

BNE

Installation, operating and maintenance instructions

BNE 1 - BNE 2 - BNE 3



excellence in hot water

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WHO SHOULD READ THESE INSTRUCTIONS


These instructions should be read by:

- the specifying engineer
- the installer
- the user
- the service engineer

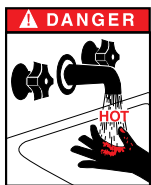
SYMBOLS

The following symbols are used in these instructions:

 **Essential instruction for correct operation of the installation.**

 **Essential instruction for the safety of persons and the environment.**

 **Electric shock hazard.**

 **Burning hazard.**

APPLICABLE STANDARDS

The products described in this document have been certified at European level (European Directive 92/42/EEC "Efficiency"). They have also been awarded the Belgian "OPTIMAZ" label (for oil-fired boilers).




IMPORTANT NOTES

These instructions are an integral part of the equipment to which they relate and must be handed to the user.


The product must be installed and serviced by qualified engineers in accordance with the regulations in force.

ACV declines all liability for any damage caused as a result of installation or in the event of the use of appliances or accessories that are not specified by ACV.


 **Failure to follow the instructions describing test operations and procedures may cause injury to persons or a risk of environmental pollution.**

N.B.:
ACV reserves the right to change the technical characteristics and specification of its products without notice.


USE OF THE BOILER

 **To ensure that your system operates correctly, please have it serviced annually, before the start of the heating season, by a qualified engineer.**

In normal operation the burner starts automatically if the temperature of the boiler is below setpoint.

 **Before carrying out any work on the boiler, isolate it from the electrical supply at the switch on the external control box. Also move the main switch on the control panel to "OFF".**

- **You should familiarise yourself with the control panel** (Fig. 1)

 **The user must not attempt to gain access to the components inside the control panel.**

1. Main switch

This switch is used to start or stop the boiler.

2. Summer/Winter switch

This is used to switch the heating pump on or off.

3. Energy selection switch

This is used to switch the heating pump and the burner off (or on). It is used to switch a 2.4 kW resistor on (or off) for the provision of hot water.

4. Resistor indicator lamp

This lamp indicates that the electrical resistor is energised.

5. Optimiser

This device switches the boiler on and off according to the time, operating on a 24-hour cycle. There are small white lugs around the circumference of the programmer. Each lug represents a 15 minute switching period. To set the 24-hour programmer, simply push outwards the lugs that correspond to the boiler operating period.

Reminder: Lug in inner position = BNE off
Lug in outer position = BNE on

6. Hot water temperature control thermostat

In hot water mode, the temperature of the hot water can be adjusted from 60 to 80°C.

7. Thermostat-pressure gauge

This dial shows the boiler temperature and the pressure in the primary circuit. The temperature should not exceed 90°C. If it is higher than this, stop the boiler and check that the thermostat is operating correctly. If the problem persists, call an engineer. The pressure should not fall below 1 bar. If it does, refer to the paragraph entitled "Gauge pressure in the heating system", later in this section.

8. Heating temperature control thermostat

In "Winter" position the boiler temperature can be set to between 60 and 90°C.

It is advisable to set this thermostat 10°C above the hot water thermostat setting.

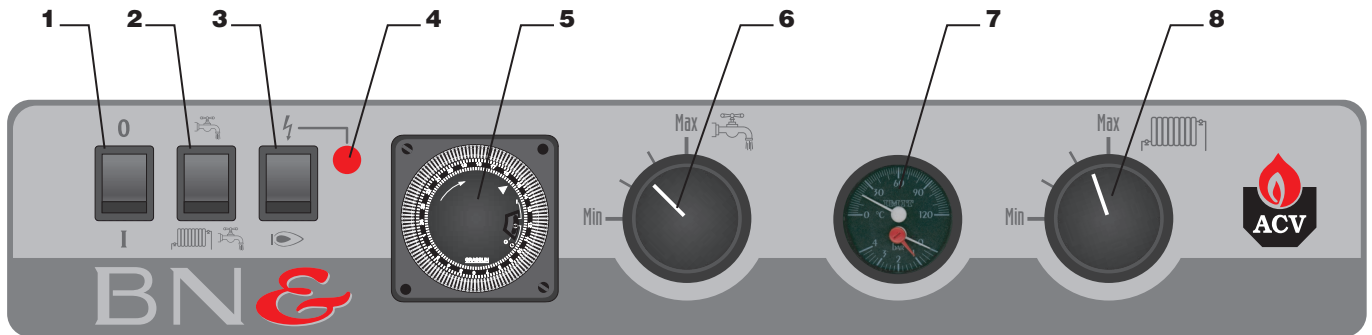


Fig. 1: Control panel

Operation of the pump:

The pump is controlled by the minimum thermostat, at the rear of the boiler. This is pre-set to 45°C, delaying the activation of the boiler pump when the burner starts, thus avoiding any risk of corrosion in the combustion chamber.

Gauge pressure in the heating system

Your system must be equipped with a heating safety valve calibrated to 3 bar.

Ensure that the system is always under water pressure. When the system is cold and the air inside it has been vented, the gauge must indicate a pressure of between 1 and 1.5 bar, depending on the height of the building.

To add water: (Fig. 9, page 7)

- Open the filling valve (5).
- Close the valve properly after filling.
- Vent the system and the boiler in order to obtain an accurate reading of the pressure inside the heating circuit.

Safety valves (heating circuit) (Fig. 9, page 7 - item 2)

If water is found to be escaping from the safety valve, stop the boiler and contact your installer for advice.

A monthly test is recommended:

Lift the lever on the drain cock for a few seconds to ensure that the safety valve is working correctly.



If there is a problem after this short test, please contact your installer for advice.



The water escaping from the safety valve may be extremely hot and can cause severe burns.

Safety group (hot water circuit)

It is normal for water to escape from the safety group each time the hot water tank is heated. A hot water expansion vessel may reduce or even prevent this escape. (Fig. 10, page 7 - item 6)

A monthly test is recommended:

Lift the lever on the drain cock for a few seconds to ensure that the safety valve is working correctly.



If there is a problem after this short test, please contact your installer for advice.



The water escaping from the safety group may be extremely hot and can cause severe burns.

