

NXR3i

Fuel oil/gas boilers
Installation and Service Manual



Working towards
a cleaner future

Declaration of conformity CE

The appliance complies with the standard model described in declaration of compliance **CE**. It is manufactured and distributed pursuant to the requirements of european directives.

The original of the declaration of compliance is available from the manufacturer.

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Contents

1	Introduction	5
1.1	Symbols and abbreviations	5
1.2	General	5
1.2.1	Manufacturer's liability	5
1.2.2	Installer's liability	5
1.2.3	User's liability	5
1.3	Homologations	6
1.3.1	Certifications	6
1.3.2	Directive 97/23/EC	6
2	Safety instructions and recommendations	7
2.1	Safety instructions	7
2.1.1	Fire hazard	7
2.1.2	Risk of intoxication	7
2.1.3	Risk of being burnt	7
2.1.4	Risk of damage	7
2.2	Recommendations	7
3	Technical description	8
3.1	General description	8
3.2	Technical specifications	8
4	Installation	9
4.1	Regulations governing installation	9
4.2	Package list	9
4.3	Choice of the location	10
4.3.1	Main dimensions	10
4.3.2	Position of the boiler	11
4.3.3	Ventilation	12
4.4	Example of an installation	13
4.5	Hydraulic connections	15
4.5.1	Flushing the system	15
4.5.2	Sludge removal	15
4.5.3	Hydraulic connection of the heating circuit	15
4.5.4	Safety valve	16
4.5.5	Connection of the water circuit for domestic use	16
4.6	Chimney connection	17
4.6.1	Flue size	17
4.6.2	Connection to the flue gas pipe	17
4.7	Fuel-oil or gas connections	18
4.8	Electrical connections	18
4.9	Filling the system	18
5	Commissioning	19
6	Switching off the boiler	19
6.1	Precautions required in the case of long boiler stops	19
6.2	Precautions required if the heating is stopped when there is a risk of freezing	19
7	Checking and maintenance	20
7.1	System maintenance	20
7.1.1	Water level	20
7.1.2	Draining	20
7.2	Data plate	20
7.3	Maintenance	21

7.3.1	Cleaning the flue gas circuit21
7.3.2	Cleaning the combustion chamber21
7.3.3	Positioning of the baffle plates22
7.3.4	Cleaning the flue gas box23
7.3.5	Chemical sweeping23
7.4	Cleaning the casing material24
7.5	Maintenance of the burner24
8	Spare parts - NXR3i25

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1 Introduction

1.1 Symbols and abbreviations

 **Caution danger**
Risk of injury and damage to equipment. Attention must be paid to the warnings on safety of persons and equipment.

 **Specific information**
Information must be kept in mind to maintain comfort.

 **Reference**
Refer to another manual or other pages in this instruction manual.

DHW: Domestic hot water

1.2 General

Congratulations on your choice of a high quality product. We strongly advise you to read the following instructions in order to guarantee the optimal operation of your appliance. We are sure that it will be entirely to your satisfaction and will meet with all of your expectations.

- ▶ Keep these instructions in a safe place close to the appliance.
- ▶ In the interest of customers, Potterton are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

1.2.1 Manufacturer's liability

- ▶ The liability of Potterton as the manufacturer may not be invoked in the following cases:
 - Failure to abide by the instructions on using the appliance.
 - Faulty or insufficient maintenance of the appliance.
 - Failure to abide by the instructions on installing the appliance.

1.2.2 Installer's liability

The installer is responsible for the installation and initial start up of the appliance. The installer must respect the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Carry out installation in compliance with the prevailing legislation and standards.
- ▶ Perform the initial start up and carry out any checks necessary.

When handing over the installation to the user, the installer will draw the user's particular attention to the following points:

- The safety of the installation.
- The functioning of the installation and the boiler.
- Periodic maintenance to be done.

1.2.3 User's liability

To ensure the optimum operation of your appliance, we strongly recommend that you abide by the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Call on qualified professionals to:
 - Carry out installation in compliance with the prevailing legislation and standards.
 - Perform the initial start up.
 - Carry out work on the appliance and the installation.
 - Have the required checks and services done.
- ▶ Get your installer to explain your installation to you.

1.3 Homologations

1.3.1 Certifications

CE identification no: 1312 BR 47 83

1.3.2 Directive 97/23/EC

Gas and oil boilers with a maximum operating temperature of 110°C and hot water tanks with a maximum operating pressure of 10 bar pertain to article 3.3 of the directive, and therefore, cannot be CE-marked to certify compliance with the directive 97/23 EC.

The boilers and hot water tanks are designed and manufactured in accordance with the sound engineering practice, as requested in article 3.3 of the directive 97/23/EC, it is certified by compliance with the directives 90/396/EC, 92/42/EC, 2006/95/EC and 2004/108/EC.

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2 Safety instructions and recommendations

2.1 Safety instructions

-  For a proper operating of the boiler, follow carefully the instructions.
-  Only qualified professionals are authorised to work on the appliance and the installation.
-  Incorrect use or unauthorised modifications to the installation or the equipment itself invalidate any right to claim.
-  Before any work, switch off the mains supply to the appliance.
-  Keep to the polarity shown on the terminals: phase (L), neutral (N) and earth .
-  Keep children away from the boiler.

2.1.1 Fire hazard

-  It is forbidden to store inflammable products and materials in the boiler room or close to the boiler, even temporarily.
-  If you smell gas, do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, lights, motor, lift, etc.):
 1. Shut off the gas supply.
 2. Open the windows.
 3. Extinguish all flames.
 4. Evacuate the premises.
 5. Contact a qualified professional.
 6. Inform the gas supplier.

2.1.2 Risk of intoxication

-  Do not obstruct the air inlets in the room (even partially).
-  If you smell flue gases:
 1. Switch the appliance off.
 2. Open the windows.
 3. Evacuate the premises.
 4. Contact a qualified professional.

2.1.3 Risk of being burnt

-  Depending on the settings of the appliance:
 - The temperature of the flue gas conduits may exceed 60°C.
 - The temperature of the radiators may reach 95°C.
 - The temperature of the domestic hot water may reach 65°C.

2.1.4 Risk of damage

-  Do not stock chloride or fluoride compounds close to the appliance.
-  Install the appliance in frost-free premises.
-  Do not neglect to service the appliance: Contact a qualified professional or take out a maintenance contract for the annual servicing of the appliance.

2.2 Recommendations

- ▶ Check regularly that the installation contains water and is pressurised.
- ▶ Keep the appliance accessible at all times.
- ▶ Avoid draining the installation.
- ▶ The appliance should be on Summer or Antifreeze mode rather than switched off to guarantee the following functions:
 - Anti blocking of pumps.
 - Frost protection.
 - Protection against corrosion on domestic hot water tanks fitted with a titanium anode.

3 Technical description

3.1 General description

The boilers of the NXR3i range are pressurised hot water boilers designed for connecting to a flue pipe which require a separate automatic fuel-oil or gas burner. NXR3i boilers have the following characteristics:

- Heating body in cast iron.
- KSF ISR or KSF CE control panel.
- Production of domestic hot water can be ensured by a separate hot water calorifier.

3.2 Technical specifications

Conditions of use:

Maximum operating temperature: 100 °C

Maximum operating pressure: 6 bar

Thermostat adjustable from 30 to 90°C

Safety thermostat: 110 °C

Test conditions:

CO₂ Fuel oil = 13%

CO₂ Natural gas = 9.5%

Ambient temperature: 20 °C

Boiler			NXR3i-4	NXR3i-5	NXR3i-6	NXR3i-7	NXR3i-8	NXR3i-9
Useful output	kW		70-105	105-140	140-180	180-230	230-280	280-330
Power input	kW		76-117	115-156	153-199	197-253	252-309	305-361
Water content	l		96	116	136	156	176	196
Number of sections			4	5	6	7	8	9
Stand-by losses - 50 °C (A)	%		0.17	0.14	0.13	0.11	0.10	0.09
Number of baffle plates			6	10	10	6	6	6
Water resistance	Δ T = 15K	mbar (B)	6.2	10.9	20.4	30	44.5	63.8
Flue gas temperature (C)		°C	210	210	210	210	210	210
Pressure in the furnace for nozzle pressure = 0 (C) (D)		mbar (B)	0.3	0.6	1.1	1.6	2.2	2.5
Mass flue gas flow rate (C)	Fuel oil	Kg/h	178	238	306	391	475	560
	Natural gas	Kg/h	187	250	321	410	499	588
Flue gas circuit volume (Flue ways + Combustion chamber)		m ³	0.163	0.206	0.249	0.292	0.335	0.378
Combustion chamber	Inscribed diameter	mm	377	377	377	377	377	377
	Length	mm	571	731	891	1051	1211	1371
	Volume	m ³	0.096	0.122	0.148	0.174	0.200	0.226
Weight (empty)		kg	612	736	846	981	1103	1230

 In order for the boiler to operate correctly, it is imperative to respect the draught at the nozzle: 0 at the nozzle.

