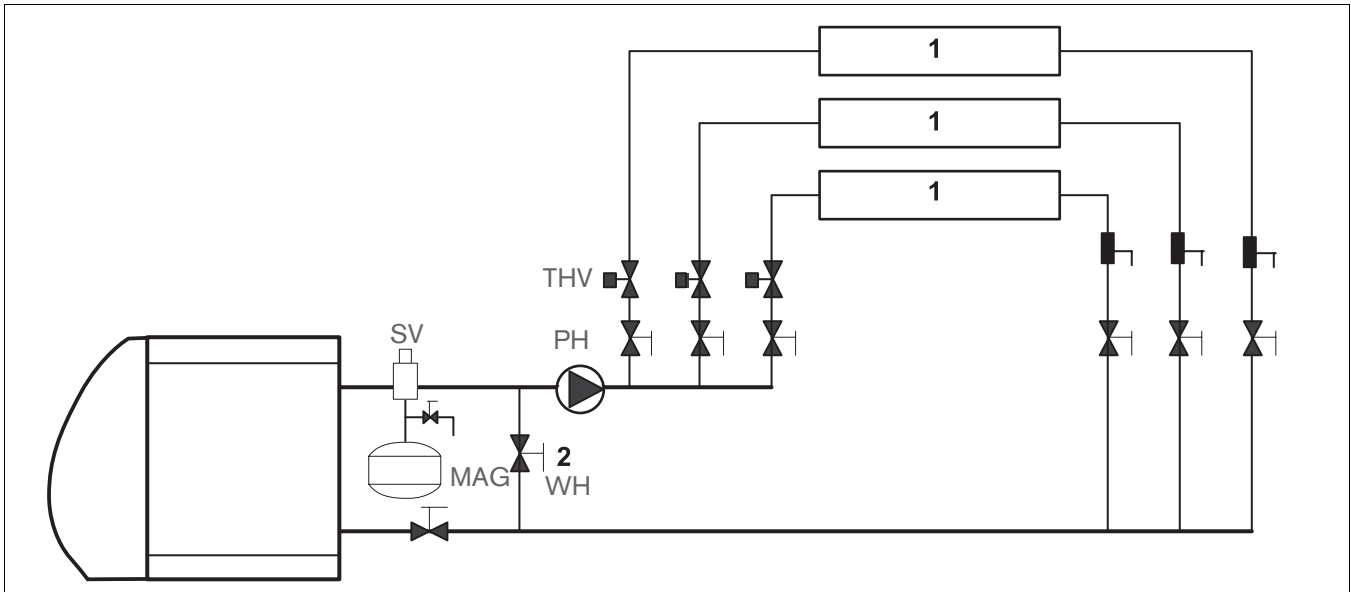


Fig. 50 Multiple heating circuits with bypass for heating systems with large water capacity