SETTING THE ACV BURNER TO SAFETY MODE

If the burner is not working:

1. The burner indicator lamp lights.
2. Press the burner reset button (Fig. 2) on the burner.



Fig. 2

3. If the burner still does not work, remove the boiler front panel and reset the high limit thermostat on the top of the boiler body (Fig. 3).

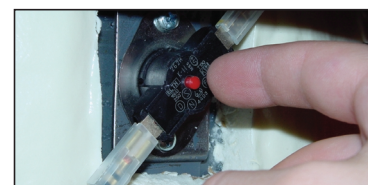


Fig. 3

4. If the problem persists, check your fuel oil level before contacting your installer for advice.

DESCRIPTION

GENERAL DESCRIPTION

- Combined boiler and water heater (*heating and domestic hot water*).
- Hot water generated by an indirect storage system.
- Equipment required: a water connection kit for the heating circuit supply (*optional*).
- The control panel contains a main switch, a Summer/Winter switch, an energy selection switch, an indicator lamp, an optimiser, a hot water control thermostat, a thermostat-pressure gauge and a heating control thermostat.
- The boiler may be connected directly to the chimney using a B23 chimney connection.
- Model **BNE 1**: output between 20 and 25 kW.
- Model **BNE 2**: output between 28 and 36 kW.
- Model **BNE 3**: output between 36.5 and 51 kW.

OPERATING PRINCIPLE

Two thermostats are used to adjust the temperature settings for the heating and hot water. The addition of the hot water priority device incorporated in the wiring ensures an ample supply of hot water.

A manual reset high limit thermostat locks the burner if the boiler temperature exceeds 103°C.

In summer, when heating is not required, the heating pump and burner can be switched off and a 2.4 kW resistor used for the hot water requirements. (**BEWARE: The water heating efficiency will be lower than that with the oil-fired burner.**)

DESIGN CHARACTERISTICS

Outer body

The outer body which holds the primary water is made of STW 22 heavy gauge steel.

Smoke flues

The boiler smoke flues are accessed via the front and contain a set of removable stainless chromium steel turbulators, specially designed to provide optimum combustion efficiency.

Combustion chamber

The boiler has a large, water-cooled combustion chamber, designed to ensure good development of the burner flame.

Removable burner chamber plate

The burner chamber plate, mounted on a hinge (left or right) is made of STW 22 steel. It is insulated from the flame by a ceramic fibre pad and a vermiculite brick.

Insulation

The boiler body has full sprayed-on rigid, CFC-free polyurethane foam insulation with a high insulation coefficient.

Casing

The boiler is covered with a steel casing that has been stove enamelled at 220°C after scouring and phosphating.

Storage exchanger

The inner hot water tank with integrated heating surface is made of stainless steel that has been fully argon welded using the TIG (Tungsten Insert Gas) method.

Electrical resistor

The electrical resistor, made entirely of stainless steel, is mounted on a flange.

BOILER VIEWS AND KEY TO PARTS

1. Cold water inlet
2. Hot water thermostat pocket
3. Hot water outlet
4. Steel outer tank
5. Stainless steel inner tank
6. Heating return
7. Chimney connection
8. Heating outlet
9. Heating circuit drain cock
10. Combustion chamber
11. Steel base
12. Exchanger (flues)
13. Burner
14. Flame inspection window
15. Left/right removable burner chamber plate
16. Electrical resistor
17. Polyurethane foam insulation
18. Front panel
19. Control panel
20. Heating circuit vent

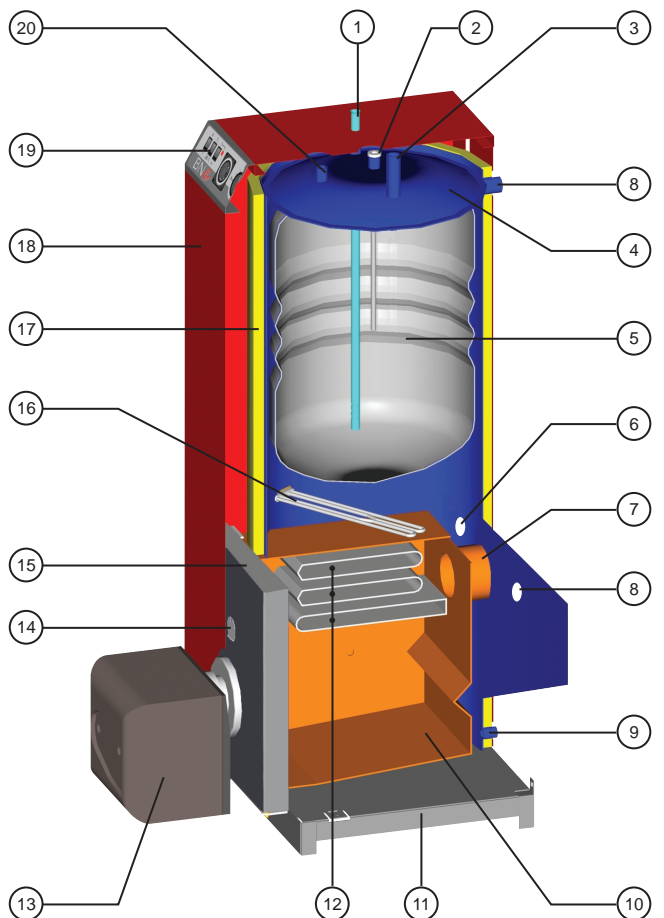


Fig. 4

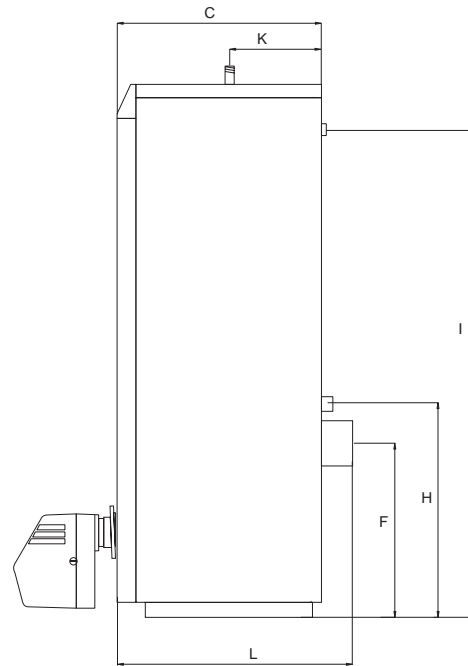
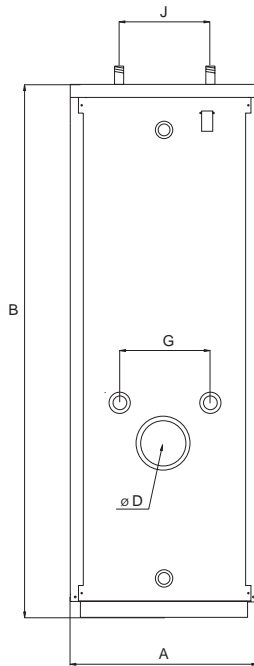
TECHNICAL CHARACTERISTICS