- (A) Stand-by losses in accordance with prevailing standard
- (B) 1 mbar = 10 mmWG = 10 daPa
- (C) Nominal operation (top boiler power)

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4 Installation

4.1 Regulations governing installation

4.1.1 In general

 Installation must be carried out in accordance with the prevailing regulations, the codes of practice and the recommendations in these instructions.

4.1.2 In particular for France

Heating installations must be designed and constructed in such a way as to prevent the return of water from the heating circuit and products put into it into the drinking water network located upstream. The installation must not be in direct relation with the drinking water network (Article 16-7 of the departmental health Directive).

When these installations are fitted with a filling system connected to the drinking water network, they comprise a CB disconnecter (disconnecter for zones with non-controllable pressure differences) which satisfy the functional requirements of the NF P 43-011 standard.

■ Residential buildings

Statutory terms and conditions of installation and maintenance:

The installation and maintenance of the appliance must be carried out by a qualified professional in compliance with the statutory texts of the codes of conduct in force, particularly:

- Order of 27 April 2009 amending the Order of 2 August 1977 Technical and safety rules applicable to combustible gas and liquefied hydrocarbon installations situated inside residential buildings and their annexes.
- NF P 45-204 standards Gas installation, (formerly DTU 61-1, gas installations: April 1982, addendum no 1: July 1984).

- Local Sanitary Regulations

For appliances connected to the electricity network:

- NF C 15-100 standards Low voltage electrical installation - Rules..

■ Establishments open to the public

Statutory terms and conditions of installation:

The installation and maintenance of the appliance must be carried out in compliance with the statutory texts and rules of the codes of conduct in force, particularly:

- Safety regulations against fire and panic in establishments open to the public:

a. General regulations

For all appliances:

- Articles GZ - Installations operating on combustible gases and liquefied hydrocarbons.

Then, depending on use:

- Articles CH-Heating, ventilation, refrigeration, air conditioning and production of steam and domestic hot water.

- b. Instructions specific to each type of establishment open to the public (hospitals, stores, etc.).

■ Certificate of compliance (only concerns NXR3i boilers fitted with a gas burner)

In application of Article 25 of the Order of 27 April 2009 amending the Order of 2 August 1977 amended and Article 1 of the amended Order of 05/02/1999, the installer is required to draw up certificates of conformity approved by the Ministers responsible for construction and gas safety:

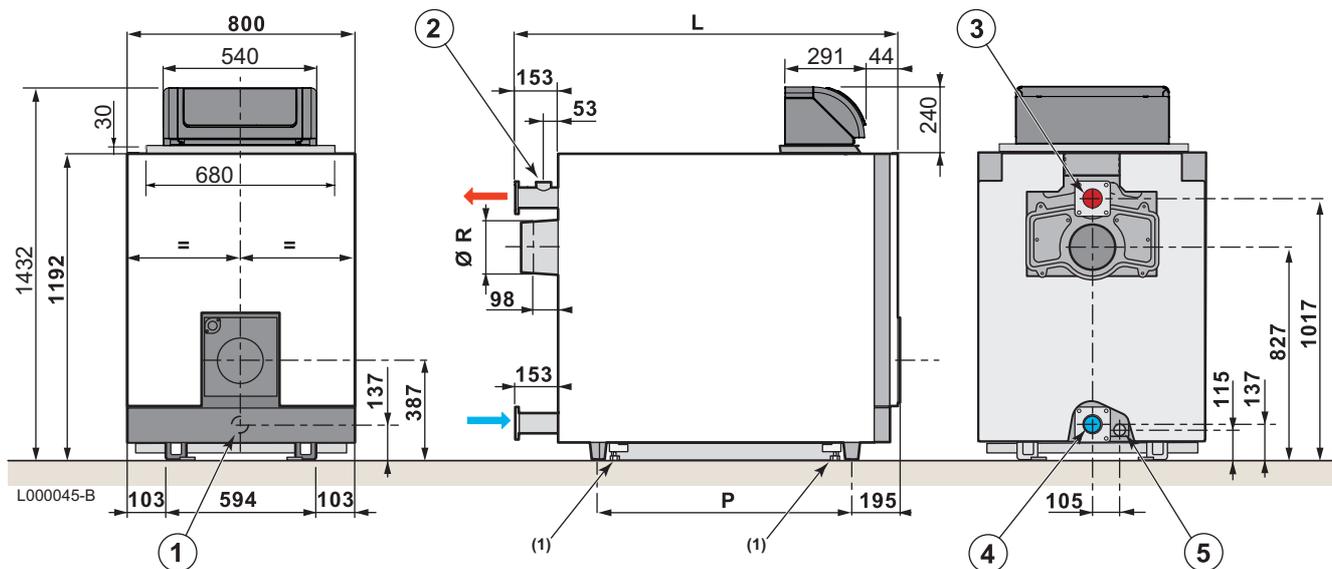
- Different forms (forms 1, 2 or 3) for a new gas installation.
- Model 4 in particular after replacing a furnace with a new one.

4.2 Package list

 See assembly instructions

4.3 Choice of the location

4.3.1 Main dimensions



- ① Sludge removal hole Rp 2" 1/2 (plugged)
- ② Rp 1" 1/2 socket for the safety control unit
- ③ Heating flow (Flange + Counter flange with collar to be welded) orifice Ø 2" 1/2 (Option: Ø 2")
- ④ Heating return (Flange + Counter flange with collar to be welded) orifice Ø 2" 1/2 (Option: Ø 2")

- ⑤ Rp 1" 1/2 draining outlet (plugged)
- Mk Tapped connection
- (1) Adjustable feet: Basic dimension 0 mm, adjustment possible: 0 to 40 mm

Boiler	NXR3i-4	NXR3i-5	NXR3i-6	NXR3i-7	NXR3i-8	NXR3i-9
L (mm)	991	1151	1311	1471	1631	1791
P (mm)	490	650	810	970	1130	1290
R (mm)	180	180	180	200	200	200

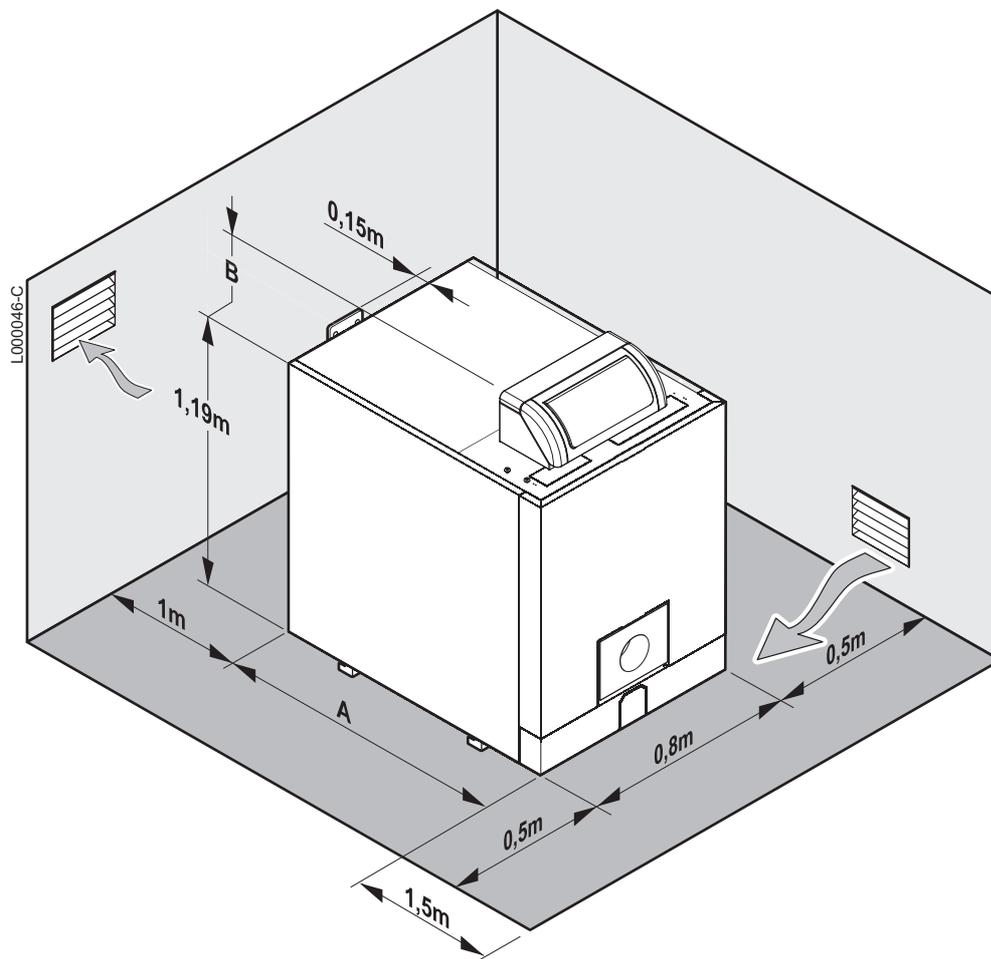
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4.3.2 Position of the boiler

For the assembly and because of their design, NXR3i boilers require no special base. Their closed furnace system means that the floor need not have refractory properties. All you have to ensure is that the floor can support the weight of the boiler when it is fitted for operation.

