

N

Installation, operating and maintenance Instructions

N-Mini / N 1 / N 2 / N 3



excellence in hot water

| | | | |
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INTRODUCTION

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:



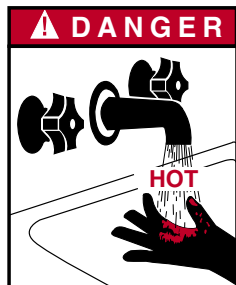
Important instructions for correct operation of the installation.



Essential instructions to ensure the safety of persons and the environment.



Danger of electrocution.



Danger of burning.

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 (fuel oil boiler).



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 incorrect installation or in the event of the use of appliances or accessories that are not specified by ACV.



Failure to follow the instructions describing the test operations and procedures may cause injury to persons or risks 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 by a qualified engineer; servicing should be completed before the start of the heating season.

Starting the burner:
in normal operation the burner starts automatically if the temperature of the boiler is below the set point.



Before carrying out any work on the boiler, isolate it from the electrical supply at the switch on the external control box. Also place 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. Control thermostat

When the boiler is used for heating only, the boiler temperature may be set at 60 to 90°C. If the boiler is used to generate domestic hot water and heating, the boiler's control thermostat should be set at 80°C to ensure optimum operating conditions.

2. Main switch

Use this switch to turn the boiler on and off.

3. Summer/Winter switch

Use this switch to start and stop the heating pump.

4. Thermostat-pressure gauge

This gauge shows the temperature of the boiler and the pressure in the primary heating circuit. The temperature must not exceed 90°C. If it rises above this point, turn off the boiler and check the settings on the thermostat. If the problem persists, call a technician. The pressure must not fall below 1 bar. If it does fall below this point, look up the section entitled "Gauge pressure of the heating installation" in this section below.

5. Manual reset high-limit thermostat

If the boiler temperature exceeds 103°C, this safety device will be enabled. The boiler temperature must drop below 60°C to re-start. Unscrew the cover and press the re-start key with a pen or an object with a similar sharp point. Replace the cover. If the fault persists, turn off the boiler and call a technician.

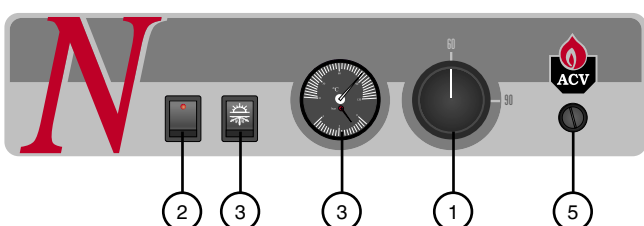


fig. 1 : Control panel



fig. 2 : N-Mini Control panel

Pump operation:

The pump is controlled by a reset high limit thermostat, which is located at the rear of the boiler. This is pre-set at 45°C. When the boiler starts up, it delays the activation of the boiler pump, thereby preventing any risk of corrosion in the combustion chamber.

Gauge pressure of the heating system

Your system must be fitted with a heating safety valve calibrated to 3 bars.

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 between 0.5 and 1.5 bar depending on the height of the building.

To add water: (refer to Fig. 10 on Page 7)

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

Safety valves (heating circuit)

If water is found to be escaping from one of the safety valves, 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 can be extremely hot and cause serious burns.

BURNER SHUTDOWN

If the burner is not working:

1. The burner indicator lamp lights up.
2. Press the burner reset button (Fig. 3) on the burner. Turn the boiler off for several seconds at the main switch, then restart the boiler.
3. If the burner still does not work, rearm the manual reset highlimit thermostat on the control panel (Fig. 4).
4. If the anomaly persists, please contact your installer.



fig. 3



fig. 4

DESCRIPTION

GENERAL DESCRIPTION

- Model **N** is a single boiler (*heating*).
- Equipment required: a water connection kit for the heating circuit supply (*optional*).
- The **N-Mini** control panel includes a control thermostat and a thermostat pressure gauge.
- The control panel on **N 1 - 2 - 3** boilers includes a main switch, a Summer/Winter switch, a thermostat pressure gauge, a control thermostat and a manual reset high-limit thermostat.
- The **N** boiler can be connected directly to the chimney using a B23 chimney connector.
- **N-Mini** Model: output of 16.6 kW.
- **N1** Model: Outputs in the range 20 to 25 kW.
- **N2** Model: Outputs in the range 28 to 36 kW.
- **N3** Model: Outputs in the range 36.5 to 51 kW.

OPERATING PRINCIPLE

Simple to control, safety assured

The temperature of the water in both the heating circuit and the hot water circuit is regulated by a single control. This is achieved by means of the control thermostat and the bulb is located beside the boiler outlet. switch.

- A manual reset high-limit thermostat locks the burner if the primary water temperature reaches 103°C.
- A minimum thermostat, fitted at the rear of the boiler, and preset at 45°C, delays the activation of the boiler pump. This prevents any risk of corrosion in the combustion chamber.

Generation of domestic hot water

Boiler **N** can be combined with the **NHR** tank (110 L) superimposed with the boiler or with any other ACV tank.

DESIGN CHARACTERISTICS

Outer body

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

Flue ways

The boiler's flue ways can be accessed from the front and include a set of removable turbulators, in either stainless steel or chrome, which have been specially designed to provide the optimum combustion efficiency.

Combustion chamber

The boiler features a large, water-cooled combustion chamber to guarantee a good flame.

Removable burner chamber plate

The chamber plate is fitted on a hinge (left or right) and made from STW 22 steel. It is protected from the flame by a ceramic fibre padding and a vermiculite brick.

Insulation

The burner body is insulated with rock wool padding (*50mm thick*).