- 1 Radiator
- 2 Boiler bypass

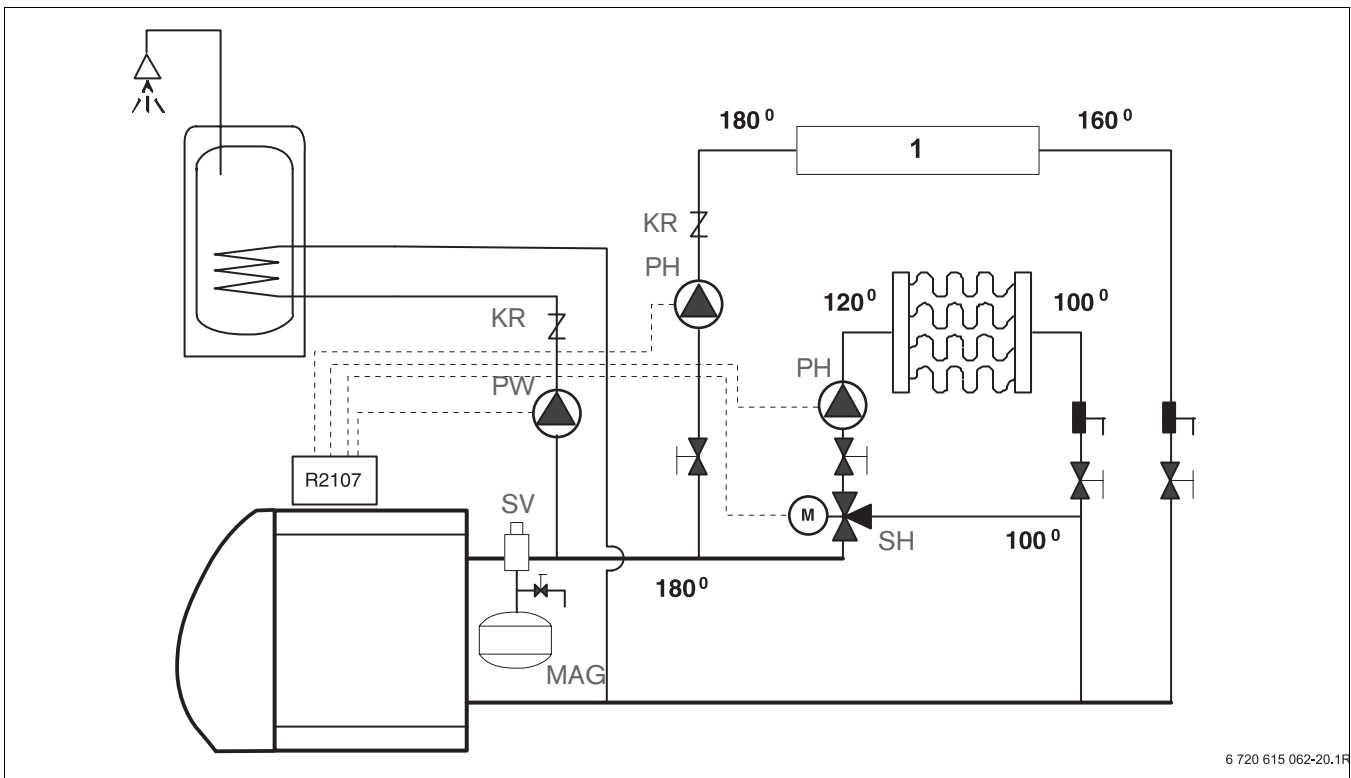


Fig. 51 Multiple heating circuits with heating pumps and motorized mixing valve

- 1 Baseboard

## 11 Spare parts

The following spare parts are available from BBT. If there are several Buderus article numbers for one item number, the numbers for the various models are listed in the relevant columns. Otherwise the table shows the number of components for each model.

### Legend for tables 21 and 22:

x = no spare part

(x) = component of a set, only available with set

0 = no picture available

### Boiler block and burner door (→ Fig. 52)

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
10	Boiler heat exchanger GB125 BE	7747027439	7747027440	7747027440
<b>Available front section components</b>				
21	Plug G1 1/4" right		86055310	
22	Gasket D 41,7x55x1, 5mm AFM 34, left		86159710	
23	Barrier plate with countersunk bolt, M8x16		63015342	
24	Countersunk bolt DIN 7991 M 8 x 16 -Ms		(x)	
<b>Available back section components</b>				
50	Gasket D33x44x2mm		63005462	
51	Plug G1 (the plug should always be fitted with a new D33x44x2mm seal (item 50))		05317712	
52	Stud bolt M10x205		7747007599	
53	Spacer sleeve R3/8"x39		(x)	
54	Hexagon nut ISO4032-M10-8-A3K		(x)	
55	Washer DIN125-A10.5-A3K		(x)	
57	Reducer G1"xG3/4" (the reducer should always be fitted with a new D33x44x2mm seal (item 50))		63027607	
60	Immersion sleeve R3/4"x100mm		5446065	
70	Anchor bolt set, M8x310mm	05127574	-	-
71	Anchor bolt set, M8x440mm	-		05127578
90	Supply adapter G1-1/4" - 1-1/4"NPT GB125 with O-ring for boilers with 3-4 sections		7747015185	
<b>Spare parts available</b>				
	Sealing rope 8x1050 GP		63020961	
	Gasket compound brown (cartridge 310 ml) for gluing sealing rope		63014361	
91	O-ring 44x3 EPDM (see set of gaskets 7747015460)		(x)	
<b>Available spare parts which are not components of the boiler heat exchanger</b>				
120	Heat exchanger baffle	05347085	05347087	05347087
130	Angle bracket G125/4 GB125/3 everp	7747000019	-	-
130	Angle bracket G124/5 GB125/4 everp	-		7747000019
131	Washer DIN126-9		(x)	
132	Hex-head bolt ISO4017 M8x25-8.8		(x)	
133	Hexagon nut DIN6923-M8-8.8-A3K		(x)	
140	Hinge bracket G105/G115/G125		05327033	
141	Washer DIN125-A10.5-A3K		(x)	
142	Hex-head bolt ISO4017 M10x25 8.8		(x)	
150	Hex-head bolt ISO4014 M10x65 8.8		(x)	
160	Washer DIN125-A10.5-A3K		(x)	
180	Appliance feet M10x51mm (set of 4)		05236440	
250	Burner door GB125		7747022876	