If the boiler location is not determined precisely, leave enough space around the boiler to facilitate monitoring and maintenance operations.

The dimensions (in mm) correspond to the minimum recommended dimensions needed to ensure adequate accessibility around the boiler.



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Boiler		NXR3i-4	NXR3i-5	NXR3i-6	NXR3i-7	NXR3i-8	NXR3i-9
A	mm	840	1000	1160	1320	1480	1640
B	mm	240	240	240	240	240	240

⚠ Pay attention to the overall volume of the burner when the door is open. To install several boilers in cascade, these dimensions should be adapted accordingly.

4.3.3 Ventilation

To allow the input of combustive air, sufficient ventilation must be provided in the boiler room, for which the cross section and emplacement must satisfy regulations in force in the country in which the boiler is installed.

Position the air inlets in relation to the high ventilation vents in order that the air is refreshed throughout the boiler room.

 **Do not obstruct the air inlets in the room (even partially).**

 **In order to avoid damage to the boiler, it is necessary to prevent the contamination of combustion air by chlorine and/or fluoride compounds, which are particularly corrosive.**

These compounds are present, for example, in aerosol sprays, paints, solvents, cleaning products, washing products, detergents, glues, snow clearing salts, etc.

Therefore:

- Do not pull in air evacuated from premises using such products: hairdressing salons, dry cleaners, industrial premises (solvents), premises containing refrigeration systems (risk of refrigerant leakage), etc.
- Do not stock such products close to the boilers.

If the boiler and/or peripheral equipment are corroded by such chloride or fluoride compounds, the contractual guarantee cannot be applied.

France

The minimum cross sections and the emplacement of the fresh air inlet and the air discharge are governed by the order of 21/03/1968 amended by the orders of 26/02/1974 and 03/03/1976.

■ Generator installed in a building for collective use (installations less than 70 kW)

- ▶ The fresh air inlet must:
 - Come out in the lower section of the premises,
 - Have a free minimum cross section calculated on the basis of 0.03 dm² per kilowatt installed output and at least equal to 2.5 dm².
- ▶ The air discharge must:
 - Be located in the upper section of the premises,
 - Rise above the roof (unless using an equivalent system which does not cause a nuisance to neighbours),
 - Have a free cross section (corresponding to 2/3 of that of the air inlet and at least equal to 2.5 dm²).

■ Generator installed in a building for individual use

- ▶ An adequate supply of fresh air must be provided as close as possible to the appliances. Its cross section must be at least 0.5 dm².
- ▶ In the upper section of the premises, an air outlet must ensure effective ventilation.

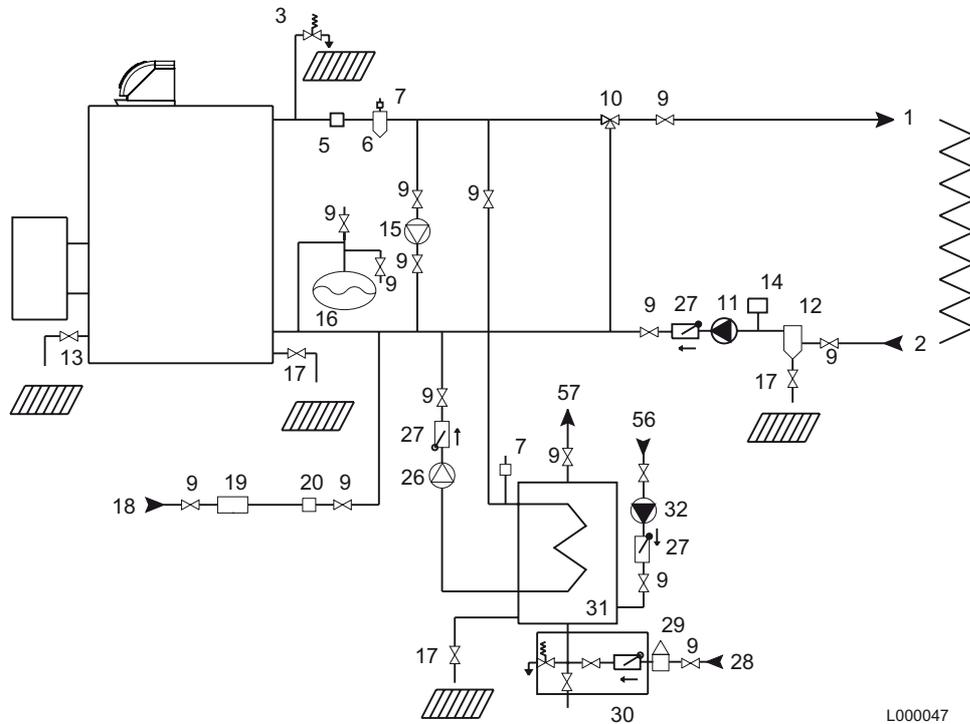
■ Establishments open to the public

- ▶ New establishment: Refer to the order of 25/06/1980 (installations of more than 20 kW and less than or equal to 70 kW).
- ▶ Existing establishment: Refer to the order of 25/06/1980 (installations less than 70 kW).

4.4 Example of an installation

The example of an installation shown below does not cover every possible configuration. Its sole aim is to draw your attention to the basic rules to be respected.

NXR3i boiler with domestic hot water production using an independent tank



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- 1 Heating flow
- 2 Heating return
- 3 3-bar safety valve + Pressure gauge
- 5 Flow switch
- 6 Air separator
- 7 Automatic air vent
- 9 Isolating valve
- 10 3-way mixing valve
- 11 Boiler pump
- 12 Sludge decanting pot (particularly recommended on older installations)
- 13 Flush valve
- 14 Water low safety pressure-sensitive switch
- 15 Shunt pump
- 16 Expansion vessel

- 17 Drain cock
- 18 Heating circuit filling (with disconnecter depending on prevailing regulations)
- 19 Water treatment
- 20 Water meter
- 26 DHW load pump
- 27 Non-return valve
- 28 Domestic cold water inlet
- 29 Pressure reducer (if mains pressure > 5.5 bar)
- 30 Sealed safety unit calibrated to 7 bar with indicator type discharge
- 31 Independent domestic hot water tanks
- 32 Domestic hot water loop pump (optional)
- 56 Domestic hot water circulation loop return
- 57 Domestic hot water outlet

4.5 Hydraulic connections

4.5.1 Flushing the system

■ Installing the boiler in new installations (installations less than 6 months old)

- ▶ Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, hemp, flux).
- ▶ Thoroughly flush the installation until the water runs clear and shows no impurities.

■ Installing the boiler in existing installations

- ▶ Remove sludge from the installation.
 See: Sludge removal.
- ▶ Flush the installation.
- ▶ Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, hemp, flux).
- ▶ Thoroughly flush the installation until the water runs clear and shows no impurities.

4.5.2 Sludge removal

A tapped Rp 2" 1/2 hole with a plug has been provided on the bottom of the front of the boiler. Fit a 1/4 turn valve (not supplied) on the opening to remove the sludge.

Sludge removal leads to the draining of large quantities of water, so remember to refill the system after the operation.

After this operation, go ahead and fill the installation.

 See: Filling the system.

i never replace a boiler in an existing system without carefully rinsing the system first. Install a sludge decanting pot on the return pipe, very close to the boiler.

4.5.3 Hydraulic connection of the heating circuit

■ Water flow in the boiler

The water flow in the boiler when the burner is operating must correspond with the following formulae:

- Nominal water flow $Q_n = 0.86 P_n / 20$.
- Minimum flow $Q_{min} = 0.86 P_n / 45$ (this flow also corresponds with the minimum recycle flow in the boiler).
- Maximum water flow $Q_{max} = 0.86 P_n / 5$.

Q_n = flow in m^3/h .

P_n = Nominal output (full boiler output) in kW.

i Connect the flow controller to the terminal blocks **UV** in the control panel KSF CE.

i Connect the flow switch to **Q** between terminals **SK1** and **SK2** on the KSF ISR control panel.

 Refer to the installation and service manual for the KSF CE control panel.

■ Operation with modulating burner

- The water temperature in the boiler is maintained at 50°C or more: The burner can modulate down to 30% of the nominal stage.
- Operation at modulated low temperature (minimum outlet temperature: 30°C); The burner can modulate down to 50% of the nominal stage.