Casing

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

BOILER VIEWS AND KEY TO PARTS

1. Top cover
2. Heating outlet
3. Heating return
4. Chimney connection
5. Heating circuit
6. Combustion chamber
7. Boiler drain cock
8. Fuel oil burner
9. Left-right removable burner chamber plate
10. Exchanger (flue ways)
11. Front panel
12. Control panel

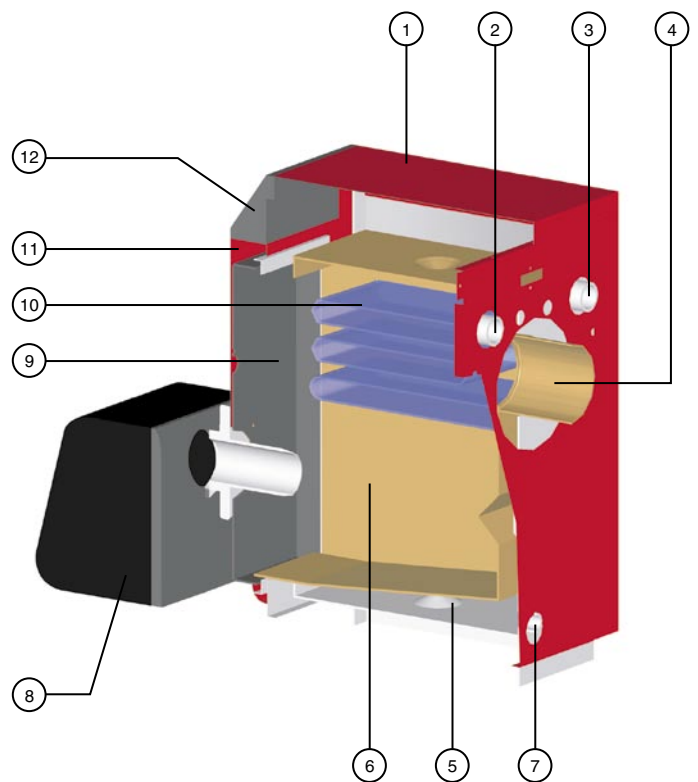


fig. 5

TECHNICAL CHARACTERISTICS

GENERAL

The appliances are supplied fully assembled, tested and packed standing on a timber 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:

OPERATING CONDITION LIMITS

Maximum service pressure (tank filled with water)

- Heating circuit: 3 bar
- Domestic hot water circuit : 10 bar (*)

Test pressure (tank filled with water)

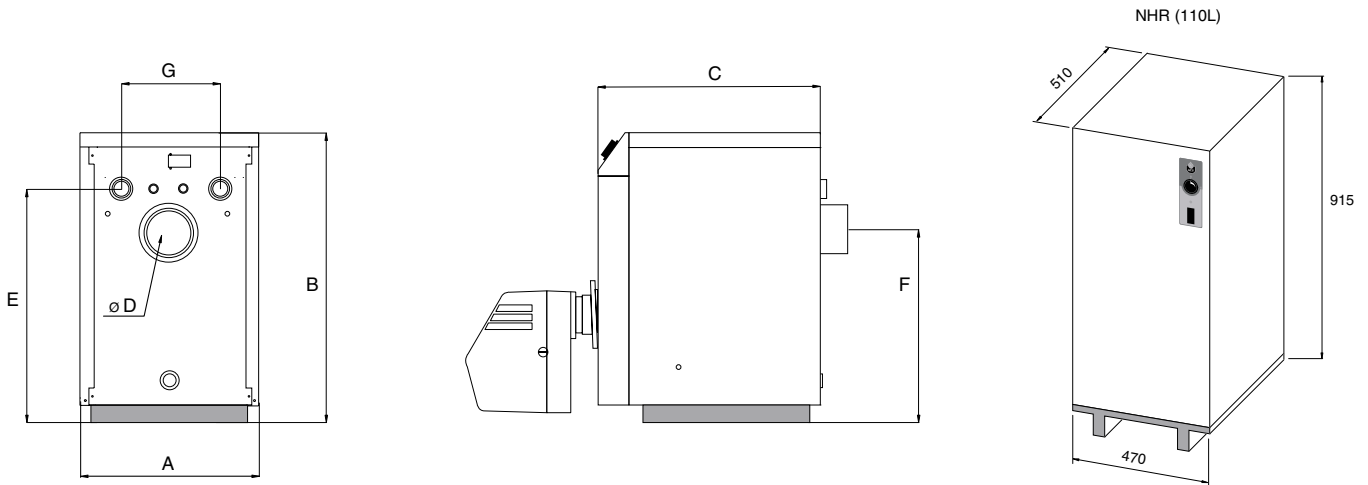
- Heating circuit: 4,5 bar
- Domestic hot water circuit : 13 bar (*)

Operating temperature

- Maximum temperature: 90°C

(*) if the boiler is connected to a domestic hot water production tank.

DIMENSIONS



| | A mm | B mm | C mm | D Ø mm | E mm | F mm | G mm | Kg (*) |
|---------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|---------------|
| N-Mini | 370 | 565 | 495 | 80 | 425 | 357 | 187 | 62 |
| N 1 | 470 | 700 | 566 | 130 | 550 | 445 | 260 | 108 |
| N 2 | 470 | 765 | 566 | 130 | 615 | 510 | 260 | 122 |
| N 3 | 530 | 805 | 656 | 150 | 645 | 550 | 260 | 157 |

(*) The weights shown are the drained weights.

DOMESTIC HOT WATER PERFORMANCE "N + NHR (110 L)"

Operating conditions at 85°C

Peak flow at 45°C (ΔT = 35°C)

L/10'

N 1

236

N 2

236

Peak flow at 60°C (ΔT = 50°C)

L/10'

145

145

GENERAL CHARACTERISTICS

| | | N-Mini | N 1 | N 2 | N 3 |
|---------------------------------------|-------------|---------------|-------------|-------------|-------------|
| Input | kW | 18.4 | 22.0 / 28.0 | 30.4 / 40.0 | 40.0 / 57.0 |
| Output | kW | 16.6 | 20.0 / 25.0 | 27.0 / 35.7 | 36.5 / 51.0 |
| Pressure loss of the flue gas circuit | mbar | 0.11 | 0.15 | 0.17 | 0.15 |
| Heating circuit capacity | L | 17 | 31 | 37 | 53 |
| Heating connection (female) | Ø | 3/4" | 1" | 1" | 1" 1/4 |

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):

- to the front 500
- to the rear 150
- to the sides 100
- above 700

Ventilation

The boiler room must have both low- and high-level ventilation (see fig. 6).

For your information, the table below gives the minimum ventilation requirements according to Belgian regulations.

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

| Ventilation | | N-Mini | N 1 | N 2 | N 3 |
|----------------------------|------------------------|--------|-----|-----|-----|
| Fresh air supply min. | m³/h | 33 | 50 | 72 | 102 |
| High-level ventilation (A) | dm² | 150 | 150 | 150 | 150 |
| Low-level ventilation (B) | dm² | 150 | 150 | 150 | 170 |

Base

The base on which the boiler will be mounted must be made from noncombustible materials.