Tab. 21 Boiler block and burner door

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
<b>Available burner door components</b>				
260	Hinge, painted		05327020	
270	Washer DIN125 A10.5 A3K		(x)	
280	Hex-head bolt ISO4017 M10x25 8.8		(x)	
290	Inspection window seal assy. V3		63023634	
<b>Obtainable individual parts of inspection window seal</b>				
300	Gasket 30x30x3		63014382	
310	Glass pane 30x30x3.3mm		7747021876	
320	Inspection window cover		(x)	
330	Hex-head bolt ISO4017 M6x12 8.8 A3K		(x)	
340	Pressure testing nozzle M6 SW10 V2		(x)	
350	Heat insulation for burner door BE/non-Buderus rating 21/3-34/5		63002401	
<b>Available heat insulation components</b>				
380	Washer DIN9021 A6.4 A3K		(x)	
390	Dome-head screw M6x40		(x)	
400	Gasket cord GB 14x1650 mm long		63020965	
410	Sealing compound, brown (310ml cartridge) for glueing gasket cord		63014361	
(x)	<b>Mounting material for boiler block G115/125 WS</b>			
	<b>Contents:</b>			
	1 countersunk bolt M8x16 Ms			
	2 spacer sleeves R3/8"x39			
	2 hexagon nuts ISO4032 M10 8 A3K			
	8 washers DIN125 A10.5 A3K			
	4 washers DIN126 9			
	4 hex-head bolts ISO4017 M8x25 8.8			
	4 hexagon nuts DIN6923 M8 8.8 A3K			
	4 hex-head bolts ISO4017 M10x25 8.8			
	2 hex-head bolts DIN6921 M10x65 8.8			
	1 hex-head bolt ISO4017 M6x12 8.8A3K			
	2 washers DIN9021 A6.4 A3K			
	2 self-tapping screws DIN7981 C ST6.3x25 A3T			
0	<b>B-KIT G115/G125 WS</b>			
	<b>Contents:</b>			
	1 Supply manifold G115"US"			
	1 elbow 90DEG11/4			
	1 elbow 90DEG 3/4 I/A			
	1 double nipple R11/4-11/4NPTx75			
	1 boiler drain 3/4			
	1 relief valve 3/4Mx3/4F 30PSI			
	1 temperature/pressure gauge 1 /4 NPT			
	1 Bolt set B-Kit G115"US"			
1 adjustable boiler foot M10x51 packed				
	<b>Set of O-ring V2 seals consisting of:</b>			
	1 x O-ring 22.2x2.5mm EPDM 70 IRHD,			
	5 x O-ring 30x3.5mm EPDM 70 IRDH			
	3 x O-ring 35x3mm EPDM 70 IRDH			
	1 x O-ring 44x3mm EPDM 70 IRHD,			
	1 x O-ring 26x3mm 70 EPDM/281 not illustrated			