 Refer to the installation and service manual for the KSF ISR control panel.

■ Operation in cascade

After stopping the burner:

- Timeout required before the order to close a 2 way valve: 3 min.
- Switch a possible shunt pump (located between the boiler and a butterfly valve) off via the end of run contact of the butterfly valve.

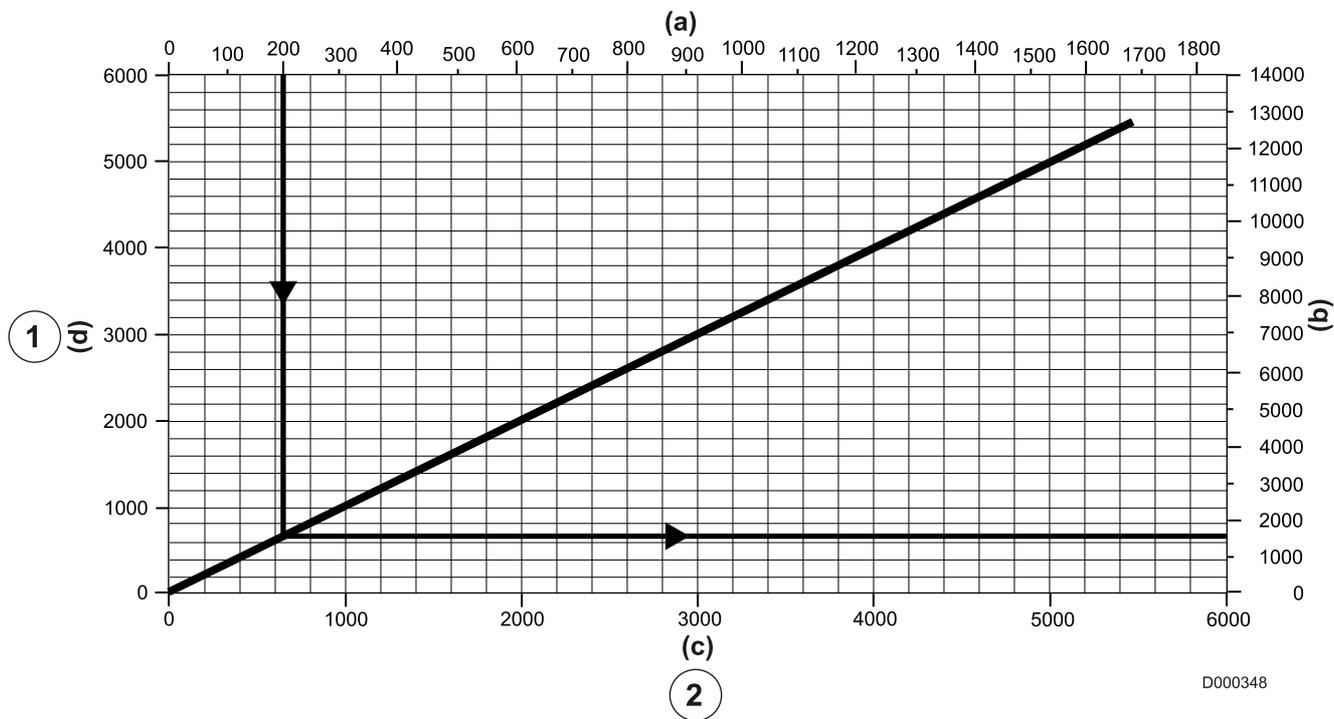
■ Operation with 2-stage burner

- The water temperature in the boiler is maintained at 50°C or more; The first stage must be set to a minimum of 30% of the nominal stage.
- Operation at modulated low temperature (minimum outlet temperature: 30°C); The first stage must be set to a minimum of 50% of the nominal stage.

4.5.4 Safety valve

The safety valve must be connected to the boiler outlet and no other valve or flap must be interposed between it and the boiler.

■ Minimum safety valve flowrate as a function of maximum boiler nominal output



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- ① Minimum relieving capacity
 - ② Maximum gross boiler output
- Unit
- (a) = kW
 - (b) = lb/h
 - (c) = MBtu/h
 - (d) = Kg/h

Example

Maximum boiler nominal output is 200 kW.

Minimum safety valve flowrate must be 700 kg/h.

4.5.5 Connection of the water circuit for domestic use

 See: Domestic hot water calorifier instructions.

4.6 Chimney connection

The high-performance features of modern boilers and their use in specific conditions as a result of the advance in burner technology (e.g. first-stage or low modulation range operation) lead to very low flue gas temperatures (<160°C).

For this reason:

- Use flue gas pipes designed to enable the flow of condensates which may result from such operating modes in order to prevent damage to the chimney.
- Install a draining tee at the bottom of the chimney.

4.6.1 Flue size

Refer to applicable regulations while determining the size of the flue.

Please note that NXR3i boilers have pressurised and tight furnaces and that the pressure at the nozzle must not exceed 0 mbar, unless special sealing precautions have been taken, for instance in order to connect a static condenser/regenerator.

The use of a draught moderator is recommended as well.

- As a last resort (old, outside, badly insulated chimney), the baffle plates in the 4 upper flue ways can be partially removed, resulting in an increase in the flue gas temperature.



In order for the boiler to operate correctly, it is imperative to respect the draught at the nozzle (= 0).

4.6.2 Connection to the flue gas pipe

The connection shall be removable, and offer minimum load losses, i.e. it must be as short as possible with no sudden change in section.

Its diameter shall always be at least equal to that of the boiler outlet, i.e.:

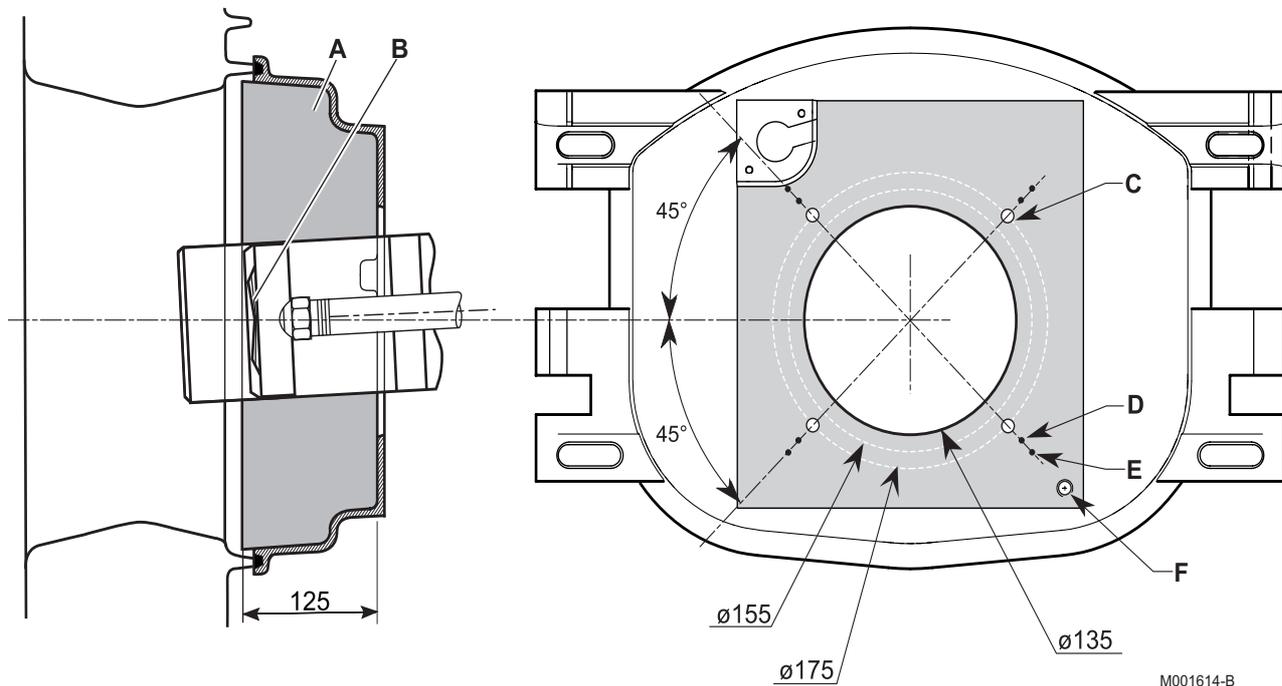
- Ø 180 mm: for 4 to 6 sections.
- Ø 200 mm: for 7 to 9 sections.

Fit a measuring point (Ø 10 mm hole) on the flue, in order to adjust the burner (combustion check).

4.7 Fuel-oil or gas connections

 Refer to the instructions supplied with the burner.

 The burner head deflector must be flush with the insulation of the burner door.



- A Furnace door insulation
- B Turbulator
- C 4 markings on $\varnothing 170$
- D 4 markings on $\varnothing 200$
- E 4 markings on $\varnothing 220$
- F Pressure gauge measurement socket

4.8 Electrical connections

 Refer to the connection instructions supplied with the control panel..