CHIMNEY CONNECTIONS



IMPORTANT

The boiler must be installed by a qualified engineer in accordance with the 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 connector type: B23 (fig.6)

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 connector is required.

| Chimney | | N-Mini | N 1 | N 2 | N 3 |
|-------------------|----|--------|-----|-----|-----|
| E = 5 m Ø min. F | mm | 97 | 130 | 143 | 170 |
| E = 10 m Ø min. F | mm | 82 | 130 | 130 | 143 |
| E = 15 m Ø min. F | mm | 80 | 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

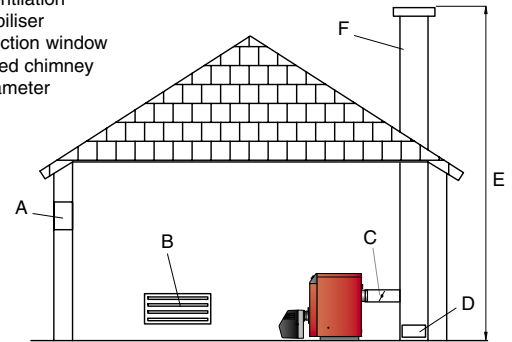


fig. 6 : Boiler ventilation and B23 chimney connector



Important note:

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



The high output of our boilers means that the flue gases are at a 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 any further information.

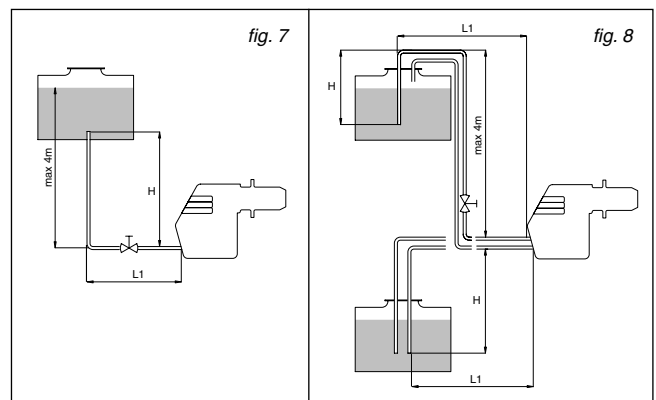
FUEL OIL SUPPLY

Single-pipe installation (fig. 7)

| 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 |

Two-pipe installation (fig. 8)

| 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 |



CONNECTING THE HEATING SYSTEM

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 power-operated if required;
 - Connection pipes that can be used to connect a second heating circuit;
 - Two isolating valves;
 - Connectors for the right- or eft-hand mounting of the expansion vessel, the safety valve with pressure gauge and the fill valve.
- The expansion vessel is not included.

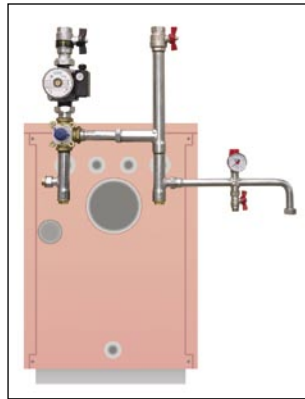


fig. 9 : ACV water kit

Typical single-circuit connection

1. 3-way power-operated mixer valve
2. Safety valve calibrated to 3 bar, with pressure gauge
3. Pump
4. Non-return valve
5. System filling valve
6. Expansion vessel
7. ACV 13.00 controller (see Controller Kit on page 9)
8. Heating system isolating valve
9. Drain cock

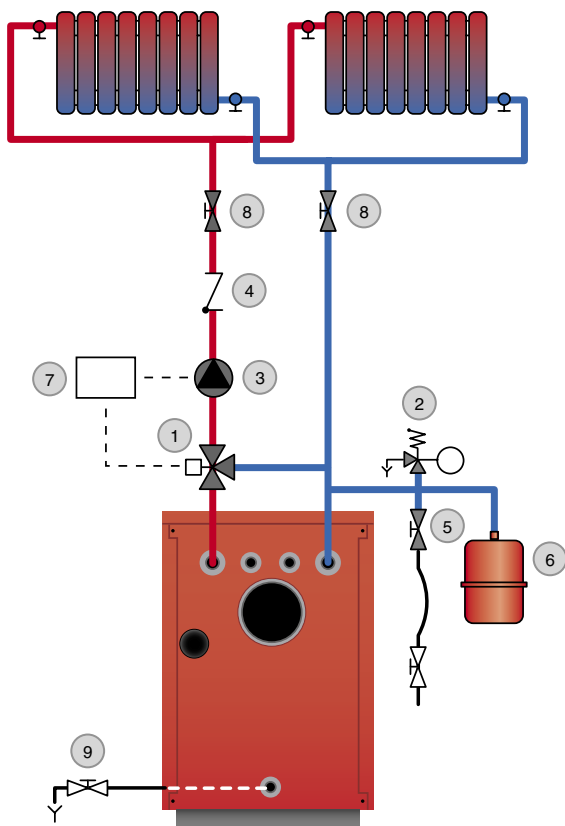


fig. 10 : Heating system connection

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 group's valve discharge 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 N + NHR domestic hot water connection (110 L) with thermostat valve

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

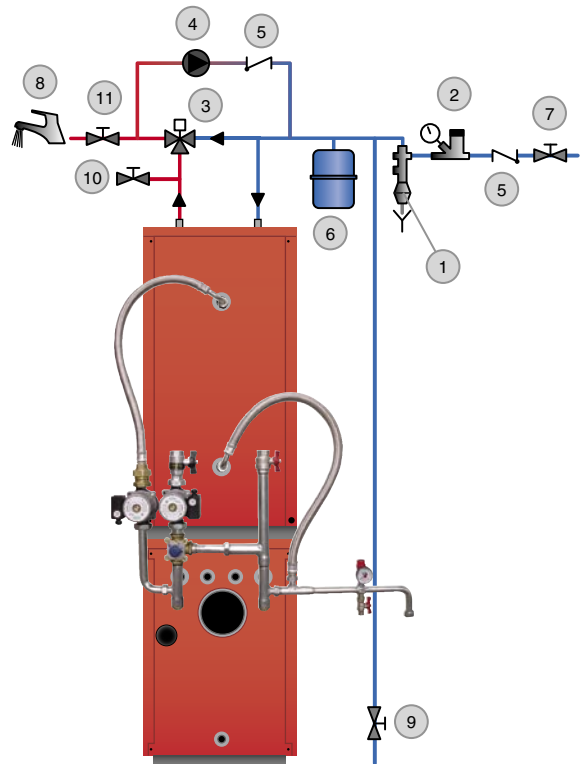


fig. 11 : Hot water system connection



IMPORTANT

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

INSTALLATION

Optional accessories

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

ELECTRICAL CONNECTIONS

Power supply principle

The boiler operates on a single-phase supply of 230 V/50 Hz. You should install a control box with main switch and 6A 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 if present 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.