Tab. 21 Boiler block and burner door

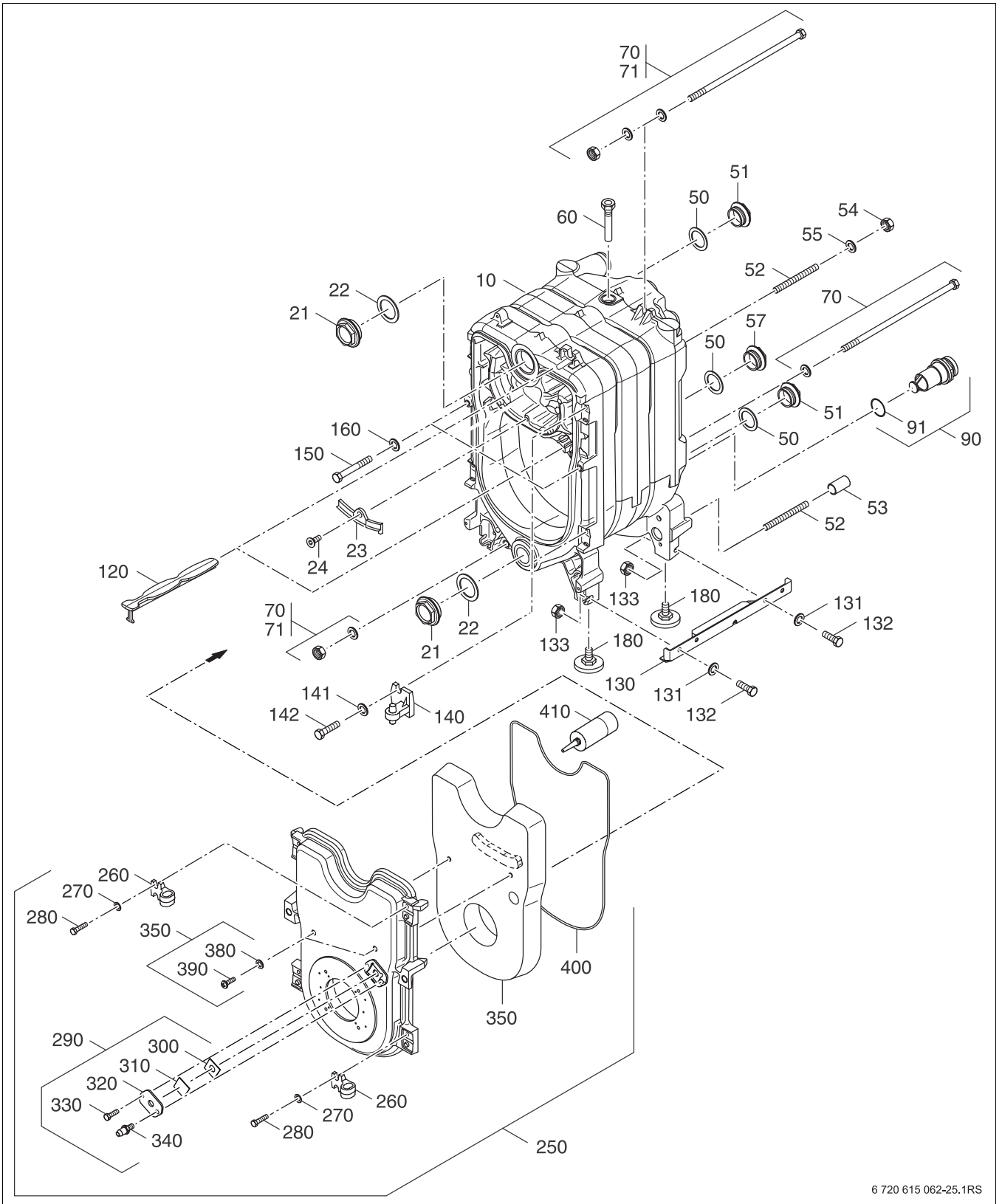


Fig. 52 Boiler block and burner door

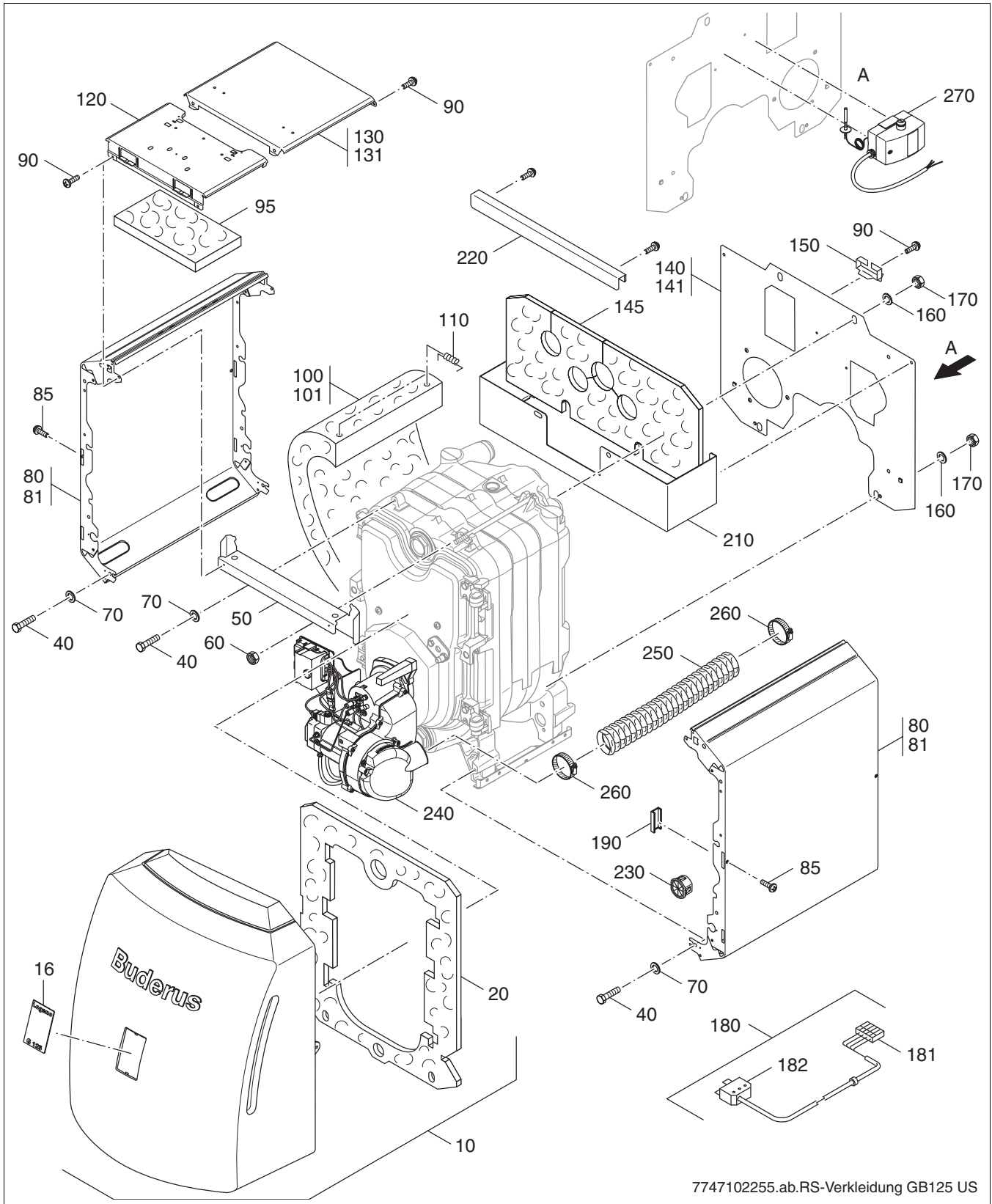
**Boiler outer casing (→ Fig. 53)**

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
10	Burner hood GB125	63046609		
<b>Available outer panel components</b>				
16	Appliance insignia Logano plus GB125	63045050		
20	Front thermal insulation 12x580x695 G115/G125	63025265		
40	Hex-head bolt ISO4017 M8x12-8.8	(x)		
50	Cross-member 1.25x108x537 G115/G125	63029209		
60	Hexagon nut DIN555 M8 5	(x)		
70	Washer DIN126 9	(x)		
80	Side panel 565mm long	63029946	-	-
80	Side panel 685mm long	-	63029947	
85	Self-tapping screw C ST3.9x13 A3T	(x)		
90	Pan-head bolt 3.9x9.5 A3T	(x)		
<b>Available outer panel components</b>				
95	Thermal insulation G125 WT top	7747012560		
100	Boiler heat exchanger insulation G125	7747012582	-	-
101	Boiler heat exchanger insulation G125	-	7747012583	
110	Spring clips for securing thermal insulation, pack of 10	7747016084		
<b>Available outer panel components</b>				
120	Front top panel assy. GB125	63029948		