4.9 Filling the system

Filling shall be performed with a low flow rate from a low point in the boiler room in order to ensure that all the air in the boiler is bled from the high point of the system.

All the pumps must be stopped before filling (included shunt pump(s)).

 Do not add cold water suddenly into the boiler when it is hot.

 **VERY IMPORTANT: Instructions for starting up the boiler for the first time after the system is fully or partly drained: If all the air is not bled naturally to an expansion vessel which opens out onto the air, the system must include manual bleeder valves, in addition to automatic bleeder valves with the capability to bleed the system by themselves when it is operating, the manual bleeder valves are used to bleed all the high points of the system and to make sure that the filled system is free of air before the burner is turned on.**

5 Commissioning

 See:

- Control panel instructions.
- Burner instructions.
- Domestic hot water calorifier instructions.

6 Switching off the boiler

- ▶ Set the On/Off switch to **O**.

 See: Control panel instructions.

- ▶ Cut the gas supply to the boiler (if present).

6.1 Precautions required in the case of long boiler stops

- The boiler and the chimney must be swept carefully.
- Close all the doors of the boiler to prevent air from circulating inside the boiler.
- We advise removing the pipe which connects the boiler to the chimney and to close off the nozzle with a cover.

6.2 Precautions required if the heating is stopped when there is a risk of freezing

We recommend the use of a correctly dosed antifreeze agent to prevent to the heating circuit from freezing.

If this cannot be done, drain the system completely.

7 Checking and maintenance

7.1 System maintenance

7.1.1 Water level

Regularly check the level of water in the system and top up if required, taking care that cold water is not added suddenly into the boiler when it is hot.

The use of an automatic filling is strongly discouraged.

This operation should be required only a few times in each heating season, with very low quantities of water; otherwise, look for the leak and repair it.

7.1.2 Draining

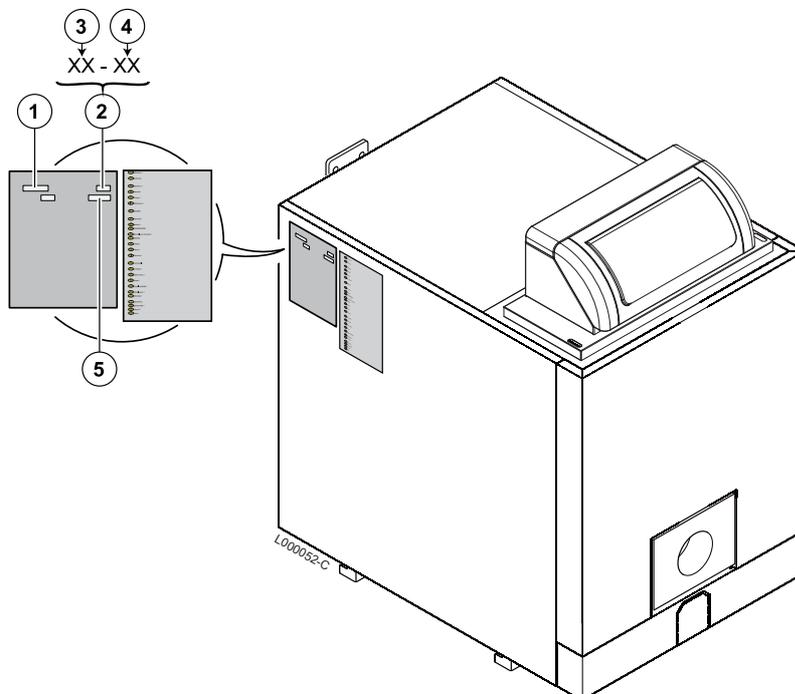
⚠ We advise you against draining the system unless it is absolutely necessary.

For example: Several months' absence with the risk of ice in the building.

7.2 Data plate

The rating plate fixed on the side of the boiler during installation is used to identify the boiler correctly and also provides the main specifications of the boiler.

- ① Boiler type
- ② Manufacturing date
- ③ Year of manufacture
- ④ Week of manufacture
- ⑤ Serial no. of the appliance



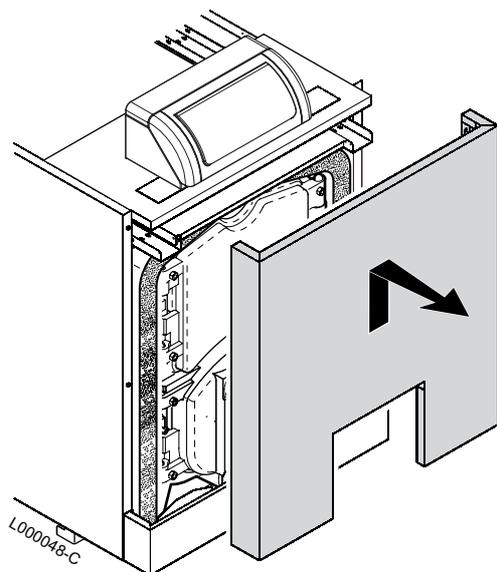
7.3 Maintenance

! The boiler will only operate efficiently if the exchange surfaces are kept clean.

The boiler must be cleaned as often as necessary and, like the chimney, **at least once a year** or more in accordance with the prevailing regulations and the insurance contract taken out.

! The operations described below shall only be performed with the boiler and power supply off.

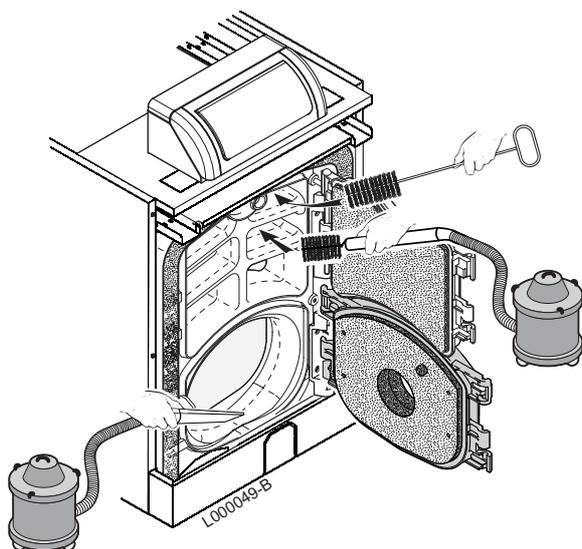
7.3.1 Cleaning the flue gas circuit



- Unhook the front panel.
- Open the cleaning door (top door) by unscrewing the 4 closing nuts (17 mm spanner).
- Remove the baffle plates.
- Carefully sweep the flue ways with the brush supplied for that purpose.
- Also sweep the baffle plates and the front panel.
- If possible, use a vacuum cleaner.
- Replace the baffle plates.
- Close the doors.

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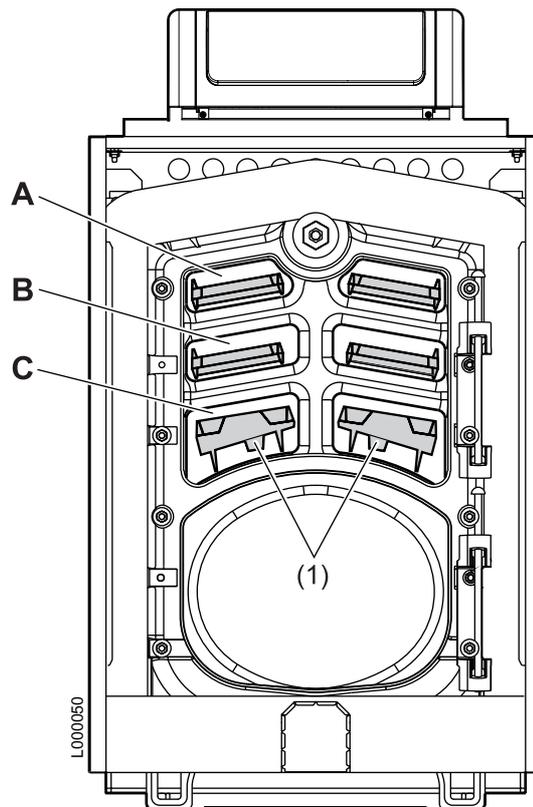
7.3.2 Cleaning the combustion chamber



- Unscrew the 4 closing nuts and open the furnace door.
- Brush out the inside of the furnace.
- Use a vacuum cleaner to remove any soot which has accumulated in the combustion chamber.
- Close the door and replace the front panel.

7.3.3 Positioning of the baffle plates

 The first two baffle plates in the 2 lower flue ways are fitted with stops allowing them to be positioned in the required emplacement.