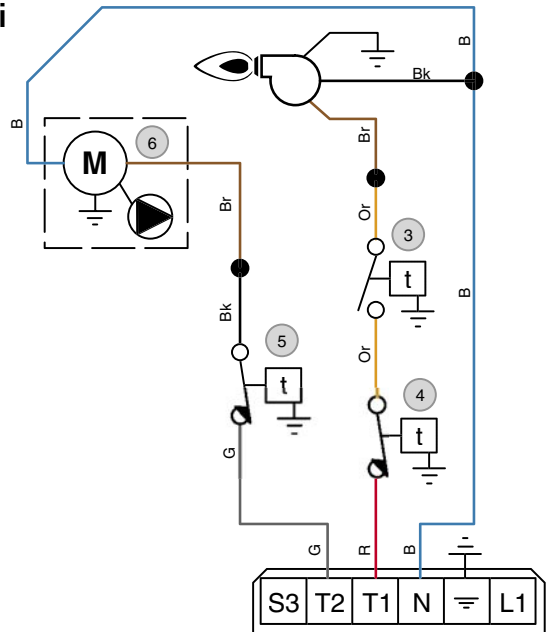
Electrical wiring of N boilers

1. Main switch
2. Summer/Winter switch Thermal reset high-limit thermostat (95°C)
3. Control thermostat (60/90°C)
4. Manual reset high-limit thermostat (103°C max.)
5. Minimum thermostat 45°C (T.O.D)
6. Pump (optional)
7. Room thermostat

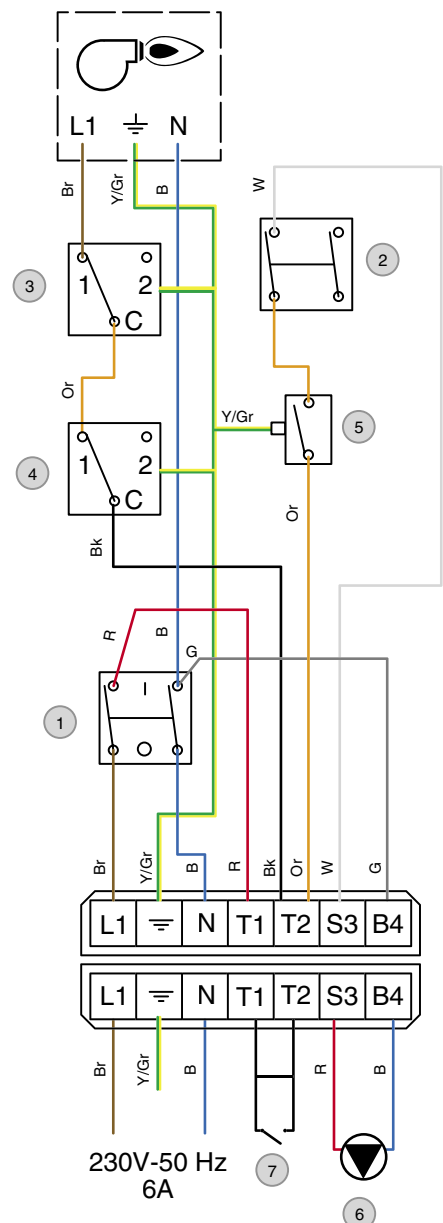
Wiring diagram key

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

N-Mini

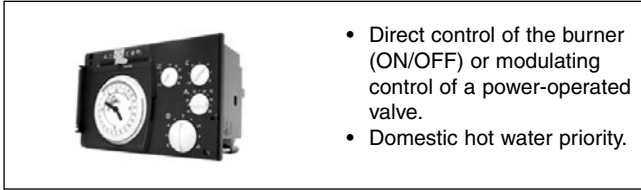


N 1 N 2 N 3



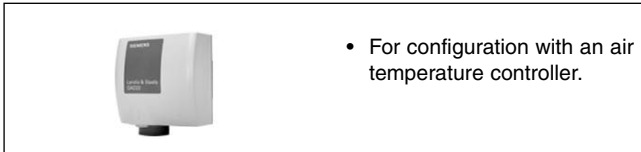
CONTROL KITS (OPTIONAL)

ACV 13 electrical controller



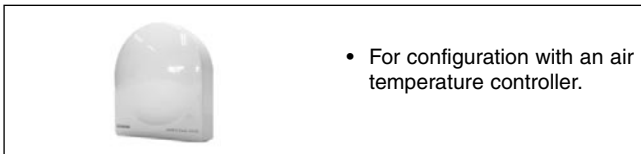
- Direct control of the burner (ON/OFF) or modulating control of a power-operated valve.
- Domestic hot water priority.

QAD 22 heating outlet sensor



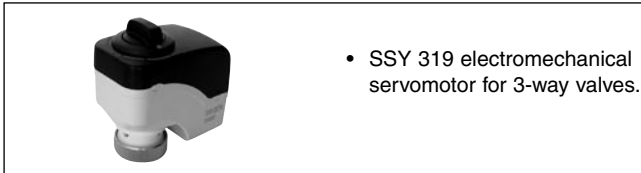
- For configuration with an air temperature controller.

QAC 32 Outdoor sensor



- For configuration with an air temperature controller.

SSY 319 servomotor



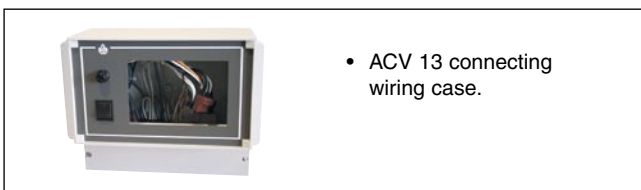
- SSY 319 electromechanical servomotor for 3-way valves.

SGK 349 servomotor



- SGK 349 electromechanical servomotor for 3-way valves.

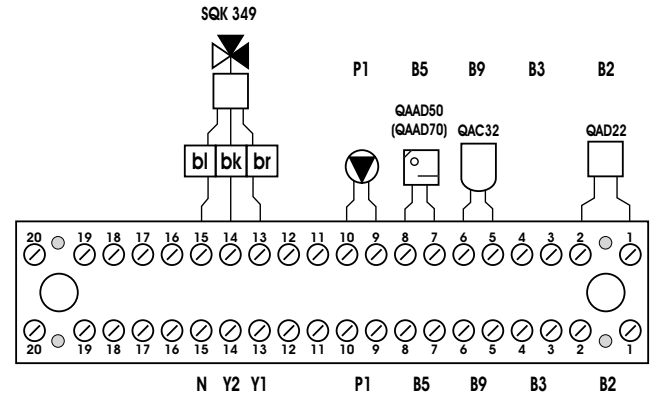
Wall-mounted case



- ACV 13 connecting wiring case.