130	Rear top panel assy. GB125 3-section	63029950	-	
131	Rear top panel assy. GB125 4-section	-	63029951	
140	Rear panel GB125 WT 18-22	7747012515		
141	Rear panel GB125 WT 30-35	7747012516		
145	Rear panel insulation GB125	7747012557		
150	Cable clip	07060754		
160	Washer DIN432 10.5 St A3E	(x)		
170	Hexagon nut DIN555 M10 5	(x)		
<b>Available outer panel components</b>				
180	Burner cable 2350 with cable grip	7747007984		
<b>Available spare parts</b>				
181	Terminal block 7-pin green BR	7747023989		
182	Connector plug ST18/ silver-plated	67903164		
190	Edge protector set 65+80+160 Required for G125 RLU Used in 63031847 fixings set For outer casing panels see below	63020896		
210	Cross-member GB125 rear panel	7747012517		
220	Angle bracket GB125 rear panel	7747012473		
230	Cable grommet G125	7747006779		
<b>Available spare parts</b>				
240	Burner BE1.2/1.3-2.2/2.3 RLUF or spare parts see commissioning and servicing instructions Art. no. 7747009804			
250	Air hose Santo SLDN63 L1450	63024885		
260	Corrugated hose clip 60/80mm	63024917		
270	Flue gas safety high limit switch STB complete	7747026825		