GENERAL

The appliances are supplied fully assembled, tested and packed standing on a timber transport base with impact protection strips and wrapped in heat-shrunk plastic film. When the appliance arrives, remove the packaging and check that no parts have been damaged in transit.

Refer to the dimensions and weights listed below for handling purposes:

DIMENSIONS



OPERATING CONDITION LIMITS

Maximum service pressure (tank filled with water)

- Heating circuit: 3 bar
- Hot water circuit: 10 bar

Test pressure (tank filled with water)

- Heating circuit: 4.5 bar
- Hot water circuit: 13 bar

Operating temperature

- Maximum temperature: 90°C

	A mm	B mm	C mm	D Ø mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Kg (*)
BNE 1	590	1505	640	130	463	260	615	1390	270	300	700	204
BNE 2	590	1570	640	130	526	260	615	1450	270	300	700	222
BNE 3	690	1610	740	150	564	260	715	1475	270	350	800	283

(*) The weights shown are drained weights.

HOT WATER OUTPUT DATA

		BNE 1	BNE 2	BNE 3
• Operating conditions at 80°C				
Peak flow at 40°C (ΔT = 30°C)	l/10 min.	311	311	311
Constant flow at 40°C (ΔT = 30°C)	l/h	716.4	898.8	898.8

GENERAL CHARACTERISTICS

		BNE 1	BNE 2	BNE 3
Input	kW	22/28	30/41	40/57
Output	kW	20/25	28/36	36.5/51
Loss of head	mbar	20.0	25.5	30.0
Flue gas pressure loss	mbar	0.15	0.17	0.15
Total capacity	l	184	186	248
Heating circuit capacity	l	64	66	128
Hot water connection (male)	Ø	3/4"	3/4"	3/4"
Heating connection (female)	Ø	1"	1"	1" 1/4
Boiler heating surface	m²	1.1	1.1	1.1

INSTALLATION

BOILER ROOM

Important

- Never obstruct the ventilation.
- Do not store inflammable products in the boiler room.
- Avoid storing corrosive products such as paint, solvents, chlorine, salt, soap or other cleaning products near the boiler.

Accessibility

The boiler room should be big enough to allow easy access to the boiler. Minimum clearances around the boiler (mm):

- at the front 500
- at the rear 150
- at the sides 100
- above 300

Ventilation

The boiler room must have both low and high level ventilation (see Fig. 5).

The user must ensure that the boiler room ventilation complies with current local regulations.

By way of information, the table below gives the minimum ventilation requirements according to Belgian regulations.

		BNE 1	BNE 2	BNE 3
Ventilation				
Min. fresh air supply	m ³ /h	50.0	72	102
High level ventilation (A)	dm ²	150	150	150
Low level ventilation (B)	dm ²	150	150	170

Base

The base or flooring on which the boiler will be placed must be made from non-combustible materials.

CHIMNEY CONNECTIONS



IMPORTANT

The boiler must be installed by a qualified engineer in accordance with local standards and codes of practice.



The diameter of the chimney must not be less than the diameter of the boiler's chimney reducer.

Chimney connection type: B23 (Fig. 5)

The chimney must be connected to the boiler by means of a metal pipe rising at an angle from the boiler to the chimney. A chimney connection is required.

		BNE 1	BNE 2	BNE 3	
Chimney					
E = 5	m Ø min. F	mm	130	143	170
E = 10	m Ø min. F	mm	130	130	143
E = 15	m Ø min. F	mm	130	130	130

- A. High level ventilation
- B. Low level ventilation
- C. Draught stabiliser
- D. Flame inspection window
- E. Height of lined chimney
- F. Chimney diameter

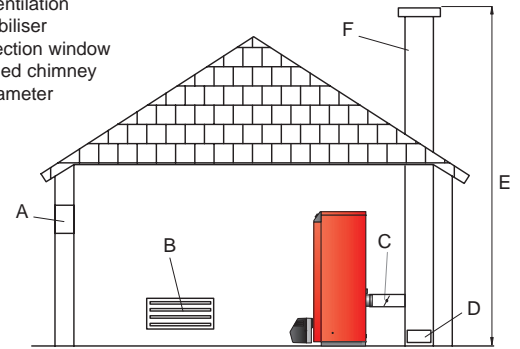


Fig. 5: Boiler ventilation and B23 chimney connection



Note:

The above table is shown by way of information only, as regulations vary from country to country.



The high efficiency of our boilers means that the flue gases exit at low temperature. The attendant risk of condensation may cause damage to some chimneys. To avoid this risk we strongly advise that you line the chimney. Please contact your installer for further details about this.