Electrical wiring diagram of the wall-mounted case

- B2. Temperature sensor
- B9. Outdoor sensor
- B5. Analogue/digital room sensor
- P1. Pump
- Y1/Y2/N. Servomotor (SQK 349 or SSY 319)
- bl. Blue N
- n/z. Black Y2
- br. Brown Y1



Please contact your installer if you require any further information.

Boiler Control BC 01



- This control box is used to connect a single- or dual-fuel boiler to a heating system boiler, without hotwater priority.

Boiler Control BC 03



- The Boiler Control BC 03 controls a heating system boiler without domestic hot water priority with a boiler: it controls the burner operation, the heating pump and the boiler - either through the SCE pump or the 3-way SCE valve.
- The Boiler Control BC 03 incorporates a pump anti-lock device that regularly starts up the pump for a few seconds after a long period of non-use.

INSTALLATION

N + NHR INSTALLATION WITH ACV CONTROL

1. Room thermostat
2. Heating pump
3. 3-way power-operated valves
4. Boiler burner
5. NHR 110 L boiler
6. Electrical supply

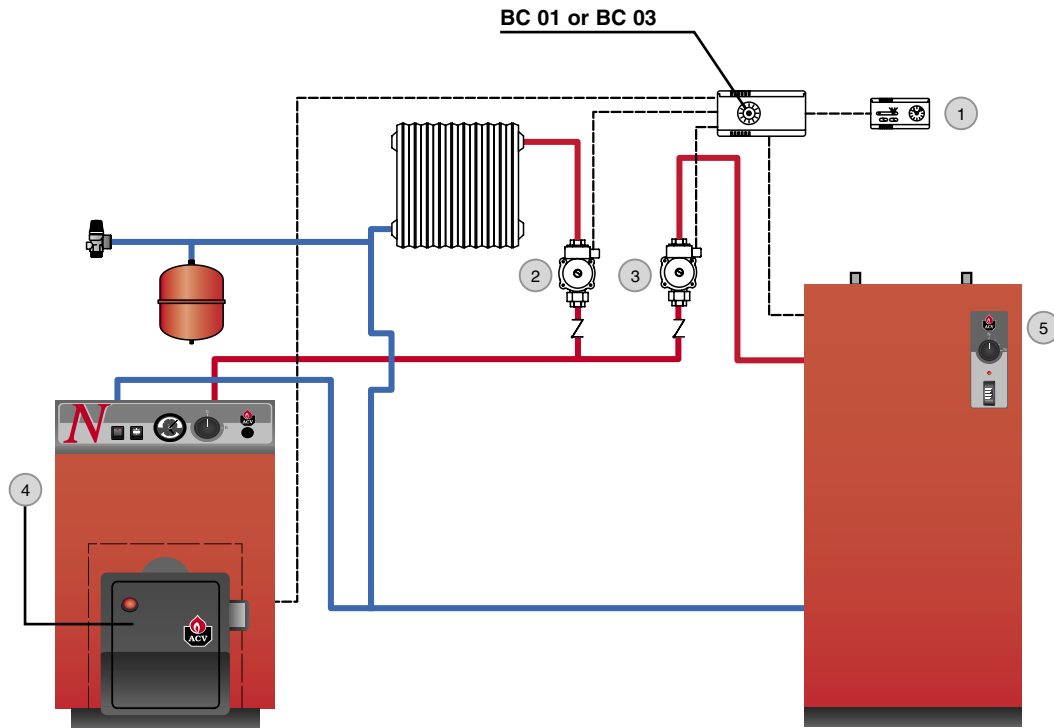


fig. 12 : Installation with two pumps.

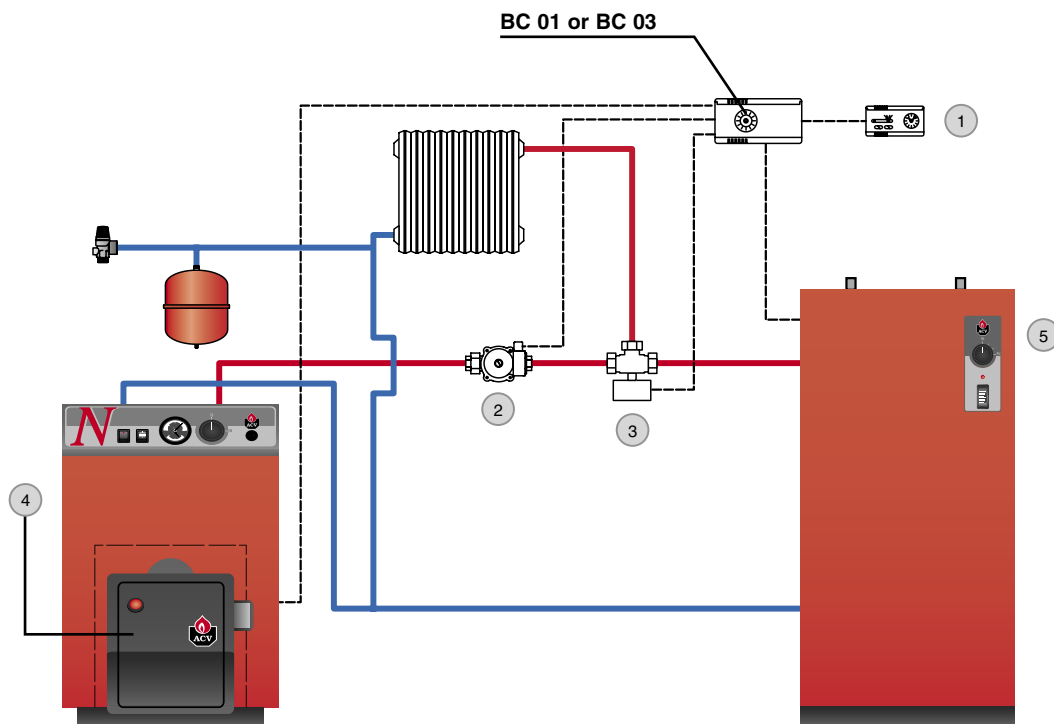
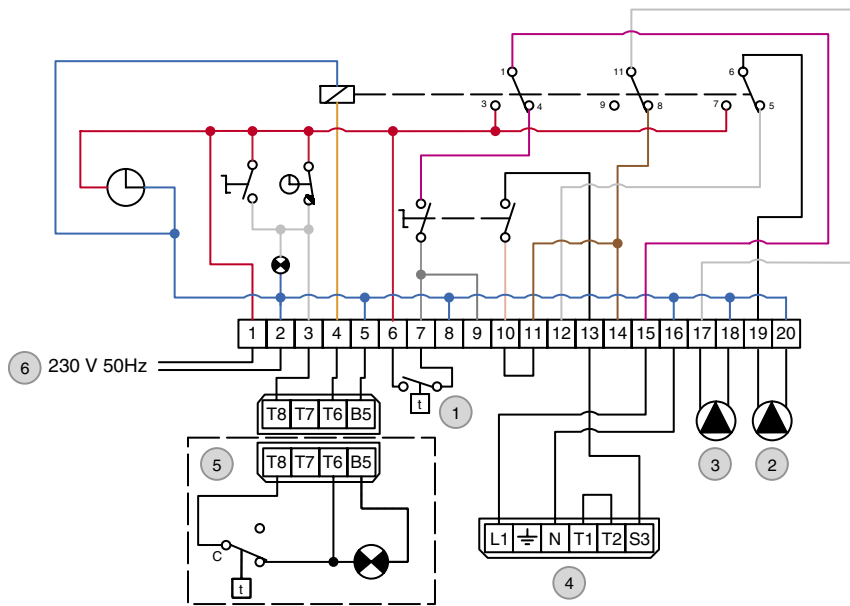
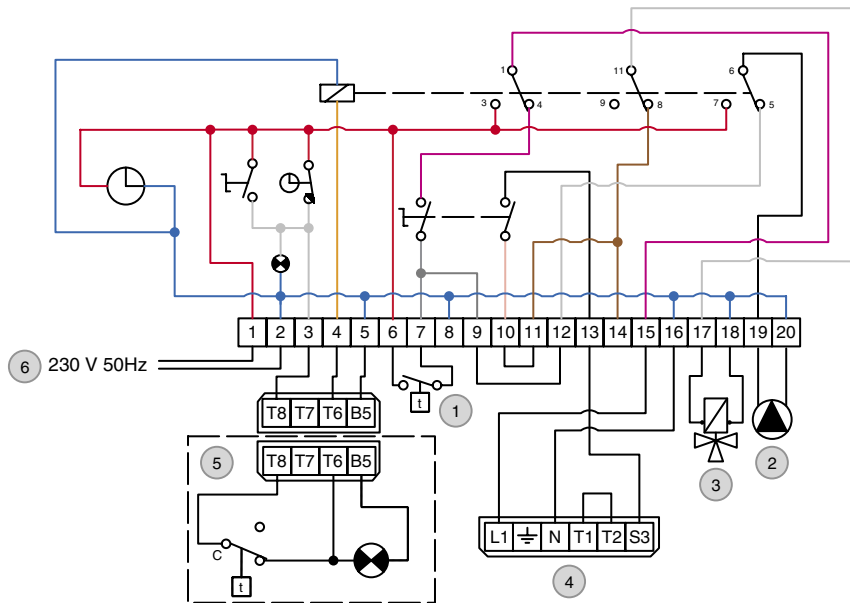