Tab. 22 Boiler jacket

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
(x)	<b>Outer panel fixings G115, G125</b>	63031847		
	<b>Contents:</b>			
	17 flathead bolts ea. 3.9x9.5-A3T			
	3 self-tapping screws C-St3.9x13-A3T			
	1 Dome-head screw DIN7985-M6x16-4.8-A3T			
	2 push-fit catches			
	4 hex-head bolts ISO4017 M8x12-8.8			
	1 hexagon nut DIN555 M8 5			
	4 washers DIN126 9			
	4 washers DIN432 10.5 St A3E			
	4 hexagon nuts DIN555 M10 5			
	1 cable grip, straight, for ribbon cable			
	1 cable grip, straight, for standard cable			

Tab. 22 Boiler jacket



7747102255.ab.RS-Verkleidung GB125 US

Fig. 53 Boiler jacket

## Heat exchanger WT (Fig. 54)

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
	Heat exchanger WT	7747102256		
10	H/E system GB125 18-22	7747015854	-	
11	H/E system GB125 30-35	-	7747015855	
<b>Available spare parts</b>				
20	Flue box GB125 18-22	7747007457	-	
21	Flue box GB125 30-35	-	7747007458	
<b>Available spare parts</b>				
30	Flue box cover GB125 18-22	7747014294	-	
40	Flue box cover GB125 30-35	-	7747014295	
70	Clips (set of 2) for low-pressure chamber	0700498		
80	Gasket cord D12x3100 CS, tight weave	63031770		
90	Screw set GB125	7747013578		
95	Stud bolt insulation 36.2	7747015461		
100	Gasket GB125 3-section	7747007463		
110	Gasket GB125 4-section		7747007464	
140	Return pipe HK/WT G1-G1	7747014892		
140	Return pipe HK/WT G1-G1	7747014892		
140	Return pipe HK/WT G1-G1	7747014892		
145	Return pipe HK/WT G1 1/4	7747014893		
150	Return pipe RK/WT G1-G1	7747014891		
155	Return pipe RK/WT G1 1/4	7747014894		
<b>Available spare parts</b>				
160	Seal D24x30.5 See set of seals 53549698 Kit seal set, plain sealing washers	(x)		
170	Seal D27x38x2 AFM34 See set of seals 53549698 Kit seal set, plain sealing washers	(x)		
180	Compensator DN25 G1 union nut	7747014895		
190	Connection WT GB125 molded part	7747014890		
195	Adapter G1-1/4" - 1-1/4" NPT	747027358		
200	Union nut G1 1/4x17 D36	7747015292		
210	O-ring 26x3 70EPDM/281 in set of seals 7747015460, see kit seal sets, O-rings	(x)		
220	Bleed valve extension WT GB125	7747015305		
250	Condensate trap cover GB125	7747013577		
260	O-ring 60x3 EPDM (3 off) Set of 3	7747007704		
270	Lip seal DN80 PerOxyd set of 5	7747021733		
280	Sensor bracket	07060986		
290	Flue gas sensor D29/d6 60L	7747002902		
300	O-ring 6x2 ISO 3601 FKM Set of 3	7747007462		

