



Installation Manual

Floor-standing condensing gas boiler

SIRIUS THREE FS 50
SIRIUS THREE FS 70
SIRIUS THREE FS 90
SIRIUS THREE FS 110

Dear Customer,

Thank you very much for buying this appliance.

Please read through the manual carefully before using the product, and keep it in a safe place for later reference. In order to ensure continued safe and efficient operation we recommend that the product is serviced regularly. Our service and customer service organisation can assist with this.

We hope you enjoy years of problem-free operation with the product.

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1 Safety

1.1 General safety instructions

For the installer and end user:



Danger

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Children must not carry out any unsupervised cleaning or maintenance operations.



Caution

Do not touch the flue gas pipes. Depending on the boiler settings, the temperature of the flue gas pipes can rise to over 60°C.



Caution

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators may exceed 60 °C.



Caution

Take precautions with the domestic hot water. Depending on the boiler settings, the domestic hot water temperature may exceed 65°C.



Danger of electric shock

Before any work, switch off the mains supply to the boiler.

For the installer:



Danger

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Locate the probable leak and seal it immediately.
5. If the leak is before the gas meter, contact the gas supplier.



Danger

If you smell flue gases:

1. Switch off the appliance.
2. Open the windows.
3. Locate the probable source of the flue gas leak and fix it immediately.



Warning

The condensation drain must not be changed or sealed. If a condensate neutralisation system is used, the system must be cleaned regularly in accordance with the instructions provided by the manufacturer.

For the end user:

**Danger**

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Evacuate the property.
5. Contact a qualified professional.

**Danger**

If you smell flue gases:

1. Switch off the appliance.
2. Open the windows.
3. Evacuate the property.
4. Contact a qualified professional.

1.2 Recommendations

**Danger**

For safety reasons, we recommend fitting smoke and CO₂ detectors and alarms at suitable places in your home.

**Caution**

- The boiler must always be connected to the protective earthing.
- Earthing must comply with the prevailing installation standards.
- Earth the appliance before making any electrical connections.

For the type and calibre of the protective equipment, refer to the chapter Electrical Connections in the Installation and Service Manual.

**Caution**

If a power cord comes with the appliance and it turns out to be damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.

**Caution**

A disconnection device must be fitted to the fixed wiring in accordance with the installation rules.

**Caution**

Power the appliance via a circuit that includes an omnipolar switch with contact opening distance of 3 mm or more.

**Caution**

Drain the boiler and heating system if the home is left empty for a long period of time and there is a chance of frost.

**Caution**

Remove the boiler casing only to perform maintenance and repair work. Always put the casing back in place after such work.

**Caution**

To enjoy warranty cover, no modifications must be made to the boiler.

**Caution**

The frost protection function only protects the boiler, not the heating system.

**Caution**

The frost protection function does not work if the boiler is powered off.

**Caution**

The appliance should be switched to Summer or Frost Protection mode rather than be switched off in order to guarantee the following functions:

- Avoidance of pumps blocking
- Frost Protection

**Important**

Respect the minimum and maximum water inlet pressure to ensure correct operation of the boiler: refer to the chapter Technical Specifications.

**Important**

Only qualified professionals are permitted to install the boiler, in accordance with prevailing local and national regulations.

**Important**

- Never remove or cover labels and data plates affixed to the boiler.
- Labels and data plates must be legible throughout the entire lifetime of the boiler. Immediately replace damaged or illegible instructions and warning labels.

**Important**

Keep this document close to where the appliance is installed.

1.3 Liabilities

1.3.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the **CE** marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

Our liability as manufacturer may not be invoked in the following cases:

- Failure to abide by the instructions on installing and maintaining the appliance.
- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.

1.3.2 Installer's liability

The installer is responsible for the installation and initial commissioning of the appliance. The installer must observe the following instructions:

- Read and follow the instructions given in the manuals provided with the system.
- Install the system in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.
- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

2 About this manual

2.1 General

This manual is intended for the installer of a SIRIUS THREE FS boiler.

2.2 Symbols used

2.2.1 Symbols used in the manual

This manual uses various danger levels to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation of the appliance.



Danger

Risk of dangerous situations that may result in serious personal injury.



Danger of electric shock

Risk of electric shock.



Warning

Risk of dangerous situations that may result in minor personal injury.



Caution

Risk of material damage.



Important

Please note: important information.



See

Reference to other manuals or pages in this manual.

2.2.2 Symbols used on the appliance

Fig.1

1

2

3

4

5



MW-2000068-1

- 1 Alternating current.
- 2 Protective earthing.
- 3 Before installing and commissioning the appliance, carefully read the instruction manuals provided.
- 4 Dispose of used products through an appropriate recovery and recycling structure.
- 5 Caution: danger of electric shock, live parts. Disconnect the mains power prior to carrying out any work.

3 Technical specifications

3.1 Homologations

3.1.1 Directives

This product has been manufactured and put into circulation in accordance with the requirements and standards of the following European Directives:

- Gas Appliances Regulation (EU) (2016/426)
- Pressure Equipment Directive 2014/68/EU
- Electromagnetic Compatibility Directive (2014/30/EU).
- Low Voltage Directive (2014/35/EU).
- Efficiency Directive (92/42/EEC)
- European Ecodesign Directive (2009/125/EC)
EU Regulation (813/2013)
- Energy Labelling Framework Regulation (EU) (2017/1369)
EU Regulation (811/2013)
- BS 7074, Part 1: Application, selection and installation of expansion vessels and ancillary equipment for sealed water systems
- BS 6644: Specification for the installation of gas-fired condensing boilers with a nominal output exceeding 70 kW
- BS EN 12828: Design for water-based heating systems
- BS EN 13831: Closed expansion vessels

Apart from the legal provisions and Directives, the additional Directives described in these instructions must also be observed.

For all provisions and Directives referred to in these instructions, it is agreed that all addenda or subsequent provisions will apply at the time of installation.

For the above reference standards, if they have updated a latest version, please refer to the latest one.

3.1.2 EC Declaration of Conformity

The unit complies with the standard type described in the EC declaration of conformity. It has been manufactured and put into circulation in accordance with the requirements of the European Directives.

The original declaration of conformity is available from the manufacturer.

3.1.3 Gas category

Tab.1 Gas and supply pressure categories

Country	Gas category	Gas type	Supply pressure (mbar)
Great Britain	I ₂ H ₃ P	G20 (natural gas H) G31 (propane)	20 37-50

The boiler is pre-set in the factory to run on natural gas H (G20).

For operation with another type of gas, see the chapter "Conversion to another gas".



Important

This appliance is suitable for categories I₂H, I₂K and I₂E containing up to 20% hydrogen gas (H₂).

3.1.4 Certifications

We hereby certify that the series of appliances specified below complies with the standard model described in the CE declaration of conformity.

CE number	CE-0085CP0089
UKCA number	UKCA/0558/21/234
NOx class	Class 6
Type of flue gas connection	<ul style="list-style-type: none"> • B₂₃ – B_{23P} • C_{13(X)} • C_{33(X)} • C_{43(X)} • C_{53(X)} • C_{63(X)} • C_{83(X)}

3.2 Technical data

Tab.2 General

	Boiler speed	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Useful heat output at 80/60°C Heating mode	Minimum	kW	5.0	7.2	9.4	11.4
Useful heat output at 80/60°C Heating mode	Maximum	kW	45	65	85	102
Useful heat output at 50/30 °C Heating mode	Minimum	kW	5.4	7.8	10.2	12.3
Useful heat output at 50/30 °C Heating mode	Maximum	kW	48.6	70.2	91.8	110.2
Heat input - Heating mode	Minimum	kW	5.1	7.4	9.7 ⁽¹⁾	11.7
Heat input - Heating mode	Maximum	kW	46.3	66.9	87.4	104.9
Heat input - Heating mode	Minimum	kW	5.6	8.2	10.7	12.9
Heat input - Heating mode	Maximum	kW	51.4	74.2	97.0	116.4
Reduced heat input NPG2* - LHV	Minimum	kW	4.8	7.0	9.2	11.1
Reduced heat input NPG2* - LHV	Maximum	kW	43.8	63.3	82.7	99.3
Reduced heat input NPG2* - HHV	Minimum	kW	5.4	7.8	10.2	12.3
Reduced heat input NPG2* - HHV	Maximum	kW	48.6	70.3	91.8	110.2
Efficiency at 80/60 °C - Heating mode under full load	Maximum	%	97.4	97.2	97.3	97.2
Efficiency at 50/30 °C -	Heating mode un- der full load	%	105.0	105.0	105.5	105.1
Efficiency - - Return temperature 30°C	Heating mode un- der part load	%	108.4	108.1	108.2	108.1
*NPG2: Mixture of 80% CH ₄ + 20% H ₂						
(1) The heat input with G31 gas is different and is 12.5 kW						

Tab.3 Characteristics of the heating circuit

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Water content (excluding expansion vessel)	litre	2.81	4.98	8.34	9.83
Minimum operating pressure	MPa (bar)	0.05 (0.5)	0.05 (0.5)	0.05 (0.5)	0.05 (0.5)
Maximum operating pressure (MOP)	MPa (bar)	0.38 (3.8)	0.38 (3.8)	0.38 (3.8)	0.38 (3.8)
Maximum water temperature	°C	85	85	85	85
Maximum operating temperature	°C	80	80	80	80

Tab.4 Data on the gases and combustion gases

For gas flow rates at 15 °C and 1013.25 hPa	Boiler speed	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Minimum gas pressure (G20)		mbar	17	17	17	17
Nominal pressure (G20)		mbar	20	20	20	20
Maximum pressure (G20)		mbar	25	25	25	25
Minimum gas pressure (G25)		mbar	20	20	20	20
Nominal pressure (G25)		mbar	25	25	25	25
Maximum pressure (G25)		mbar	30	30	30	30
Minimum gas pressure (G31)		mbar	25	25	25	25
Nominal pressure (G31)		mbar	37	37	37	37
Maximum pressure (G31)		mbar	57.5	57.5	57.5	57.5
Consumption of natural gas (G20)	Minimum	m³/h	0.54	0.78	1.03	1.24
Consumption of natural gas (G20)	Maximum	m³/h	4.90	7.07	9.25	11.10
Consumption of natural gas (G25)	Minimum	m³/h	0.63	0.91	1.19	1.44
Consumption of natural gas (G25)	Maximum	m³/h	5.69	8.22	10.75	12.91
Consumption of Propane (G31)	Minimum	kg/h	0.40	0.57	0.97	0.91
Consumption of Propane (G31)	Maximum	kg/h	3.59	5.19	6.79	8.15
NOx emission according to EN297A3	Class 5	mg/kWh	29.8	34.8	39.5	24.7
Flue gas mass flow rate (G20)	Minimum	kg/h	7.2	14.4	18	18
Flue gas mass flow rate (G20)	Maximum	kg/h	75.6	111.6	144	169.2
Maximum flue gas temperature	Minimum	°C	92	76	70	70

Tab.5 Electrical specifications

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Power supply voltage	VAC	230V 50Hz	230V 50Hz	230V 50Hz	230V 50Hz
Maximum absorbed power - Full load	W	100	117	146	185
Maximum absorbed power - Part load	W	24	24	24	24
Maximum absorbed power - Stand-by	W	2.7	3	3	3

Tab.6 Other specifications

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Ingress protection rating		IPX1B	IPX1B	IPX1B	IPX1B
Empty weight	kg	60	70	104	109

3.2.1 Other technical parameters

Tab.7 Technical parameters for boiler space heaters

Product name			SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Condensing boiler			Yes	Yes	Yes	Yes
Low-temperature boiler ⁽¹⁾			No	No	No	No
B1 boiler			No	No	No	No
Cogeneration space heater			No	No	No	No
Combination heater			Yes	Yes	Yes	Yes
Rated heat output	P_{rated}	kW	45	65	85	102
Useful heat output at rated heat output and high temperature regime ⁽²⁾	P_4	kW	45.0	65.0	85.0	102.0
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	P_1	kW	15.0	21.7	28.3	34.0
Seasonal space heating energy efficiency	η_s	%	93	93	-	-
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	87.7	87.6	87.7	87.6
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	97.7	97.4	97.5	97.4
Auxiliary electricity consumption						
Full load	el_{max}	kW	0.100	0.117	0.146	0.185
Part load	el_{min}	kW	0.023	0.024	0.024	0.024
Stand-by	P_{SB}	kW	0.003	0.003	0.003	0.003
Other specifications						
Standby heat loss	P_{stby}	kW	0.045	0.046	0.062	0.072
Ignition burner power consumption	P_{ign}	kW	-	-	-	-
Annual energy consumption	Q_{HE}	GJ	139	201	-	-
Sound power level, indoors	L_{WA}	dB	61	64	-	-
Emissions of nitrogen oxides	NO_x	mg/kWh	27	31	36	22
(1) Low temperature means for condensing boilers 30°C, for low temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).						
(2) High temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.						



See
The back cover for contact details.

3.2.2 Sensor specifications

Tab.8 Heating flow sensor and return sensor

Temperature (in °C)	30	65	85
Resistance (in ohms)	8059	2084	1070

Tab.9 Flue gas sensor

Temperature (in °C)	-50	-10	0	40	100	200	250	300
Resistance (in ohms)	1 755765	117521	67650	10569	1377	145	65	34

Tab.10 Outside sensor

Temperature (in °C)	-30	-15	-5	0	10	20	30	50
Resistance (in ohms)	13034	5861	3600	2857	1840	1218	827	407

3.3 Dimensions and connections

Fig.2 Dimensions and connections SIRIUS THREE FS 50 and SIRIUS THREE FS 70

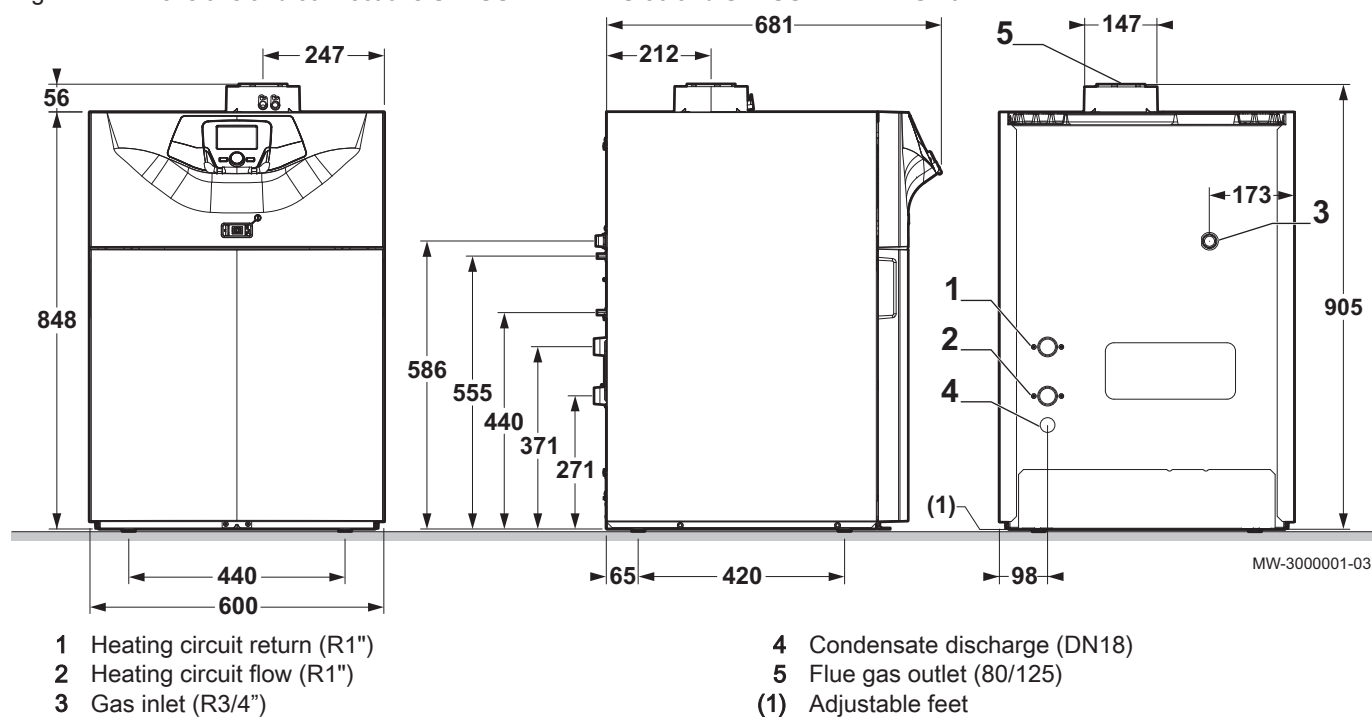


Fig.3 Dimensions and connections SIRIUS THREE FS 90 and SIRIUS THREE FS 110

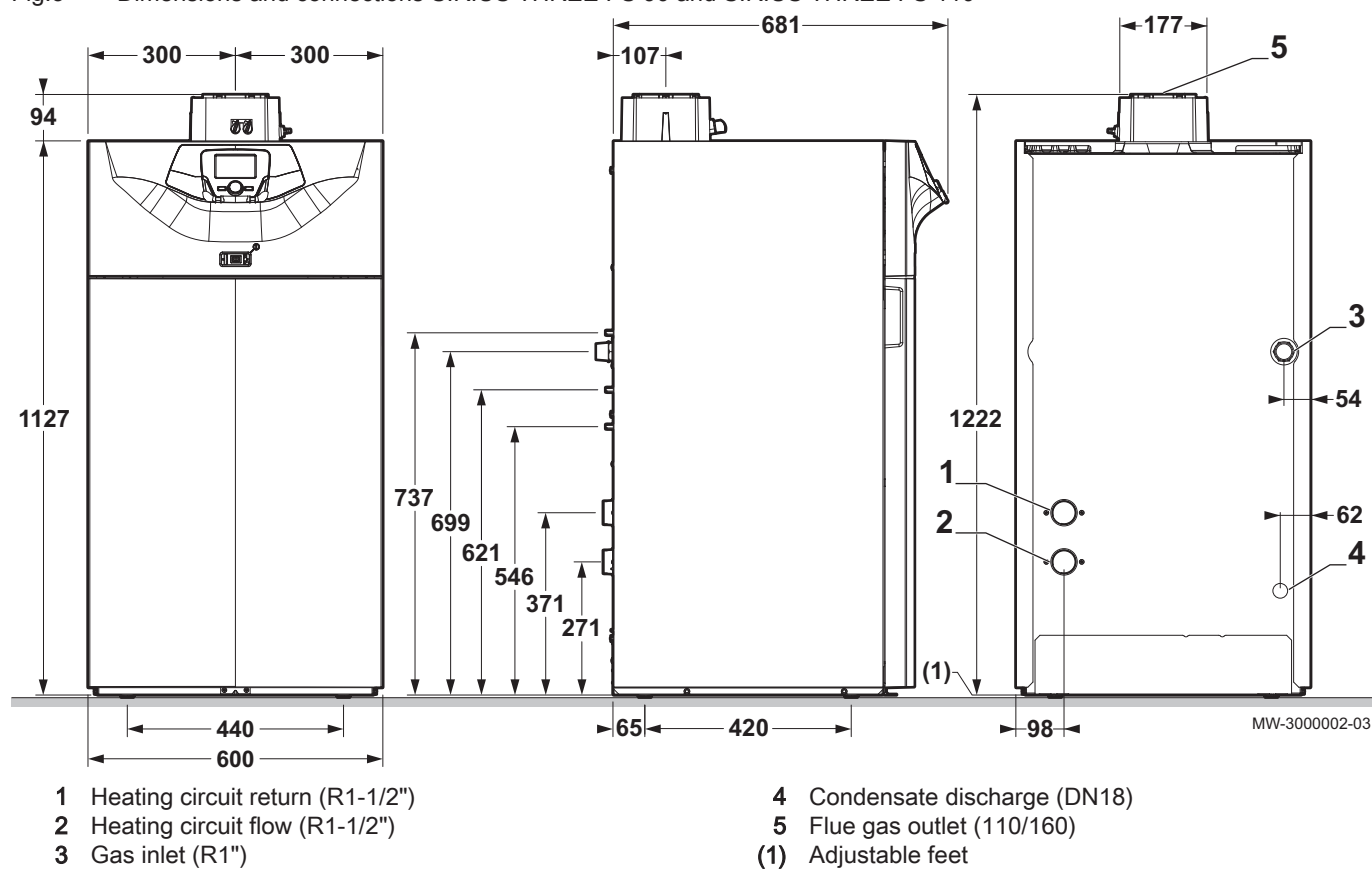
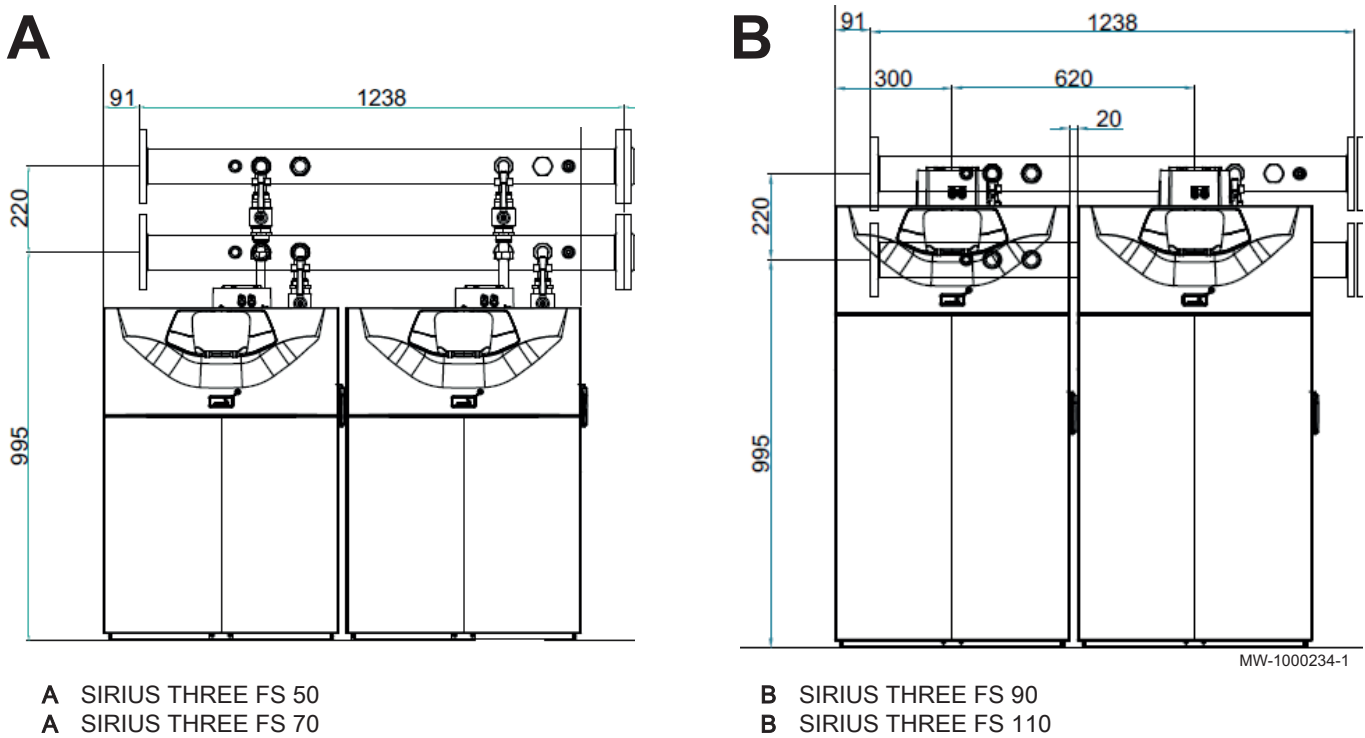


Fig.4 Space required by 2 boilers in cascade



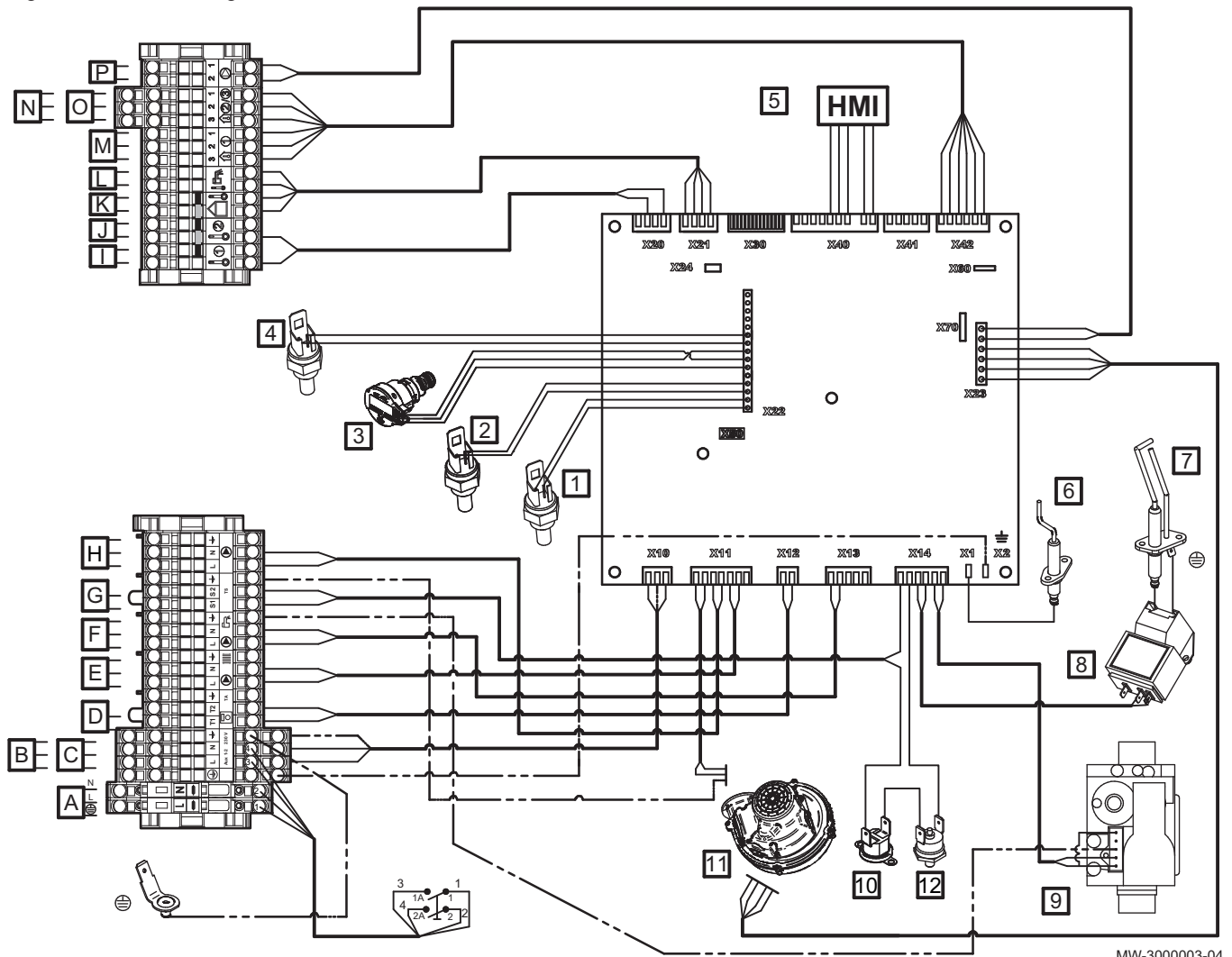
MW-1000234-1



See also
Accessories & options, page 24

3.4 Electrical diagram

Fig.5 Electrical diagram SIRIUS THREE FS 50 and SIRIUS THREE FS 70



MW-3000003-04

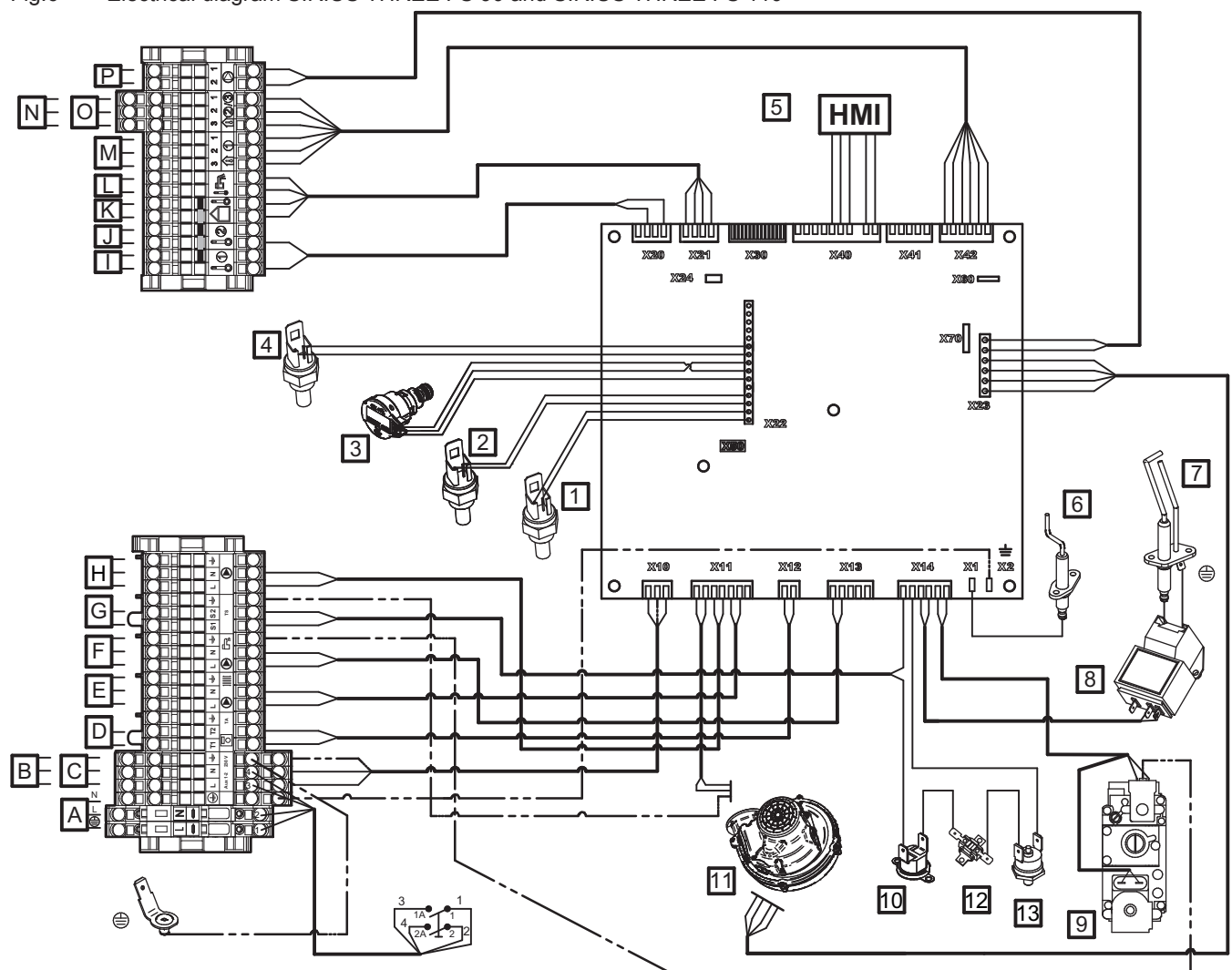
⊕ Earth POP rivet

- A Power supply 230 V 50 Hz
- B Power supply auxiliary circuit 1
- C Power supply auxiliary circuit 2
- D Room thermostat
- E Heating circuit pump
- F Domestic hot water pump
- G Safety contact
- H Boiler pump
- I Auxiliary sensor 1
- J Auxiliary sensor 2
- K Outside sensor
- L Domestic hot water sensor
- M Room temperature sensor 1
- N Room temperature sensor 2

- O Room temperature sensor 3
- P Boiler pump modulation (PWM)

- 1 Flow temperature sensor
- 2 Return temperature sensor
- 3 Hydraulic pressure sensor
- 4 Flue gas sensor
- 5 Control panel display
- 6 Ionisation probe
- 7 Spark plug
- 8 Igniter
- 9 Gas valve
- 10 Safety thermostat
- 11 Fan
- 12 Safety thermostat on the combustion chamber door

Fig.6 Electrical diagram SIRIUS THREE FS 90 and SIRIUS THREE FS 110



MW-3000004-04

- | | |
|------------------------------------|---|
| ⊕ Earth POP rivet | O Room temperature sensor 3 |
| A Power supply 230V 50Hz | P Boiler pump modulation (PWM) |
| B Power supply auxiliary circuit 1 | 1 Flow temperature sensor |
| C Power supply auxiliary circuit 2 | 2 Return temperature sensor |
| D Room thermostat | 3 Hydraulic pressure sensor |
| E Heating circuit pump | 4 Flue gas sensor |
| F Domestic hot water pump | 5 Control panel display |
| G Safety contact | 6 Ionisation probe |
| H Boiler pump | 7 Spark plug |
| I Auxiliary sensor 1 | 8 Igniter |
| J Auxiliary sensor 2 | 9 Gas valve |
| K Outside sensor | 10 Safety thermostat |
| L Domestic hot water sensor | 11 Fan |
| M Room temperature sensor 1 | 12 Thermal fuse |
| N Room temperature sensor 2 | 13 Safety thermostat on the combustion chamber door |

4 Description of the product

4.1 General description

SIRIUS THREE FS floor-standing condensing gas boilers have the following characteristics:

- Low pollutant emissions
- High efficiency heating
- Electronic control panel

- Flue gas discharge by a concentric connection.
- Perfectly suitable for cascade systems with several boilers.