fig. 13 : Installation with 1 pump and one 3-way power-operated valve.

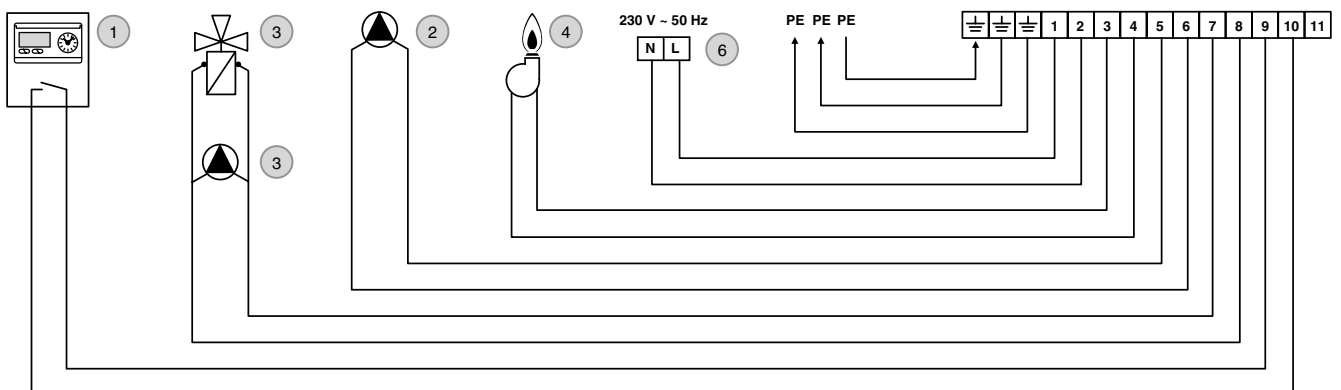
Electrical connection of BC 01 with 2 pump



Electrical connection of BC 01 with one 3-way motorised mixer valve + 1 pump



Connecting the system's electrical components to the BC 03



BURNER CHARACTERISTICS

DESCRIPTION OF THE BURNER

This new generation of fuel oil burners comply with current requirements in terms of performance and the cleanliness of combustion gases.

The burner is fitted with the finest quality components reflecting the latest developments in technology and the fuel-oil is pre-heated.

Components:

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

Advantages

- Simple to install, it is fitted with a safety switch and a new burner suspension system.
- A special key is provided with the burner for any maintenance work needed.
- The burner air pressure adapts to the pressure in the combustion chamber.
- An automatic stop check valve stops the airflow when the boiler is turned off, preventing it from cooling.
- Silent and very reliable operation.
- Adapts to the depth of the boiler with the adjustable nozzle clamp.
- Three air-regulation points to ensure the optimum air/fuel oil mixture.
 - The air is pre-regulated upstream;
 - primary regulation;
 - combustion head regulation.