FUEL OIL SUPPLY

Installation with one pipe (Fig. 6)

Height H	Ø 8 mm	Ø 10 mm
0.5 m	L = 10 m	L = 20 m
1.0 m	L = 20 m	L = 40 m
1.5 m	L = 40 m	L = 80 m
2.0 m	L = 60 m	L = 100 m

Installation with two pipes (Fig. 7)

Height H	Ø 8 mm	Ø 10 mm
0 m	L = 35 m	L = 100 m
0.5 m	L = 30 m	L = 100 m
1.0 m	L = 25 m	L = 100 m
1.5 m	L = 20 m	L = 90 m
2.0 m	L = 15 m	L = 70 m
3.0 m	L = 8 m	L = 30 m
3.5 m	L = 6 m	L = 20 m

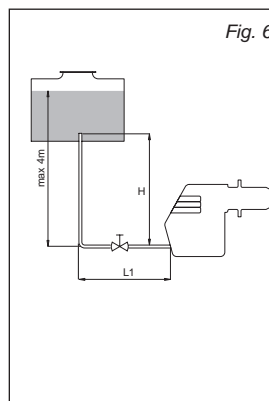


Fig. 6

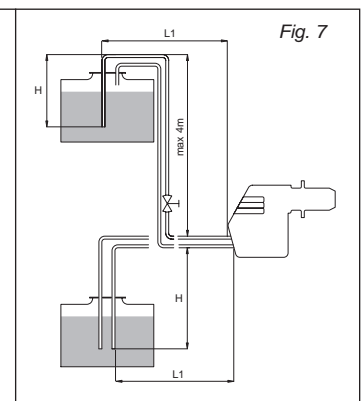


Fig. 7

HEATING CONNECTION

ACV water kit

ACV can supply an optional pre-assembled water kit.

This kit comprises:

- A pump;
- A 3-way manual valve.
This valve can be motorised if required;
- Connection pipes that can be used to connect a second heating circuit;
- Two isolating valves;
- Connectors for the right or left hand mounting of the expansion vessel, the safety valve with pressure gauge and the filling valve.
The expansion vessel is not included.



Fig. 8: ACV water kit

Typical single circuit configuration

1. Motorised 3-way mixer valve
2. Safety valve calibrated to 3 bar, with pressure gauge
3. Pump
4. Isolating valve with non-return valve
5. System filling valve
6. Expansion vessel
7. Room thermostat
8. Isolating valve, heating system
9. Drain cock

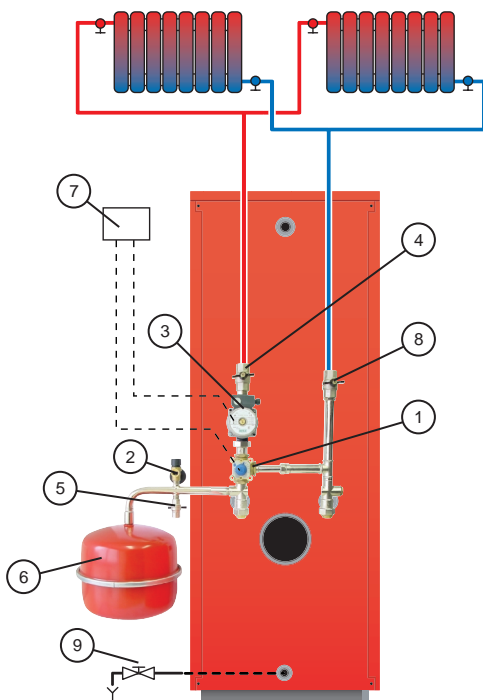


Fig. 9: Heating system layout

Drain

The drain cock and safety valve must be connected to the building drain.

HOT WATER CONNECTION

Pressure reducing valve

If the mains water pressure exceeds 6 bar, a pressure reducing valve calibrated to 4.5 bar must be installed.

Safety group

The safety group of the water tank must be approved by ACV and calibrated to 7 bar; the discharge from the group's valve must be connected to the drain.

Hot water expansion vessel

Installing a hot water expansion vessel will prevent any risk of excess pressure due to water hammer or pressure fluctuations.

Hot water circulation

If the water tank is a long way from the point of use, installing a closed recirculation circuit can ensure a faster hot water drawoff at any time.

Typical hot water configuration

1. Safety group
2. Pressure reducing valve
3. Thermostatic mixer
4. Hot water pump
5. Non-return valve
6. Hot water expansion vessel
7. Cold water supply tap
8. Drawoff tap
9. Drain cock
10. Air vent
11. Isolating valve

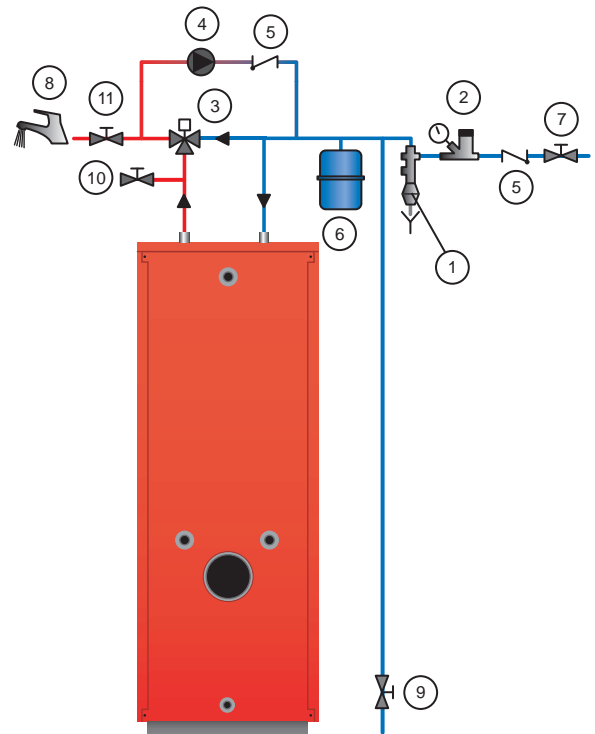


Fig. 10: Hot water system layout

Optional accessories

Safety group	Ø 3/4"
Pressure reducing valve	Ø 3/4"
Thermostatic mixer	Ø 3/4"
Expansion vessel	5 litres



IMPORTANT

As a safety measure, we strongly advise the installation of a thermostatic mixer to prevent any risk of burning to persons.

INSTALLATION

ELECTRICAL CONNECTIONS

Principle of supply

The boiler operates on a 230 V/50 Hz single-phase supply. You should install a control box with main switch and fuses externally to the boiler to allow the boiler to be isolated from the supply for servicing and repairs.

Statutory compliance

The installation must comply with your local standards and codes of practice.

Safety

The stainless steel water tank must be provided with a separate earth.



The boiler must be isolated from the electrical supply before any work is carried out on it.

The heater consists of two 2.4 kW electrical resistors. One of these two resistors is wired and used as the main resistor. The other resistor is not used, and serves only as a back-up if the first resistor becomes faulty.