4.2 Operating principle

4.2.1 Circulating pump



Important

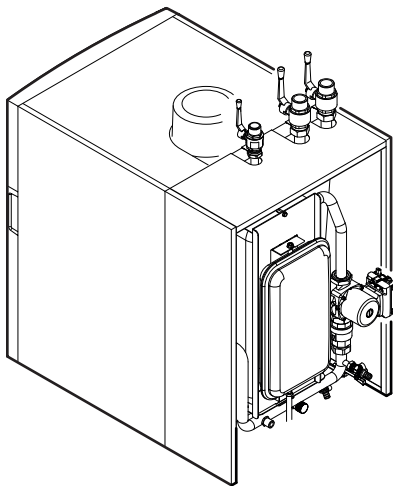
The benchmark for the most efficient circulating pumps is $EEI \leq 0.20$.

4.2.2 Gas/air setting

The casing fitted to the boiler is also used as an air box. Air is drawn in by the fan and gas injected into the Venturi by the fan intake. The fan speed is modulated according to the settings, the heat demand and the actual temperatures measured by the temperature sensors. The gas and air are mixed in the Venturi. The gas/air ratio command function accurately adjusts the quantities of gas and air required. This provides optimum combustion over the entire output range. The gas/air mixture is sent to the burner, located upstream of the heat exchanger.

4.2.3 Plate heat exchanger (accessories)

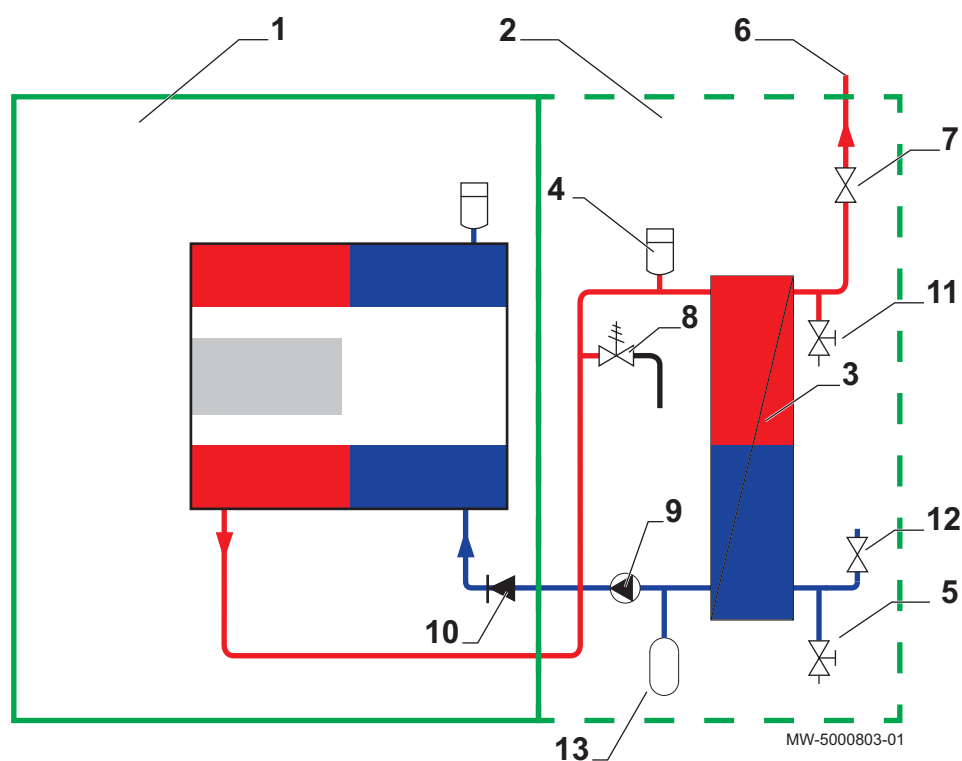
Fig.7



MW-2000828-01

The main advantage of the plate heat exchanger is that it hydraulically isolates the primary and secondary circuits. It also enables the boiler body to be protected from any contamination found in the secondary heating circuit water.

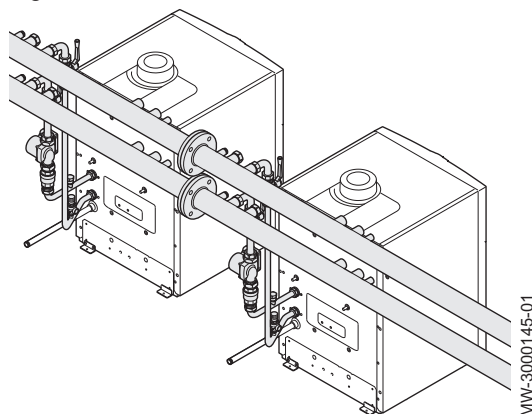
Fig.8 Functional diagram of a boiler with plate heat exchanger



- | | |
|----------------------------|-------------------------------|
| 1 Boiler | 8 Safety valve |
| 2 Plate heat exchanger kit | 9 Modulating circulating pump |
| 3 Plate heat exchanger | 10 Non-return valve |
| 4 Air vent | 11 Drain valve |
| 5 Drain valve | 12 Valve |
| 6 Heating circuit flow | 13 Expansion vessel |
| 7 Valve | |

4.2.4 System in cascade

Fig.9 Boilers in cascade



The boiler is ideally suited for a cascade system configuration. Use a boiler/cascade connection kit to connect boilers in cascade.



Important


Please contact the After Sales Service for further information.

4.2.5 Settings and safety devices


Important

The settings and safety devices are only operational if the boiler is powered up.

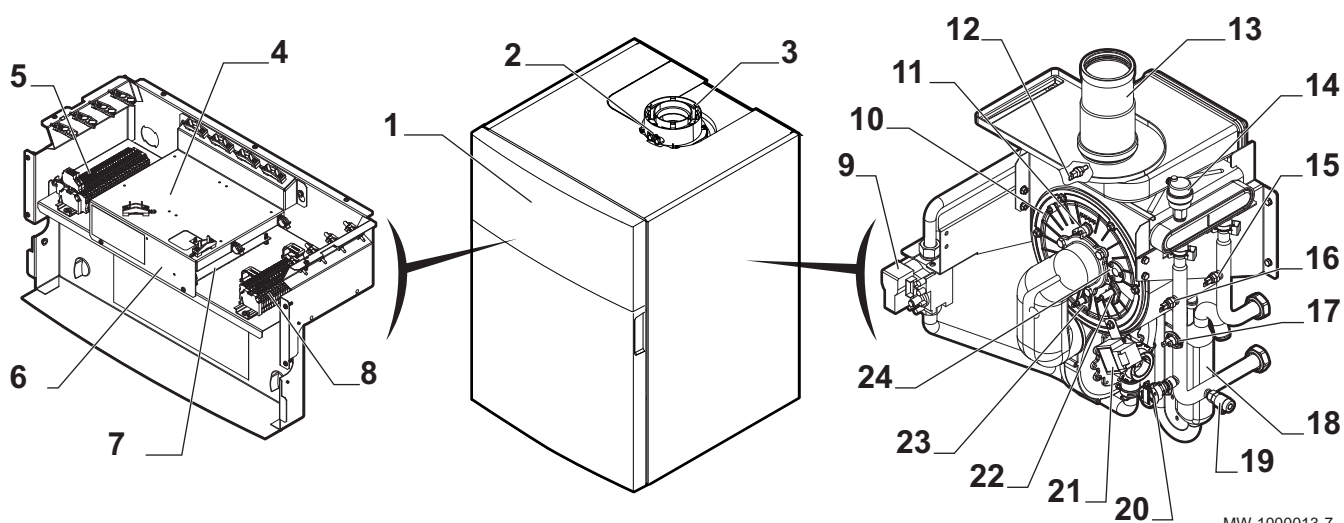
Tab.11 Description of the safety devices

Device	Description
Safety thermostats	<p>The safety thermostats suspend the supply of gas to the burner if the water in the primary circuit overheats. To resume normal operation of the boiler, eliminate the cause of this interruption.</p> <div>  Caution The safety thermostats must in no circumstances be switched off or disconnected. </div>
NTC flue gas sensor	The control panel blocks the gas supply to the burner in the event of overheating. To resume normal operation of the boiler, switch off the boiler and switch it back on again with the ON/OFF switch.
Flame detector by ionisation	The boiler is put into safety lock-down in the event of gas shortage or incomplete cross-lighting on the burner.
Hydraulic pressure switch	<p>Thanks to this device, the burner can only operate if the system pressure is higher than 0.5 bar (0.05 MPa).</p> <p>When the pressure switch detects a pressure lower than 0.8 bar (0.08 MPa), a warning message is displayed, without stopping the circulating pump.</p>
Post-circulating pump	After the burner stops, depending on the room thermostat setting and if in heating mode, the circulating pump runs for a further 3 minutes.
Frost protection device	<p>When the flow temperature is lower than 5 °C, the burner starts up and runs until the flow temperature reaches 15 °C. This device runs under the following conditions:</p> <ul style="list-style-type: none"> • The boiler is switched on • The gas supply is working • The pressure in the system is higher than 0.5 bar (0.05 MPa)
Anti-blocking of the pump	<p>If there are no heating or domestic hot water requirements for 24 consecutive hours, the pumps start up automatically and run for 10 seconds.</p> <p>The pumps connected directly to the appliance's terminal blocks are started up every Friday at 10:00 a.m. and run for 30 seconds.</p>
Anticipatory start-up of the circulating pumps	In heating mode only, the appliance can start up the circulating pumps before burner ignition. The duration and activation of anticipatory start-up depends on the installation requirements and the operating temperatures. The duration of anticipatory start-up of the circulating pumps therefore varies from a few seconds to several minutes.

4.3 Main components

4.3.1 Main boiler components

Fig.10 SIRIUS THREE FS 50 and SIRIUS THREE FS 70



MW-1000013-7

- 1 Control panel
- 2 Flue gas measuring point
- 3 Flue gas connection
- 4 Mounting point for a maximum of two AVS 75 modules. A third AVS 75 module can be used by the boiler but must be fixed to the wall and powered externally.
- 5 Power supply terminal block
- 6 Mounting point for communication module OCI 345



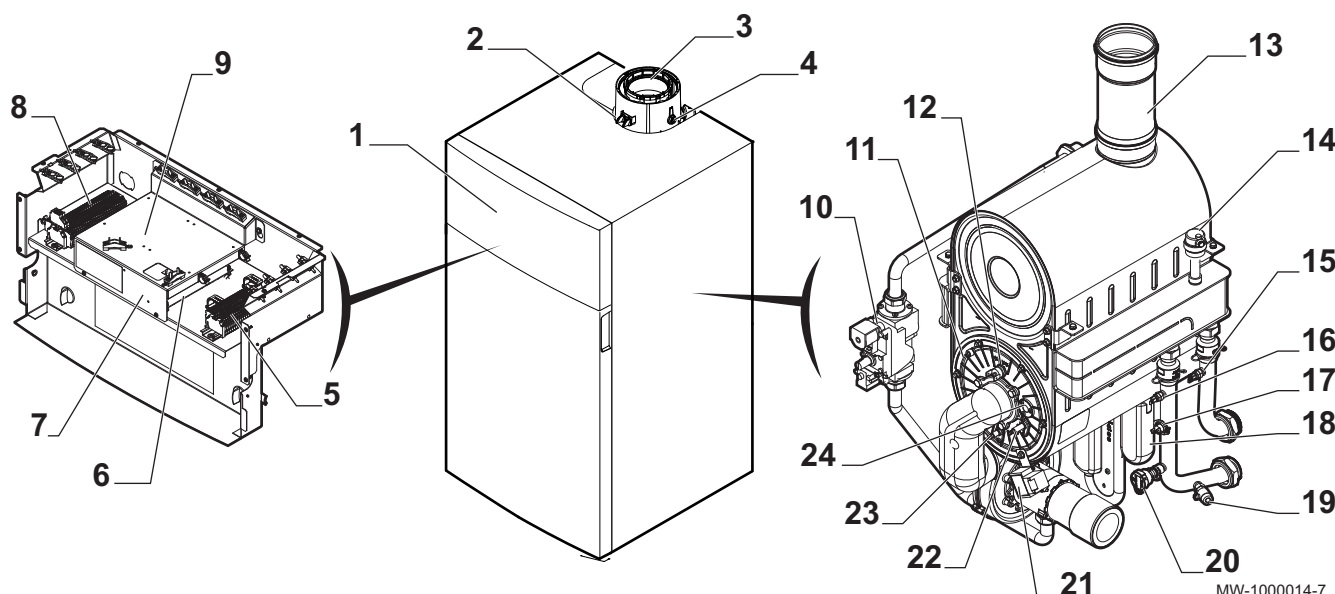
Caution

Danger of short circuit on the OCI 345 communication module if it is fixed in another emplacement.

- 7 Controller PCB
- 8 Terminal block for the sensors and the remote control

- 9 Gas valve
- 10 Burner
- 11 Safety thermostat on the combustion chamber door
- 12 Flue gas sensor
- 13 Flue gas fitting
- 14 Automatic air vent
- 15 Return temperature sensor
- 16 Flow temperature sensor
- 17 Safety thermostat
- 18 Condensate siphon
- 19 Drain valve
- 20 Hydraulic pressure sensor
- 21 Ignition transformer
- 22 Ignition electrode
- 23 Ionisation probe
- 24 Flame inspection window

Fig.11 SIRIUS THREE FS 90 and SIRIUS THREE FS 110



MW-1000014-7

- 1 Control panel
- 2 Flue gas measuring point
- 3 Flue gas connection
- 4 Flue gas sensor
- 5 Terminal block for the sensors and the remote control
- 6 Controller PCB
- 7 Mounting point for communication module OCI 345



Caution

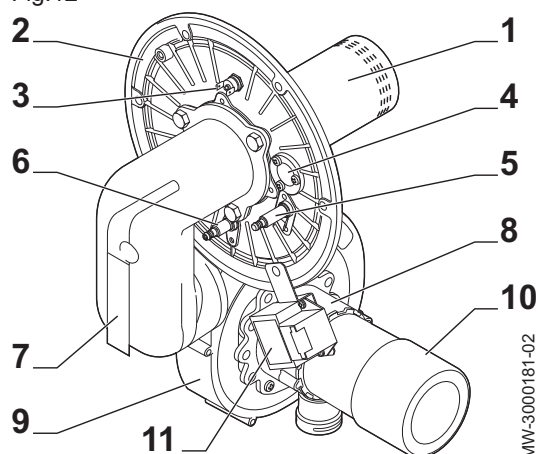
Danger of short circuit on the OCI 345 module if it is fixed in another emplacement.

- 8 Power supply terminal block
- 9 Mounting point for a maximum of two AVS 75 modules. A third AVS 75 module can be used by the boiler but must be fixed to the wall and powered externally.

- 10 Gas valve
- 11 Burner
- 12 Safety thermostat on the combustion chamber door
- 13 Flue gas fitting
- 14 Automatic air vent
- 15 Return temperature sensor
- 16 Flow temperature sensor
- 17 Safety thermostat
- 18 Condensate siphon
- 19 Drain valve
- 20 Hydraulic pressure sensor
- 21 Ignition transformer
- 22 Ignition electrode
- 23 Ionisation probe
- 24 Flame inspection window

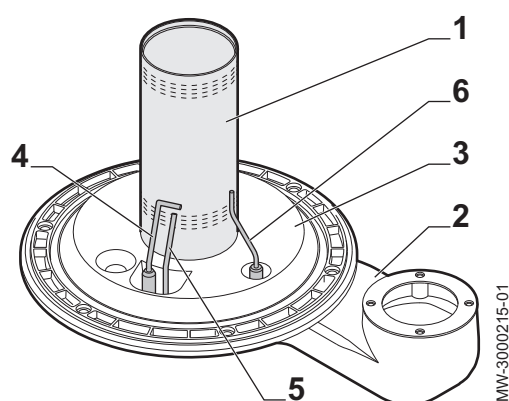
4.3.2 Main burner components

Fig.12



- 1 Burner
- 2 Burner bracket
- 3 Safety thermostat on the combustion chamber door
- 4 Flame inspection window
- 5 Spark plug
- 6 Ionisation probe
- 7 Gas collector
- 8 Venturi
- 9 Fan
- 10 Silencer (SIRIUS THREE FS 90 model only)
- 11 Igniter

Fig.13

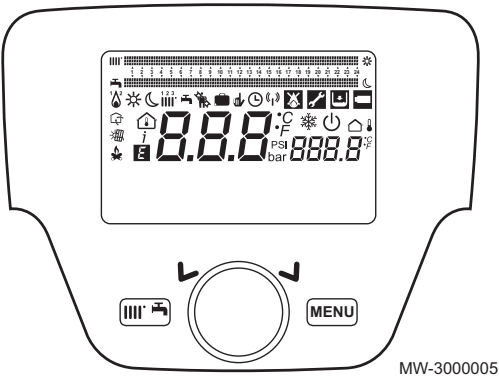


- 1 Burner
- 2 Air/gas collector
- 3 Insulating surface area
- 4 Ignition electrode
- 5 Earth electrode
- 6 Flame detection electrode

4.4 Control panel description

4.4.1 Description of the keys

Fig.14

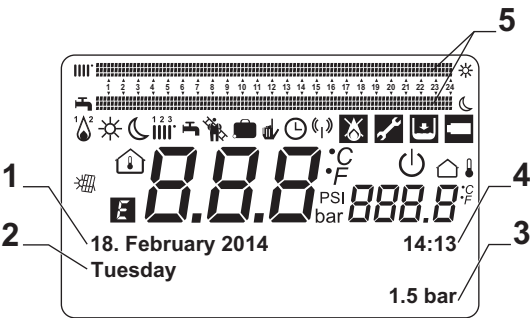


- Shortcuts menu key
- Quick access to the operating modes
- Menu key
- Selection and confirmation button
 - Rotary button for navigating between menu or parameter screens
 - Push button to select a menu/parameter or to confirm a value/action

See also
List of parameters, page 70
Shortcuts menu, page 70

4.4.2 Description of the symbols

























Fig.15



- 1 Date: day, month, year
- 2 Day of the week
- 3 Boiler / heating circuit pressure
- 4 Clock: hours and minutes
- 5 Operating period indicators in Comfort/Eco mode over 24 hours:
 - Top line: Heating mode
 - Bottom line: Domestic hot water mode

Tab.12 Description of the symbols

Type of information	Symbol	Description
Information		Room temperature (°C)
		Outdoor temperature (°C)
	°C, °F bar, PSI	Temperature and hydraulic pressure units: international system or imperial system.
		Data transmission: only when the wireless remote control is connected.
		Solar integration available

Type of information	Symbol	Description
Operating modes		Comfort operating mode: comfort room temperature
		Eco operating mode: reduced room temperature
		Operating mode: Heating <ul style="list-style-type: none">  (1): Zone 1 active  (2): Zone 2 active  (3): Zone 3 active Symbol displayed: <ul style="list-style-type: none"> No symbol: heating circuit not connected Fixed symbol: heating circuit connected Flashing symbol: heating requested
		Operating mode: Domestic hot water activated <div>  Important The heating  is off during production of domestic hot water . </div>
		Operating mode: Comfort  / Eco  override mode
		Operating mode: Automatic, according to the timer programs
		Sweep Function activated
		Holidays program function activated
		Frost protection mode: the boiler frost protection has been activated
		Burner on: <ul style="list-style-type: none">  (1): Output < 70%  (2): Output > 70%
error		Error: the burner cannot start up
		Error: After Sales Service intervention required
		Hydraulic pressure too low
		Anomaly/error detected

4.5 Standard delivery

The SIRIUS THREE FS boiler comes in a package that includes:

- A floor-standing gas boiler
- An installation and maintenance manual
- A user guide
- A data plate.

4.6 Accessories & options

For the list of accessories and options, refer to the current price list.

5 Before installation

5.1 Installation regulations



Warning

The installer must be registered with Gas Safe and have the correct ACS qualifications.



Important

Practical guidelines - see the latest version.

5.2 Installation requirements

5.2.1 Water treatment

Domestic hot water circuit

- If the water is harder than 20°f (1°f = 10 mg of calcium carbonate per litre of water), install a polyphosphate cartridge or an equivalent treatment system, in line with prevailing regulations.
- Flush the system thoroughly after installation and initial commissioning of the appliance.
- The materials used for the domestic hot water circuit must comply with Directive 98/83/EC.

For a new system

Before carrying out installation of the boiler, clean and flush the system to eliminate residual chips of sharp threading and welding and solvent residues. Use appropriate exclusive neutral products in order not to damage parts made of metal, plastic and rubber. To protect the system from limescale, use inhibitors such as SENTINEL X300 or X400 and FERNOX protector for the heating circuits. Use these products carefully, following their manufacturers' instructions.

For an existing system

Before carrying out installation of the boiler, drain and flush the system to eliminate sludge and pollutants, using the appropriate products permitted (see products recommended above). Any foreign particles in the heating circuit impair proper functioning of the boiler (e.g.: overheating, noisy heat exchanger).

The first start-up of the boiler must be performed by an accredited installer, who will ensure:

- that the nominal specifications of the appliance match the power supply specifications (electric, hydraulic and gas),
- that the installation meets prevailing standards,
- that the appliance is correctly connected to the electrical mains and duly earthed.

5.2.2 Gas supply

- Before mounting, check that the gas meter has sufficient capacity (in m³/h). To do this, you should bear in mind the consumption of all appliances. If the capacity of the gas meter is too low, inform the gas supply company.
- The boilers are preset to run on G20 gas (gas H) and can be adapted to run with the following gases:
 - G25 (gas L),
 - G25.1 (gas S),
 - G27 (gas Lw),
 - G31 (gas P),



Important

To use a different type of gas, contact an approved assistance service.

5.2.3 Power supply

Supply voltage	230 V AC / 50 Hz
----------------	------------------



Caution
Please ensure the polarities shown on the terminals are followed, i.e live (L), neutral (N) and earth (÷)

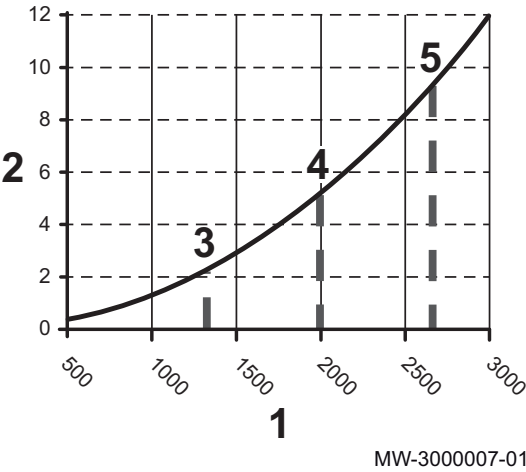
5.2.4 Circulating pump

The boiler's water flow rates must be higher than or equal to the specifications in the table below:

Tab.13 Water flow rates in the boiler

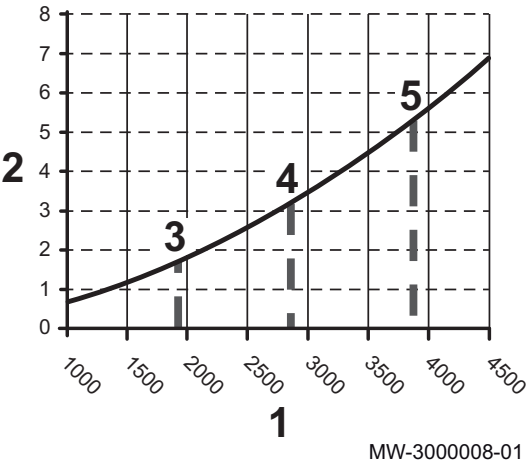
Working flow rate with the low-loss header kit	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Minimum flow rate	litres/hour	800	1500	2000	2250
Maximum flow	litres/hour	2450	3500	4600	4800

Fig.16 Pressure drops for SIRIUS THREE FS 50



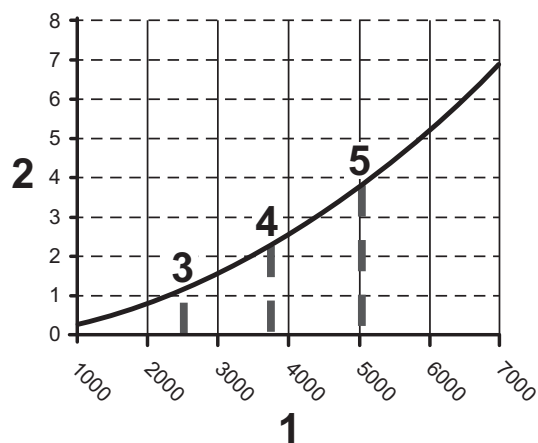
- 1 Q flow rate (litres/hour)
- 2 {3}H pressure in metres of water column (mWC)
- 3 Operating water flow rate at nominal heat output = 1330 litres/hour where $\Delta T = 30\text{ }^{\circ}\text{C}$
- 4 Operating water flow rate at nominal heat output = 2000 litres/hour where $\Delta T = 20\text{ }^{\circ}\text{C}$
- 5 Operating water flow rate at nominal heat output = 2660 litres/hour where $\Delta T = 15\text{ }^{\circ}\text{C}$
- ΔT Temperature difference between the flow water and the return water in the boiler

Fig.17 Pressure drops for SIRIUS THREE FS 70



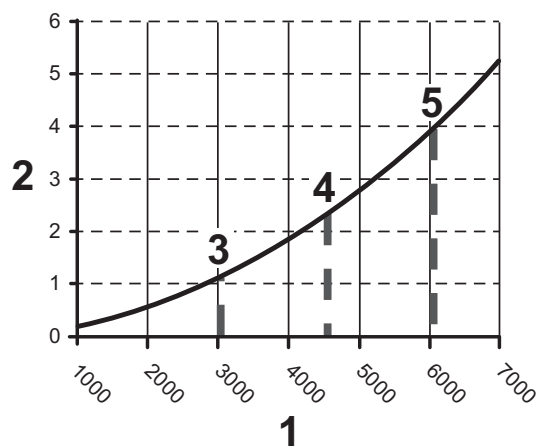
- 1 Q flow rate (litres/hour)
- 2 H pressure in metres of water column (mWC)
- 3 Operating water flow rate at nominal heat output = 1920 litres/hour where $\Delta T = 30\text{ }^{\circ}\text{C}$
- 4 Operating water flow rate at nominal heat output = 2880 litres/hour where $\Delta T = 20\text{ }^{\circ}\text{C}$
- 5 Operating water flow rate at nominal heat output = 3840 litres/hour where $\Delta T = 15\text{ }^{\circ}\text{C}$
- ΔT Temperature difference between the flow water and the return water in the boiler

Fig.18 Pressure drops for SIRIUS THREE FS 90



MW-3000009-01

Fig.19 Pressure drops for SIRIUS THREE FS 110



MW-3000010-01

5.3 Choice of the location

Before mounting the boiler, decide on the ideal position for mounting, bearing in mind any Directives and the dimensions of the appliance.



Caution

Install the thermodynamic water heater in a frost-free environment.



Caution

Install the boiler on a solid, stable structure able to bear its weight.



Caution

Do not stock chloride or fluoride compounds close to the boiler. They are particularly corrosive and may contaminate the combustion air. Chloride and fluoride compounds are present in aerosol sprays, paints, solvents, cleaning products, washing products, detergents, glues, snow clearing salts.



Caution

Do not store, even temporarily, explosive or easily combustible materials in the boiler room or near the boiler.



Caution

Use plugs for the intake of air and discharge of combustion gases observing the prevailing regulations and directives.



Caution
Connect the condensate discharge to the waste water near the boiler.



Caution
France: Abide by the regulatory provisions of the Order of 23 June 1978 and the **ATG C 321.4**

5.3.1 Ventilation

To allow the intake of combustion air, sufficient ventilation must be provided in the boiler room, for which the cross section and position must satisfy the regulations in force in the country in which the boiler is installed:

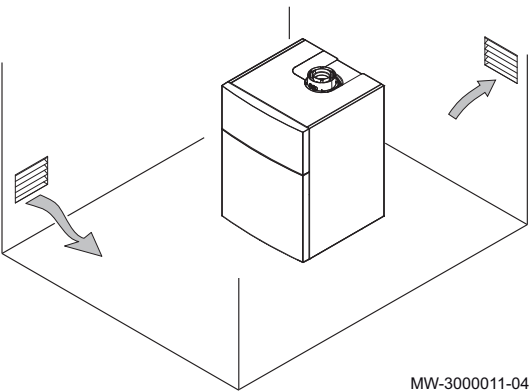
Great Britain	BS 5440 Part 1 and Part 2: <ul style="list-style-type: none">For boilers with a nominal output of more than 70 kW: Upper and lower air vents compulsory BS 6644 and IGEM/UP-10
---------------	--

If the boiler is installed in closed premises, respect the minimum dimensions given in the diagram below. Also allow for openings to obviate the following hazards:

- Accumulation of gas
- Overheating of the premises
- **Great Britain:** Minimum cross section of openings: see BS 5440 Part 1 and Part 2, and BS 6644.