Throat

Burner socket

Nozzle line adjuster screw

Louver

Pump - nozzle connection pipe

Control relay

Burner reset

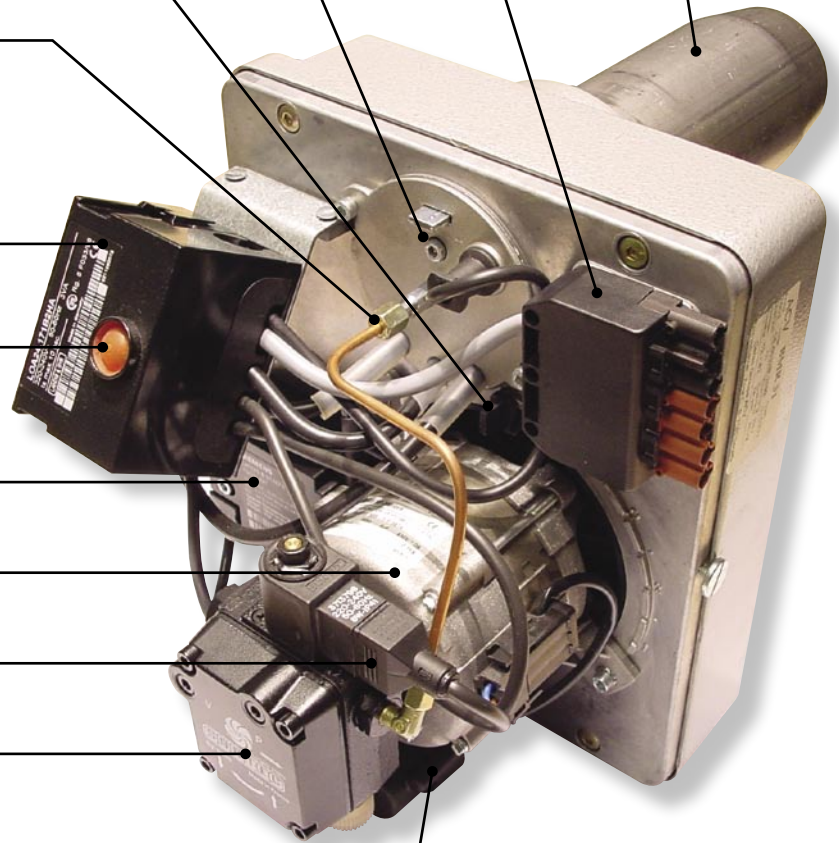
High voltage transformer

Motor

Electrical valve

Fuel oil pump

Motor capacitor



BURNER CHARACTERISTICS

REGULATION PARAMENTER

| | | BM R 31 | | BM R 51 |
|----------------------------|--------------|----------------|-----------|----------------|
| | | N1 | N2 | N3 |
| Power | kW | 23.0 | 30.0 | 49.0 |
| Electrical power | W | 150 | 150 | 150 |
| Nozzle | gal/h | 0.50 | 0.75 | 1.25 |
| Nozzle angle | | 60° | 60° | 60° |
| Fuel oil rate of flow | 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 |
| Louver regulation | | 3 | 4.5 | 4 |
| Combustion head regulation | | 2 | 1 | 2 |
| Weight | Kg | 12 | 12 | 12 |

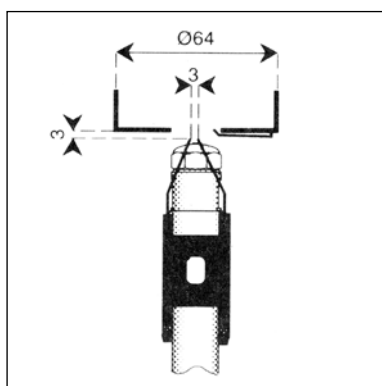


fig. 14 :
Electrode distance



fig. 15 :
Combustion head
adjuster screw

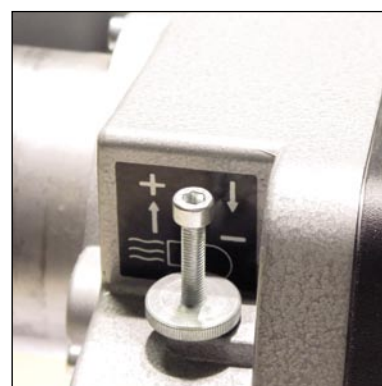


fig. 16 :
Air flow adjuster screw
(fine tuning)

BURNER DIMENSION

| | 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 |

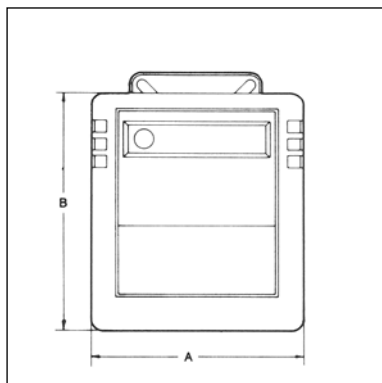


fig. 17

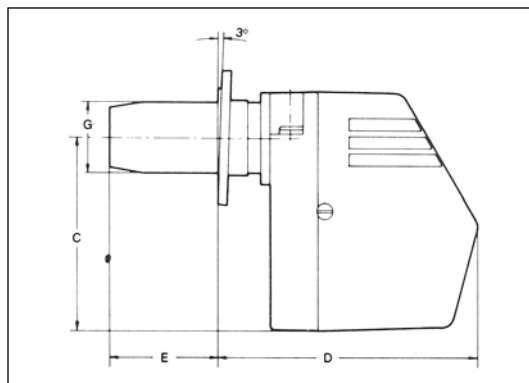


fig. 18

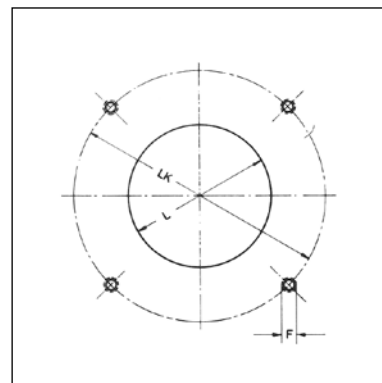


fig. 19

FILLING THE HEATING CIRCUIT



IMPORTANT

If your "N" boiler is connected to an ACV tank, it is essential to fill the domestic water circuit before the heating circuit.

1. Open valves 5 and 8 to fill the heating circuit and make sure the pressure does not exceed 2 bars.

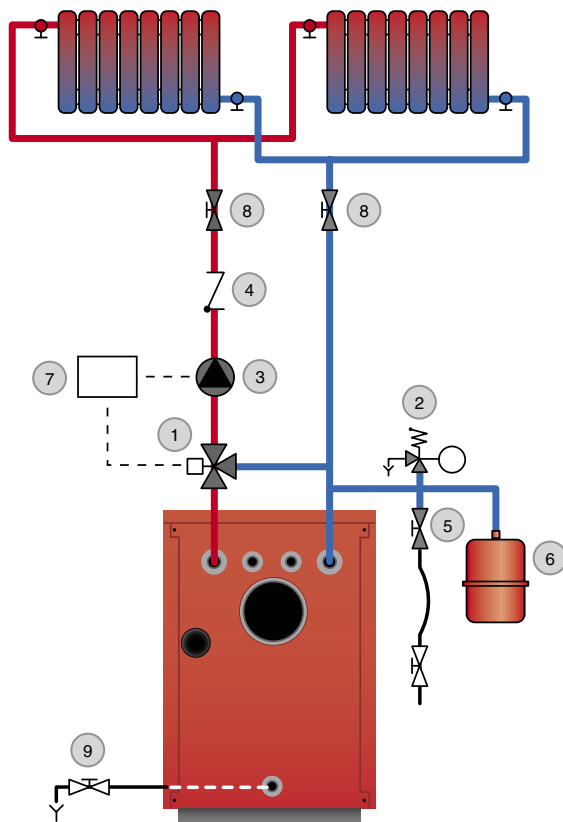


fig. 20

2. Vent the system.
3. Once you have vented the system, return the pressure to the 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 to 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. Place the Summer/Winter switch to the required position.
5. Place the main switch to "ON".
6. Carry out the necessary venting operations, measurements and settings.