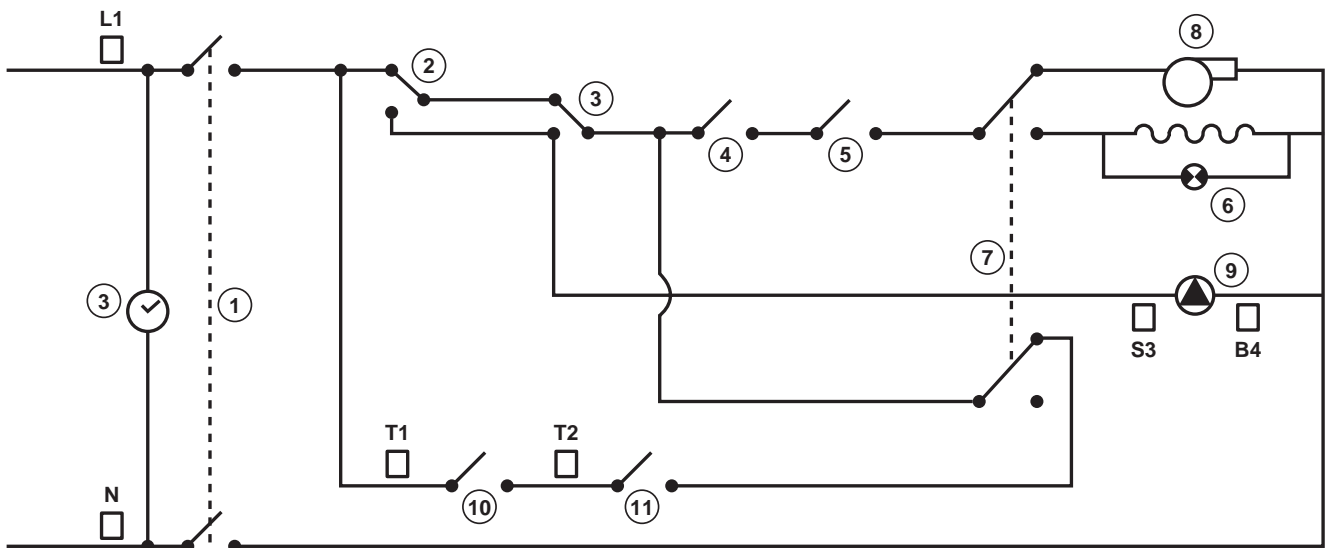
The two resistors must never be connected to operate together, as this will damage the internal wiring of the boiler.

Wiring diagram key

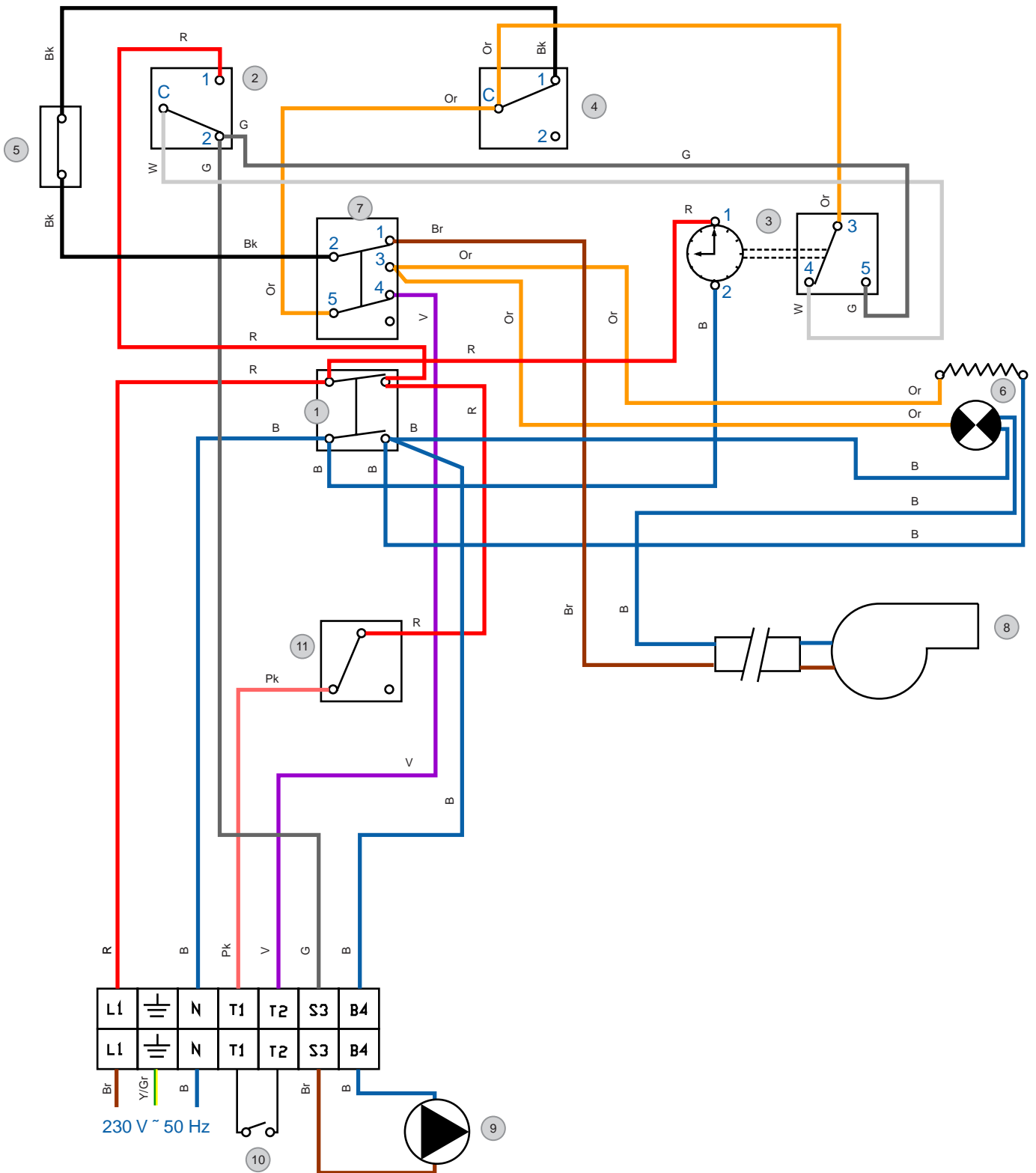
1. Main switch
2. Hot water control thermostat
3. 24-hour programmer
4. Heating control thermostat (60/90°C)
5. Manual reset high limit thermostat (103°C max.)
6. Electrical resistor indicator lamp
7. Energy selection switch
8. Burner
9. Pump
10. Room thermostat (*optional*)
11. Summer/Winter switch