■ Ventilation to be provided for the boilers

Fig.20



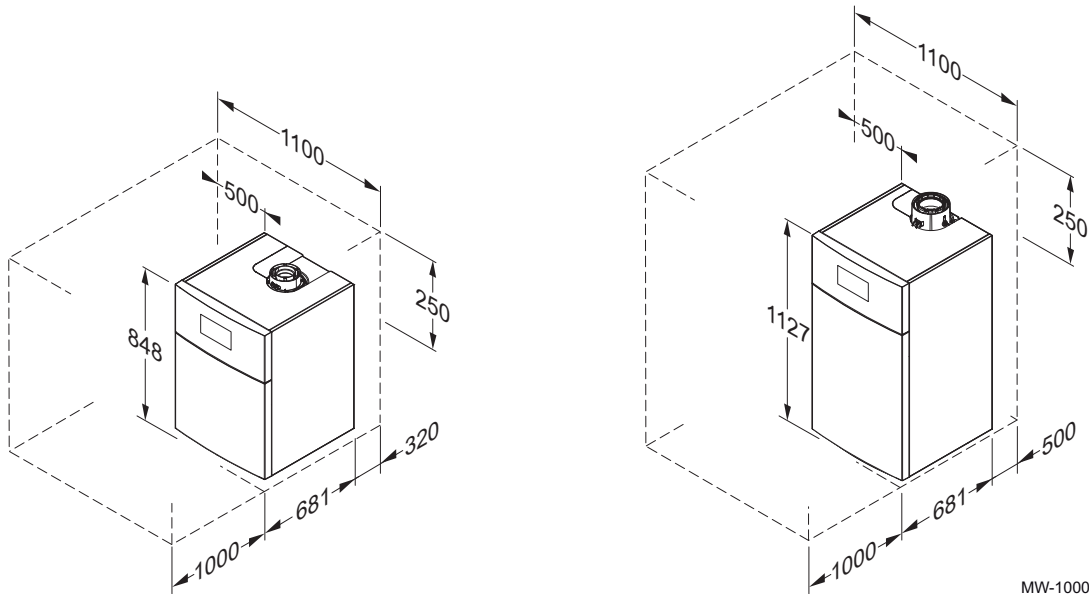
5.3.2 Overall space needed for the boiler

To ensure adequate access to the appliance and facilitate maintenance, allow sufficient space around the boiler, according to the information provided.

**Important**

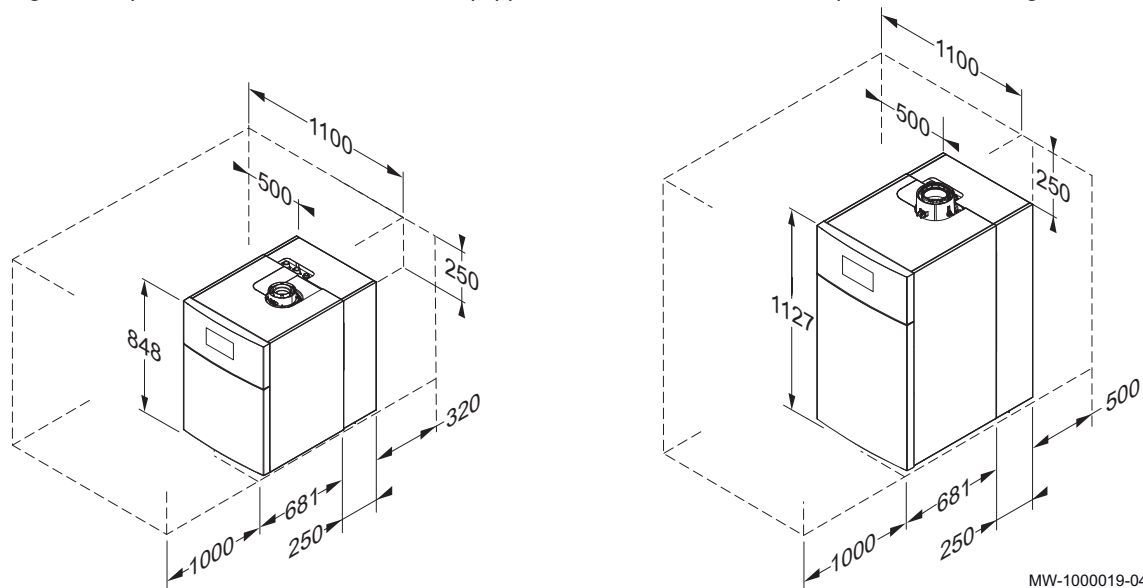
Keep the boiler accessible at all times.

Fig.21 Space to be allowed for the boilers



MW-1000003-06

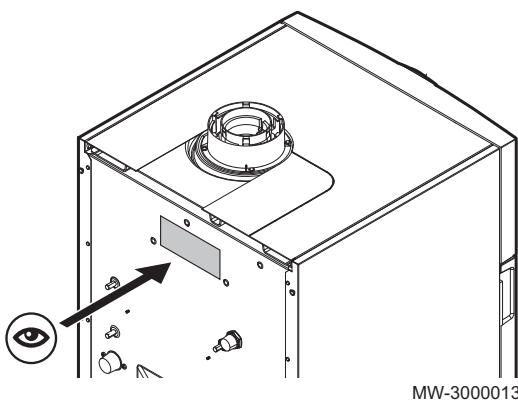
Fig.22 Space to be allowed for boilers equipped with a low-loss header kit, plate heat exchanger kit or cascade kit



MW-1000019-04

5.3.3 Data plate

Fig.23



MW-3000013

The data plate is located on the back of the boiler. The data plate provides important information regarding the appliance:

- Serial number
- Model
- Gas category
- etc.

**Caution**

A second data plate is provided in the instructions bag. The second data plate should be affixed to a visible part of the boiler when installation has been completed.

If the boiler is equipped with a hydraulic kit (low-loss header kit, plate heat exchanger kit, cascade kit), a position on the side of the boiler is preferable.

5.3.4 Selecting the position for the outside temperature sensor (optional)

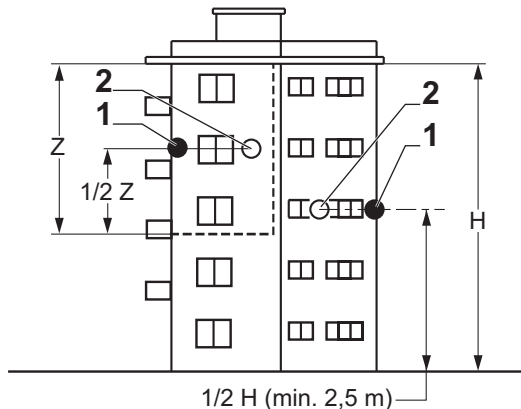
It is important to select a position that allows the sensor to measure the outside conditions correctly and effectively.

■ Recommended positions

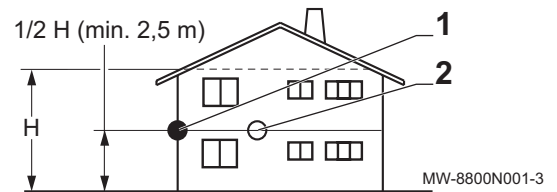
Place the outdoor temperature sensor in a position that covers the following characteristics:

- On a façade of the area to be heated, on the north if possible.
- Halfway up the wall of the area to be heated
- Affected by changes in the weather
- Protected from direct sunlight.
- Easy to access.

Fig.24



- 1 Optimum location
2 Possible position



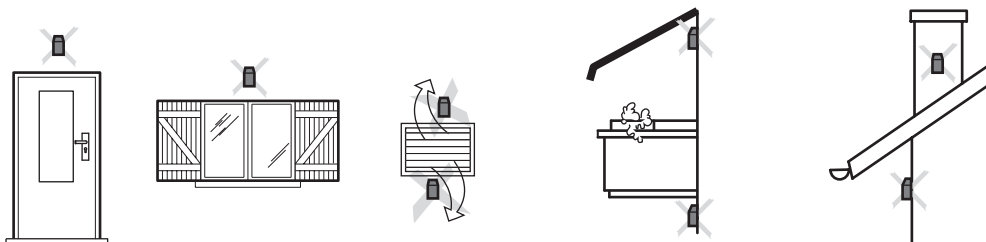
- H Inhabited height controlled by the sensor
Z Inhabited area controlled by the sensor

■ Positions to be avoided

Avoid placing the outdoor temperature sensor in a position with the following characteristics:

- Masked by a building element (balcony, roof, etc.).
- Close to a disruptive heat source (direct sunlight, chimney, ventilation grille, etc.).

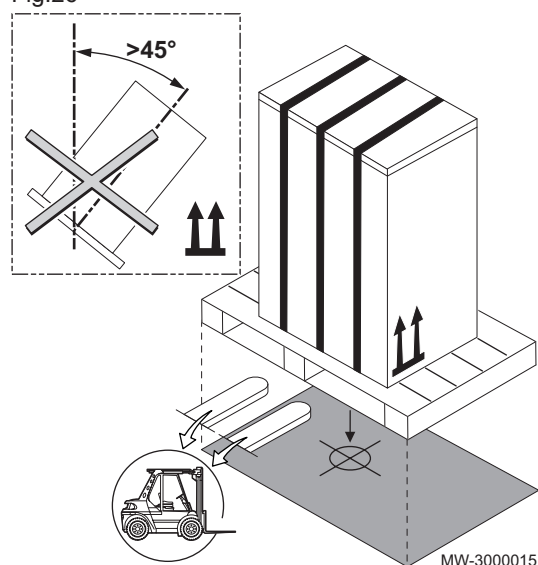
Fig.25



MW-3000014-2

5.4 Transport

Fig.26

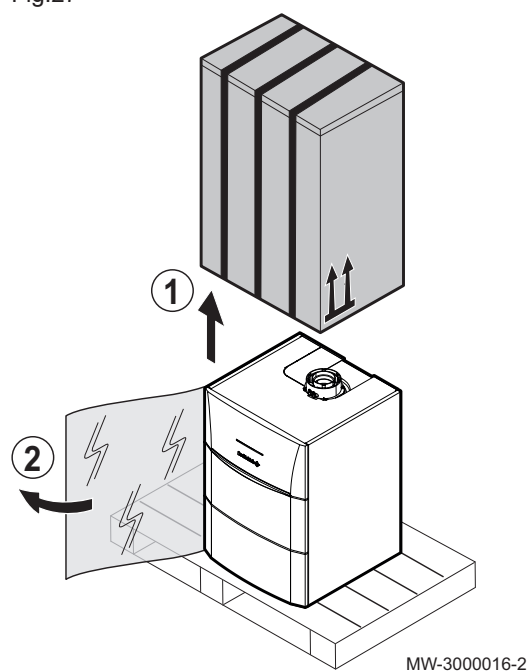


Caution

- Have at least two people standing by. Follow the usual handling techniques and use adequate safety equipment.
- Handle the appliance with gloves.
- Transport the pallet carrying the appliance using a pallet truck, a forklift truck or a 4-wheel removals cart.
- Do not use the top cover of the appliance for transport lifting.
- Transport the appliance vertically.

5.5 Unpacking & initial preparation

Fig.27



1. Remove the cardboard packaging.
2. Remove the plastic protection and the polystyrene cover.



Caution

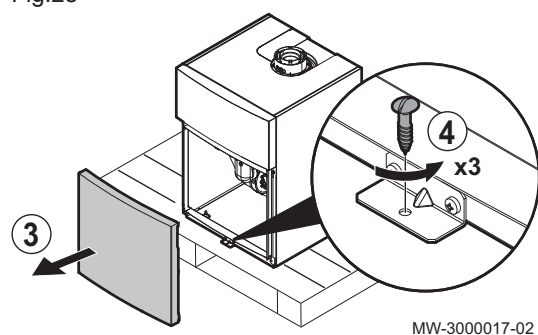
- Recycle the cardboard into recycling bins.
- The plastic sleeve and the polystyrene should be put into the household waste.



Danger

There is a risk of suffocation, keep out of reach of children.

Fig.28



3. Remove the front panel by pulling firmly on the notches provided.
4. Remove the four screws holding the boiler in place on the pallet.
5. Take the condensates hose that you will find in the boiler and connect it to the condensates discharge.
6. Put the boiler in its intended position.



Caution

Moving the boiler is a job for two people. Follow the usual handling techniques and use adequate safety equipment.

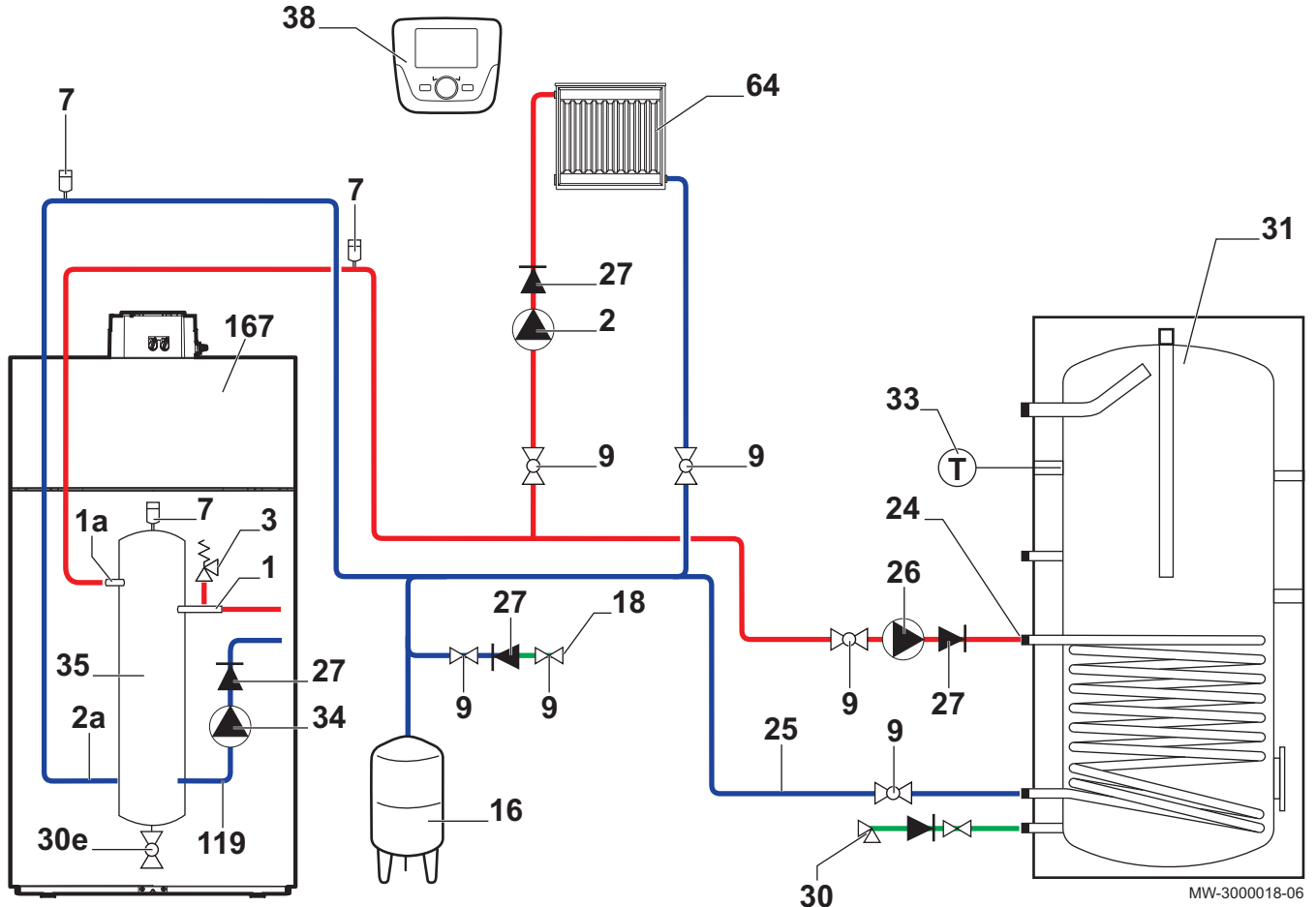
7. Level the boiler using the adjustable feet.

6 Connecting diagrams and configuration

6.1 One boiler + one direct circuit + one domestic hot water tank

6.1.1 Hydraulic connection

Fig.29 Boiler + 1 direct circuit + 1 domestic hot water tank

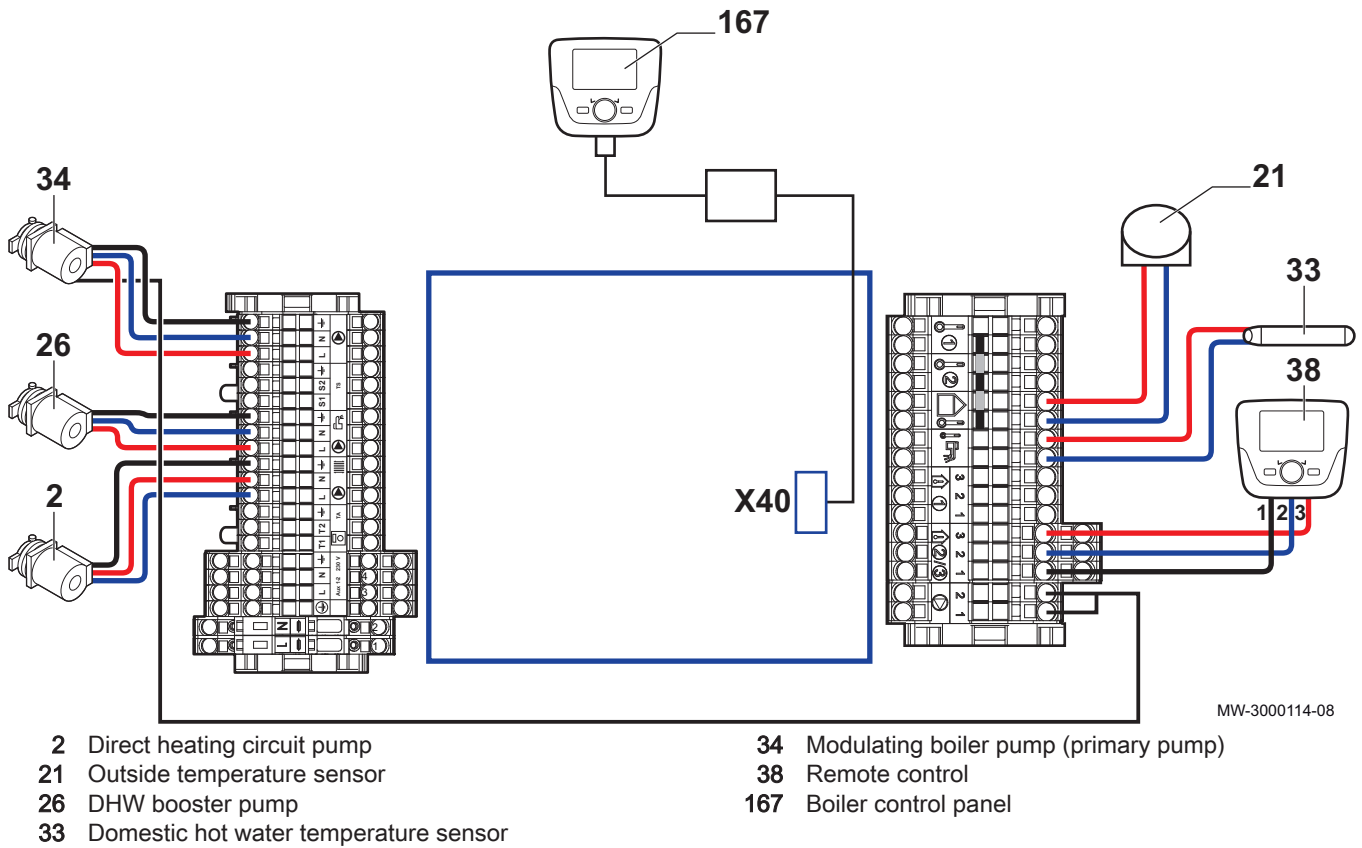


- 1 Boiler flow
- 1a Heating flow direct circuit
- 2 Heating pump direct circuit
- 2a Heating return direct circuit
- 3 4 bar (0.4 MPa) safety valve
- 7 Automatic air vent
- 9 Isolation valve
- 16 Closed expansion vessel
- 18 Heating circuit fill point
- (France: with disconnecter according to prevailing regulations)
- 24 Domestic hot water tank exchanger primary inlet
- 25 Domestic hot water tank exchanger primary outlet
- 26 DHW booster pump

- 27 Non-return valve
- 30 Calibrated and sealed safety unit
- France: (7 bar (0.7 MPa) - with opening on the discharge pipe)
- 30e Drain valve
- 31 Independent domestic hot water tank
- 33 Domestic hot water temperature sensor
- 34 Modulating boiler pump (primary pump)
- 35 Low-loss header (accessory)
- 38 Remote control
- 64 Direct heating circuit
- 119 Boiler return
- 167 Boiler control panel

6.1.2 Electrical connection

Fig.30 Boiler + 1 direct circuit + 1 domestic hot water tank



Important

Relay the pumps if the current exceeds 1 A max per output.

6.1.3 Configuration

1. Go to the installer parameters.
2. Set/check the following parameters on the boiler:

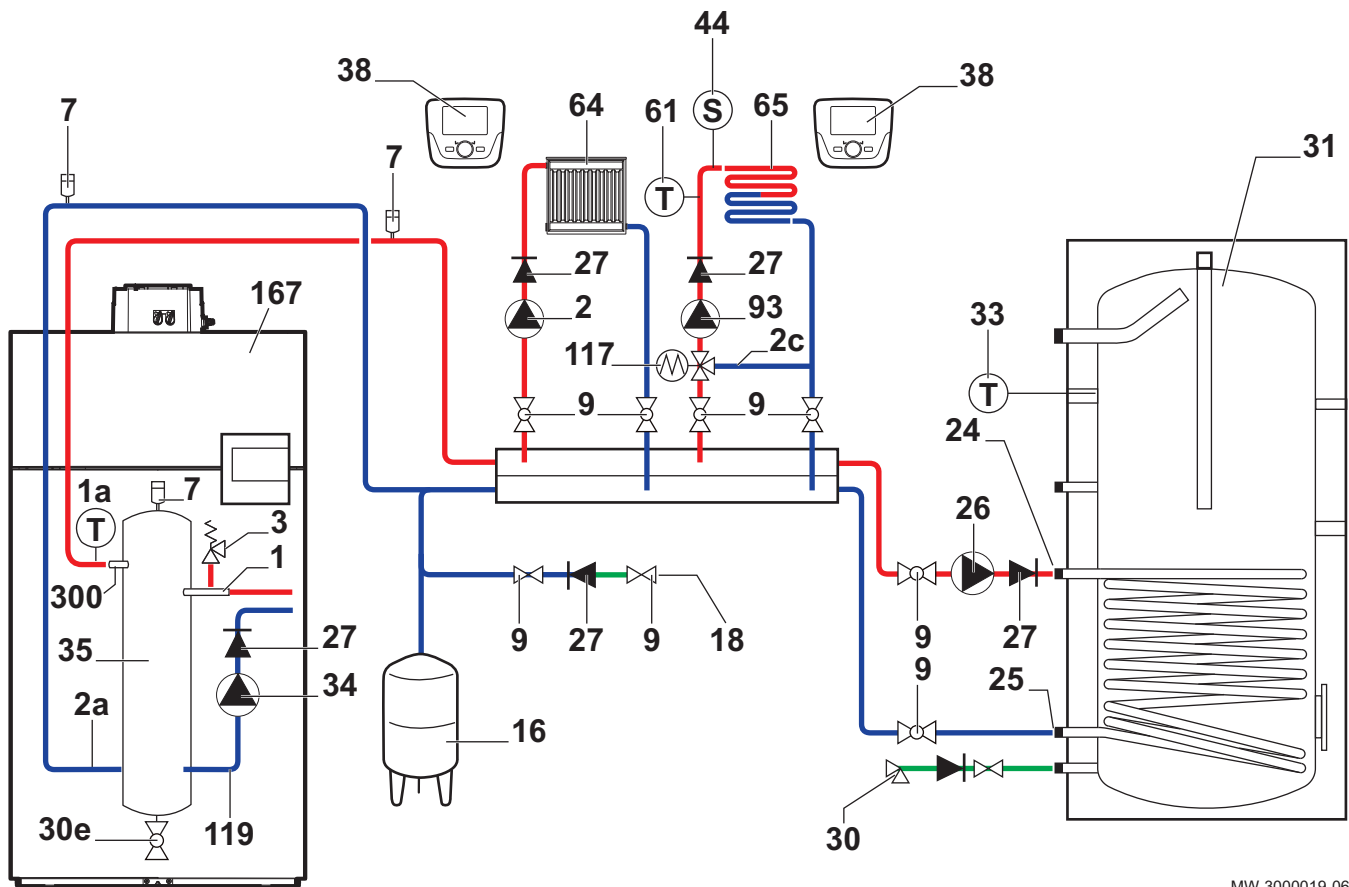
Tab.14 Settings for the boiler + 1 direct zone + 1 domestic hot water tank

Parameter number	Parameter	Adjustment/check required
5710	Temps / mode CH1	On
5715	Temps / mode CH2	Off
5721	Temps / mode CH3	Off
5730	Hot water sensor	Hot water sensor B3
5731	HW controlling element	Charging pump
5890	Relay output QX1	heating pump CH1 Q2
5891	Relay output QX2	Boiler pump Q1
5892	Relay output QX3	Hot water ctrl elem Q3
5931	Sensor input BX2	None

6.2 One boiler + one underfloor heating circuit + one direct circuit + one domestic hot water tank

6.2.1 Hydraulic connection

Fig.31 Boiler + 1 underfloor heating circuit + 1 direct circuit + 1 domestic hot water tank

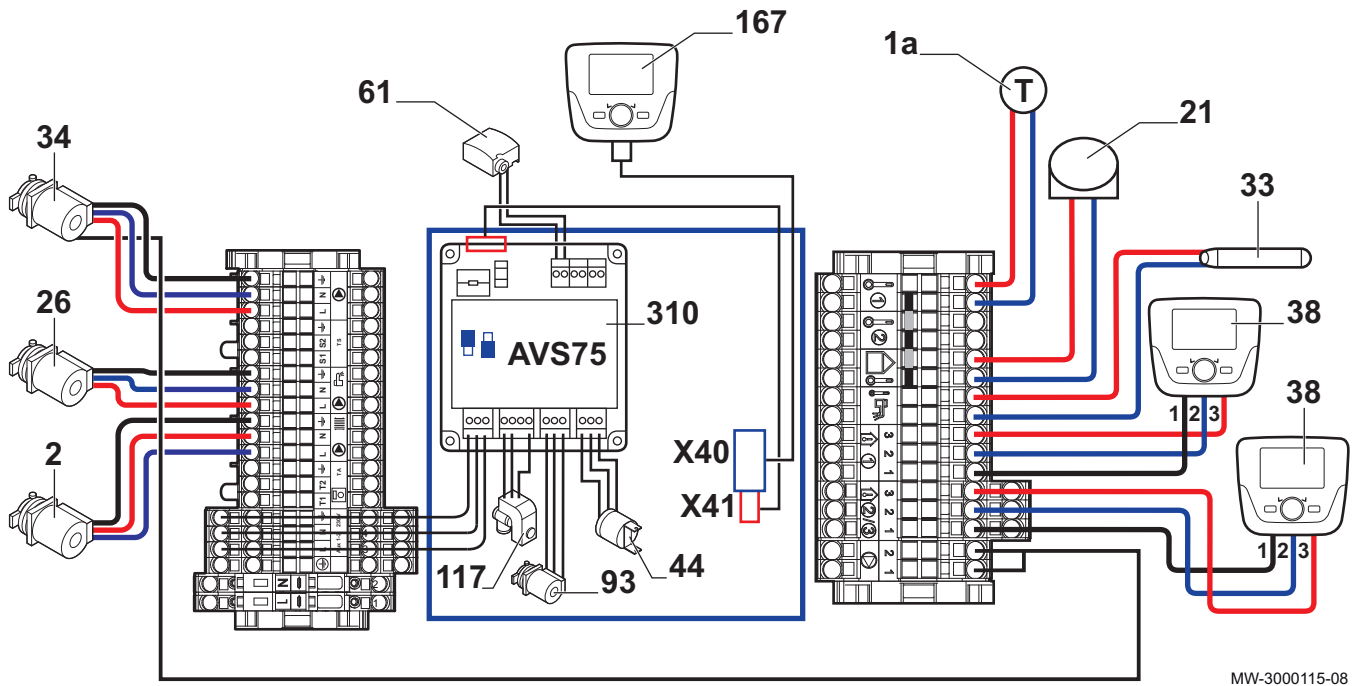


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- | | | | |
|-----|---|-----|--|
| 1 | Boiler flow | 34 | Modulating boiler pump (primary pump) |
| 1a | Heating flow sensor | 35 | Low-loss header (optional) |
| 2 | Direct heating circuit pump | 38 | Remote control with or without room temperature sensor |
| 2a | Heating return | 44 | - France: 65 °C safety thermostat with manual reset for underfloor heating (DTU 65.8, NF P52-303-1) |
| 2c | Three-way valve bypass | | - Austria: safety device to safeguard against overheating: according to the type of underfloor heating |
| 3 | 4 bar (0.4 MPa) safety valve | | - Other countries: safety device to safeguard against overheating of the underfloor heating, in accordance with prevailing regulations |
| 7 | Automatic air vent | 61 | Mixed circuit flow sensor |
| 9 | Isolation valve | 64 | Direct heating circuit (example: radiators) |
| 16 | Closed expansion vessel | 65 | Heating circuit with mixing valve, may be low temperature heating circuit (underfloor heating or radiators) |
| 18 | Heating circuit fill point | 93 | Heating pump for underfloor heating circuit |
| | (France: with disconnecter according to prevailing regulations) | 117 | Three-way mixing valve |
| 24 | Domestic hot water tank exchanger primary inlet | 119 | Boiler return |
| 25 | Domestic hot water tank exchanger primary outlet | 167 | Boiler control panel |
| 26 | DHW booster pump | 300 | Heating flow |
| 27 | Non-return valve | | |
| 30 | Calibrated and sealed safety unit | | |
| | France: (7 bar (0.7 MPa) - with opening on the discharge pipe) | | |
| 30e | Drain valve | | |
| 31 | Independent domestic hot water tank | | |
| 33 | Domestic hot water temperature sensor | | |

6.2.2 Electrical connection

Fig.32 Boiler + 1 underfloor heating circuit + 1 direct circuit + 1 domestic hot water tank



MW-3000115-08

- | | |
|--|--|
| 1a Heating flow sensor | 61 Mixed circuit flow temperature sensor |
| 2 Heating pump direct circuit | 93 Mixed circuit heating pump |
| 21 Outside temperature sensor | 117 Three-way mixing valve |
| 26 DHW booster pump | 167 Boiler control panel |
| 33 Domestic hot water temperature sensor | 310 AVS75: Option |
| 34 Modulating boiler pump (primary pump) | |
| 38 Room temperature sensor | |
| 44 65 °C safety thermostat with manual reset for underfloor heating (France: DTU 65.8, NF P52-303-1) | |



Important

Relay the pumps if the current exceeds 1 A max. per output.