(1) Stop

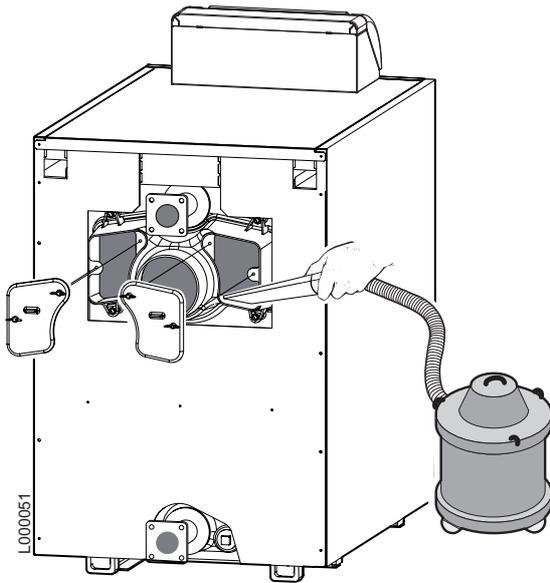
Baffles		Flue ways	NXR3i-4	NXR3i-5	NXR3i-6	NXR3i-7	NXR3i-8	NXR3i-9
Upper	Length: 410 mm	A + B	-	8	8	-	-	-
	Length: 570 mm	A + B	4	-	-	4 ⁽¹⁾	4 ⁽¹⁾	4 ⁽¹⁾
Lower	Length : 412 mm	C	2	2	2	2	2 ⁽²⁾	2 ⁽²⁾

⁽¹⁾ 4 baffles are not used.

⁽²⁾ 2 baffles are not used.

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7.3.4 Cleaning the flue gas box



- Remove the left and right cleaning hatches from the flue gas box (2 butterfly screws) and use a vacuum cleaner to remove any soot which has accumulated.
- Replace the cleaning hatches.

7.3.5 Chemical sweeping

■ General principle

Boilers are traditionally swept mechanically. There are now chemical sweeping methods which facilitate this maintenance work.

A chemical reagent is applied to the boiler's heating surfaces.

After application, the reaction is completed by igniting the burner. The initial deposits are neutralised and pyrolised. The remaining pulverent residues are easy to remove by sweeping or vacuum cleaning.

■ The products

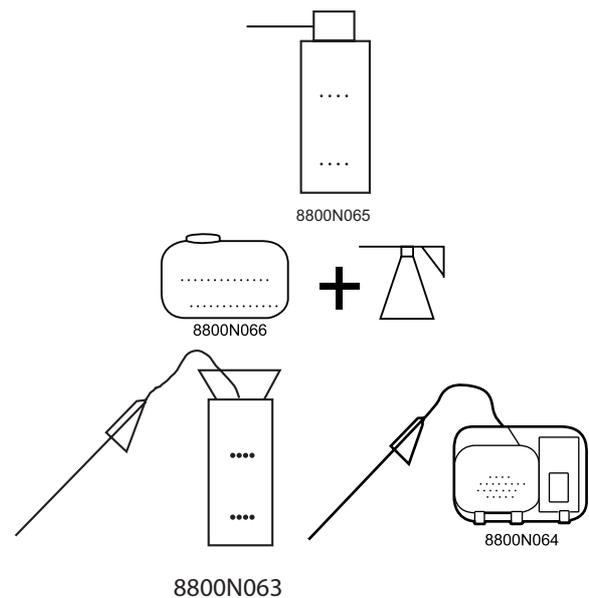
The product must be suitable for boilers with a cast iron body. Various manufacturers offer products in the form of a concentrated liquid or aerosol.

The aerosols are packaged in 0.5 to 1 l spray cans for treating domestic boilers. Refer to the instructions supplied with the product.

The liquid products are available in 1 to 50 l containers. These concentrated liquids are diluted before application with a spray.

Sprays exist in various forms suitable for their intended use:

- Low capacity (2 or 3 l) spray with built-in reservoir for small boilers and moderate frequency. Manual pressurisation of the reservoir.
- 5 l spray with separate reservoir, nozzle and connecting tube. The nozzles enable easy application at the back of the combustion chamber. Manual pressurisation of the reservoir.
- Motor-assisted pressurisation spray with reservoir, nozzle and connecting tube. These sprays are intended for intensive use.



■ Operational mode

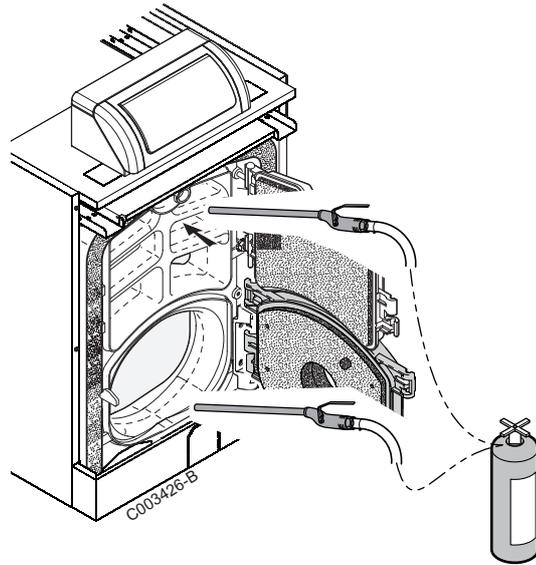
The operating mode mentioned corresponds to standard user situations. Refer to the manufacturer's instructions for specific advice on the product used.

■ Application

- Depending on the product, the boiler must be cold or heated. Refer to the instructions supplied with the product.
- Direct application to the heating surfaces with aerosol sprays.
- The concentrates are diluted in the proportions 1/5 to 1/20 (depending on the product and the condition of the boiler).
- Application with the spray is done in the upper part of the boiler and on the walls of the combustion chamber. Surfaces are dampened but not washed. It is not necessary to use the spray to get between the heating surfaces.
- A volume of one litre of solution is generally used for 1 m² of heating surface (domestic boiler), i.e. 0.05 to 0.2 l of concentrate.

■ Ignition

The burner is ignited after allowing the product time to penetrate for 2 to 5 min. Refer to the instructions supplied with the product.



■ Cleaning

- Remove the baffle plates.
- Light sweeping will remove the pulverent residues remaining after combustion.
The remaining pulverent residues are easy to remove by sweeping or vacuum cleaning.
For certain products, brief application after cleaning has a preventive effect, limiting deposits on the heating surfaces.
- Replace the baffle plates.
- Close the door of the combustion chamber.
- Service the burner.
- Replace the front panel.

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7.4 Cleaning the casing material

Use a soapy solution and a sponge only. Rinse with clean water and dry with chamois leather or a soft cloth.

7.5 Maintenance of the burner

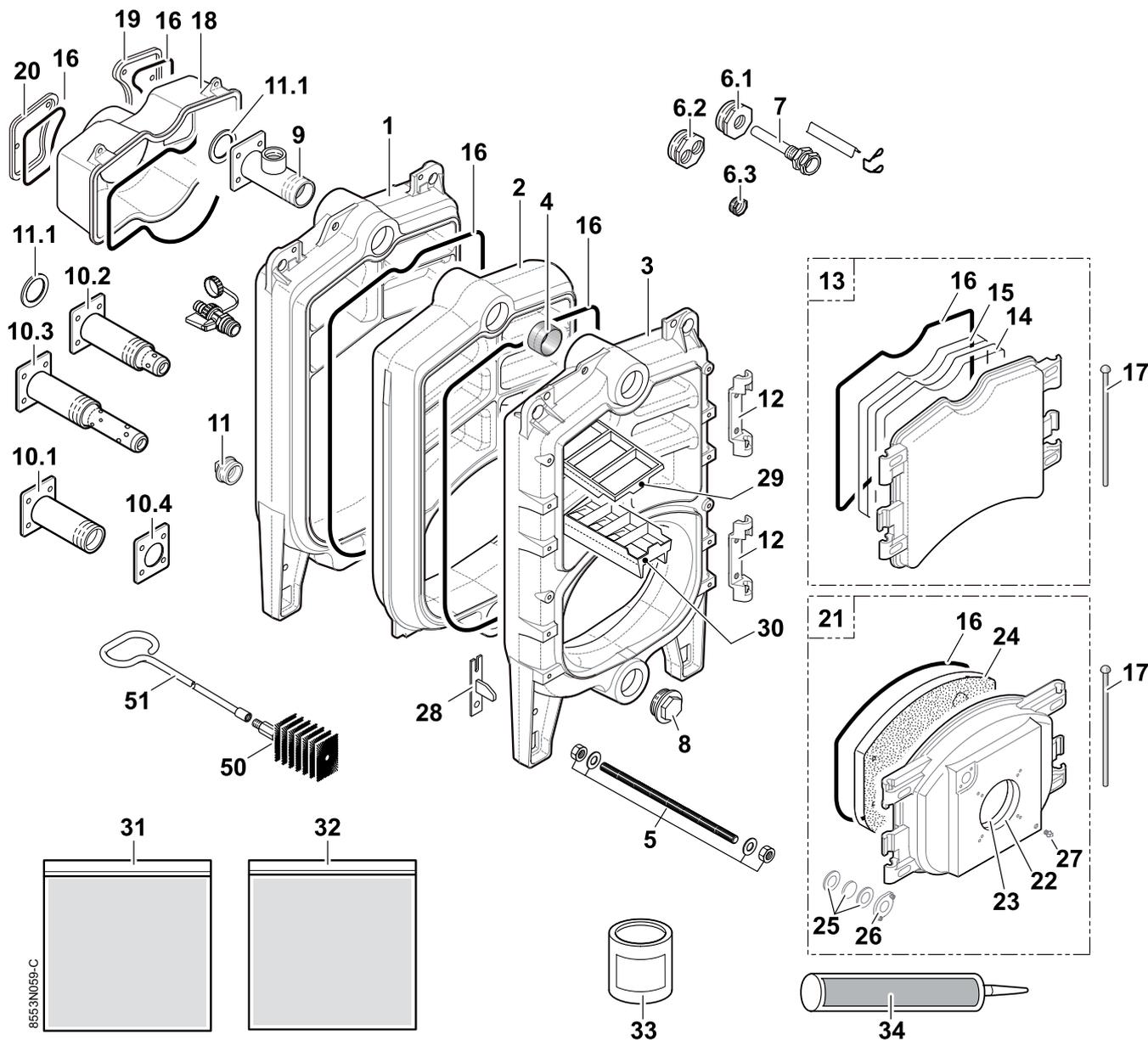
 Refer to the instructions supplied with the burner.