- B. Blue
- Bk. Black
- Br. Brown
- G. Grey
- Or. Orange
- Pk. Pink
- R. Red
- V. Violet
- W. White
- Y/Gr. Yellow/Green

Schematic diagram of the boiler electrical circuit



Wiring diagram of the boiler electrical circuit



BURNER CHARACTERISTICS

DESCRIPTION OF THE BURNER

This new generation of oil-fired burners meets current requirements for the performance and cleanliness of combustion gases. The burner is made from top quality components using the latest technologies, and includes a fuel oil preheating device.

Components:

- “Landis & Gyr” relay
- “A.E.G.” motor
- “Suntec” pump
- “May & Christe” transformer
- “Danfoss” oil preheating device

Advantages

- Easy to install, fitted with a safety shut-off and a new burner suspension system.
- A special tool supplied with the burner is used for all maintenance work.
- The burner air pressure adapts to the combustion chamber pressure.
- An automatic check valve stops the air flow when the burner stops, and thus prevents the boiler cooling down.
- Quiet and very reliable.
- Adapts to the depth of the boiler via the adjustable flange on the throat.
- Three air adjustment points to ensure optimum air/oil mixture.
 - Presetting of the upstream air;
 - Primary adjustment;
 - Combustion head adjustment.

Throat

Burner inlet

Nozzle line adjustment screw

Air damper

Pump/nozzle connection pipe

Control relay

Burner reset

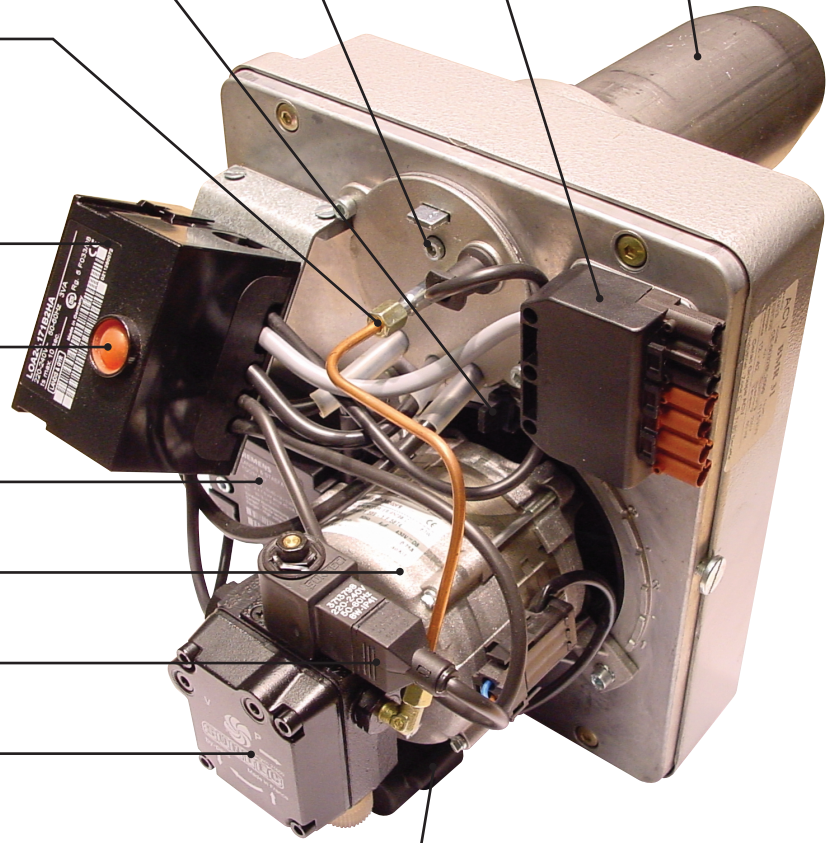
High voltage transformer

Motor

Solenoid valve

Fuel oil pump

Motor capacitor



BURNER CHARACTERISTICS

SETTING PARAMETERS

		BM R 31		BM R 51
		BNE 1	BNE 2	BNE 3
Input	kW	23.0	30.0	49.0
Electrical output	W	150	150	150
Nozzle	gal/h	0.50	0.75	1.25
Nozzle angle		60°	60°	60°
Fuel oil flow rate	Kg/h	1.94	2.53	4.13
Pump pressure	bar	13.5	10.5	10
Flue gas index		0.6	0.6	0.6
Air damper setting		3	4.5	4
Combustion head setting		2	1	2
Weight	Kg	12	12	12

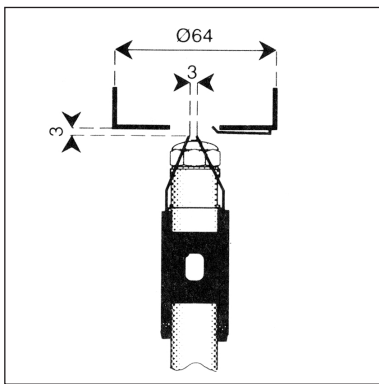


Fig. 11:
Electrode distance



Fig. 12:
Combustion head
adjustment screw

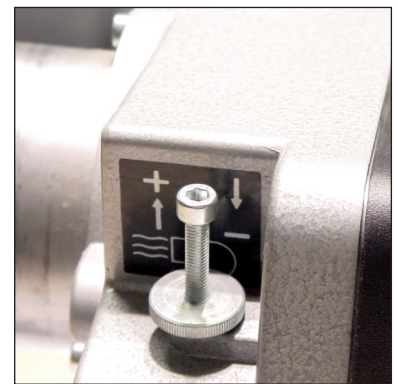


Fig. 13:
Air flow adjustment screw
(precision adjustment)

BURNER DIMENSIONS

	A mm	B mm	C mm	D mm	E mm	F mm	G Ø mm	L Ø mm	LK Ø mm
BM R 31	240	270	215	280	60-130	M 8	80	85	140-165
BM R 51	240	270	215	280	60-130	M 8	80	85	140-165