6.2.3 Configuration

1. Go to the installer parameters.
2. Set/check the following parameters on the boiler:

Tab.15 Boiler settings + 1 underfloor heating circuit + 1 direct circuit + 1 domestic hot water tank

Parameter number	Parameter	Adjustment/check required
5710	Temps / mode CH1	On
5715	Temps / mode CH2	On
5721	Temps / mode CH3	Off
5730	Hot water sensor	Hot water sensor B3
5731	HW controlling element	Charging pump
5890	Relay output QX1	heating pump CH1 Q2
5891	Relay output QX2	Boiler pump Q1
5892	Relay output QX3	Hot water ctrl elem Q3
5932	Sensor input BX3	Common flow sensor B10 Low-loss header sensor pocket
6020	Function extension module 1	Temps / mode CH2
6024	Funct input EX21 module 1	Limit thermostat CH

**See also**

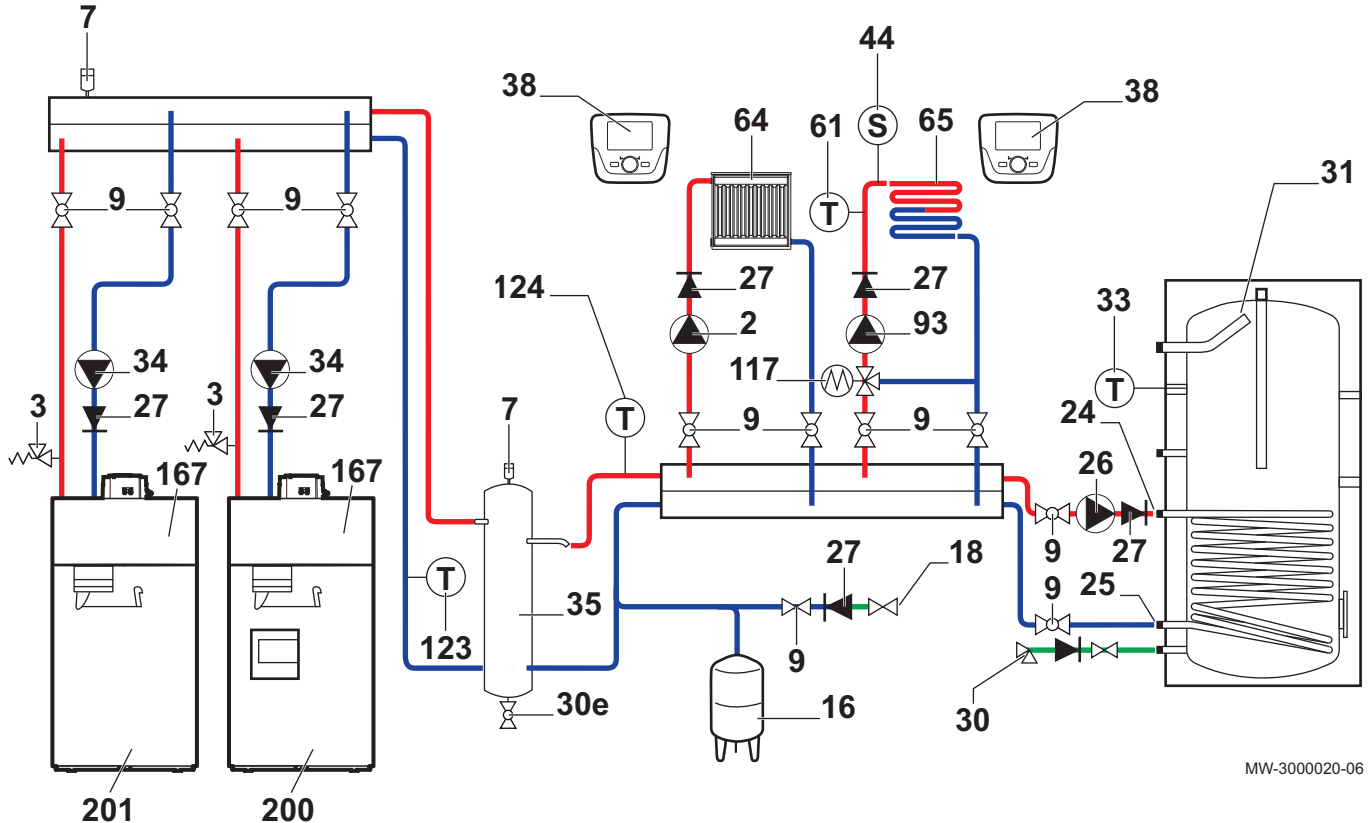
Modifying the installer parameters, page 68

List of installer parameters, page 73

6.3 Boilers in cascade + one underfloor heating circuit + one direct circuit + one domestic hot water tank

6.3.1 Hydraulic connection

Fig.33 Boilers in cascade + 1 underfloor heating circuit + 1 direct circuit + 1 domestic hot water tank



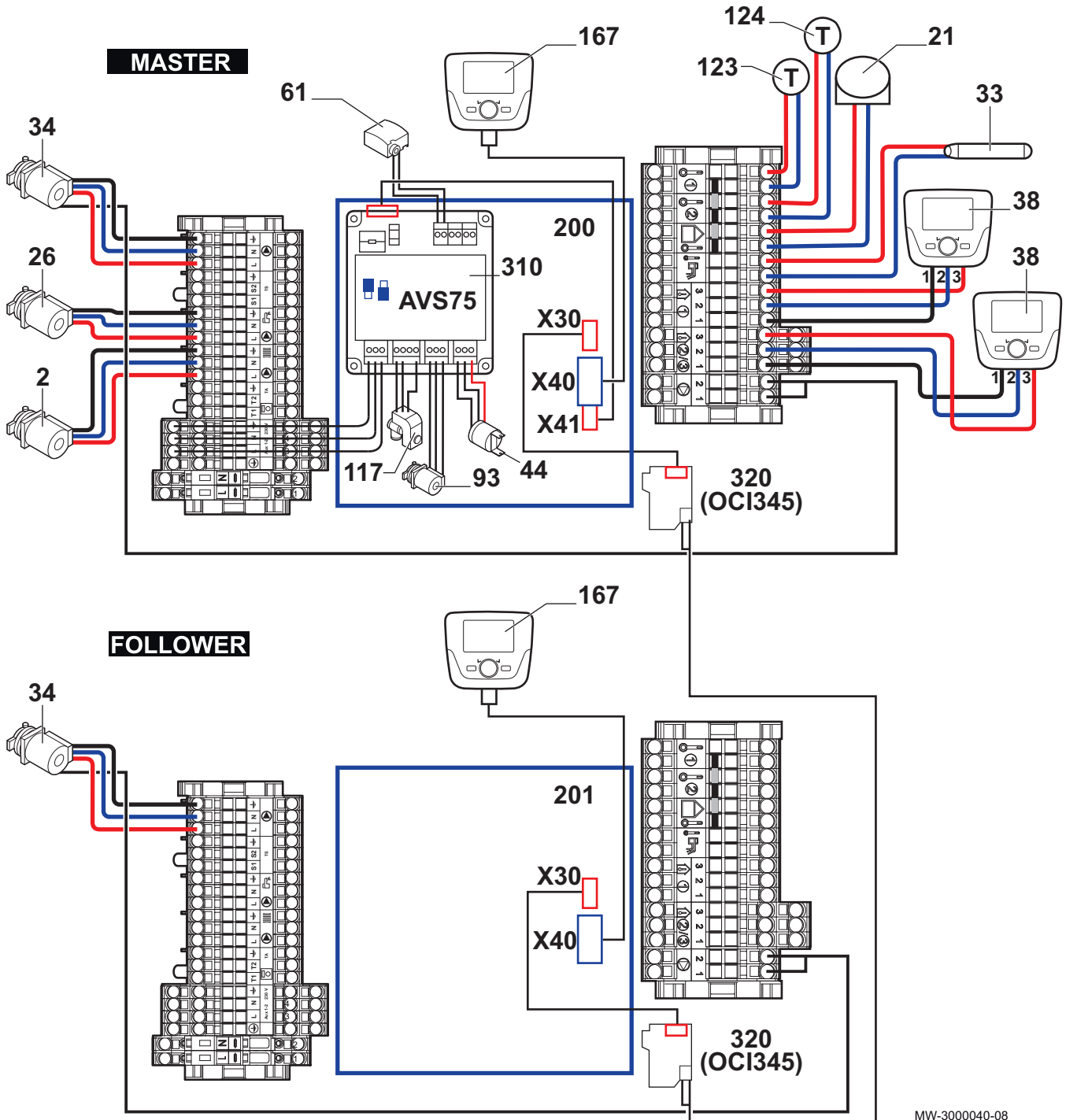
MW-3000020-06

- 2 Heating pump direct circuit
- 3 4 bar (0.4 MPa) safety valve
- 7 Automatic air vent
- 9 Isolation valve
- 16 Closed expansion vessel
- 18 Heating circuit fill point
- (France: with disconnecter according to prevailing regulations)
- 24 Domestic hot water tank exchanger primary inlet
- 25 Domestic hot water tank exchanger primary outlet
- 26 DHW booster pump
- 27 Non-return valve
- 30 Calibrated and sealed safety unit
- France: (7 bar (0.7 MPa) - with opening on the discharge pipe)
- 30e Drain valve
- 31 Independent domestic hot water tank
- 33 Domestic hot water temperature sensor
- 34 Modulating boiler pump (primary pump)
- 35 Low-loss header
- 38 Remote control with or without room temperature sensor

- 44 - France: 65 °C safety thermostat with manual reset for underfloor heating (DTU 65.8, NF P52-303-1)
- Austria: safety device to safeguard against overheating: according to the type of underfloor heating
- Other countries: safety device to safeguard against overheating of the underfloor heating, in accordance with prevailing regulations
- 61 Mixed circuit flow sensor
- 64 Direct heating circuit (example: radiators)
- 65 Heating circuit with mixing valve, may be low temperature heating circuit (underfloor heating or radiators)
- 93 Heating pump for underfloor heating circuit
- 117 Three-way mixing valve
- 123 Cascade return sensor
- 124 Cascade flow sensor
- 167 Boiler control panel
- 200 Lead boiler
- 201 Slave boiler

6.3.2 Electrical connection

Fig.34 Boilers in cascade + 1 underfloor heating circuit + 1 direct circuit + 1 domestic hot water tank



MW-3000040-08

- 2 Heating pump direct circuit
- 21 Outside temperature sensor
- 26 DHW booster pump
- 33 Domestic hot water temperature sensor
- 34 Modulating boiler pump (primary pump)
- 38 Room temperature sensor
- 44 France: 65 °C safety thermostat with manual reset for underfloor heating (DTU 65.8, NF P52-303-1)

Austria: safety device to safeguard against overheating: according to the type of underfloor heating

Other countries: safety device to safeguard against overheating of the underfloor heating, in accordance with prevailing regulations

- 61 Mixed circuit flow sensor
- 93 Mixed circuit heating pump
- 117 Three-way mixing valve
- 123 Cascade return sensor
- 124 Cascade flow sensor
- 167 Boiler control panel
- 200 Lead boiler
- 201 Slave boiler
- 310 AVS75: option
- 320 OCI345: communication module for cascade (option)

**Important**

Relay the pumps if the current exceeds 1 A max. per output.

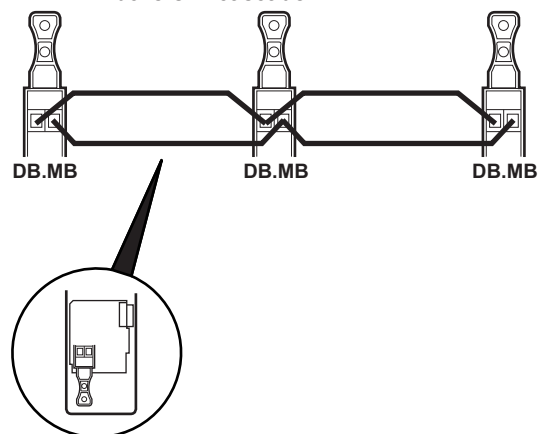
6.3.3 Connecting boilers in cascade with a OCI 345 module

Connect the boilers included in the boiler cascade with OCI 345 modules (electronic devices that handle communication through a BUS link). The OCI 345 modules must be connected to each boiler with three connectors.

Tab.16 Connecting the boiler components in cascade

Component 1	Component 2
OCI 345 module on the boiler	X30 connector on the boiler PCB. (Flat cable supplied with the OCI 345 module)
MB connector of a OCI 345 module	MB connector of a boiler OCI 345 module
DB connector of a OCI 345 module	DB connector of a boiler OCI 345 module

Fig.35 Connecting OCI 345 modules for boilers in cascade



MW-3000042-2

To make the connections between the various MB and DB connectors, use a shielded cable with the following specifications:

Type	Cross section	Maximum length
HAR H05 VV-F	2 x 1.5 mm ²	200 m

6.3.4 Configuration for 1 master boiler and 1 slave boiler

1. Go to the installer parameters on boiler 1 (master boiler).
2. Set the following parameters on boiler 1:

Tab.17 Settings on boiler 1 (master boiler)

Parameter number	Parameter	Adjustment required
5710	Temps / mode CH1	On
5715	Temps / mode CH2	On
5721	Temps / mode CH3	Off
5730	Hot water sensor	Hot water sensor B3
5731	Sensor input BX2	Common flow sensor B10
5890	Relay output QX1	heating pump CH1 Q2
5892	Relay output QX3	Hot water ctrl elem Q3
5932	Sensor input BX3	Cascade return sensor B70
6020	Function extension module 1	Temps / mode CH2
6600	Device address	1
6640	Clock mode	Master

3. Go to the installer parameters on boiler 2 (slave boiler).

- Set the following parameters on boiler 2:

Tab.18 Settings on boiler 2 (slave boiler)

Parameter number	Parameter	Adjustment required
5710	Temps / mode CH1	Off
6600	Device address	2
6640	Clock mode	Slave without remote setting

**See also**

Modifying the installer parameters, page 68

List of installer parameters, page 73

6.3.5 Configuration for a master boiler and slave boilers

- Access the installer parameters of the master boiler.
- Set the following parameters on the master boiler:

Tab.19 Configuration of the master boiler in a cascade

Parameter number	Parameter	Adjustment required	Description
6200	Save sensors	Yes	Saving any modifications made. The setting will revert automatically to No immediately after the adjustment.
6630	Cascade master	Always	Identification master boiler
6640	Clock mode	Autonomously	Cascade master boiler clock setting

- Access the installer parameters for the slave boiler(s):
- Set the following parameters on the slave boiler(s).

Tab.20 Cascade configuration of the slave boilers

Parameter number	Parameter	Adjustment required	Description
5710	Temps / mode CH1	Off	
6600	Device address	2...3...4...	Cascade activation
6640	Clock mode	Slave with remote setting	Setting the slave boiler clock with a master boiler

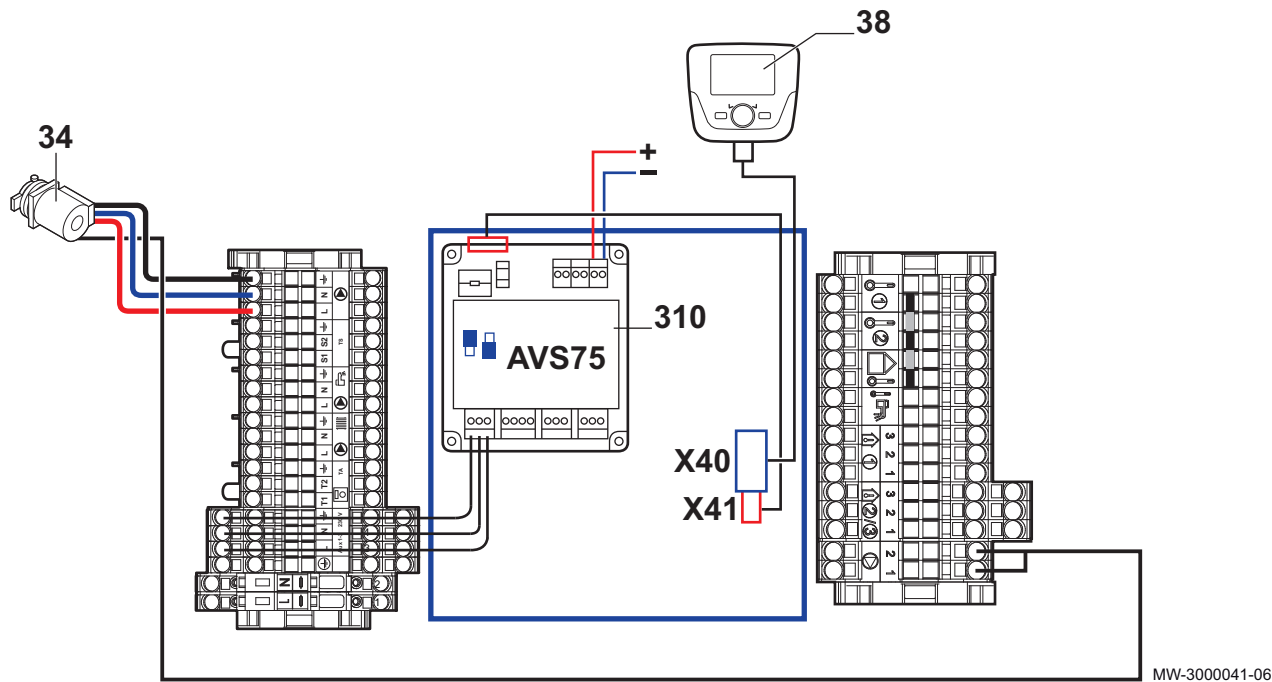
**Important**

- Remember to deactivate Heating circuit 1 so that the thermostatic input on terminal block M1 (1-2) is not taken into account.

6.4 Controlling a boiler in 0-10 V mode

6.4.1 Electrical connection

Fig.36 Boiler in 0–10 V mode



- 34

Primary pump
- 38

Remote control with or without room temperature sensor
- 310

AVS75: Option

i

Important

Relay the pumps if the current exceeds 1 A max. per output.

6.4.2 Configuration of the control system

1. Go to the installer parameters.
2. Set the following parameters on the boiler:

Tab.21 Boiler settings in 0–10 V mode

Parameter number	Parameter	Adjustment required
5710	Temps / mode CH1	Off
6020	Function extension module 1	Multifunctional
6046	Function input H2 module 1	Consumer request VK1 10V
6049	Voltage value 1 H2 module 1	0,5 ⁽¹⁾
6050	Funct value 1 H2 module 1	250 ⁽¹⁾
6051	Voltage value 2 H2 module 1	10 ⁽¹⁾
6052	Funct value 2 H2 module 1	800 ⁽¹⁾⁽²⁾
<div>(1) Default setting</div> <div>(2) This parameter setting is an example. The value 800 means that, at 10 V, the set point will be 80°C.</div>		

See also

Modifying the installer parameters, page 68

List of installer parameters, page 73

7 Installation

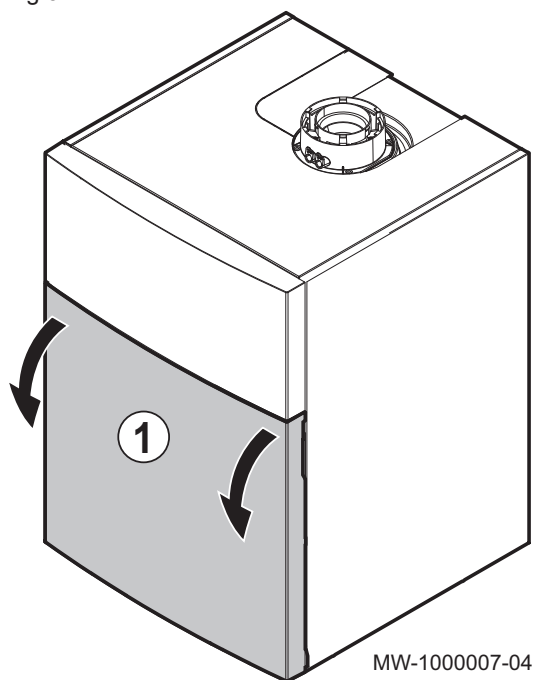
7.1 General

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

7.2 Preparation

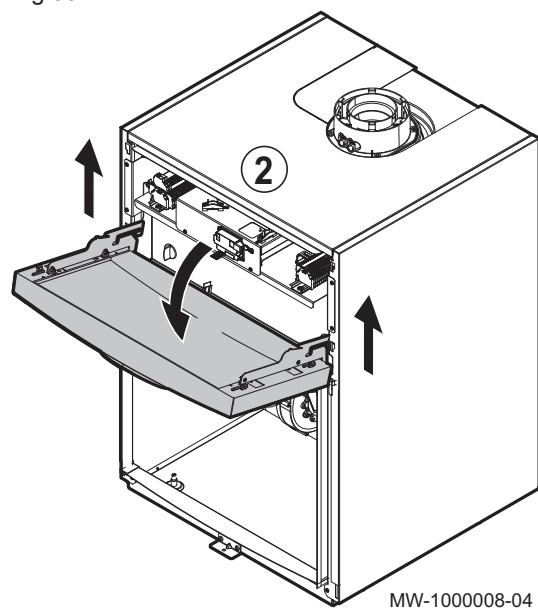
7.2.1 Accessing the internal boiler components

Fig.37



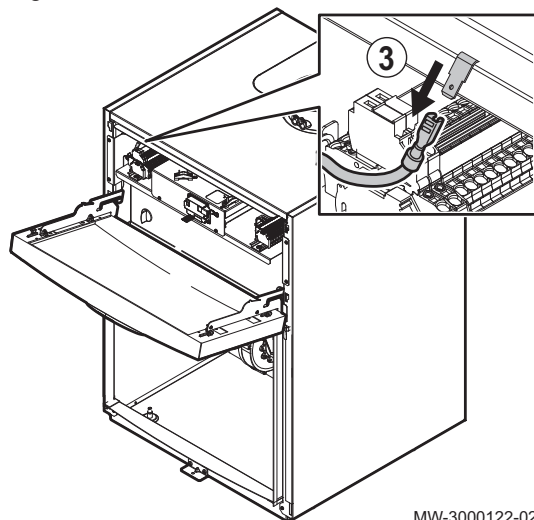
1. Remove the front panel by pulling firmly on the notches provided.

Fig.38



2. Lift and tilt the panel holding the control panel

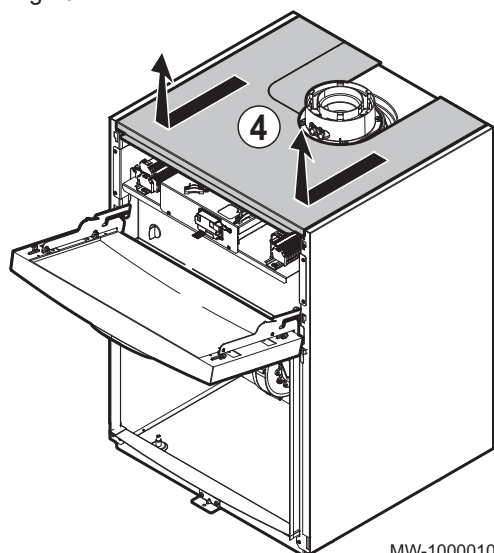
Fig.39



MW-3000122-02

3. Disconnect the earth wire.

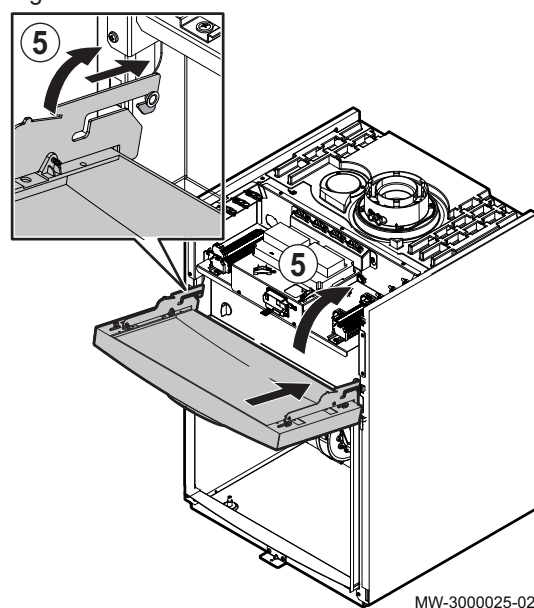
Fig.40



MW-1000010-06

4. Pull the top panel towards you and lift.

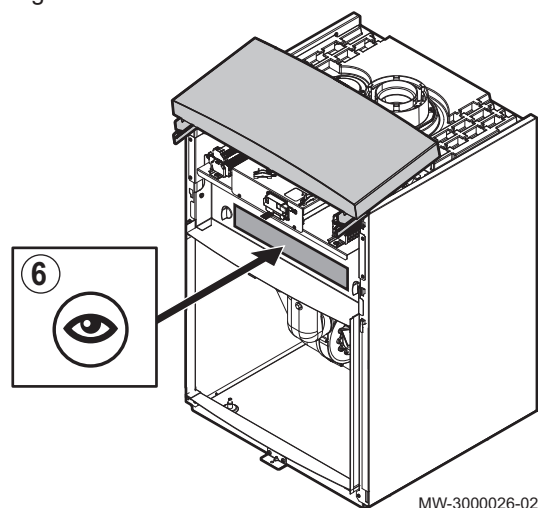
Fig.41



MW-3000025-02

5. Unclip the panel for the control panel and place it on the notches provided.

Fig.42



6. Remove the detachable panel if necessary.



See

The disassembly instructions can be found on the detachable panel.

7.3 Hydraulic connections

7.3.1 Connection of the heating circuit

Abide by the mountings shown in the hydraulic diagrams.



Caution

- The heating pipe must be mounted in accordance with the provisions applicable.
- If installing stop valves, position the fill/drain valve and the expansion vessel between the stop valves and the boiler.
- Always install a safety valve calibrated to 4 bar on the heating circuit. The safety valve can be connected to a venting pot. The safety valve must not be used to drain the heating circuit.



See

If using a hydraulic kit (low-loss header, plate heat exchanger, cascade kit), use the assembly instructions for the kit.



Important

The pipes are not provided.

1. Remove the anti-dust plug located on the boiler's "heating flow" outlet.
2. Connect the "heating circuit flow" pipe to the "heating flow" outlet on the boiler.

Fig.43

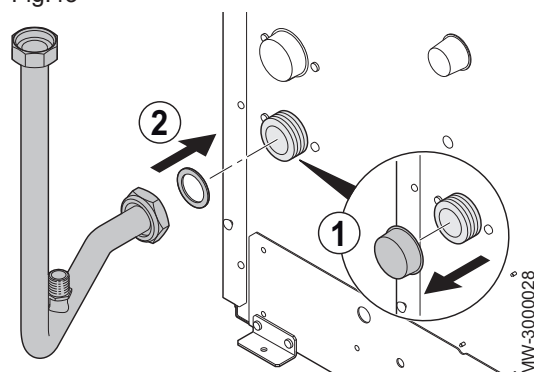
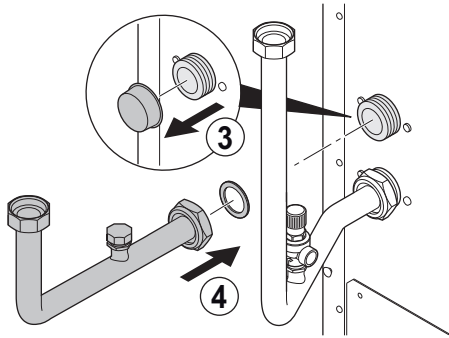


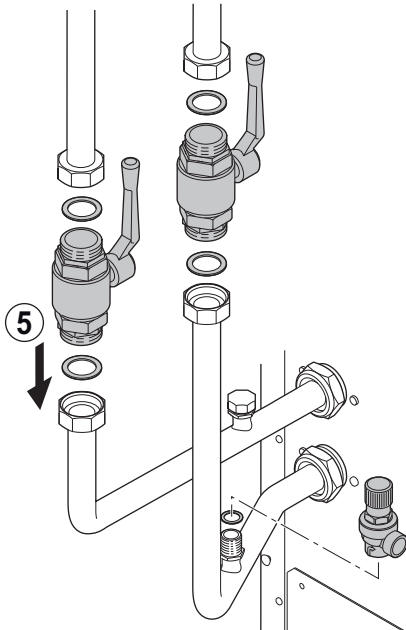
Fig.44



MMW-3000030-03

3. Remove the anti-dust plug on the "heating return" inlet.
4. Connect the "heating circuit return" pipe to the "heating return" inlet on the boiler.

Fig.45



MMW-3000029-04

5. Mount the filling and drain valves to the boiler's inlet and outlet (valves not provided).



Important

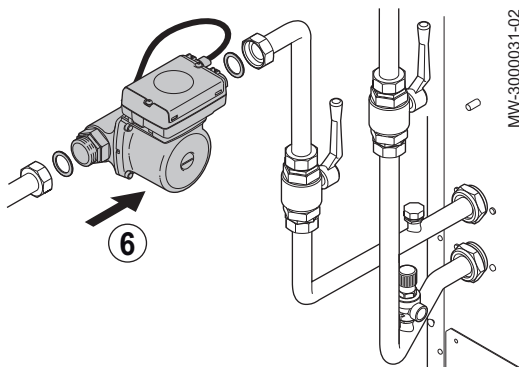
To facilitate maintenance work, we recommend mounting a stop valve on the heating flow and return pipes.



Caution

Position the safety valve between the boiler and the stop valve.

Fig.46



MMW-3000031-02

6. Mount the circulating pump on the "heating return" pipe (circulating pump not provided).

7.3.2 Connecting the expansion vessel

1. Determine the volume of the expansion vessel depending on the volume of the installation.
2. Connect the expansion vessel to the heating circuit return pipe.

■ Volume of the expansion vessel for the installation

Terms and conditions of validity:

- Safety valve calibrated to 0.4 MPa (4 bar).
- Average water temperature: 70°C.
- Heating circuit flow temperature: 80°C.
- Heating circuit return temperature: 60°C.

- Filling pressure in the system lower than or equal to the initial pressure in the expansion vessel.

**See**

- The expansion vessel complies with the BS EN 13831 standard.
- The size of the expansion vessel complies with the BS 7074 standard, part 1.
- Abide by the regulations on filling the heating circuits with water:
 - BS 7074
 - BS 6644
 - BS EN 12828

**Caution**

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

7.3.3 Connecting the condensate discharge pipe

The condensate discharge pipe is located inside the boiler.

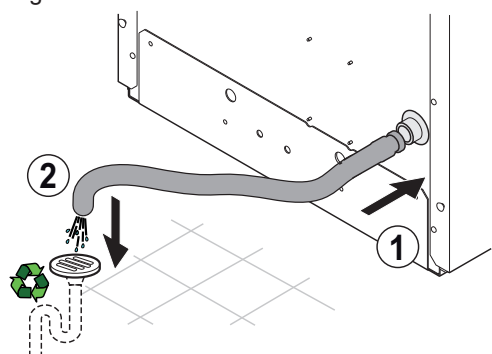
- Do not block the condensate discharge pipe.
- Set the discharge pipe at a gradient of at least 30 mm per metre, maximum horizontal length 5 metres.
- Do not drain condensation water into a roof gutter.
- Connect the condensate discharge pipe in accordance with prevailing standards.
- It is preferable to use the condensate neutralisers recommended by the manufacturer of the boiler.

1. Connect a plastic hose to the condensate discharge outlet (DN18).
2. Insert the other end of the hose into a waste water discharge outlet.

**Caution**

Do not create a siphon using the discharge hose.

Fig.47



7.4 Gas connection

**Warning**

Close the main gas valve before starting work on the gas pipes.

The gas pipes are not provided.

**Danger**

The diameters of the pipes must be defined in accordance with the standards in force in your country.

1. Remove the anti-dust plug located on the boiler's gas inlet.
2. Mount a gas stop valve (not provided) on the boiler's gas inlet.
3. Connect the gas inlet pipe to the gas stop valve.

**Caution**

- Ensure that there is no dust in the gas pipe.
- Connect the gas pipe in accordance with prevailing standards and regulations.
- Check the leak-tightness using a leak detector spray.



See also
Gas supply, page 25

7.5 Air inlet/flue gas outlet connections

7.5.1 Classification

The discharge and intake pipes must be certified for the appropriate configuration and must meet the requirements of the prevailing installation standards in the country.

The pipes must deliver a maximum pressure drop in compliance with the values given in the table below.