Tab. 23 Heat exchanger WT

Item no.	Description	Part number		
		GB125/22 BE 3 sections	G1B25/30 BE 4 sections	GB125/35 BE 4 sections
310	Trap set GB125 V2	7747020450		
320	Inlet connection, trap set GB125	7747010787		
330	Extension G1 1/4x120 GB125	7747104888		
335	Seal D44x3 set of seals 7747015460, see kit seal set, O-rings	(x)		
350	Trap fixing bracket GB125	7747012514		
360	Pipe clip G125ECO/GB125	7747007705		
370	Thermal insulation GB125 WT 30-35 kW	-	7747012559	
380	Thermal insulation GB125 WT 18-22 kW	7747012558	-	
390	Flue socket, concentric 80/125 GB125 V2 Suitability depends on flue system	7747016312		
	Trap seal set GB125 SB105 no picture available	7747016504		

Tab. 23 Heat exchanger WT

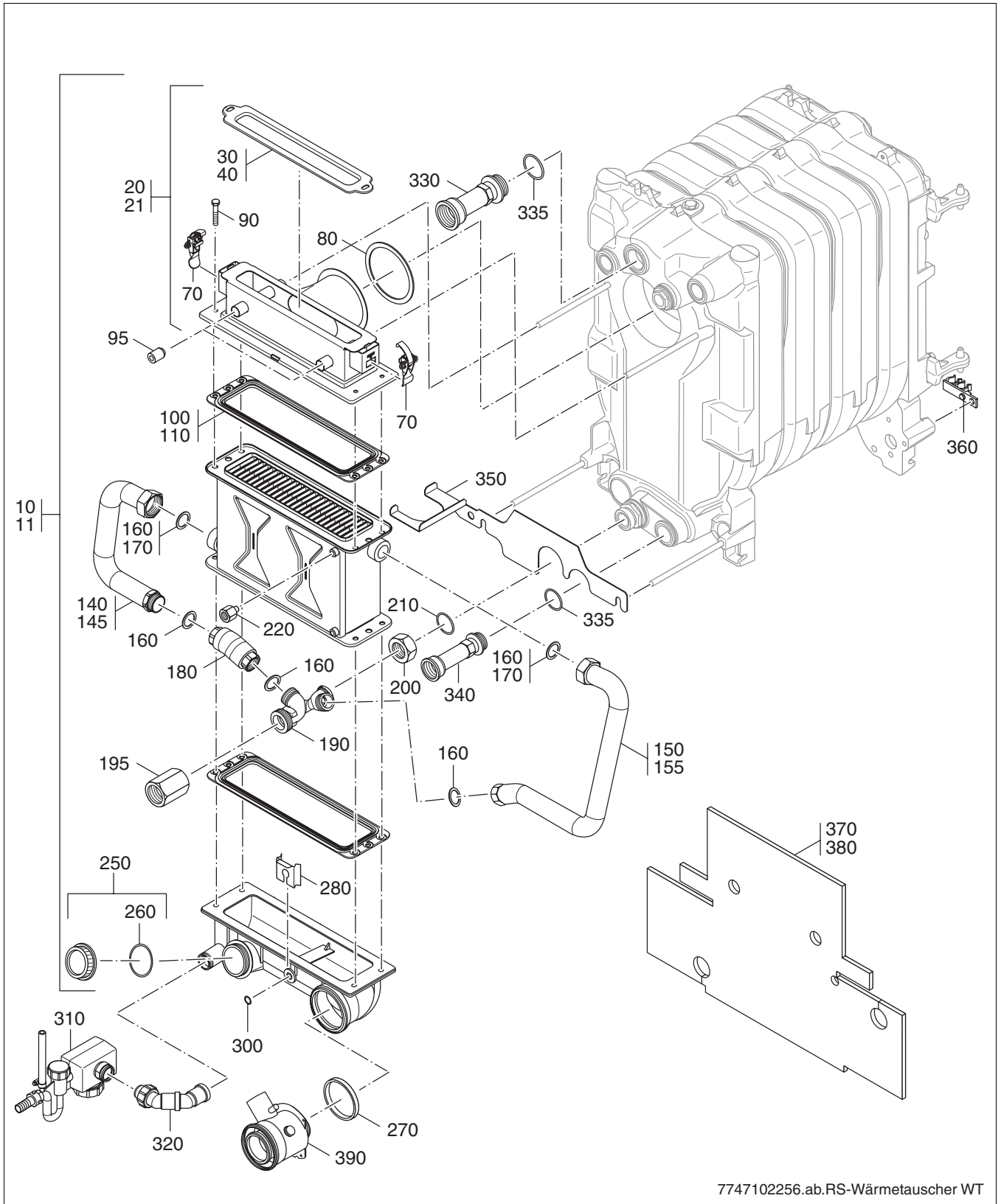


Fig. 54 Heat exchanger WT

# 12 Wiring diagrams

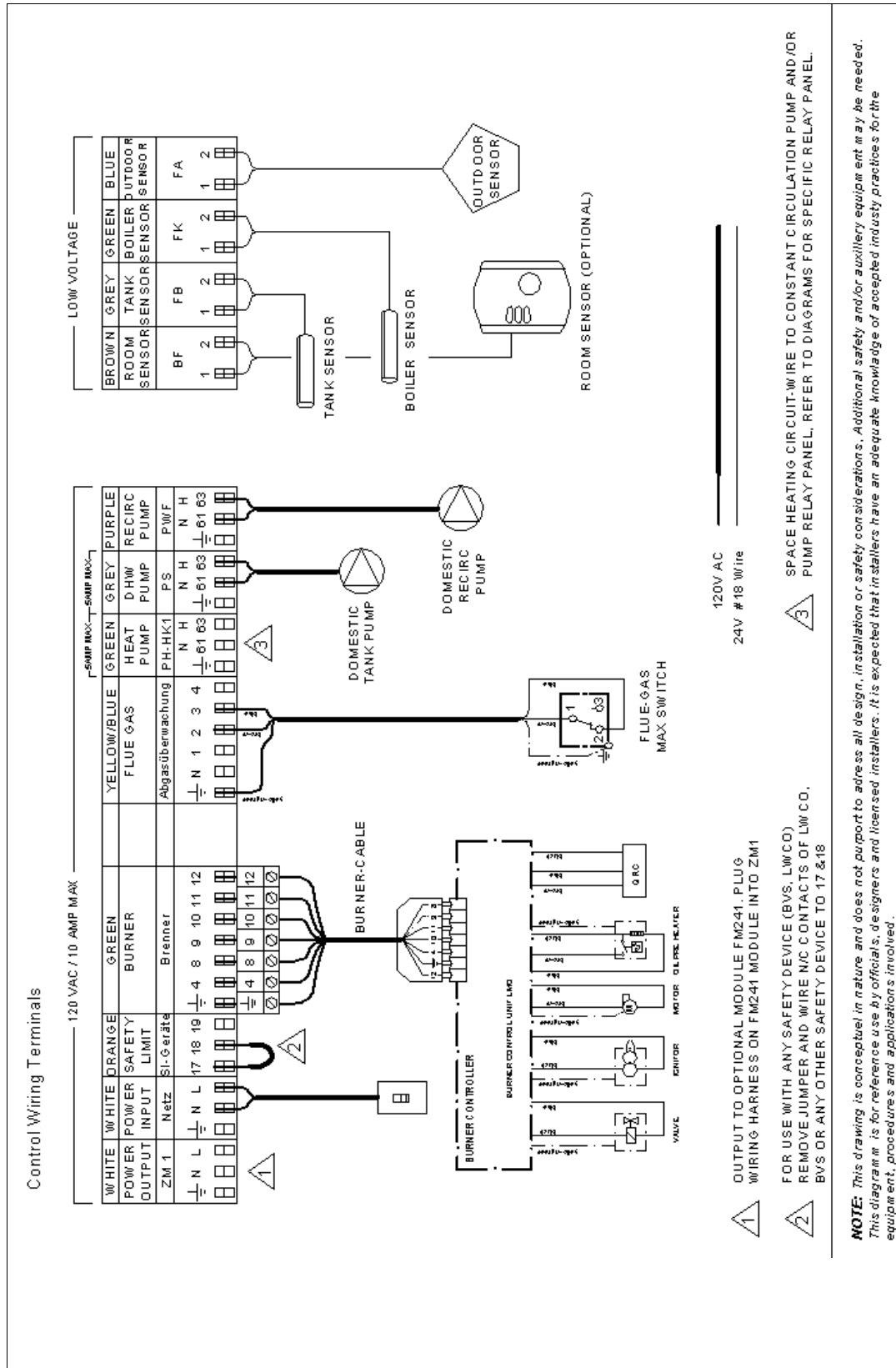


Fig. 55 Wiring diagram

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