RECOMMENDATION

It is compulsory to have the boiler serviced once a year. Boiler servicing and checking must be carried out by a qualified engineer.

MAINTAINING THE BOILER

1. Isolate the boiler from the electrical supply at the switch on the external control box and close the fuel oil supply valve.
2. Place the main switch on the control panel to "OFF" (except for the N-Mini).
3. Remove the boiler front panel (1) (except for the N-Mini).
4. Loosen the two nuts or locking clamps for the N-Mini to open the burner chamber plate (2).
5. Remove the insulating brick (for the N-Mini only).
6. Remove the stainless-steel turbulators (3).
7. Brush the flue ways, clean the chamber and vacuum up any soot deposits.
8. Check the insulation of the burner chamber plate (4).
9. Before reassembling, clean the burner combustion head (5).
10. Check that the thermostats and safety valves are working correctly.

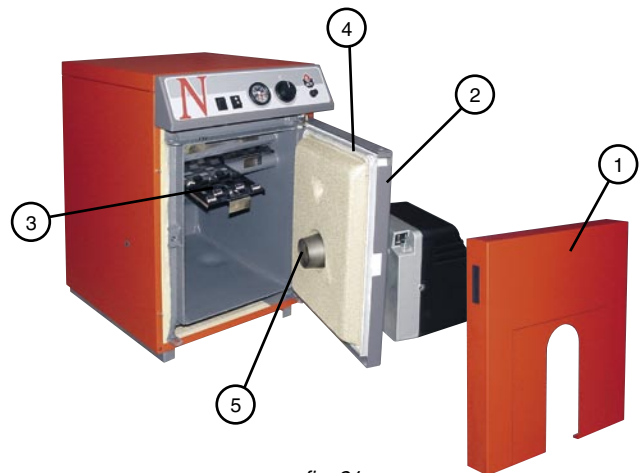


fig. 21

MAINTENANCE OF SAFETY EQUIPMENT

- Check that all thermostats and safety devices operate correctly: the boiler thermostat and the manual reset high-limit thermostat (103°C).
- Check the heating circuit safety valves.

DRAINING THE BOILER



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

Draining the heating circuit (fig. 20)

1. Place the main switch on the control panel to "OFF", isolate the boiler from the electrical power supply at the switch in 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.

SPARE PARTS

| N° | CASINGS | N-MINI | N 1 | N 2 | N 3 |
|-----|--------------------------|----------|----------|----------|----------|
| A01 | Right side | 21471387 | 21471380 | 21471381 | 21471382 |
| A02 | Left side | 21472387 | 21472380 | 21472381 | 21472382 |
| A03 | Front panel | - | 21473380 | 21473381 | 21473382 |
| A04 | Rear panel | 21474387 | 21474380 | 21474381 | 21474382 |
| A05 | Top cover | 21475387 | 21475380 | 21475380 | 21475382 |
| A06 | Unequipped control panel | 21477387 | 21477380 | 21477380 | 21477382 |
| A07 | Front bridge | 21473387 | - | - | - |

N° ACCESSORIES

| | | | | | |
|-----|--|----------|----------|----------|----------|
| B01 | Unequipped body | 30465160 | 30465153 | 30465154 | 30465155 |
| B02 | Burner chamber plate | 2147P371 | 2147P380 | 2147P381 | 2147P382 |
| B03 | brick backplate | - | 2147E380 | 2147E381 | 2147E382 |
| B04 | Burner chamber plate insulating brick | 51701000 | 51404028 | 51404029 | 51404030 |
| B05 | Door ceramic fibre insulating cord | - | 51401113 | 51401113 | 51401113 |
| B06 | Burner chamber insulating cover | - | 51401127 | 51401128 | 51401129 |
| B07 | Pressure gauge thermometer | 54763009 | 54441008 | 54441008 | 54441008 |
| B08 | Drain cock, Ø 1/2" | | 55426001 | 55426001 | 55426001 |
| B09 | M 10 19x33mm hinge pin | - | 47405252 | 47405252 | 47405252 |
| B10 | Probe attachment spring | 47438008 | 47438008 | 47438008 | 47438008 |
| B11 | Turbulators | 50423098 | 50423097 | 50423097 | 50423098 |
| B12 | H.D.P.E. handle | - | 49410280 | 49410280 | 49410280 |
| B13 | Flame inspection window | 50423008 | 50423008 | 50423008 | 50423008 |
| B14 | Grommet | 54428001 | 54428001 | 54428001 | 54428001 |
| B15 | Brass pocket, Ø 1/2" / L. 100 mm | 63438001 | 63438001 | 63438001 | 63438001 |
| B16 | Control panel self-adhesive | - | 617G0050 | 617G0050 | 617G0050 |
| B17 | Burner chamber plate insulation | 51700033 | - | - | - |
| B18 | Door locking clamp | 47405137 | - | - | - |
| B19 | Male/female brass chimney reducer, Ø 1/2" x 1/4" | 43416065 | 43416065 | 43416065 | 43416065 |
| B20 | Clip retainer | 47405004 | 47405004 | 47405004 | 47405004 |
| B21 | Stud | 47405005 | 47405005 | 47405005 | 47405005 |

N° ELECTRICAL ACCESSORIES

| | | | | | |
|-----|--|----------|----------|----------|----------|
| C01 | Full control panel | - | 24614108 | 24614108 | 24614109 |
| C02 | ON/OFF switch | - | 54428116 | 54428116 | 54428116 |
| C03 | Summer/Winter switch | - | 54428107 | 54428107 | 54428107 |
| C04 | 90°C control thermostat | 54442045 | 54442045 | 54442045 | 54442045 |
| C05 | Manual reset high-limit thermostat (103°C) | 54442015 | 54764009 | 54764009 | 54764009 |
| C06 | Thermal reset high-limit thermostat (45°C) | 54442027 | 54442027 | 54442027 | 54442027 |
| C07 | Wiring | 25435217 | - | - | - |

SERVICE RECORD

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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