Tab.22 Configurations and recommendations for the flue system

Configuration	Description										
B ₂₃ – B _{23P}	<ul style="list-style-type: none"> Connection to a chimney using a connection kit (single pipe in a flue, combustion air taken from the boiler room). The maximum pressure drop in the pipes ΔP must not exceed the values given in the table below. The pipes must be certified for this type of use and for a temperature in excess of 100°C. <p>Tab.23 Maximum pressure drop</p> <table> <tr> <th>Model</th><th>Maximum pressure drop ΔP (Pa)</th></tr> <tr> <td>SIRIUS THREE FS 50</td><td>200</td></tr> <tr> <td>SIRIUS THREE FS 70</td><td>200</td></tr> <tr> <td>SIRIUS THREE FS 90</td><td>200</td></tr> <tr> <td>SIRIUS THREE FS 110</td><td>200</td></tr> </table>	Model	Maximum pressure drop ΔP (Pa)	SIRIUS THREE FS 50	200	SIRIUS THREE FS 70	200	SIRIUS THREE FS 90	200	SIRIUS THREE FS 110	200
Model	Maximum pressure drop ΔP (Pa)										
SIRIUS THREE FS 50	200										
SIRIUS THREE FS 70	200										
SIRIUS THREE FS 90	200										
SIRIUS THREE FS 110	200										
C ₁₃	<ul style="list-style-type: none"> Air/flue gas connection using concentric pipes to a horizontal terminal (so-called forced flue). The terminal parts of the singled-up discharge pipe must be scheduled inside a 50 cm square. 										
C ₃₃	<ul style="list-style-type: none"> Air/flue gas connection using concentric pipes to a vertical terminal (roof outlet). The terminal parts of the singled-up discharge pipe must be scheduled inside a 50 cm square. 										
C ₄₃	<ul style="list-style-type: none"> Air/flue gas connection to a collective flue for sealed boilers. The chimney or flue gas pipe must be suitable for such use. 										
C ₅₃	<ul style="list-style-type: none"> Separate air/flue gas connection using a bi-flow adapter. The terminal parts of combustion air intake and combustion product discharge pipes must not be planned on opposite walls of the building. 										
C ₆₃	<ul style="list-style-type: none"> The maximum pressure drop in the pipes ΔP must not exceed the values given in the table below. The pipes must be certified for this type of use and for a temperature of more than 100 °C. The terminal part of the flue gas pipe must be certified as complying with the EN 1856-1 Standard. If installing discharge and intake pipes not supplied by Potterton, these must be certified for the type of use scheduled and present a maximum pressure drop in line with the values given in the table below. <p>Tab.24 Maximum pressure drop</p> <table> <tr> <th>Model</th><th>Maximum pressure drop ΔP (Pa)</th></tr> <tr> <td>SIRIUS THREE FS 50</td><td>270</td></tr> <tr> <td>SIRIUS THREE FS 70</td><td>270</td></tr> <tr> <td>SIRIUS THREE FS 90</td><td>320</td></tr> <tr> <td>SIRIUS THREE FS 110</td><td>370</td></tr> </table>	Model	Maximum pressure drop ΔP (Pa)	SIRIUS THREE FS 50	270	SIRIUS THREE FS 70	270	SIRIUS THREE FS 90	320	SIRIUS THREE FS 110	370
Model	Maximum pressure drop ΔP (Pa)										
SIRIUS THREE FS 50	270										
SIRIUS THREE FS 70	270										
SIRIUS THREE FS 90	320										
SIRIUS THREE FS 110	370										
C ₈₃	<ul style="list-style-type: none"> Flue gas connection to a collective flue for sealed boilers. The air supply is individual via a terminal coming from outside the building. The chimney or flue gas pipe must be suitable for such use. 										

**Caution**

The use of any and all other components is prohibited.

**Important**

- Only original components are authorised for connection to the boiler and for the terminal.
- The clear section must comply with the standard.
- The chimney must be swept before installing the discharge flue.

**Caution**

Ensure that the flue gas discharge pipes are securely attached to the wall with suitable retaining flanges to prevent any damage and guarantee the tightness of every gasket in the circuit.

7.5.2 Coaxial pipes

Fig.48 Specifications of the coaxial pipes for SIRIUS THREE FS 50 and SIRIUS THREE FS 70

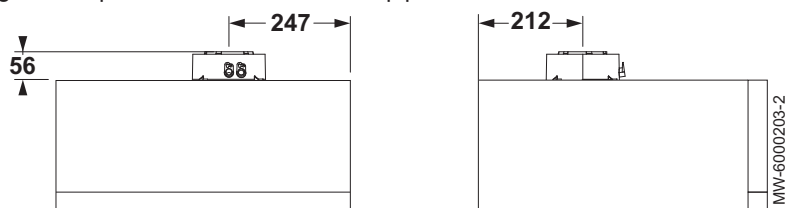
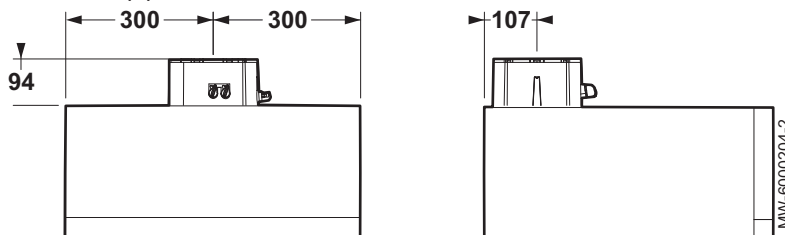


Fig.49 Specifications of the coaxial pipes for SIRIUS THREE FS 90 and SIRIUS THREE FS 110

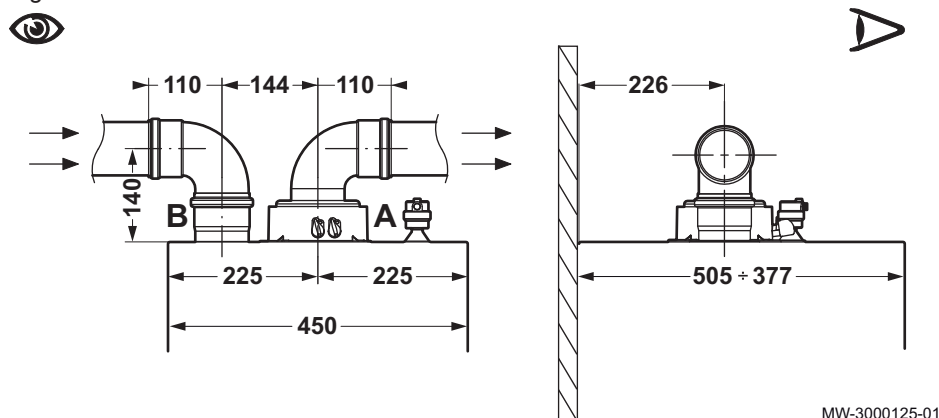


This type of pipe is used to discharge exhaust gases and draw in combustion air, whether outside the building or in the flue gas pipes. The 90° coaxial elbow is used to connect the boiler to the discharge/intake pipes in every direction due to the 360° rotation option. It can also be used as an extra elbow in combination with the coaxial pipe or the 45° elbow. If discharging to the outside, the discharge/intake pipe must stick out of the wall by at least 18 mm to allow fitting of the aluminium rosette and its sealing unit and thus prevent any infiltration of water.

- Insertion of a 90° elbow reduces the total length of the pipe by 1 metres.
- Insertion of a 45° elbow reduces the total length of the pipe by 0.5 metres.
- The first 90° elbow is not taken into account in calculating the maximum length available.

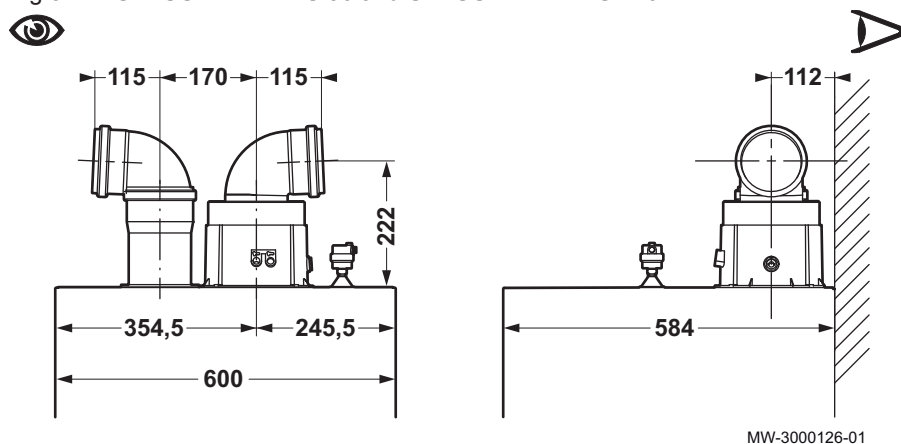
7.5.3 Separate pipes (not provided)

Fig.50 SIRIUS THREE FS 50 and SIRIUS THREE FS 70



MW-3000125-01

Fig.51 SIRIUS THREE FS 90 and SIRIUS THREE FS 110



MW-3000126-01

This type of pipe is used to discharge exhaust gases either to the outside of the building or into the individual flue gas pipes. Combustion air can be taken in from zones different from the discharge zones. The two-way accessory includes a discharge fitting Ø 110 mm and an air intake fitting Ø 110 mm.

The 90° elbow is used to connect the boiler to the discharge and intake pipes according to requirements. It can also be used as an extra elbow to couple to the pipe or to the 45° elbow.

- Insertion of a 90° elbow reduces the total length of the pipe by 0.5 metres.
- Insertion of a 45° elbow reduces the total length of the pipe by 0.25 metres.
- The first 90° elbow is not taken into account in calculating the maximum length available.

7.5.4 Pipes in cascade (not provided)

These types of pipes are used to discharge the combustion products from several boilers interlinked in cascade via a shared flue gas collector. The collector must be used solely to connect the boilers to the flue gas pipe. The diameters available are 150 mm and 200 mm.

Tab.25 Flue system for boilers in cascade

Boiler model	Maximum number of boilers in cascade		
	Diameter 125 mm (200 kW max)	Diameter 160 mm (250 kW max)	Diameter 200 mm (500 kW max)
SIRIUS THREE FS 50	4	5	10
SIRIUS THREE FS 70	2	3	7

Boiler model	Maximum number of boilers in cascade		
	Diameter 125 mm (200 kW max)	Diameter 160 mm (250 kW max)	Diameter 200 mm (500 kW max)
SIRIUS THREE FS 90	/	2	5
SIRIUS THREE FS 110	/	2	4

**Caution**

For this type of extraction, each boiler must be fitted with a flue gas valve (non-return valve) Ø 110/110 mm.

**Caution**

The calculation of the length of the flue gas pipe must be made by a qualified technician during the system design phase, in accordance with the requirements of the prevailing standards.

7.5.5 Lengths of the air/flue gas pipes

**Warning**

The discharge and intake pipes must be certified for the adapted configuration and their pressure drops must comply with the values given in the following corresponding table(s).

**Caution**

Be careful that the discharge pipe outlet for combustible products is not directed towards a habitation zone.

■ B_{23p} configuration

Italy	Ventilation of the premises: in accordance with the UNI CIG 7129-2001 standard.
All countries except Italy	Ventilation of the premises: in accordance with the NFP 45 – 204 or DTU 61.1 standard.
All countries	Lengths L1, L2 and L3 are obtained with Centrotec pipes covered by CE marking and the TAD Technical Application Directive.

Fig.52 Flexible flue system B_{23p}

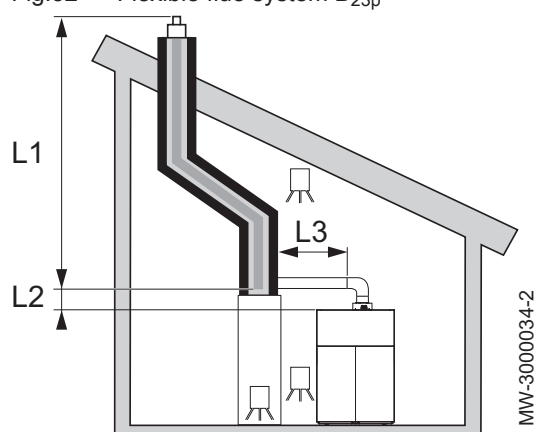
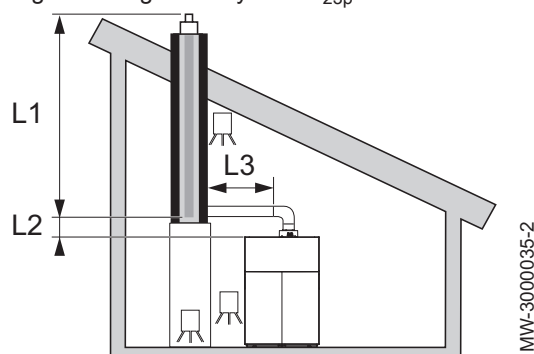
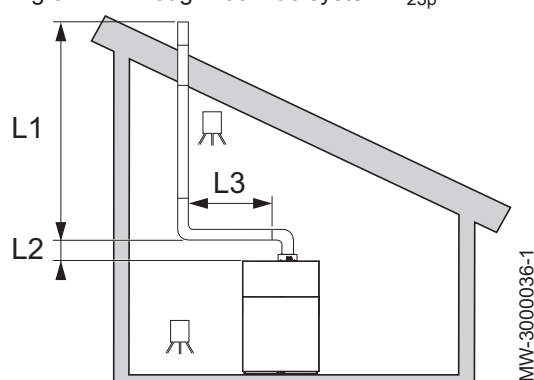


Fig.53 Rigid flue system B_{23p}Fig.54 Through-roof flue system B_{23p}**Important**

For B_{23p} configurations, the lengths given in the tables are valid for horizontal pipes with a maximum length of 1 metre. For each additional metre of horizontal pipe, subtract 1.2 m from the vertical length L_{max} .

Tab.26 Flue system connection type B_{23p} for SIRIUS THREE FS 50 and SIRIUS THREE FS 70

Arrangement	Configuration	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 70
		mm	Ø 80	Ø 110	Ø 80	Ø 110
L3<2m + 2 elbows	(L1 + L2) rigid	m	20	56	8	56
L3<2m + 2 elbows	(L1 + L2) flexible	m	15	56	6	38
L3<5m + 2 elbows	(L1 + L2) rigid	m	–	56	–	56
L3<5m + 2 elbows	(L1 + L2) flexible	m	–	56	–	38

Tab.27 Flue system connection type B_{23p} for SIRIUS THREE FS 90 and SIRIUS THREE FS 110

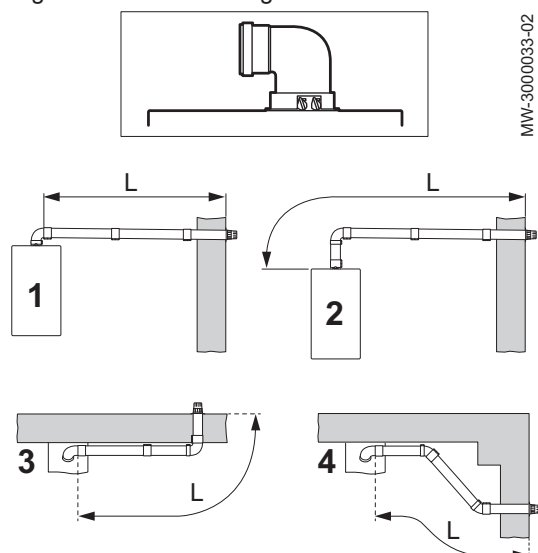
Arrangement	Configuration	Unit	SIRIUS THREE FS 90	SIRIUS THREE FS 90	SIRIUS THREE FS 110	SIRIUS THREE FS 110	SIRIUS THREE FS 110
		mm	Ø 110	Ø 125	Ø 110	Ø 125	Ø 160
L3<2m + 2 elbows	(L1 + L2) rigid	m	20	56	27	56	–
L3<2m + 2 elbows	(L1 + L2) flexible	m	–	21	15	–	–
L3<5m + 2 elbows	(L1 + L2) rigid	m	24	56	–	43	56
L3<5m + 2 elbows	(L1 + L2) flexible	m	13	–	–	–	–

■ C₁₃ Configuration

**Important**

Pipes subject to technical evaluation 14 08–1289.

Fig.55 Maximum length of the connections

Tab.28 Maximum length for configuration C₁₃

Configuration	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
	mm	Ø 80 / Ø 125	Ø 80 / Ø 125	Ø 110 / Ø 160	Ø 110 / Ø 160
1	m	L<10 m	L<10 m	L<10 m	L<10 m
2	m	L<10 m	L<10 m	L<10 m	L<10 m
3	m	L<9 m	L<9 m	L<9 m	L<9 m
4	m	L<9 m	L<9 m	L<9 m	L<9 m

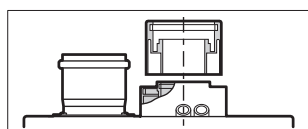
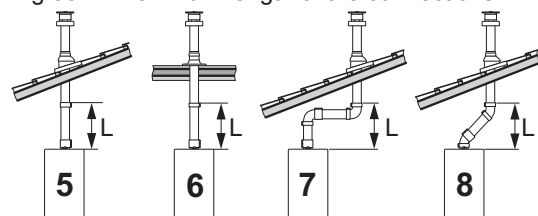
■ Configuration C₃₃



Important

Pipes subject to technical evaluation 14 08–1289.

Fig.56 Maximum length of the connections

Tab.29 Maximum length for configuration C₃₃

Configuration	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
	mm	Ø 80 / Ø 125	Ø 80 / Ø 125	Ø 110 / Ø 160	Ø 110 / Ø 160
5	m	L<10 m	L<10 m	L<10 m	L<10 m
6	m	L<10 m	L<10 m	L<10 m	L<10 m
7	m	L<8 m	L<8 m	L<8 m	L<8 m
8	m	L<9 m	L<9 m	L<9 m	L<9 m

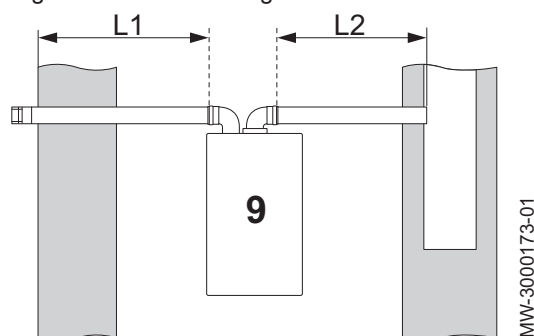
■ Configuration C₅₃



Important

Pipes subject to technical evaluation 14 08–1289.

Fig.57 Maximum length of the connections



Tab.30 Maximum length for configuration C₅₃

Configuration	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
	mm	Ø 80 / Ø 125	Ø 80 / Ø 125	Ø 110 / Ø 160	Ø 110 / Ø 160
9	m	L1<15 m and L1+L2<60 m (Ø 80)	L<15 m and L1+L2<30 m (Ø 80)	L1<7 m and L1+L2<27 m (Ø 110)	L1<7 m and L1+L2<27 m (Ø 110)

7.6 Flue gas system accessories

A detailed list of flue system accessories can be found in our catalogue.

7.7 Electrical connections

7.7.1 Recommendations

- Only qualified professionals may carry out electrical connections, always with the power off.
- Earth the appliance before making any electrical connections.
- Power the appliance via a circuit that includes an omni-polar switch with contact opening distance of 3 mm or more.
- When making electrical connections to the mains, respect the polarities.



Danger

Position the various electrical cables in such a way that they never touch the heating pipes.

Keep the various electrical cables far enough from the heating pipes so that they cannot be damaged by the effect of the heat.

7.7.2 Recommended cable cross section

Decide on the cable according to the following information:

- Distance of the appliance from the power source.
- Upstream protection.
- Neutral operating conditions.

Tab.31 Specifications of the power cable and the power source

Cable cross section	3 x 1.5 mm ²
Curve C (circuit breaker)	10 A
Differential	30 mA

**Caution**

Provide a separate power supply for the pump and a power switch, if necessary.

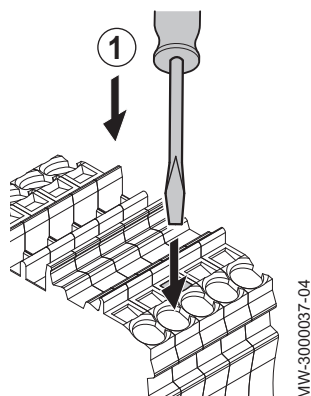
**Caution**

All connections are made to the terminal blocks provided for that purpose in the boiler connection box. The output available per outlet is 180 W (1 A, with $\cos \phi = 0.8$) and the inrush current must be less than 5 A. If the load exceeds either of these values, the control must be relayed using a contactor that must in no circumstances be installed in the control panel.

The sum of the currents from all outlets must not exceed 4 A.

7.7.3 Wiring the terminal blocks

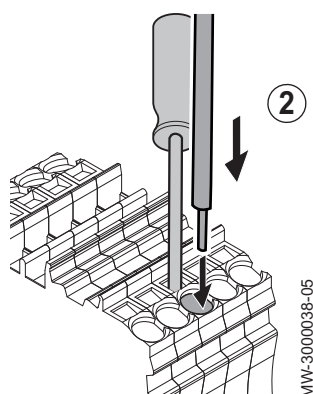
Fig.58



Use a flat-bladed screwdriver less than 3.5 mm in width.

1. Press down the spring on the terminal block with a suitable screwdriver.

Fig.59

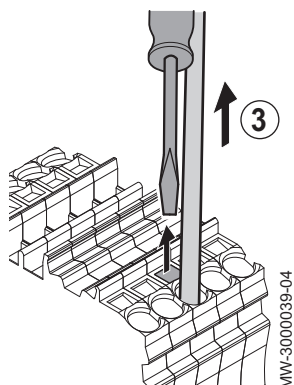


2. Insert the stripped part of the wire into the corresponding connector.

**Caution**

The length to be stripped must be between 10 and 12 mm.

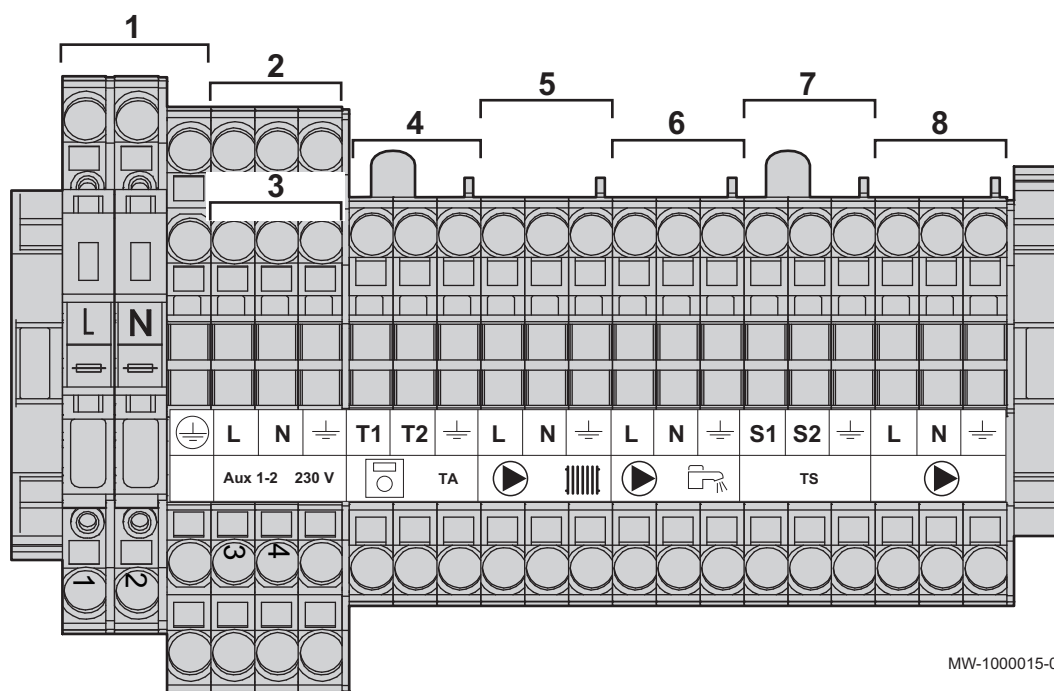
Fig.60



3. Release the pressure on the spring.
⇒ The wire is attached.
4. Check that the wire is attached by pulling it gently upwards. If it comes out of the housing, repeat step 3.

7.7.4 Description of the power supply terminal block

Fig.61



MW-1000015-06

- 1 Power supply 230 V 50 Hz
- 2 Power supply auxiliary circuit 1
- 3 Power supply auxiliary circuit 2
- 4 Room thermostat H5 (230 V)

- 5 Heating circuit pump – QX1
- 6 Domestic hot water pump – QX3
- 7 Safety contact
- 8 Boiler pump – QX2



Important

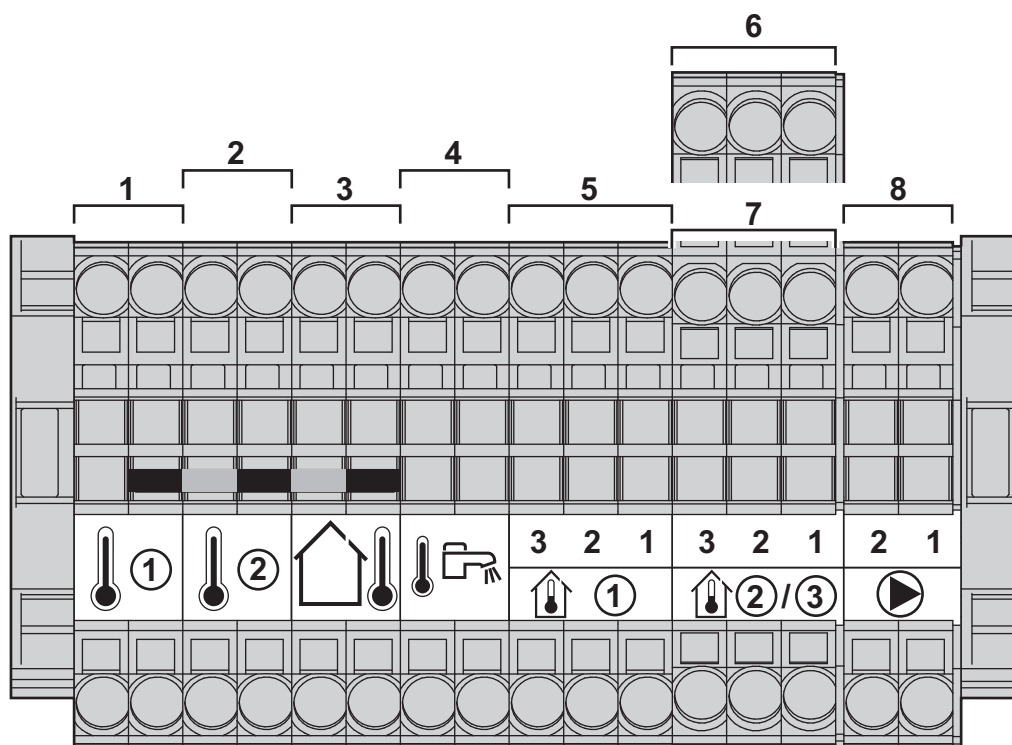
Terminals 5, 6 and 8 are associated with the QX1, QX3 and QX2 parameters of the **Configuration** menu

**Caution**

All connections are made to the terminal blocks provided for that purpose in the boiler connection box. The output available per outlet is 180 W (1 A, with $\cos \phi = 0.8$) and the inrush current must be less than 5 A. If the load exceeds either of these values, the control must be relayed using a contactor that must not be installed in the control panel under any circumstances.
The sum of the currents from all outlets must not exceed 4 A.

7.7.5 Description of the sensor terminal block

Fig.62



MW-1000016-05

- | | |
|---|--------------------------------|
| 1 Auxiliary sensor 1 - BX3: flow sensor + cascade return connection | 4 Domestic hot water sensor |
| 2 Auxiliary sensor 2 - BX2: heating circuits collector flow sensor connection | 5 Room temperature sensor 1 |
| 3 Outside sensor | 6 Room temperature sensor 2 |
| | 7 Room temperature sensor 3 |
| | 8 Boiler pump modulation (PWM) |

7.8 Filling the system

7.8.1 Filling the heating system

Before filling the heating system, rinse it thoroughly.

In many cases, the heating circuits can be filled with mains water, without treating the water.

1. Fill the heating system until you reach a pressure of between 0.15 and 0.2 MPa (1.5 and 2 bar).
2. Check the tightness of the hydraulic connections.
3. Completely vent the heating circuit for optimum running.

**See also**

Water treatment, page 25

■ Flushing new installations and installations less than 6 months old

Before filling the heating installation, it is essential to remove any debris (copper, caulking, soldering flux) from the installation.

1. Clean the installation using a suitable cleaning agent.
2. Flush the system with at least 3 times the volume of water contained in the entire system (until the water runs clear and shows no impurities).
3. Check and clean the filters if necessary.

**See also**

Water treatment, page 25

■ Flushing an existing installation

Before filling the heating installation, it is essential to remove any sludge deposits which have accumulated in the heating circuit over the years.

1. Remove any sludge from the installation.
2. Flush the installation with at least 3 times the volume of water contained in the central heating system (until the water runs clear and shows no impurities).
3. Check and clean the filters if necessary.

**See also**

Water treatment, page 25

7.8.2 Filling the siphon

1. Clean the siphon.
2. Completely fill the siphon until it overflows.

**Danger**

Fill the siphon to the top. If the siphon is empty, there is a danger of poisoning by combustion products.

**See also**

Cleaning the siphon, page 103

7.9 Completing installation

1. Reconnect the earth wire and put the front panel back in place.
2. Discard the various packaging items.
3. Affix the data plate found in the instructions bag to a visible part of the boiler.

**See also**

Data plate, page 29

8 Commissioning

8.1 General

Commissioning the boiler is done for first time use, after a prolonged shut-down (more than 28 days) or after any event that would require complete re-installation of the boiler. Commissioning of the boiler allows the user to review the various settings and checks to be made to start up the boiler in complete safety.

8.2 Check-list before commissioning

1. Check that the gas type supplied matches the data shown on the boiler's data plate.

**Warning**

Do not commission the boiler if the gas supplied does not match the gas types approved for the boiler.

2. Check connection of the earth wires.
3. Check the tightness of the gas circuit from the non-return valve to the burner.
4. Check the hydraulic circuit from the boiler's isolation valves to the connection to the heating body.
5. Check the hydraulic pressure in the heating system.
6. Check the electricity supply connections to the various boiler components.
7. Check the electrical connections on the thermostat and the other external components.
8. Check the ventilation in the room in which the system is installed.
9. Check the flue gas connections.
10. Test the boiler at full load.
11. Test the boiler at part load.

**See also**

Setting the air/gas ratio (maximum heat input), page 59

Setting the air/gas ratio (reduced heat input), page 60

8.3 Commissioning procedure

8.3.1 Checking the gas inlet

**Danger**

Ensure that the boiler is switched off.

1. Open the main gas valve.
2. Open the gas valve on the boiler.
3. Open the front panel.
4. Check the gas supply pressure at the pressure outlet on the gas valve unit.
5. Check the tightness of the gas connections made after the gas valve unit in the boiler.
6. Check the tightness of the gas pipe, including any valves, from the non-return valve to the burner. The test pressure must not exceed 0.06 bar (0.006 MPa).
7. Vent the gas supply pipe by unscrewing the pressure outlet on the gas valve unit. Close the outlet again when the pipe has been sufficiently vented.
8. Check the tightness of the gas connections in the boiler.

**See also**

Stopping the boiler, page 68

Gas valve basic settings, page 62

8.3.2 Checking the electrical connections


1. Check for the presence of the recommended circuit breaker.
2. Check the electrical connection to the mains.
3. Check the connection of the sensors.
4. Check the position of the sensors. Respect the distance of the sensors according to the power.
5. Check the connection of the circulating pump(s).
6. Check the connection of the optional equipment.
7. Check the length of the cables and that they are firmly secured in the cable clamps.