8 Spare parts - NXR3i

i To order a spare part, quote the reference number next to the part required.

300029292-002-01

Boiler body



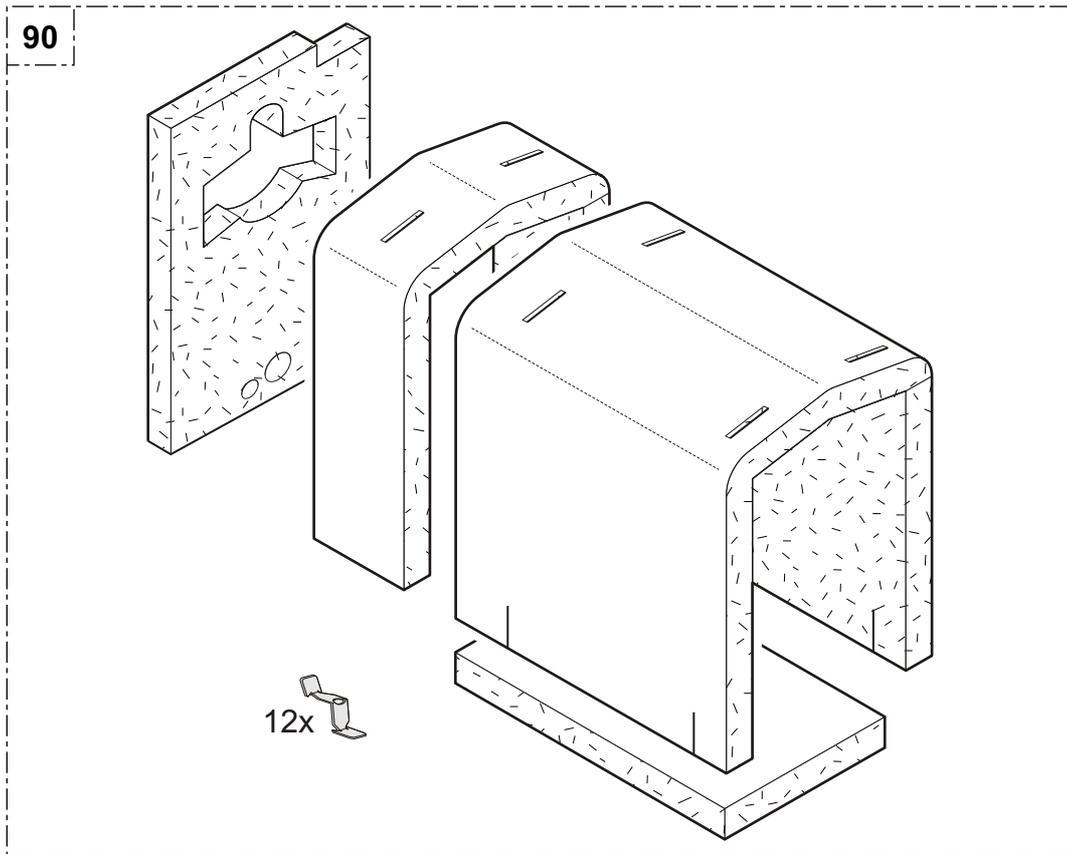
PROVISOIRE

8553N059-C

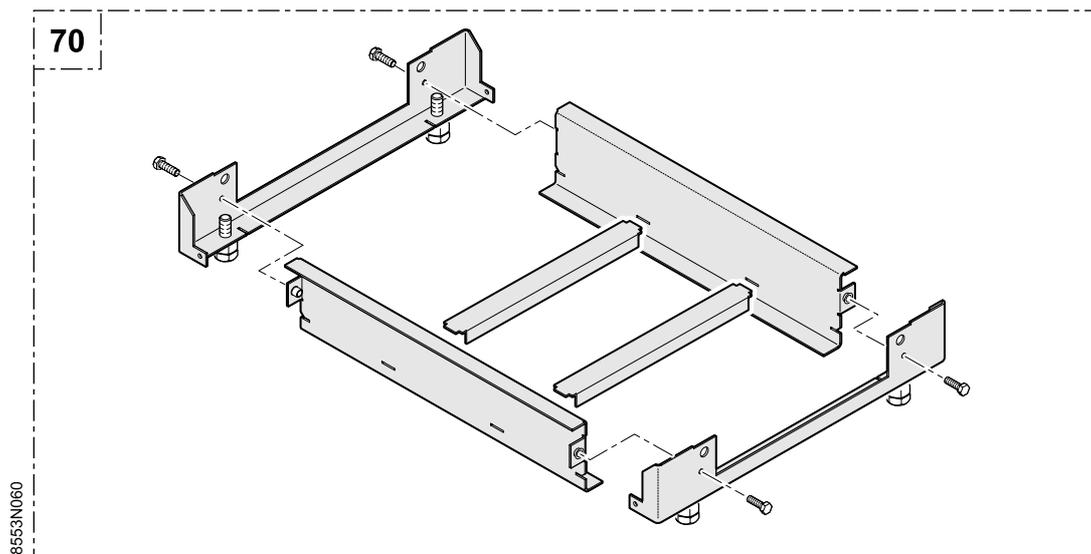
Interpart

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Insulation

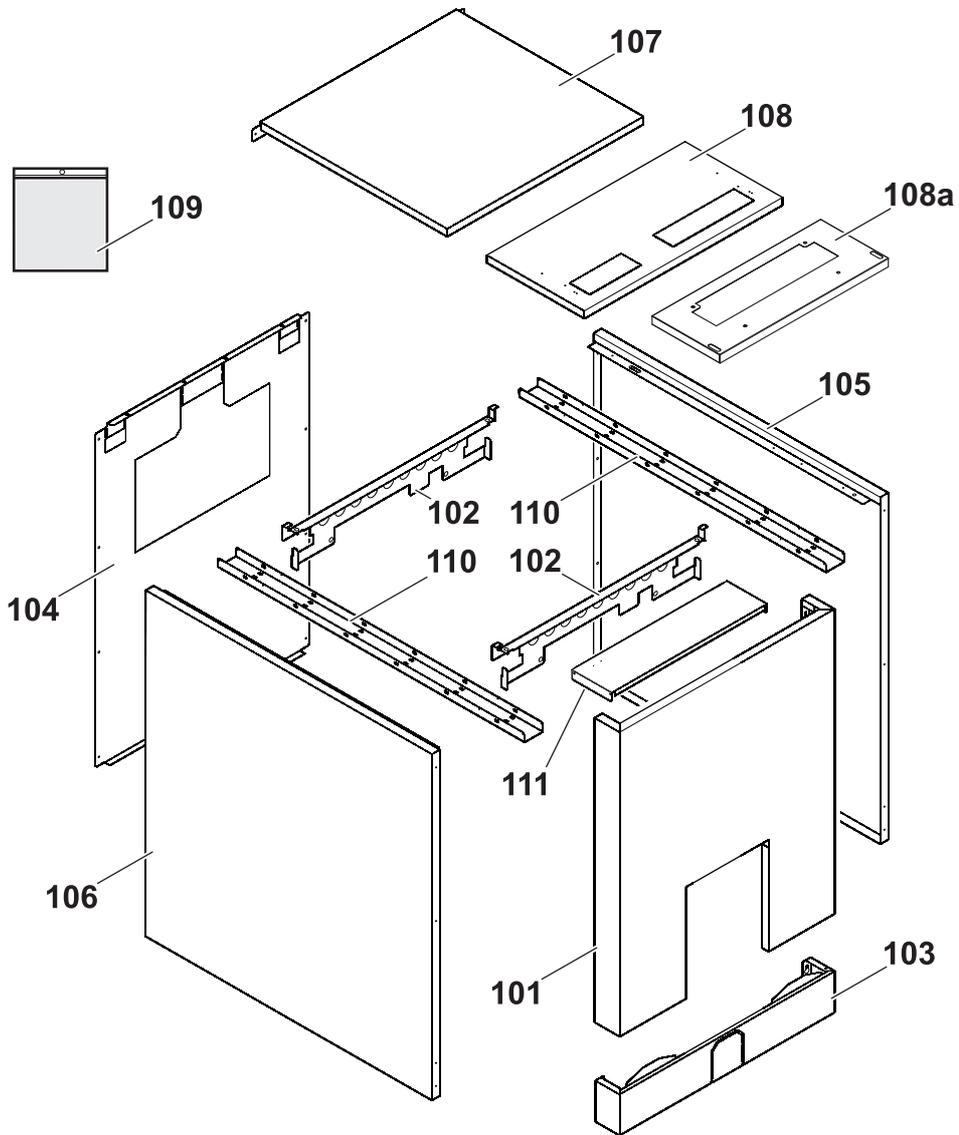


Base frame



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Casing



L000053

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Control panels

 Refer to the Spare Parts list in the panel instructions.

KSF-ISR control panel



KSF-CE control panel



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Markers	Code no.	Description
		Boiler body
1	8219-8912	Complete rear section
2	8219-8966	Special intermediate section
3	8219-8976	Complete front section
4	8116-0571	Nipple
5	8219-8968	Complete assembly rod, 4 sections
5	8219-8969	Complete assembly rod, 5 sections
5	8219-8970	Complete assembly rod, 6 sections
5	8219-8971	Complete assembly rod, 7 sections
5	8219-8972	Complete assembly rod, 8 sections
5	8219-8973	Complete assembly rod, 9 sections
6.1	8202-0028	Plug 2 1/2" - 1/2"
6.2	8209-0049	Plug 2 1/2" - 1/2" - NL
6.3	94948080	Nipple N 241 - 1/2"x1/4"
7	9536-5611	Rp 1/2 sensor tube
8	8013-0028	Plug 2 1/2"
9	8553-5513	Flow flange, 4 to 9 sections
10.1	8553-5514	Return flange, 4 to 5 sections
10.2	8553-5515	Return flange + distribution pipe, 6 to 8 sections
10.3	8553-5516	Return flange + distribution pipe, 9 sections
10.4	9754-9178	Counter flange
11	9495-0249	Male plug 290 T9 - R 1 1/2
11.1	9501-4122	Flange gasket
12	8104-8984	Hinge
13	8219-8916	Sweeping door
14	9425-0306	Inner protection, sweeping door
15	9425-0305	Insulation, sweeping door
16	9508-6032	10 Ø thermocord gasket
17	9756-0203	Pin Ø 12x350
18	8219-8913	Ø 180 complete nozzle
18	8219-8914	Ø 200 complete nozzle
19	8219-0206	Right hand nozzle cover
20	8219-0207	Left hand nozzle cover
21	8219-8953	Complete combustion chamber door, ø 135
22	9425-0303	Internal protection, combustion chamber door
23	9425-0302	Furnace door guard
24	9425-0301	Furnace door insulation
25	8015-7700	Sight glass + gaskets
26	9757-0027	Inspection flange
27	9495-0050	Plug 1/4"
28	8219-0539	Guide rail for combustion chamber door
29	8219-0017	Upper baffle plate, 410

Markers	Code no.	Description
29	8219-0018	Upper baffle plate, 570
30	8219-0019	Lower baffle plate, 412
30	8219-0020	Lower baffle plate, 572
31	8219-7724	Body screws packet
32	8219-8957	Bag of screws for furnace door
33	9430-5027	0.3 kg can nipple lubricant
34	9428-5095	Mastic Novasil S 17
		Miscellaneous
50	9750-5025	Brush
51	9750-5076	1000 mm brush rod
51	9750-5060	1300 mm brush rod
		Base frame
70	8553-7060	Complete frame 4 sections Package FD 30
70	8553-7061	Complete frame 5 sections Package FD 31
70	8553-7062	Complete frame 6 sections Package FD 32
70	8553-7063	Complete frame 7 sections Package FD 33
70	8553-7064	Complete frame 8 sections Package FD 34
70	8553-7065	Complete frame 9 sections Package FD 35
		Insulation
90	8553-5507	Complete boiler body insulation, 4 sections
90	8553-5008	Complete boiler body insulation, 5 sections
90	8553-5509	Complete boiler body insulation, 6 sections
90	8553-5510	Complete boiler body insulation, 7 sections
90	8553-5511	Complete boiler body insulation, 8 sections
90	8953-5512	Complete boiler body insulation, 9 sections
		Casing
101	200019270	Front panel
102	200004840	Upper crosspiece
103	200005571	Lower cap
104	200005032	Complete rear panel
105	200005033	Complete side panel right, 4 sections
105	200005034	Complete side panel right, 5 sections
105	200005035	Complete side panel right, 6 sections

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Markers	Code no.	Description
105	200005036	Complete side panel right, 7 sections
105	200005037	Complete side panel right, 8 sections
105	200005038	Complete side panel right, 9 sections
106	200005039	Complete side panel left, 4 sections