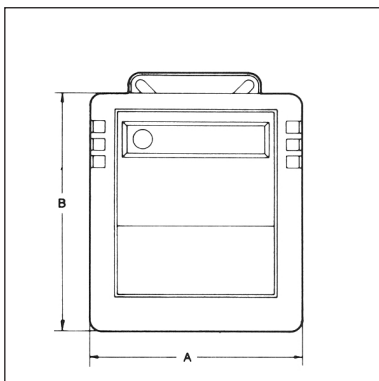


Fig. 14

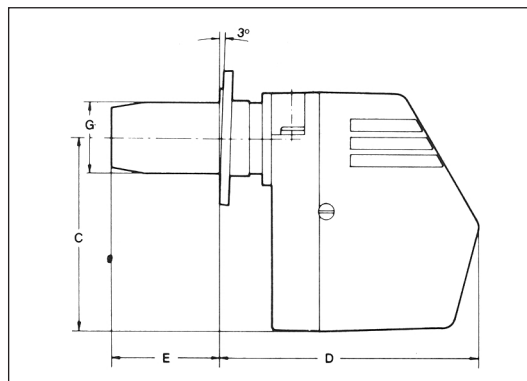


Fig. 15

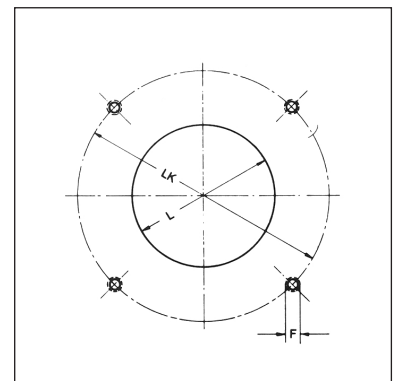


Fig. 16

COMMISSIONING AND MAINTENANCE

FILLING THE HOT WATER AND HEATING CIRCUITS



IMPORTANT

It is essential that the hot water circuit is filled before the heating circuit.

1. Fill the hot water circuit opening valves 7 and 8 and pressurise it. (Fig. 19, page 13)
2. Fill the heating circuit opening valves 4, 5 and 8 - do not exceed a pressure of 2 bar. (Fig. 18, page 13)
3. Vent the air in the system and the boiler.
4. Once you have vented the system, return the pressure to static pressure plus 0.5 bar.

Height of the heating system:

- 10 m ⇒ heating circuit pressure = 1.5 bar
- 15 m ⇒ heating circuit pressure = 2 bar

USING THE BOILER FOR THE FIRST TIME

1. Check the fuel oil supply connection and ensure that it is free from leaks.
2. Check the electrical connection of the boiler and the boiler room ventilation, and ensure that the flue gas discharge pipes and the burner chamber plate are properly gas tight.
3. Set the boiler thermostat to between 60 and 90°C.
4. Move the Summer/Winter switch to the "Winter" position.
5. Move the main switch to "ON".
6. Carry out the necessary venting operations, measurements and settings.

SERVICING RECOMMENDATION

It is essential that you have the boiler serviced once a year. Boiler servicing and checking the burner must be carried out by a qualified engineer.

BOILER MAINTENANCE (Fig. 17)

1. Isolate the boiler from the electrical supply at the switch on the external control box, and close the fuel oil supply valve.
2. Move the main switch on the control panel to "OFF".
3. Remove the front panel from the boiler (1).
4. Open the burner chamber plate (2) by undoing the two nuts.
5. Take out the stainless steel turbulators (3).
6. Brush the flue ways, clean the combustion chamber and vacuum up the soot deposits.
7. Check the condition of the insulation on the burner chamber plate (4).
8. Before re-assembly, clean the burner combustion head (5).
9. Check that the thermostats and safety valves are in good working order.

SAFETY EQUIPMENT MAINTENANCE

- Check that all thermostats and safety devices are in good working order: boiler thermostat and 103°C manual reset high limit thermostat.
- Check the safety valves in both the heating circuit and hot water circuit.

DRAINING THE BOILER



The water draining from the drain cock is very hot and can cause severe burns. Keep all persons away from running hot water.

Draining the heating circuit (Fig. 18)

1. Move the main switch on the control panel to "OFF" and isolate the boiler from the electrical supply at the switch on the external control box.
2. Close the isolating valves (8) in the heating circuit.
3. Connect a flexible tube to the drain cock (9).
4. Open the drain cock (9) to drain the heating circuit.

Draining the hot water circuit (Fig. 19)

1. Move the main switch on the control panel to "OFF" and isolate the boiler from the electrical supply at the switch on the external control box.
2. Reduce the pressure in the heating circuit until the pressure gauge reads zero.
3. Close the tap (7) and isolating valve (11).
4. Open the drain cock 9 first, then 10.
5. Allow the hot water circuit to discharge to the drain.



The drain cock (9) must be at ground level for the circuit to drain fully.