8.3.3 Checking the hydraulic circuit

1. Check the siphon, which must be completely filled with water.
2. Check that there are no leaks on the boiler's hydraulic connections.
3. Check the pressure in the expansion vessel before filling the system.

8.3.4 First time commissioning

When commissioning the boiler for the first time, the control panel needs to be synchronised with the boiler. The default setting for the control panel is English.

1. Press the  button for 5 seconds.
⇒ Synchronisation between the boiler and the control panel starts up and shows its progress from 1% to 100%. Synchronisation may take several minutes.
2. Select the language.
3. Set the date and time.









See also

Setting the date and time, page 84
Selecting the language, page 84

8.4 Gas settings

8.4.1 Configuring the fan speed

The boiler's fan speed has to be configured according to gas type before the gas valve is set.

1. Go to the installer parameters.
2. Select the **Boiler Settings** menu by turning the  button.
3. Confirm the menu selection by pressing the  button.
4. Modify parameter 2441 **Fan speed heating max** according to the gas type. Use the  button to select and modify the parameter.
5. Confirm the setting by pressing the  button.
6. Select the **Burner control** menu by turning the  button.
7. Modify parameters 9512 **Required speed ignition**, 9524 **Required speed LF** and 9529 **Required speed HF** according to the gas type. Use the  button to select and modify the parameters.



See also

Modifying the installer parameters, page 68

■ Fan speed according to gas type

Tab.32 Fan speed for gas type G20

Parameter number	Parameter	Output	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
9524	Required speed LF	minimum	rpm	1500	1270	1250	1300
9524	Required speed LF	minimum for boilers in cascade	rpm	1700	1470	1450	1500
9529 2441	Required speed HF Fan speed heating max	maximum	rpm	6650	6450	6500	6900
9512	Required speed ignition	ignition	rpm	2300	2100	2400	2500

Tab.33 Fan speed for gas type G25

Parameter number	Parameter	Output	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
9524	Required speed LF	minimum	rpm	1500	1270	1250	1300
9524	Required speed LF	minimum for boilers in cascade	rpm	1700	1470	1450	1500
9529 2441	Required speed HF Fan speed heating max	maximum	rpm	6650	6450	6500	6900
9512	Required speed ignition	ignition	rpm	2300	2100	2400	2500

Tab.34 Fan speed for gas type G31

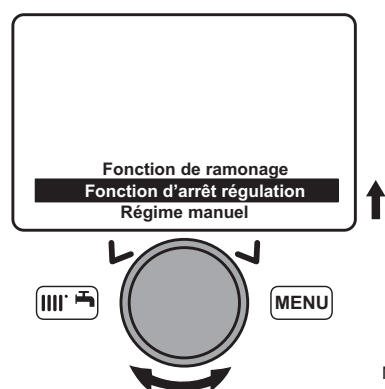
Parameter number	Parameter	Output	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
9524	Required speed LF	minimum	rpm	1500	1270	1500	1300
9524	Required speed LF	minimum for boilers in cascade	rpm	1700	1470	1650	1500
9529 2441	Required speed HF Fan speed heating max	maximum	rpm	6400	6100	6200	6700
9512	Required speed ignition	ignition	rpm	3000	2500	2400	3000



See also

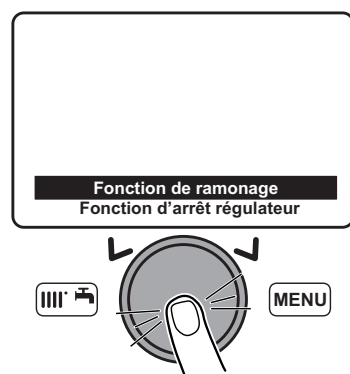
Modifying the installer parameters, page 68

8.4.2 Setting the air/gas ratio (maximum heat input)




MW-4000282-FR-01

1. Access the function **303** Chimney sweep function.
⇒ The **Chimney sweep function** parameter appears.
2. Turn the  button to select **Chimney sweep function**.



MW-4000283-FR-01

3. Confirm the selection by pressing the  button.
⇒ The function 303 appears.

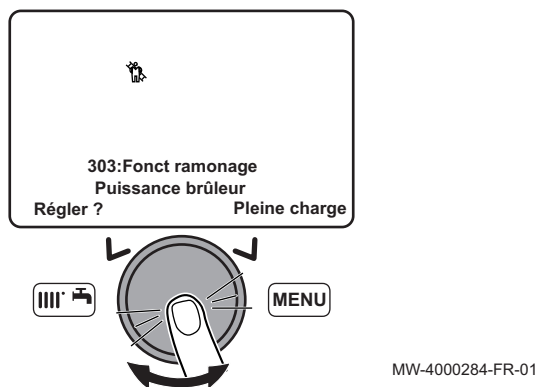
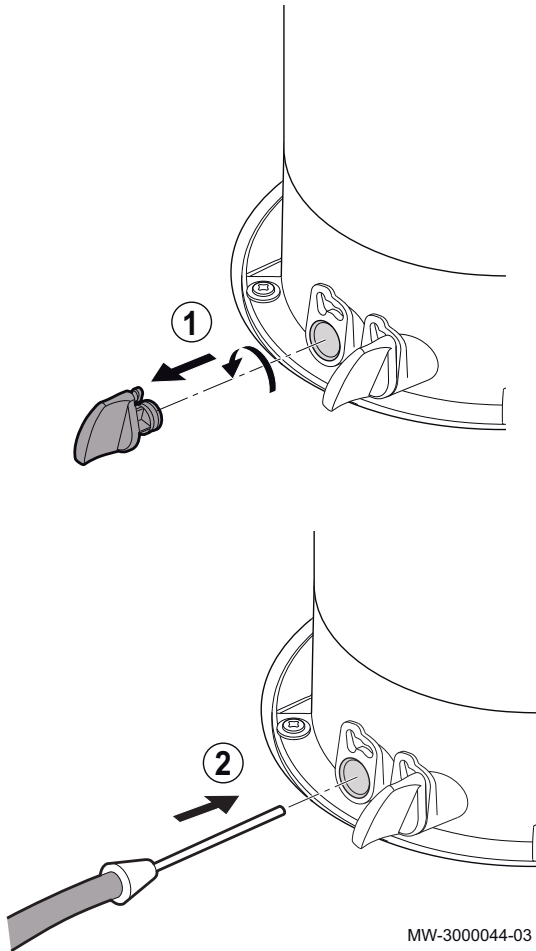


Fig.63 Connecting the flue gas analyser



4. Turn the button to select **Full load**.
5. Confirm the selection by pressing the button.

6. Unscrew the left-hand plug, which corresponds to the flue gas measurement point connection.
7. Connect the flue gas analyser to the connection on the left.

i Important

- Ensure that the opening around the sensor is completely sealed when taking measurements.
- SIRIUS THREE FS 50 and SIRIUS THREE FS 70 : insert the sensor at least 8 cm into the flue gas measurement point.
- SIRIUS THREE FS 90 and SIRIUS THREE FS 110 : insert the sensor at least 9 cm into the flue gas measurement point.

8. Set the boiler's heat input to 100%.
9. Measure the percentage of CO₂ in the flue gases.
10. Compare the values measured with the set point values in the Control and setting values table.
11. If necessary, adjust the air/gas ratio using the gas flow rate adjustment screw.

i Important

- Turn the gas adjustment screw clockwise to reduce the CO₂ content.
- Turn the gas adjustment screw counter-clockwise to increase the CO₂ content.



Caution

Be sure to correctly replace the plug after taking a measurement.



Important

The right-hand connection may be used to analyse the combustion air to make sure that no flue gas is recirculated in the flue system.



Important

This appliance is suitable for G20 gas containing up to 20% hydrogen (H₂). Due to variations in the percentage of H₂, the percentage of O₂ can vary over time. (For example: 20% H₂ in the gas may lead to a 1.5% increase of O₂ in flue gases). In these conditions, it is recommended NOT to adjust the gas control valve.

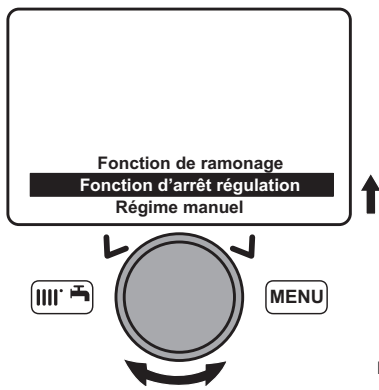


See also


Check-list before commissioning, page 56
CO₂ checking and setting values, page 63
Gas valve basic settings, page 62
Using the fixed-speed boiler, page 88
Checking combustion (maximum heat input), page 104

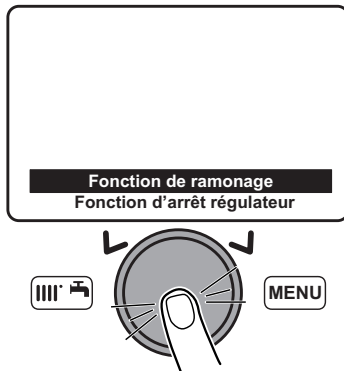
8.4.3 Setting the air/gas ratio (reduced heat input)

1. Accessing the Chimney sweep function **303** function.




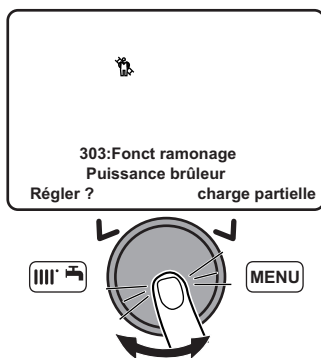
MW-4000282-FR-01

2. The **Chimney sweep function** parameter appears.
3. Turn the  button to select **Chimney sweep function**.



MW-4000283-FR-01

4. Confirm the selection by pressing the  button.
⇒ The 303 function appears.



MW-4000285-FR-01



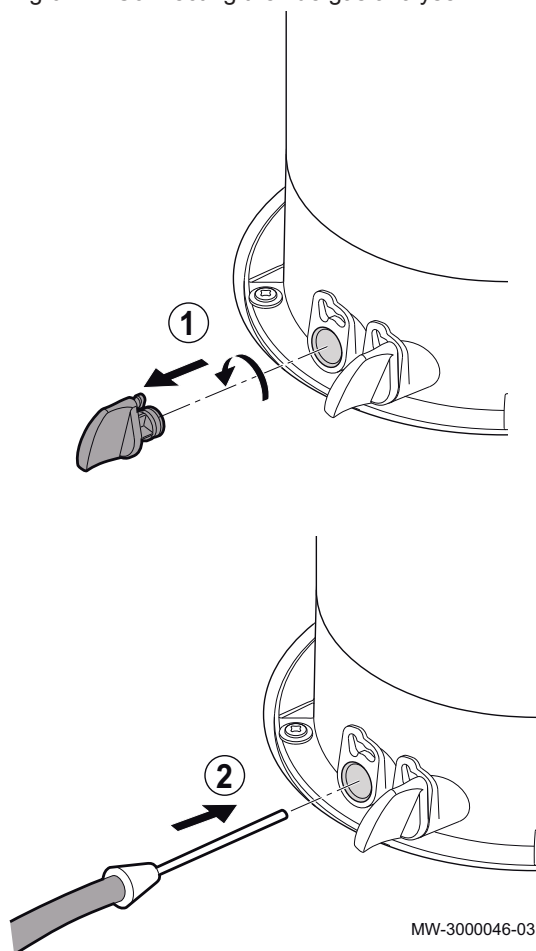
5. Turn the  button to select **Partial load**.
6. Confirm the selection by pressing the  button.

Fig.64 Connecting the flue gas analyser



MW-3000046-03

7. Unscrew the left-hand plug, which corresponds to the flue gas measurement point connection.
8. Connect the flue gas analyser to the connection on the left.

**Important**

- Ensure that the opening around the sensor is completely sealed when taking measurements.
- SIRIUS THREE FS 50 and SIRIUS THREE FS 70 : Insert the sensor into the flue gas measurement point to at least 8 cm.
- SIRIUS THREE FS 90 and SIRIUS THREE FS 110 : Insert the sensor into the flue gas measurement point to at least 9 cm.

9. Set the boiler's heat input to 0%.
10. Measure the percentage of CO₂ in the flue gases.
11. Compare the values measured with the authorised CO₂ range in the Control and setting values table.

**Important**

The CO₂ settings range at reduced heat input depends on the CO₂ value measured at maximum heat input.

12. If necessary, adjust the air/gas ratio using the OFFSET adjustment screw.

**Important**

- Turn the gas adjustment screw clockwise to increase the CO₂ content.
- Turn the gas adjustment screw counter-clockwise to reduce the CO₂ content.

**Caution**

Be sure to correctly replace the plug after taking a measurement.

**See also**

- Check-list before commissioning, page 56
- Gas valve basic settings, page 62
- CO₂ checking and setting values, page 63
- Using the fixed-speed boiler, page 88
- Checking combustion (reduced heat input), page 105

8.4.4 Gas valve basic settings

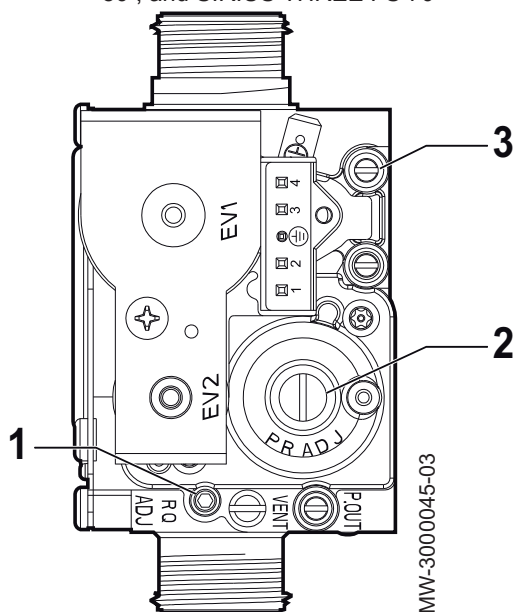
Tab.35 Settings values for a new gas valve

Boiler model	Nominal heat input: Number of turns for the gas flow rate settings screw	Minimum heat input: Number of turns for the OFFSET settings screw
SIRIUS THREE FS 50	12	5 + 3/4
SIRIUS THREE FS 70	13	5 + 3/4
SIRIUS THREE FS 90	2 + 2/3	5 + 3/4
SIRIUS THREE FS 110	2 + 1/3	5 + 3/4

**Important**

For use with G31 gas, add two extra turns to the OFFSET adjustment screw.

Fig.65 Gas valve for SIRIUS THREE FS 50 , and SIRIUS THREE FS 70



1 Gas flow rate setting screw

The settings screw is screwed down as far as it will go and is then unscrewed according to the number of turns given in the above table.

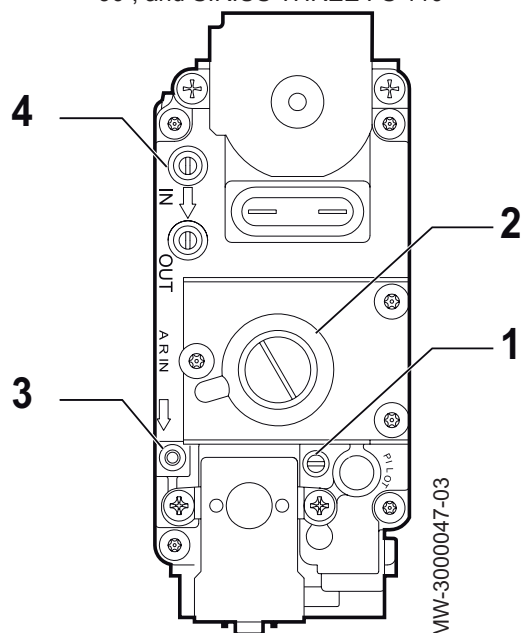
2 OFFSET settings screw:

1. Remove the plug

2. Use a 4 mm hexagonal spanner

3 Gas supply pressure outlet

Fig.66 Gas valve for SIRIUS THREE FS 90 , and SIRIUS THREE FS 110



1 Gas flow rate setting screw

The settings screw is screwed down as far as it will go and is then unscrewed according to the number of turns given in the above table.

2 OFFSET settings screw:

1. Remove the plug

2. Use a flat-blade screwdriver

3 Sealed chamber pressure signal

4 Gas supply pressure outlet

**See also**

Checking the gas inlet, page 57

8.4.5 CO₂ checking and setting values

Tab.36 Checking and setting values for gas type G20

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Diameter of the Venturi	mm	24	30	34	38
Diameter of the nozzles	mm	3.70 (no. 2)	5.30 (no. 2)	5.60 (no. 2)	6.40 (no. 2)
Maximum CO	ppm	< 250	< 250	< 250	< 250

Tab.37 Authorised CO₂ ranges for G20 type gas for SIRIUS THREE FS 50 , SIRIUS THREE FS 70 and SIRIUS THREE FS 90

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	8.5	7.8 - 8.2
%	8.6	7.9 - 8.3
%	8.7	8.0 - 8.4
%	8.8	8.1 - 8.5
%	8.9	8.2 - 8.6
%	9.0 ⁽²⁾	8.3 - 8.7
%	9.1	8.4 - 8.8
%	9.2	8.5 - 8.9
%	9.3	8.6 - 9.0
%	9.4	8.7 - 9.1
%	9.5	8.8 - 9.2

(1) The CO₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.

(2) Nominal value.

Tab.38 Authorised CO₂ ranges for G20 type gas for SIRIUS THREE FS 110

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	8.7	8.2 - 8.6
%	8.8	8.3 - 8.7
%	8.9	8.4 - 8.8
%	9.0	8.5 - 8.9
%	9.1	8.6 - 9.0
%	9.2 ⁽²⁾	8.7 - 9.1
%	9.3	8.8 - 9.2
%	9.4	8.9 - 9.3
%	9.5	9.0 - 9.4
%	9.6	9.1 - 9.5
%	9.7	9.2 - 9.6

(1) The CO₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.

(2) Nominal value.

Tab.39 Checking and setting values for gas type G25

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Diameter of the Venturi	mm	24	30	34	38
Diameter of the nozzles	mm	4.20 (no. 2)	Variable mixer nozzles: top part with a diameter of 5.70 mm, bottom part with a diameter of 6.50 mm.	6.30 (no. 2)	Variable mixer nozzles: top part with a diameter of 6.80 mm, bottom part with a diameter of 7.70 mm.
Maximum CO	ppm	< 250	< 250	< 250	< 250

Tab.40 Authorised CO₂ ranges for G25 type gas for SIRIUS THREE FS 50 , SIRIUS THREE FS 70 and SIRIUS THREE FS 90

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	8.5	7.8 - 8.2
%	8.6	7.9 - 8.3
%	8.7	8.0 - 8.4
%	8.8	8.1 - 8.5

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	8.9	8.2 - 8.6
%	9.0 ⁽²⁾	8.3 - 8.7
%	9.1	8.4 - 8.8
%	9.2	8.5 - 8.9
%	9.3	8.6 - 9.0
%	9.4	8.7 - 9.1
%	9.5	8.8 - 9.2
(1) The CO ₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.		
(2) Nominal value.		

Tab.41 Authorised CO₂ ranges for G25 type gas for SIRIUS THREE FS 110

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	8.7	8.2 - 8.6
%	8.8	8.3 - 8.7
%	8.9	8.4 - 8.8
%	9.0	8.5 - 8.9
%	9.1	8.6 - 9.0
%	9.2 ⁽²⁾	8.7 - 9.1
%	9.3	8.8 - 9.2
%	9.4	8.9 - 9.3
%	9.5	9.0 - 9.4
%	9.6	9.1 - 9.5
%	9.7	9.2 - 9.6
(1) The CO ₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.		
(2) Nominal value.		

Tab.42 Checking and setting values for gas type G31

	Unit	SIRIUS THREE FS 50	SIRIUS THREE FS 70	SIRIUS THREE FS 90	SIRIUS THREE FS 110
Diameter of the Venturi	mm	24	30	34	38
Diameter of the nozzles	mm	2.95 (no. 2)	4.0 (no. 2)	4.5 (no. 2)	5.0 (no. 2)
Maximum CO	ppm	< 250	< 250	< 250	< 250

Tab.43 Authorised CO₂ ranges for G31 type gas for SIRIUS THREE FS 90

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	9.5	9.0 - 9.4
%	9.6	9.1 - 9.5
%	9.7	9.2 - 9.6
%	9.8	9.3 - 9.7
%	9.9	9.4 - 9.8
%	10.0 ⁽²⁾	9.5 - 9.9
%	10.1	9.6 - 10.0
%	10.2	9.7 - 10.1
%	10.3	9.8 - 10.2
%	10.4	9.9 - 10.3
%	10.5	10 - 10.4
(1) The CO ₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.		
(2) Nominal value.		

Tab.44 Authorised CO₂ ranges for G31 type gas for SIRIUS THREE FS 50 , SIRIUS THREE FS 70 and SIRIUS THREE FS 110

Unit	CO ₂ at maximum power ⁽¹⁾	Authorised CO ₂ range at minimum power ⁽¹⁾
%	9.5	8.8 - 9.2
%	9.6	8.9 - 9.3
%	9.7	9.0 - 9.4
%	9.8	9.1 - 9.5
%	9.9	9.2 - 9.6
%	10.0 ⁽²⁾	9.3 - 9.7
%	10.1	9.4 - 9.8
%	10.2	9.5 - 9.9
%	10.3	9.6 - 10.0
%	10.4	9.7 - 10.1
%	10.5	9.8 - 10.2

(1) The CO₂ value is valid with the front panel mounted. If the front panel is removed (open chamber), the value readout is lower by 0.2 %.

(2) Nominal value.

**Important**

The amount of CO₂ permitted at minimum power depends on the amount of CO₂ measured at maximum power. In accordance with the new standard EN15502 for gas boilers, the settings ranges for CO₂ at minimum power are indicated for each CO₂ value measured at maximum power.

8.4.6 Adapting the boiler to a different type of gas

**Caution**

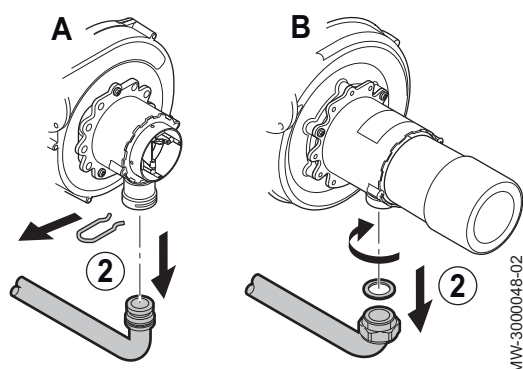
Only a fully trained, qualified professional may carry out the following operations.

The boiler is pre-set in the factory to run on natural gas **H (G20)**.

Conversion kits are available for other types of gas **G25** and **G31**.

1. Close the mains gas valve.
2. Remove the pipe connecting the Venturi to the gas valve.

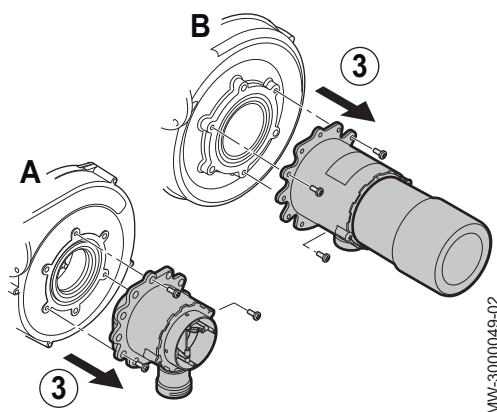
Fig.67



Tab.45 Connection pipe

Reference	Model
A	SIRIUS THREE FS 50
B	SIRIUS THREE FS 70 SIRIUS THREE FS 90 SIRIUS THREE FS 110

Fig.68 Removing the Venturi unit



3. Remove the Venturi unit.
4. Replace the original Venturi unit with the Venturi unit provided in the conversion kit.
5. Remount the connection pipe to the gas valve

Tab.46 Torque load

Reference	Model	Fastening Venturi end	Fastening gas valve end
A	SIRIUS THREE FS 50	Clip	G1" nut, torque: 40 N·m
B	SIRIUS THREE FS 70 SIRIUS THREE FS 90 SIRIUS THREE FS 110	Nut, Torque: 40 N·m	Nut, Torque: 40 N·m

6. Open the mains gas valve.
7. Check the tightness of the assembly and ensure that there are no leaks.
8. Set the gas valve according to the parameters given in the conversion kit manual.
9. Set the fan speed according to the new gas type.
10. Set the air/gas ratio.
11. Replace the gas setting label with the one delivered with the boiler and tick the corresponding gas setting.

**See also**

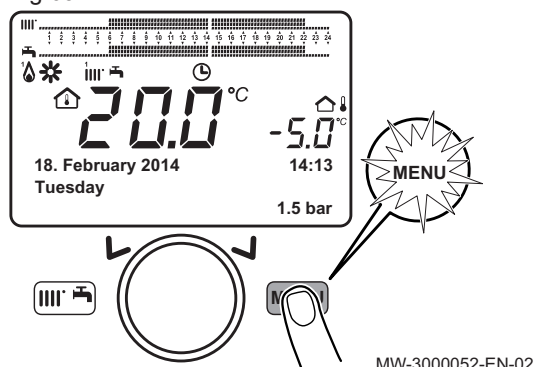
CO2 checking and setting values, page 63
 Setting the air/gas ratio (reduced heat input), page 60
 Setting the air/gas ratio (maximum heat input), page 59

9 Operation

9.1 Use of the control panel

9.1.1 Modifying the user parameters

Fig.69



1. Press the **MENU** key to access the parameters.

**Important**

Press the **MENU** key to return to the main display.

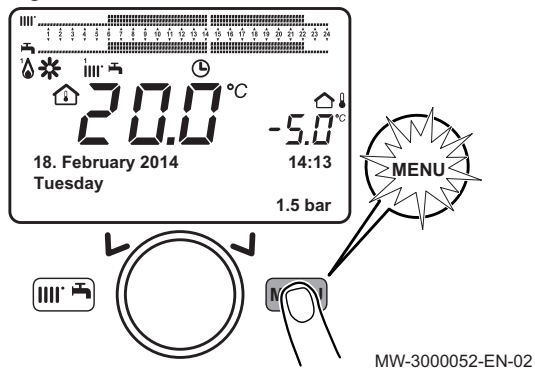
⇒ The user parameters can now be accessed. Use the **○** button to select and modify them.

**See also**

List of user parameters, page 71

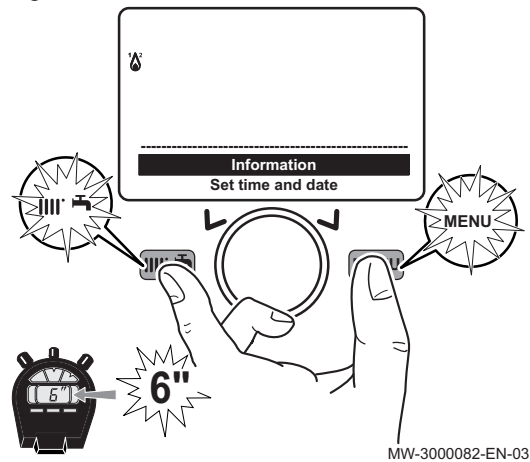
9.1.2 Modifying the installer parameters

Fig.70



1. Press the key to access the parameters.

Fig.71



2. Press the and keys simultaneously for at least 6 seconds.
3. Select the **Commissioning** menu by turning the button.
4. Confirm the menu selection by pressing the button.

Important

Press the key to return to the main display.

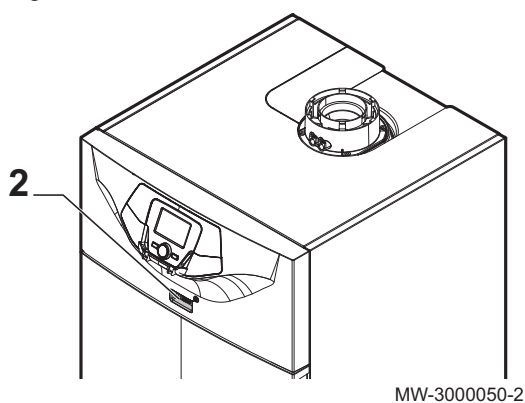
⇒ The parameters for the **Commissioning** mode can now be accessed. Use the button to select and modify them.

See also

List of installer parameters, page 73

9.2 Starting up the boiler

Fig.72



1. Open the gas cock.
2. Start up the boiler by pressing the ON/OFF switch.
3. Press the key to access the shortcuts menu.
4. Select the **Standby/operation** parameter by turning the button.
5. Press the button to start up the boiler.

⇒ The symbol disappears.

9.3 Stopping the boiler



Important

Choose the operating mode **Off** or **Standby**.

1. Switch off the boiler by pressing the ON/OFF switch.
2. Close the gas cock.

9.3.1 Putting the boiler in Standby mode

1. Press the key to access the shortcuts menu.
2. Select the **Standby/operation** parameter by turning the button.







- Press the  button to put the boiler in standby.
⇒ The  symbol is displayed.

9.4 Frost Protection

The electronic management system of the boiler includes protection against frost. If the water temperature falls below 5°C, the burner starts up in order to provide a water temperature of 30°C.

This function only works if the boiler is turned on, the gas supply open and the hydraulic pressure correct.

9.4.1 Activating the Off

- Press the  key to access the shortcuts menu.
- Select the parameter **Central heating mode CH1** by turning the  button.
- Confirm the selection by pressing the  button.
- Select the parameter **Off** by turning the  button.
- Confirm the selection by pressing the  button.
⇒ The  symbol is displayed.

Important

When the operating mode **Off** is activated:

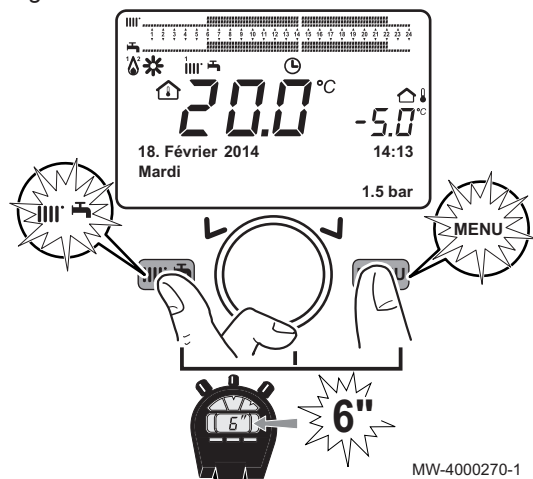
- The electrical circuits continue to be powered up.
- The frost protection function is activated.

9.5 Special functions







Tab.47

Number and Name of the function	Description
301:Manual control	The boiler operates in heating mode according to the programmed temperature set point value. Adjustment range: 25 to 90 °C
303:Chimney sweep function	<ul style="list-style-type: none"> • Full load: boiler at its maximum heat output, • Part load: reduced heat output, • Heating full load: heating function at its maximum heat output.
304:Controller stop	Activate this function to facilitate the gas valve calibration operations. Adjustment range: 100 % (maximum heat output) to 0 % (reduced heat output).

Fig.73



To activate a special function:

- From the main menu, simultaneously press the   keys for approximately 6 seconds.
⇒ The name of the functions 301–303–304 flashes.
- Turn the  button to select the required function.
- Press the  button to activate the selected function.
- Confirm the selection by pressing the  button.
⇒ The menu for the selected function flashes.
- Modify by turning the  button

Important













To manually interrupt the function, repeat the procedure described above. When the function is deactivated, the display indicates "Off".