106	200005040	Complete side panel left, 5 sections
106	200005041	Complete side panel left, 6 sections
106	200005042	Complete side panel left, 7 sections
106	200005043	Complete side panel left, 8 sections
106	200005044	Complete side panel left, 9 sections
107	200004830	Complete rear cover, 4 sections
107	200004831	Complete rear cover, 5 sections
107	200004832	Complete rear cover, 6 sections
107	200004833	Complete rear cover, 7 sections
107	200004834	Complete rear cover, 8 sections
107	200004835	Complete rear cover, 9 sections
108	200005045	Complete front cover
108a	200019564	Painted control panel base
109	200005046	Screw bag
		Cable channel
110	200004849	4-section cable way
110	200004850	5-section cable way
110	200004851	6-section cable way
110	200004852	7-section cable way
110	200004853	8-section cable way
110	200004854	9-section cable way
111	200004841	Cable protection
		Control panels
		Refer to the connection instructions supplied with the control panel..

Warranty

You have just purchased one of our appliances and we thank you for the trust you have placed in our products. Please note that your appliance will provide good service for a longer period of time if it is regularly checked and maintained. Your fitter and our customer support network are at your disposal at all times.

■ Warranty terms

Starting from the purchase date shown on the original fitter's invoice, your appliance has a contractual guarantee against any manufacturing defect.

The length of the guarantee is mentioned in the price catalogue.

The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer). In particular, the manufacturer shall not be held responsible for any damage, loss or injury caused by installations which do not comply with the following:

- applicable local laws and regulations
- specific requirements relating to the installation, such as national and/or local regulations
- the manufacturer's instructions, in particular those relating to the regular maintenance of the unit
- the rules of the profession.

The warranty is limited to the exchange or repair of such parts as have been recognised to be faulty by our technical department and does not cover labour, travel and carriage costs. The warranty shall not apply to the replacement or repair of parts damaged by normal wear and tear, negligence, repairs by unqualified parties, faulty or insufficient monitoring and maintenance, faulty power supply or the use of unsuitable fuel. Sub-assemblies such as motors, pumps, electric valves etc. are guaranteed only if they have never been dismantled.

Commercial sales technical & service enquiries

Tel: 0845 070 1055
Fax: 0845 070 1059
Sales hotline: 0845 070 1056
Technical helpline: 0845 070 1057
Service hotline: 0845 070 1058
e-mail: [potterton.commercial@
baxicommercialdivision.com](mailto:potterton.commercial@baxicommercialdivision.com)
web: www.pottertoncommercial.co.uk

Spares

Potterton Commercial spares are available nationwide through the interpart network of approved stockists. Alternatively please contact:-

Interpart

Brooks House
Coventry Road
Warwick CV34 4LL
Tel: 0844 871 1540

Applications & Installations

Our experienced technical support team are available to offer advice on any aspect of heating system design and boiler installation.

Please contact: 0845 070 1057

Commercial service offices

Our service organisation covers the whole of the UK to look after your needs for all Potterton Commercial products.

Our service office offers a wide range of specialised services including:

- Burner commissioning for all fuels
- Boiler service contracts
- Breakdown and repair services
- Burner and boiler replacement
- Oil/gas conversions
- Water treatment and descaling
- Packaged units

All descriptions and illustrations contained within this leaflet have been carefully prepared, but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information in this leaflet.