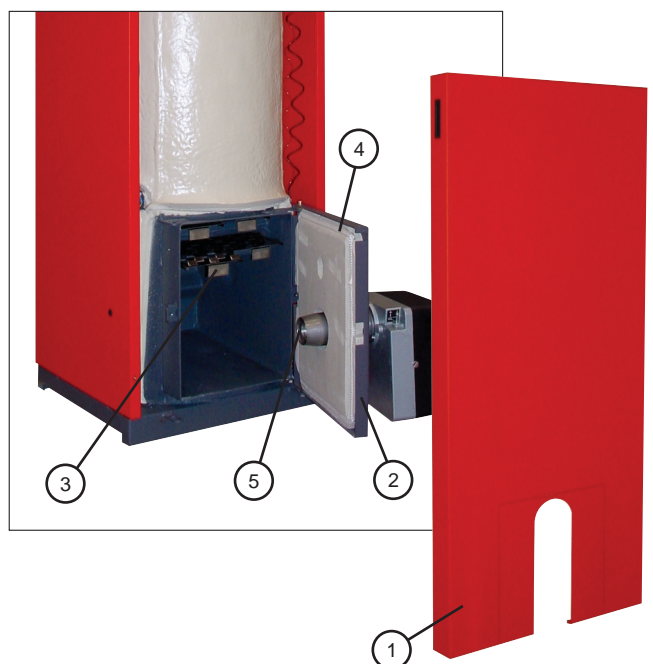


Fig. 17

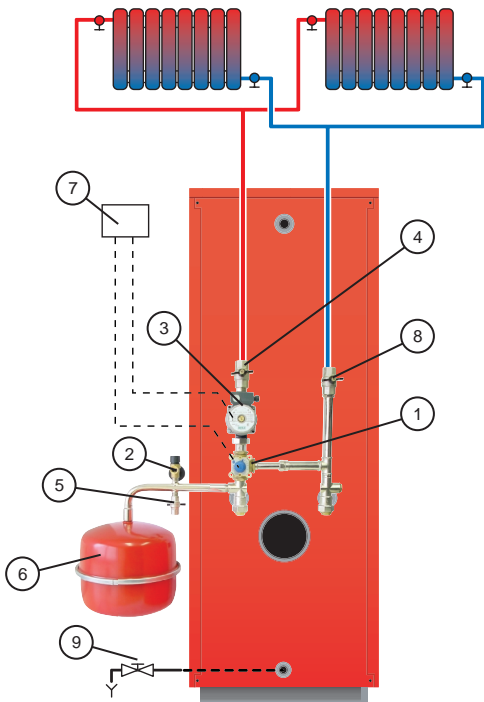


Fig. 18: Heating connection

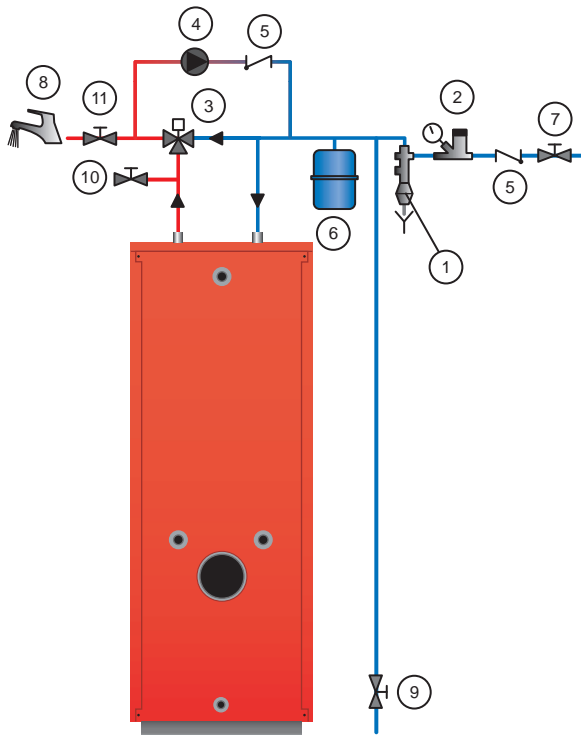


Fig. 19: Hot water connection

SPARE PARTS

No.	Casings	BNE 1	BNE 2	BNE 3
A01	Right side	21471384	21471385	21471386
A02	Left side	21472384	21472385	21472386
A03	Front panel	21473384	21573385	21473386
A04	Rear panel	21474384	21474385	21474386
A05	Top cover	21475384	21475384	21475386
A06	Unequipped control panel	21477384	21477384	21477376
No. Accessories				
B01	Body shell	30465156	30465157	30465158
B02	Burner chamber plate	2147P380	2147P381	2147P382
B03	Brick backplate	-	2147E381	2147E382
B04	Insulating cover	-	51401128	51401129
B05	Burner chamber plate insulating brick	51701001	51404029	51404030
B06	Ceramic fibre door insulating cord	51401113	51401113	51401113
B07	PVCC plunger, Ø 19.5 mm / L 800 mm	49410045	49410045	49410045
B08	Aerator	50423066	50423066	50423066
B09	Thermometer-pressure gauge	54441008	54441008	54441008
B10	Drain cock, Ø 1/2"	55426001	55426001	55426001
B11	Hinge pin M 10 19x33 mm	47405252	47405252	47405252
B12	Sensor retainer spring	47438008	47438008	47438008
B13	Turbulators	50423097	50423097	50423098
B14	H.D.P.E. handle	49410280	49410280	49410280
B15	Flame inspection window	50423008	50423008	50423008
B16	Grommet	54428001	54428001	54428001
B17	Brass pocket, Ø 1/2" / L. 100 mm	63438001	63438001	63438001
B18	Stainless steel pocket 12/10 - Ø 1/2" / L. 350 mm	39438023	39438023	39438023
B19	Control panel self-adhesive label	617G0054	617G0054	617G0054
B20	Clip retainer	47405004	47405004	47405004
B21	Stud	47405005	47405005	47405005
No. Electrical accessories				
C01	Full control panel	24614110	24614110	24614111
C02	ON/OFF switch	54766014	54766014	54766014
C03	Summer/Winter switch or energy selection switch	54766013	54766013	54766013
C04	90°C control thermostat	54442045	54442045	54442045
C05	Manual reset high limit thermostat (103°C)	54764010	54764010	54764010
C06	Indicator light	54766001	54766001	54766001
C07	Electrical resistor 2 x 2.4 kW	54428182	54428182	54428182

DETAILS OF THE INSTALLATION

Installation date:	Model:
% CO₂ (max. load):	Serial number:
Flue gas T°:	Heating system pressure setting:
Efficiency:	Name and signature:
Fuel oil pressure:	

SERVICE NOTES

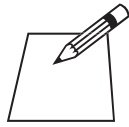
Installation date:	Comments:
% CO₂ (max. load):	
Flue gas T°:	
Efficiency:	Name and signature:
Fuel oil pressure:	

Installation date:	Comments:
% CO₂ (max. load):	
Flue gas T°:	
Efficiency:	Name and signature:
Fuel oil pressure:	

Installation date:	Comments:
% CO₂ (max. load):	
Flue gas T°:	
Efficiency:	Name and signature:
Fuel oil pressure:	

Installation date:	Comments:
% CO₂ (max. load):	
Flue gas T°:	
Efficiency:	Name and signature:
Fuel oil pressure:	

Installation date:	Comments:
% CO₂ (max. load):	
Flue gas T°:	
Efficiency:	Name and signature:
Fuel oil pressure:	



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