10 Settings

10.1 List of parameters

10.1.1 Shortcuts menu




Tab.48 Functions accessible with the shortcut key 

Parameter	Description	Adjustment range
Standby/operation	Boiler standby/Start-up.	<ul style="list-style-type: none"> • Standby : Boiler put on standby. <ul style="list-style-type: none"> - The symbol  is displayed. - The boiler's operating modes are deactivated. - The frost protection function is activated. • On : Putting the boiler into operation
316:Hot water boost	Forcing domestic hot water production.	<ul style="list-style-type: none"> • On : <ul style="list-style-type: none"> - Activates the domestic hot water override. - The symbol  is displayed. - If a domestic hot water tank is connected to the boiler circuit, the boiler will give priority to forcing heating of the DHW tank, independently of the other parameters. • Off : Deactivates forcing of domestic hot water.
Central heating mode CH1	Boiler operating mode.	<ul style="list-style-type: none"> • On : <ul style="list-style-type: none"> - The heating is activated in Comfort mode. - The symbols ,  and  are displayed. • Reduced: <ul style="list-style-type: none"> - The heating is activated in Eco mode. - The symbols ,  and  are displayed. • Timed : <ul style="list-style-type: none"> - The heating operates according to the defined timer programs. - The symbols  and  are displayed. • Off : <ul style="list-style-type: none"> - The boiler is shut down and frost protection is active. - The symbol  is displayed.
Room temperature CH1	Room temperature setpoint in comfort mode.	<ul style="list-style-type: none"> • Can be adjusted between 16 and 35 °C.
Hot water heating	Setting domestic hot water production.	<ul style="list-style-type: none"> • On : Enables domestic hot water production. • Off : <ul style="list-style-type: none"> - Disables domestic hot water production. - The symbol  disappears from the display. • Eco : Not used.
Hot water temp setpoint	Domestic hot water temperature set point.	<ul style="list-style-type: none"> • Can be adjusted between 35 and 60 °C.

10.1.2 Information menu

Tab.49 Information menu

Information	Description	Unit
Room temperature	Is displayed if the control system unit is configured as a room temperature appliance	
Room temperature min		
Room temperature max		
Boiler temperature	Boiler flow temperature	°C
Outside temp	Outdoor temperature	°C

Information	Description	Unit
Outside temp min	Minimum outside temperature value memorised  Important The outside sensor must be connected.	°C
Outside temp max	Maximum outside temperature value memorised  Important The outside sensor must be connected.	°C
Hot water temp 1	Domestic hot water temperature  Important The value displayed comes from the sensor on the boiler's domestic hot water circuit.	°C
Collector temp 1	Instantaneous temperature of the solar panel sensor (when associated to a solar system)	°C
State central heating CH1	Operating mode of heating circuit 1	
State central heating CH2	Operating mode of heating circuit 2	
State central heating CH3	Operating mode of heating circuit 3	
State hot water	Domestic hot water circuit operating mode	
State boiler	Boiler operating mode	
State solar	Indicates solar running (when associated to a solar system)	-
Telephone customer service	Telephone number of the After Sales Service	0845 070 1057

10.1.3 List of user parameters

Tab.50 Structure of the user menu

Menu	Feature
Set time and date	Setting the time and date
Operator section	<ul style="list-style-type: none"> • Change Language • Programming lock
Time program Time hot water	Predefined or custom programs with a maximum of 3 comfort or domestic hot water production ranges for each 24 hours
Holiday Settings	Eco heating or frost protection mode for a defined period
Temps / mode CH1 Temps / mode CH2 Temps / mode CH3	Choice of Comfort/Eco/Auto/Standby mode for each heating circuit with reduced or comfort temperature

Tab.51 Set time and date menu

Parameter number	Parameter	Description
1	Hours / minutes	Setting the time
2	Day / month	Setting the day and the month
3	Year	Setting the year

Tab.52 Operator section menu

Parameter number	Parameter	Description	Factory setting
20	Change Language	Setting the interface language	English
27	Programming lock	Setting the programming lock <ul style="list-style-type: none"> • Off: the parameters can be displayed and modified • On: the parameters can be displayed but cannot be modified 	Off

Tab.53 Time program menu

Parameter number			Parameter	Description
Heating circuit 1	Heating circuit 2	Heating circuit 3		
500	520	540	Select days	Selecting the days or group of days for the timer program.
514	534	554	Mon-Sun	Selecting a default timer program.
501	521	541	1st Time ON	Start of timer period 1.
502	522	542	1st Time OFF	End of timer period 1.
503	523	543	2nd Time ON	Start of timer period 2.
504	524	544	2nd Time OFF	End of timer period 2.
505	525	545	3rd Time ON	Start of timer period 3.
506	526	546	3rd Time OFF	End of timer period 3.
516	536	556	Default values	Reset the timer programming parameters (Yes / No)

Tab.54 Time hot water menu

Parameter number	Parameter	Description
560	Select days	Selecting the days or group of days for the timer program.
574	Mon-Sun	Selecting a default timer program.
561	1st Time ON	Start of timer period 1.
562	1st Time OFF	End of timer period 1.
563	2nd Time ON	Start of timer period 2.
564	2nd Time OFF	End of timer period 2.
565	3rd Time ON	Start of timer period 3.
566	3rd Time OFF	End of timer period 3.
576	Default values	Reset the timer programming parameters (Yes / No).

Tab.55 Holiday Settings menu

Parameter number			Parameter	Description	Factory setting
Heating circuit 1	Heating circuit 2	Heating circuit 3			
641	651	661	Select	Selecting the holiday period	Period 1
642	652	662	Start	Selecting the day and month of the start of the current holiday period.	
643	653	663	End	Selecting the day and month of the end of the current holiday period.	
648	658	668	Operating level	Boiler operating mode during the holiday period. • Off • Reduced	Off

Tab.56 Temps / mode CH1 – Temps / mode CH2 – Temps / mode CH3 menu

Parameter number			Parameter	Description	Factory setting
Heating circuit 1	Heating circuit 2	Heating circuit 3			
700	1000	1300	Operating mode	<p>The control unit is installed on the boiler:</p> <ul style="list-style-type: none"> • Off : heating is deactivated. • Timed : the heating is dependent on the timer program. • Reduced : heating is in permanent reduced mode. • On : heating is in permanent reduced mode. <p>The control unit is installed as a room temperature control system:</p> <ul style="list-style-type: none"> • Off : the boiler starts up when the room temperature falls below the frost protection set point. • Timed : the heating is dependent on the timer program. • Reduced : the room temperature set point is the reduced set point (Parameters 712, 1010, 1310) • On : the room temperature set point is the comfort set point (Parameters 710, 1010, 1310) 	On
710	1010	1310	Comfort setpoint		20 °C
712	1012	1310	Reduced temp setpoint		16 °C

10.1.4 List of installer parameters

Tab.57 Structure of the installer menu

Menu	Sub-menu
Installer	Operator section
	Temps / mode CH1
	Temps / mode CH2
	Temps / mode CH3
	Temps / mode hot water
	Boiler Settings
	Solar
	Configuration
	Error
	Service/special operation
	State
	Diagnostics heat generation
	Burner control

Tab.58 Operator section menu

Parameter number	Parameter	Description	Factory setting
24	Lighting	<ul style="list-style-type: none"> • Off • Temporarily • Permanently 	Temporarily
29	Units	<ul style="list-style-type: none"> • °C, bar • °F, PSI 	°C, bar

Parameter number	Parameter	Description	Factory setting
40	Used as	<ul style="list-style-type: none"> • Operator unit 1 : The control system unit is installed on the boiler. • Room unit 1 : The control system unit is configured as a room temperature unit for heating circuit 1. • Room unit 2 : The control system unit is configured as a room temperature unit for heating circuit 2. • Room unit 3 : The control system unit is configured as a room temperature unit for heating circuit 3. 	Operator unit 1
42	Assignment device 1	<p>As Room Temperature Unit 1, the action of the control system unit can be assigned to CC1 or to two heating circuits:</p> <ul style="list-style-type: none"> • Temps / mode CH1 • Central heating 1 and 2 • Central Heating 1 and 3 • All central heatings 	All central heatings
43	Action operation	<ul style="list-style-type: none"> • Locally : The room temperature unit controls only the respective heating circuit. • Centrally : Only room temperature unit 1 can be centralised. It also controls the domestic hot water and standby mode. 	Centrally
54	Readjustment room sensor	-3°C to +3°C	0 °C
70	Software version		

Tab.59 Temps / mode CH1 – Temps / mode CH2 – Temps / mode CH3 menus

Parameter number			Parameter	Description	Unit	Factory setting
Heating circuit 1	Heating circuit 2	Heating circuit 3				
714	1014	1314	Frost protection setpoint		°C	6
720	1020	1320	Heating curve slope	Heating curve gradient: The regulator calculates the flow temperature set point which is used for the control system, according to outside weather conditions.	–	<ul style="list-style-type: none"> • Heating circuit 1: 1.5 • Heating circuit 2: 1.5 • Heating circuit 3: 1.5
730	1030	1330	Summer/winter heating limit	Limit temperature for switching between Heating/Protection mode. Triggers or shuts down the heating in the course of the year according to variations in outside temperature. This switch is made automatically in Automatic Mode.		20
732	1032	1332	24-hour heating limit	The heating is shut down when the outside temperature is equal to the room temperature + parameter 732 (deactivated in Comfort mode).	°C	0
740	1040	1340	Flow temp setpoint min	The flow set point calculated is limited by the set value.	°C	25
741	1041	1341	Flow temp setpoint max	The flow set point calculated is limited by the set value.	°C	80
742	1042	1342	Flow temp setpoint room stat	The set flow value is applied in room temperature thermostat mode. '---' the boiler is running in modulation mode.	°C	80

Parameter number			Parameter	Description	Unit	Factory setting
Heating circuit 1	Heating circuit 2	Heating circuit 3				
750	1050	1350	Room influence	<ul style="list-style-type: none"> Influence of the room temperature and the outside temperature on calculating the flow temperature: ---%: Simple regulation in accordance with outside weather conditions: 1...99%: Regulation in accordance with outside weather conditions with room temperature influence. 100%: Regulation in accordance with the room temperature only. 	%	50
760	1060	1360	Room temp limitation	Cuts the circulating pump if the room temperature exceeds the current set point + parameter 760, 1060, 1360.	°C	0.5
809	1109	1409	Continuous pump operation	<ul style="list-style-type: none"> No : The heating circuit / boiler pump may be shut down during an accelerated decline in temperature or when the room temperature set point is reached. Yes : The heating circuit / boiler pump also continues to run during the accelerated decline in temperature and when the room temperature set point is reached. 	–	No
834	1134	1434	Actuator running time	Setting the stroke of the servomotor on the mixing valve used	seconds	30
850	1150	1450	Floor curing function	Controlled screed-drying function: <ul style="list-style-type: none"> Off : The function is inoperative. Curing/functional heating : Active for 7 days, 3 days at 25 °C and 4 days at 55 °C. Curing heating : Active for 18 days, 6 days from 25 °C to 55 °C increasing by 5 °C a day, 6 days at 55 °C, 6 days from 55 °C to 25 °C diminishing by 5 °C a day. Functional/curing heating : "Functional Heating" cycle first, and then "Ready for Occupation". Manually : Regulation is based on the "Manual Control Drying" set point. 	S	Off
851	1151	1451	Floor curing setp manually	The flow temperature set point of the "Manual" controlled drying function can be set separately for each heating circuit.	°C	25
855	1155	1455	Floor curing setp current	Displays the current day of the controlled screed-drying function. With '---' the function is deactivated.	-	'---'
856	1156	1456	Days complete.current	Displays the current flow temperature set point of the controlled screed-drying function. With '---' the function is deactivated.	-	'---'

Tab.60 Temps / mode hot water menu

Parameter number	Parameter	Description	Factory setting
1600	Operating mode	<ul style="list-style-type: none"> Off: Permanent running at the frost protection set point. On : Domestic hot water loading is done automatically at the comfort set point. Eco : The temperature maintenance function is deactivated. 	On
1610	Hot water temp setpoint	DHW set point during release times	60°C
1612	Reduced temp setpoint	Reduced temperature set point outside release times	35°C

Parameter number	Parameter	Description	Factory setting
1620	Release	Start-up enabled: <ul style="list-style-type: none"> • Time hot water : This setting provides domestic hot water preparation with a dedicated timer program. • Time setting central heating : Domestic hot water is released with the same timer program as the heating circuits. • 24h/day : Default setting for instantaneous boilers. 	Time hot water
1640	Legionella function	<ul style="list-style-type: none"> • Off • Periodically • Fixed weekday 	Off
1641	Legionella funct periodically	Determines after how many days the anti-legionella function must be reactivated.	7
1642	Legionella funct weekday	Determines on which day the anti-legionella function must be activated.	Monday
1644	Legionella funct time	Determines the start-up time of the anti-legionella function (Hours / Minutes).	-- --
1660	Circulating pump release	The circulating pump is tripped during the release time: <ul style="list-style-type: none"> • Time central heating CH3 • Hot water release • Time hot water • Time auxiliary 	Hot water release
1663	Circulation setpoint	The regulator monitors the temperature measured while the anti-legionella function is running.	45 °C
1680	Optg mode changeover	In cases of external switching via the Hx inputs, the regime to which the switch must be made must first be defined. <ul style="list-style-type: none"> • None • Off 	None

Tab.61 **Boiler Settings** menu

Parameter number	Parameter	Description	Unit	Factory setting
2214	Setpoint manual control	In manual mode, the flow temperature set point can be set to a fixed value.	°C	80 °C
2441	Fan output heating max	Maximum fan speed in heating mode.	rpm	depending on the model


Tab.62 **Solar** menu (with additional extension module)

Parameter number	Parameter	Description	Unit	Factory setting
3810	Temp diff on	Min. ΔT between the solar collector sensor and the solar domestic hot water tank for running the solar pump.	°C	8
3811	Temp diff off	Max. ΔT between the solar collector sensor and the solar domestic hot water tank for shutting down the solar pump.	°C	4
3830	Collector start function	To measure the temperature on the solar collector correctly (pipes empty) (--- = deactivated)	min	30
3831	Min run time collector pump	Minimum running of the collector pump.	Seconds	30
3850	Collector overtemp prot	If there is a danger of overheating in the collector, tank loading continues to eliminate any excess heat.	°C	120

Tab.63 Configuration menu

Parameter number	Parameter	Description	Factory setting
5710	Temps / mode CH1	Activation of heating circuit 1: <ul style="list-style-type: none"> • Off • On 	On
5715	Temps / mode CH2	Activation of heating circuit 2: <ul style="list-style-type: none"> • Off • On 	Off
5721	Temps / mode CH3	Activation of heating circuit 3: <ul style="list-style-type: none"> • Off • On 	Off
5730	Hot water sensor	Selection of the domestic hot water sensor: <ul style="list-style-type: none"> • Hot water sensor B3 : Domestic hot water sensor for tank • Thermostat : The sensor used for domestic hot water is a thermostat 	Hot water sensor B3
5731	HW controlling element	Type of actuator for controlling the domestic hot water requirement: <ul style="list-style-type: none"> • No charging request : No function • Charging pump : Domestic hot water loading is done with a pump. • Diverting valve : Domestic hot water loading is done with a bypass valve. 	Diverting valve







Parameter number	Parameter	Description	Factory setting
5890	Relay output QX1	<ul style="list-style-type: none"> • None • Circulating pump Q4 : Domestic hot water circulating pump. • El imm heater HW K6 • Collector pump Q5 : Circulating pump for the solar collector circuit. • Cons circuit pump VK1 Q15 : The VK1 consumer circuit pump can be used for an additional boiler consumer. • Boiler pump Q1 : The pump connected is used for circulating the boiler water. • Bypass pump Q12 • Alarm output K10 : Presence of an error signalled by relay. Closure of the contact is on a time delay of 2 min. • 2nd pump speed CH1 Q21 • 2nd pump speed CH2 Q22 • 2nd pump speed CH3 Q23 • heating pump CH3 Q20 : The heating circuit with CH3 pump is activated (3WV Zone). • Cons circuit pump VK2 Q18 • System pump Q14 : The pump connected is used as the mains pump. • Heat gen shutoff valve Y4 • Solid fuel boiler pump Q10 : Integration of a solid fuel boiler: Circulating pump in the boiler circuit. • Time setting 5 K13 : The relay is controlled according to the settings on timer program 5. • Buffer return valve Y15 • Solar pump ext exch K9 • Solar ctrl elem buffer K8 • Solar ctrl elem swi pool K18 : Contact for heating the swimming pool with solar energy (if using several heat exchangers). • Cons circuit pump VK2 Q18 • Cascade pump Q25 : Boiler pump common to all boilers in a cascade. • St tank transfer pump Q11 • Hot water mixing pump Q35 • HW interm circ pump Q33 • Heat request K27 • Refrigeration request K28 : Cooling requirement for cooling circuit 1. • heating pump CH1 Q2 : The heating circuit with CH1 pump is activated. • heating pump CH2 Q6 : The heating circuit with CH2 pump is activated. • Hot water ctrl elem Q3 : Pump / distribution valve for hot water tank. • Instant WH ctrl elem Q34 : Pump / distribution valve for boiler producing instantaneous hot water. • Water refill K34 : Solenoid filling valve command. • 2nd boiler pump speed Q27 : Boiler pump second speed. • Status output K35 • Status information K36 • Flue gas damper K37 • Fan shutdown K38 : Fan shut-down function for cutting the power to the fan if it is not used. 	heating pump CH1 Q2

Parameter number	Parameter	Description	Factory setting
5931	Sensor input BX2	<ul style="list-style-type: none"> • None : No function on the sensor input. • Hot water sensor B31 : Sensor in the bottom section of the domestic hot water tank. • Collector sensor B6 : Solar collector sensor. • HW circulation sensor B39 : Circulation / DHW preparation sensor. • Buffer sensor B4 : Sensor in the top section of the storage tank. • Buffer sensor B41 : Sensor in the bottom section of the storage tank. • Flue gas temp sensor B8 : Flue gas sensor • Common flow sensor B10 : Common flow sensor (cascade). • Solid fuel boiler sensor B22 : Sensor for solid fuel boiler. • HW charging sensor B36 • Buffer sensor B42 : Third sensor (in the middle) of the storage tank. • Common return sensor B73 • Cascade return sensor B70 : Cascade return sensor. • Swimming pool sensor B13 : Swimming pool sensor. • Solar flow sensor B63 : Solar flow sensor for measuring efficiency. • Solar return sensor B64 : Solar return sensor for measuring efficiency. • Primary exch sensor B26 	None
5932	Sensor input BX3	 See Sensor input BX2	None
5970	Function input H4	<ul style="list-style-type: none"> • None : Default setting for boilers with domestic hot water tank. • Flow measurement Hz : Default setting for instantaneous boilers. • Error/alarm message 	None
5971	Contact type H4	<ul style="list-style-type: none"> • NC • NO 	Error/alarm message
5973	Frequency value 1 H4	Definition of the parameters for collector specifications	15
5974	Function value 1 H4	Definition of the parameters for collector specifications	20
5975	Frequency value 2 H4	Definition of the parameters for collector specifications	162
5976	Function value 2 H4	Definition of the parameters for collector specifications	120

Parameter number	Parameter	Description	Factory setting
5977	Function input H5	<ul style="list-style-type: none"> • None • Optg mode change CHs+HW : Heating and domestic hot water circuit changeover mode. • Optg mode changeover HW : Domestic hot water circuit changeover mode. • Optg mode changeover CHs : The regimes of the heating circuits are switched to parameter mode on line 900-1200-1500. • Optg mode changeover CH1 : The regimes of the heating circuits are switched to parameter mode on line 900-1200-1500. • Optg mode changeover CH2 : The regimes of the heating circuits are switched to parameter mode on line 900-1200-1500. • Optg mode changeover CH3 : The regimes of the heating circuits are switched to parameter mode on line 900-1200-1500. • Heat generation lock : The generator is locked. All heating circuit and domestic hot water temperature requirements are ignored. (boiler frost protection active) • Error/alarm message : The input causes an error message on the regulator. • Consumer request VK1 : The input causes an error message on the regulator. • Consumer request VK2 : The input causes an error message on the regulator. • Release swimpool source htg : Swimming pool demand • Excess heat discharge : Enables an external generator to force the switches (heating circuit, DHW, Hx pump) to dissipate any heat surplus. • Release swi pool solar : This function enables the release of solar swimming pool heating by an external resource. • Operating level HW : The temperature level can be adjusted by a contact (external timer program) rather than by the internal timer program. • Operating level CH1 : The temperature level can be adjusted by a contact (external timer program) rather than by the internal timer program. • Operating level CH2 : The temperature level can be adjusted by a contact (external timer program) rather than by the internal timer program. • Operating level CH3 : The temperature level can be adjusted by a contact (external timer program) rather than by the internal timer program. • Room thermostat CH1 : This input is used to generate a room thermostat demand for heating circuit 1. • Room thermostat CH2 : This input is used to generate a room thermostat demand for heating circuit 2. • Room thermostat CH3 : This input is used to generate a room thermostat demand for heating circuit 3. • Hot water flow switch : Connection of the flow rate controller on the instantaneous water heater. • Hot water thermostat : Connection of the domestic hot water tank thermostat. • Pulse count : Impulse counter. • Checkb sign flue gas damper : Feedback on flue gas valve position. • Boiler flow switch : Start-up authorisation by flow rate controller. • Boiler pressure switch : Start-up authorisation by pressure switch. 	Room thermostat CH1
5978	Contact type H5	<ul style="list-style-type: none"> • NC • NO 	NO
6020 to 6068		See following table	
6097	Sensor type collector	Type of collector sensor: <ul style="list-style-type: none"> • NTC • Pt 1000 	NTC
6100	Readjustm outside sensor	The value of the outdoor temperature measurement can be offset by +/- 3 °C.	0 °C

Parameter number	Parameter	Description	Factory setting
6200	Save sensors	Records the sensors used in the appliance.	No
6212	Check no. heat source 1	Information on the manufacturer	
6213	Check no. heat source 2		
6215	Check no. storage tank		
6217	Check no. heating circuits		
6230	Info 1 OEM		
6231	Info 2 OEM		

Tab.64 Configuration menu: parameters for extension modules 1, 2 and 3

Parameter			Description	Factory setting
Extension module 1	Extension module 2	Extension module 3		
6020 : Function extension module 1	6021 : Function extension module 2	6022 : Function extension module 3	<ul style="list-style-type: none"> • None • Multifunctional : The functions that can be assigned to the inputs/outputs. • Temps / mode CH1 : Settings corresponding to the operator chapter on "Heating Circuit 1". • Temps / mode CH2 : Settings corresponding to the operator chapter on "Heating Circuit 2". • Temps / mode CH3 : Settings corresponding to the operator chapter on "Heating Circuit 3". • Return temp controller : Not used • Solar HW : Settings corresponding to the operator chapter on "Thermal Solar". • Primary contr/system pump : Not used 	Without
6024 : Funct input EX21 module 1	6026 : Funct input EX21 module 2	6028 : Funct input EX21 module 3	<ul style="list-style-type: none"> • None • Limit thermostat CH 	None
6030 : Relay output QX21 module 1	6033 : Relay output QX21 module 2	6036 : Relay output QX21 module 3	 See QX1 relay outlet	without
6031 : Relay output QX22 module 1	6034 : Relay output QX22 module 2	6037 : Relay output QX22 module 3	 See QX1 relay outlet	without
6032 : Relay output QX23 module 1	6035 : Relay output QX23 module 2	6038 : Relay output QX23 module 3	 See QX1 relay outlet	without
6040 : Sensor input BX21 module 1	6042 : Sensor input BX21 module 2	6044 : Sensor input BX21 module 3	 See BX2 sensor inlet	without
6041 : Sensor input BX22 module 1	6043 : Sensor input BX22 module 2	6045 : Sensor input BX22 module 3	 See BX2 sensor inlet	without
6046 : Function input H2 module 1	6054 : Function input H2 module 2	6062 : Function input H2 module 3	 See H5 inlet function	without
6047 : Contact type H2 module 1	6055 : Contact type H2 module 2	6063 : Contact type H2 module 3	<ul style="list-style-type: none"> • NC • NO 	NO
6049 : Voltage value 1 H2 module 1	6057 : Voltage value 1 H2 module 2	6065 : Voltage value 1 H2 module 3	Definition of parameters for collector specifications	0

Parameter			Description	Factory setting
Extension module 1	Extension module 2	Extension module 3		
6050 : Funct value 1 H2 module 1	6058 : Funct value 1 H2 module 2	6066 : Funct value 1 H2 module 3	Definition of parameters for collector specifications	0
6051 : Voltage value 2 H2 module 1	6059 : Voltage value 2 H2 module 2	6067 : Voltage value 2 H2 module 3	Definition of parameters for collector specifications	0
6052 : Funct value 2 H2 module 1	6060 : Funct value 2 H2 module 2	6068 : Funct value 2 H2 module 3	Definition of parameters for collector specifications	0

Tab.65 Error menu

Parameter number	Parameter	Description	Factory setting
6704	Display SW diagnostic code	Display of the software troubleshooting code: • No • Yes	Yes
6705	SW diagnostic code	Software troubleshooting code currently pending.	
6706	Burn ctrl phase lockout pos	Locking phase indicating the place where the error occurred.	
6710	Reset alarm relay	Alarm relay reset.	
6800	History 1	Last error that occurred.	
6805	SW diagnostic code 1	Last troubleshooting code that occurred.	
6806	Burner control phase 1	Last locking phase indicating the place where the error occurred.	
6810 – 6996	History 2 to History 20	Fault history.	

Tab.66 Service/special operation menu

Parameter number	Parameter	Description	Factory setting
7045	Time since maintenance	Resetting the boiler operating time after boiler servicing.	0 months
7130	Chimney sweep function	Chimney sweep function: • Off • On	Off
7131	Burner output	Burner output during the chimney sweep function: • Partial load • Full load • Max heating load	Full load
7140	Manual control	Manual control function: • Off • On	Off
7143	Controller stop function	Regulator shut-down function: • Off • On	Off
7145	Controller stop setpoint	Set point output during the regulator shut-down function: 0 % to 100 %.	100%
7146	Deaeration function	Venting function: • Off • On	Off

Parameter number	Parameter	Description	Factory setting
7147	Type of venting	Venting cycle operating mode: <ul style="list-style-type: none"> • None • Heating circuit continuous • Heating circuit cycled • Hot water continuous • Hot water cycled 	None
7170	Telephone customer service		
7231	Refill time current week	Value displayed	0 s
7232	Refill time to date	Value displayed	0 s
7233	Number of refills to date	Value displayed	0

Tab.67 State menu

Parameter number	Parameter	Description
8000	State central heating CH1	
8001	State central heating CH2	
8002	State central heating CH3	
8003	State hot water	
8005	State boiler	
8007	State solar	
8008	State solid fuel boiler	
8009	State burner	
8010	State buffer	
8011	State swimming pool	

Tab.68 Diagnostics heat generation menus

Parameter number	Parameter	Description
8310	• Boiler temperature • Control temp	Value displayed
8311	• Boiler setpoint • Control setpoint	
8313	Control sensor	
8314	Boiler return temp	
8315	Boiler return temp setpoint	
8316	Flue gas temp	
8321	Primary exchanger temp	
8323	Fan speed	
8326	Burner modulation	Value reset
8330	Hours run 1st stage	
8526	Solar Gain 24 Hour	
8527	Total Solar Gain	
8530	Hours run solar	
8531	Hours run collect overtemp	
8532	Hours run collector pump	

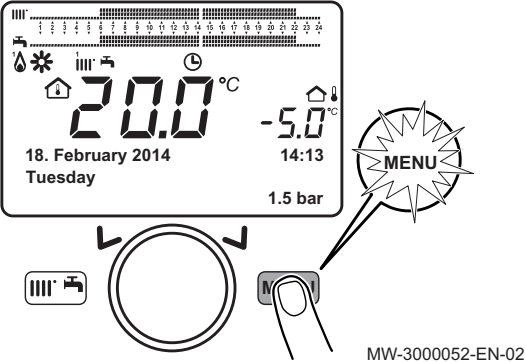
Tab.69 Burner control menus

Parameter number	Parameter	Description
9512	Required speed ignition	Ignition speed set point adjustable on the operating interface.
9524	Required speed LF	Rotation speed set point at partial load adjustable on the operating interface.
9529	Required speed HF	Rotation speed set point at nominal load adjustable on the operating interface.
6624	Manual source lock	

10.2 Setting the parameters

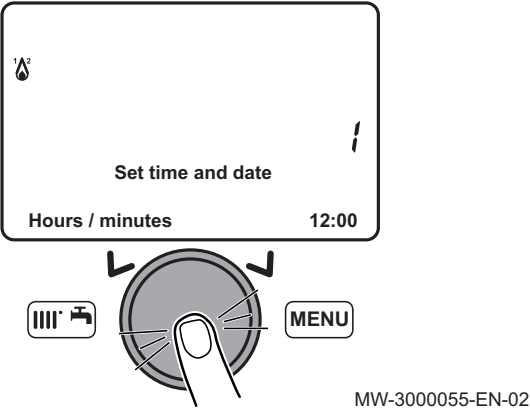
10.2.1 Setting the date and time

Fig.74



1. Press the **MENU** key to access the parameters.
2. Select the **Set time and date** menu by turning the **⌚** button.
3. Confirm the menu selection by pressing the **⏻** button.
⇒ The parameter **Hours / minutes** appears.

Fig.75



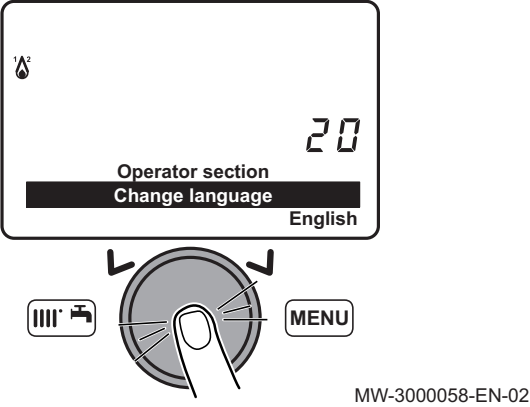
4. Confirm the parameter selection by pressing the **⏻** button.
⇒ The parameter flashes, it can be modified.
5. Modify the parameter by turning the **⌚** button.
6. Confirm the setting by pressing the **⏻** button.
7. Set the other parameters if necessary.

i Important
Press the **MENU** key to return to the main display.

📖 See also
List of user parameters, page 71

10.2.2 Selecting the language

Fig.76

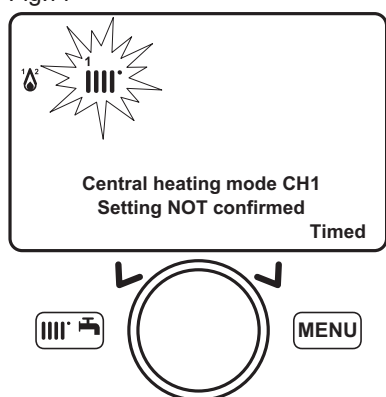


1. Press the **MENU** key to access the parameters.
2. Select the **Operator section** menu by turning the **⌚** button.
3. Confirm the menu selection by pressing the **⏻** button.
⇒ The **Change Language** parameter appears.
4. Confirm the menu selection by pressing the **⏻** button.
⇒ The language currently used flashes.
5. Modify the parameter by turning the **⌚** button.
6. Confirm the setting by pressing the **⏻** button.

i Important
Press the **MENU** key to return to the main display.

10.2.3 Changing the operating mode

Fig.77



MW-3000060-EN-02

1. Press the key to access the shortcuts menu.
2. Select the parameter **Central heating mode CH1** by turning the button.
3. Press the button to confirm.
4. Select the appropriate operating mode.
5. Press the button to confirm.



Important

Press the key to return to the main display.



See also

Shortcuts menu, page 70

10.2.4 Forcing domestic hot water production

1. Press the key to access the shortcuts menu.
2. Select the parameter **316:Hot water boost** by turning the button.
3. Press the button to start forcing domestic hot water.



Important

Press the button a second time to stop forcing domestic hot water.



Important

Press the key to return to the main display.

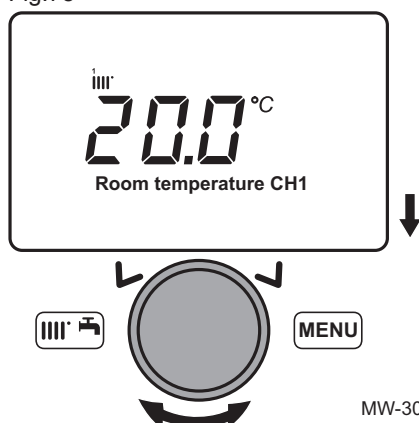


See also

Shortcuts menu, page 70

10.2.5 Setting the room temperature set point (On mode)

Fig.78



MW-3000063-EN-02

1. Press the key to access the shortcuts menu.
2. Select the parameter **Room temperature CH1** by turning the button.
3. Press the button to confirm.
4. Turn the button to modify the temperature set point.
5. Press the button to confirm.



Important

Press the key to return to the main display.



See also

Shortcuts menu, page 70

10.2.6 Modifying the domestic hot water production mode

1. Press the key to access the shortcuts menu.
2. Select the parameter **Hot water heating** by turning the button.
3. Press the button to confirm.
4. Select the appropriate operating mode.
5. Press the button to confirm.



Important

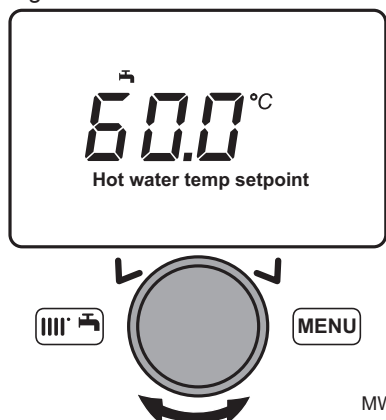
Press the key to return to the main display.



See also
Shortcuts menu, page 70

10.2.7 Setting the domestic hot water temperature set point

Fig.79



1. Press the key to access the shortcuts menu.
2. Select the parameter **Hot water temp setpoint** by turning the button.
3. Press the button to confirm.
4. Turn the button to modify the temperature set point.
5. Press the button to confirm.



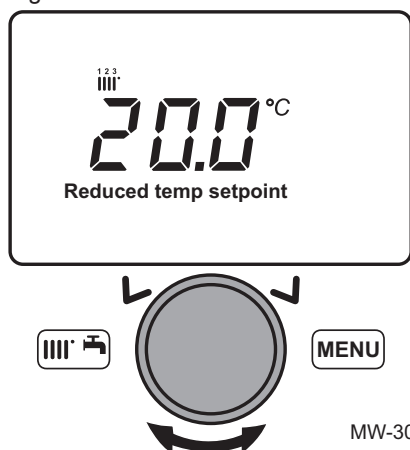
Important
Press the key to return to the main display.



See also
Shortcuts menu, page 70

10.2.8 Setting the room temperature set point (Reduced mode)

Fig.80



1. Press the key to access the parameters.
2. Select the **Temps / mode CH1** menu by turning the button.
3. Confirm the menu selection by pressing the button.
⇒ The parameter **Operating mode** appears.
4. Select the **Reduced temp setpoint** menu by turning the button.
5. Confirm the menu selection by pressing the button.
⇒ The room temperature set point (Reduced mode) flashes.
6. Turn the button to modify the temperature set point.
7. Press the button to confirm.



Important
Press the key to return to the main display.

10.2.9 Programming a Holiday period

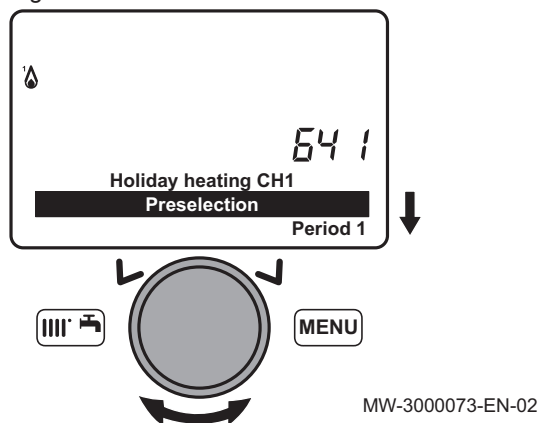
This series of functions is used to program the boiler's behaviour in holiday periods or during prolonged absences. The various parameters are used to program one of eight Holiday periods.



Important
When the function is activated, the symbol is displayed.

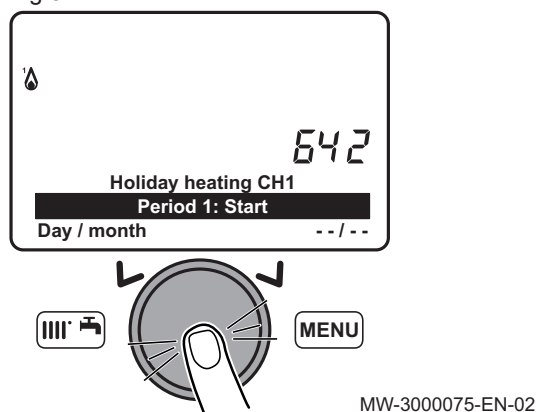
1. Press the key to access the parameters.
 2. Select the **Holiday heating CH1** menu by turning the button.
 3. Confirm the menu selection by pressing the button .
- ⇒ The **Select** parameter appears.

Fig.81



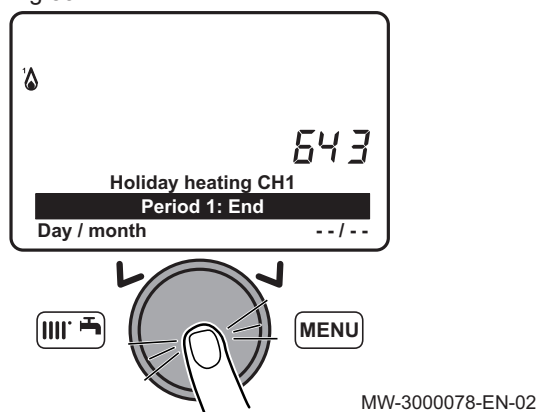
4. Select the Holiday period to be programmed by turning the button.
5. Confirm by pressing the button.

Fig.82



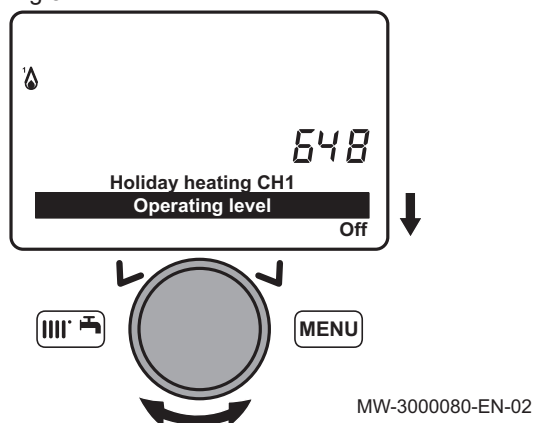
6. Select the **Start** parameter by turning the button.
7. Confirm the menu selection by pressing the button .
8. Select and confirm the start date (day/month) of the holiday period with the button.
9. Confirm by pressing the button.

Fig.83



10. Select the End parameter by turning the button.
11. Confirm the menu selection by pressing the button .
12. Select and confirm the end date (day/month) of the holiday period with the button.
13. Confirm by pressing the button.

Fig.84



14. Select the **Operating level** parameter by turning the button.
15. Confirm the menu selection by pressing the button .
16. Select the boiler's operating mode during the holiday period by turning the button.
17. Confirm the menu selection by pressing the button .

**See also**

Setting the room temperature set point (On mode), page 85
 Setting the room temperature set point (Reduced mode), page 86
 Activating the Off, page 69

10.2.10 Using the fixed-speed boiler

Fig.85

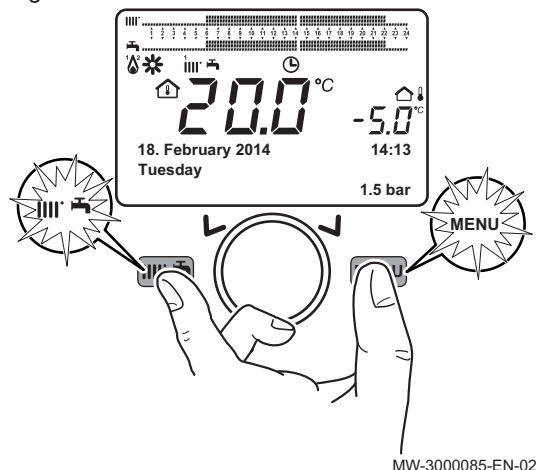


Fig.86

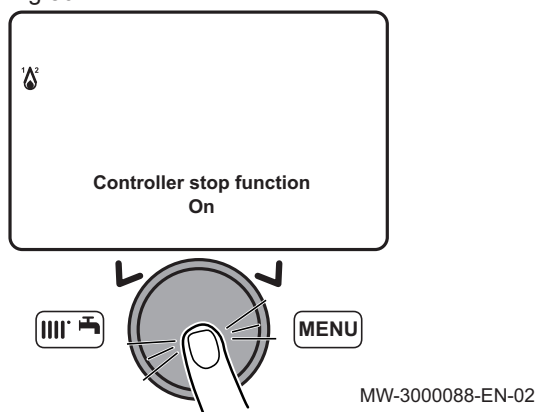
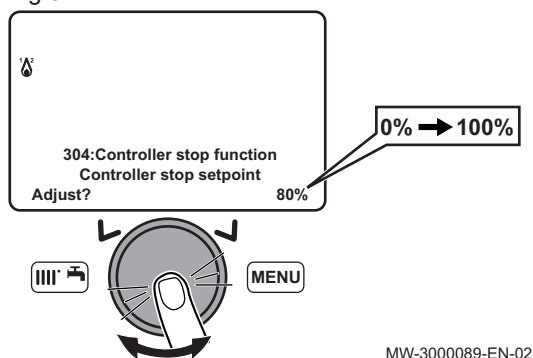


Fig.87



Using the boiler according to heat input makes it possible to calibrate the gas valve.

The heat input corresponds to the speed of the boiler in percentage of the nominal output.

1. From the home screen, press the and keys simultaneously.
2. Select the parameter **Controller stop function** by turning the button.
3. Press the button to confirm.
⇒ The parameter **Controller stop function On** appears.

4. Press the button to confirm.
⇒ **304:Controller stop** appears.

5. Press the button to modify the heat input value from 0 to 100 % by turning the button.
6. Press the button to confirm the heat input.



Important

Press the key to return to the main display and reactivate the control system.



See also


Setting the air/gas ratio (maximum heat input), page 59
Setting the air/gas ratio (reduced heat input), page 60

10.2.11 Selecting a heating circuit

The control panel can manage up to three different heating circuits.

1. From the home screen, turn the button to select one of the three heating circuits available.
2. Press the button to confirm.
3. Turn the button to temporarily modify the temperature set point on the selected heating circuit.
4. Press the button to confirm.
⇒ The selected heating circuit is active.

10.2.12 Locking/Unlocking parameter modification

It is possible to lock all functions associated with the  key to prevent unauthorised persons from modifying the parameters.

■ Locking parameter modification






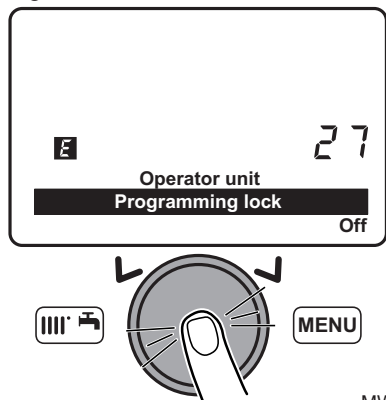
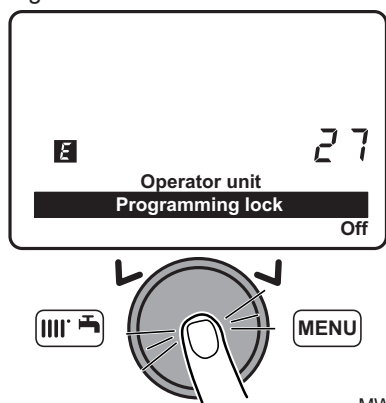
1. Press the  key to access the user parameters menu.
2. Select the **Operator unit** menu by turning the  button.
3. Confirm the menu selection by pressing the  button.
4. Select menu 27 **Programming lock** by turning the  button.
5. Confirm the menu selection by pressing the  button.

Fig.88





MW-3000091-EN-02

Fig.89






MW-3000092-EN-02

6. Select the setting **On** by turning the  button.
7. Confirm the menu selection by pressing the  button.
⇒ The parameters can be displayed but cannot be modified.

■ Unlocking parameter modification

It is necessary to enter a temporary unlocking phase to modify the parameter **Programming lock**. This parameter enables parameter modification to be locked/unlocked.

1. Press the  key to access the user parameters menu.
2. Press the  key and the  button simultaneously for around 6 seconds.



Important

Unlocking is temporary and lasts 1 minute.

⇒ **temporarily unlocked** is displayed.





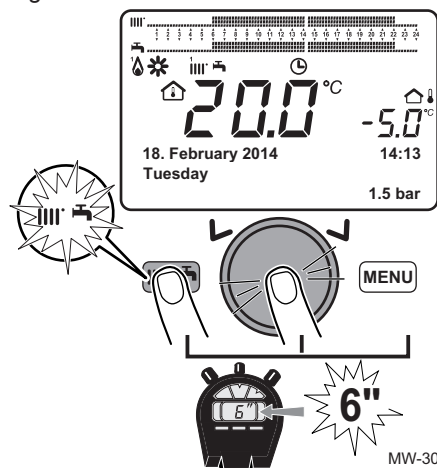
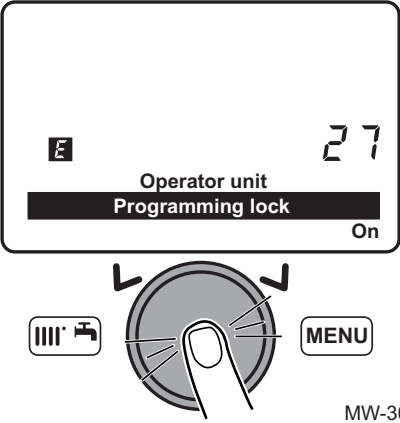
3. Press the  key to access the user parameters menu.
4. Select the **Operator unit** menu by turning the  button.
5. Confirm the menu selection by pressing the  button.
6. Select menu 27 **Programming lock** by turning the  button.

Fig.90






MW-3000093-EN-02

Fig.91



MW-3000096-EN-02

- 7. Confirm the menu selection by pressing the  button.
- 8. Select the setting On by turning the  button.
- 9. Confirm the menu selection by pressing the  button.
⇒ The parameters can be modified.

10.2.13 Timer programme

 **Important**
Activate the **Timed** operating mode

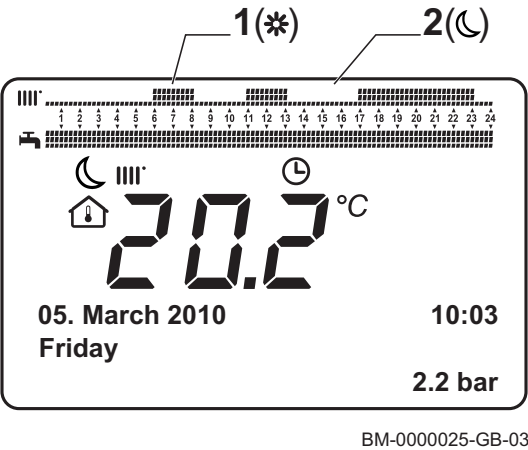
The various timer programming functions are used to program start-up and automatic shut-down of the boiler during predefined time ranges. Timer programming is done for days of the week, from Monday to Sunday. Groups of days are predefined.

Tab.70 Weekly intervals

Values of the parameters **Select days** (500, 520, 540) for heating circuits 1, 2 and 3 and the parameters **Select days** (560) for domestic hot water.

Pre-setting selected	Days programmed
Mon-Sun	Monday - Tuesday - Wednesday - Thursday - Friday - Saturday - Sunday
Mon-Fri	Monday - Tuesday - Wednesday - Thursday - Friday
Sat-Sun	Saturday - Sunday
Mon	Monday
Tue	Tuesday
Wed	Wednesday
Thu	Thursday
Fri	Friday
Sat	Saturday
Sun	Sunday

Fig.92 Example of a time range



BM-0000025-GB-03

- 1 Period of operation at the comfort temperature
- 2 Period of operation in reduced mode

Tab.71 Daily time ranges

Values of the parameters **Select default timings?** (514, 534, 554) for heating circuits 1, 2 and 3 and the parameter **Select default timings?** (574) for domestic hot water.

Pre-setting selected	Hours programmed
Time setting 1	6:00 to 23:00
Time setting 2	06:00...08:00 – 17:00...23:00
Time setting 3	06:00...08:00 – 11:00...13:00 – 17:00...23:00

**See also**

Changing the operating mode, page 85

■ Default time ranges

Tab.72 Time ranges according to the groups of days selected

Program line 514 (heating), 574 (domestic hot water)

Groups of days	Pre-set programs		
	On 1 - Off 1	On 2 - Off 2	On 3 - Off 3
Mon-Sun	06:00 - 08:00	11:00 - 13:00	17:00 - 23:00
Mon-Fri	06:00 - 08:00		17:00 - 23:00
Sat-Sun	06:00 - 23:00		

Tab.73 Time ranges according to the days selected



Program line 501, 502, 503, 504, 505, 506 (heating) - 561, 562, 563, 564, 565, 566 (domestic hot water)

Single days	Pre-set programs		
	On 1 - Off 1	On 2 - Off 2	On 3 - Off 3
Monday-Tuesday-Wednesday-Thursday-Friday-Saturday-Sunday	06:00 - 08:00	11:00 - 13:00	17:00 - 23:00

**See also**

Changing the operating mode, page 85

■ Selecting a Timer Program

1. Select a heating circuit.
2. Press the  key to access the parameters.
3. Select the **Time central heating CH1** menu by turning the  button.

**Important**

- For heating circuits 2 and 3, select the parameters **Time central heating CH2** or **Time setting 3/CHP**.
- For the domestic hot water circuit, select the parameter **Time hot water**.


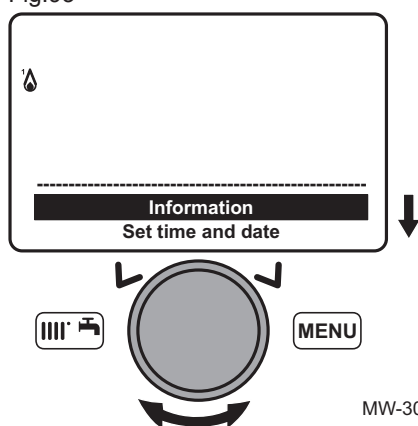
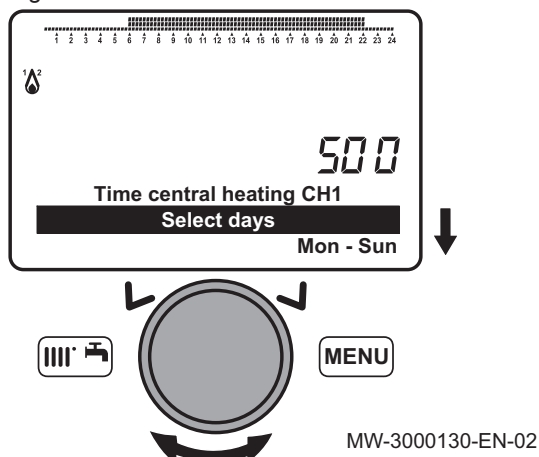
4. Confirm the menu selection by pressing the  button.
⇒ The parameter **Select days** (500, 520, 540 or 560) appears.

Fig.93



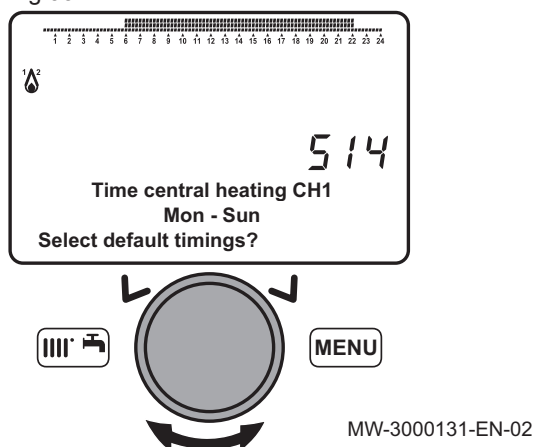
MW-3000071-EN-03

Fig.94



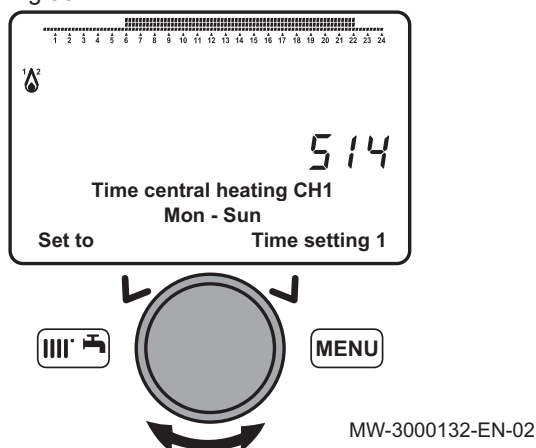
5. Confirm the parameter selection by pressing the button.
⇒ The current selection flashes.
6. Select a weekly interval by turning the button.
7. Confirm the weekly interval selection by pressing the button.

Fig.95



8. Select the parameter **Select default timings?** (514, 534, 554 or 574) by turning the button.

Fig.96



9. Confirm the parameter selection by pressing the button.
⇒ The current selection flashes.
10. Select the desired time range by turning the button.
11. Confirm the time range selection by pressing the button.

**Important**

Press the key to return to the main screen.

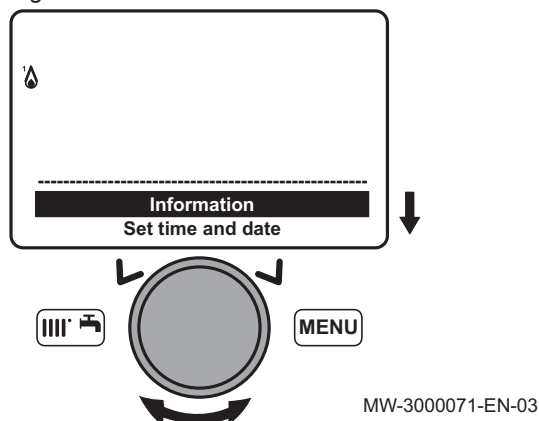
**See also**

Changing the operating mode, page 85
Copying a time range, page 94

■ Customising the time ranges

1. Select a heating circuit.
2. Press the key to access the parameters.

Fig.97



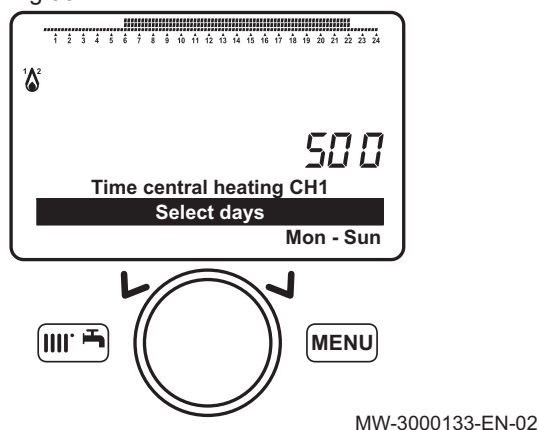
3. Select the **Time central heating CH1** menu by turning the button.

**Important**

- For heating circuits 2 and 3, select the parameters **Time central heating CH2** or **Time setting 3/CHP**.
- For the domestic hot water circuit, select the parameter **Time hot water**.

4. Confirm the menu selection by pressing the button.
 ⇒ The parameter **Select days** (500, 520, 540 or 560) appears.

Fig.98

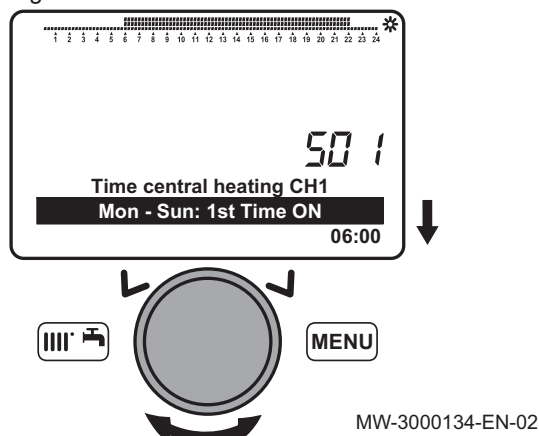


5. Confirm the menu selection by pressing the button.
 ⇒ The current selection flashes.

6. Select a weekly interval.

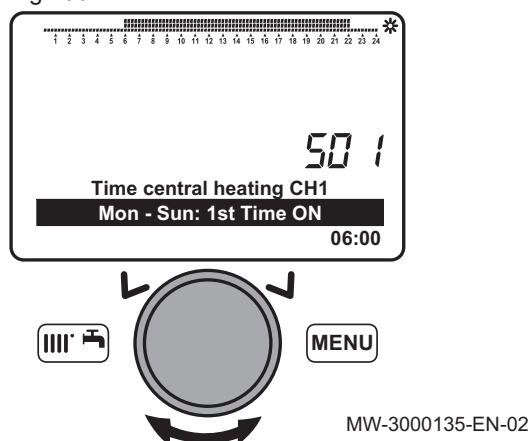
7. Confirm the menu selection by pressing the button.

Fig.99



8. Select the parameter **1st Time ON** (501, 521, 541 or 561) by turning the button.

Fig.100



9. Confirm the menu selection by pressing the button.
 ⇒ The beginning of the first time range flashes.

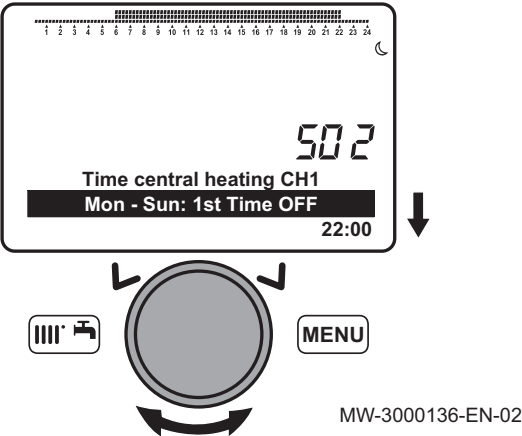
10. Select the end of the first time range by turning the button.

**Important**

- Select the value **--:--** in order not to program a first time range.

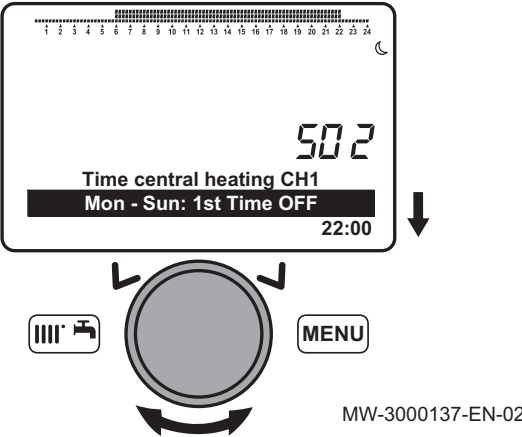
11. Confirm the value programmed by pressing the button.

Fig.101



12. Select the parameter **1st Time OFF** (502, 522, 542 or 562) by turning the button.

Fig.102



13. Confirm the menu selection by pressing the button.
⇒ The current selection flashes.
14. Select the beginning of the first time range by turning the button.
15. Confirm the value programmed by pressing the button.
16. Repeat the programming for the second and third time ranges.

Tab.74 Parameters of the time ranges

	First time range	Second time range	Third time range
Beginning of the time range	1st Time ON (501, 521, 541 or 561)	2nd Time ON (503, 523, 543 or 563)	3rd Time ON (505, 525, 545 or 565)
End of the time range	1st Time OFF (502, 522, 542 or 562)	2nd Time OFF (504, 524, 544 or 564)	3rd Time OFF (506, 526, 546 or 566)

Important
Press the key to return to the main screen.

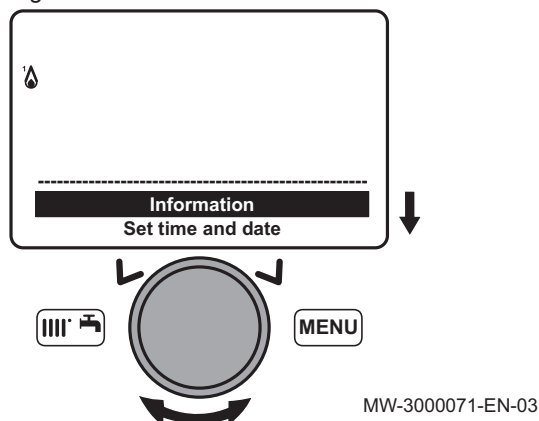
See also
Changing the operating mode, page 85
Selecting a heating circuit, page 88
Default time ranges, page 91
Copying a time range, page 94

■ **Copying a time range**

Important
It is possible to copy a time range from one day to another. It is not possible to copy a time range from a period of several days.

1. Select a heating circuit.
2. Press the key to access the parameters.

Fig.103



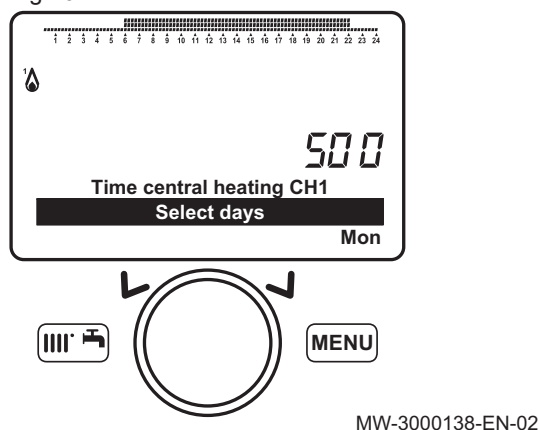
3. Select the **Time central heating CH1** menu by turning the button.

**Important**

- For heating circuits 2 and 3, select the parameters **Time central heating CH2** or **Time setting 3/CHP**.
- For the domestic hot water circuit, select the parameter **Time hot water**.

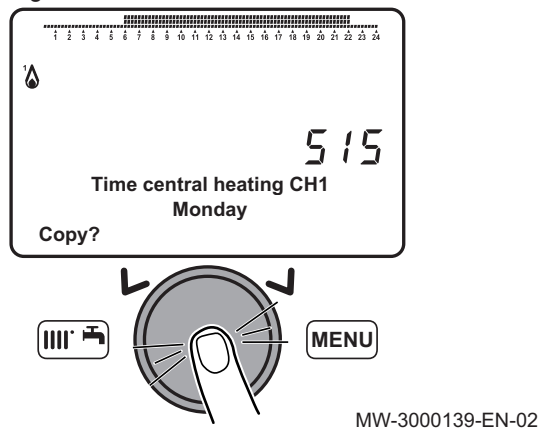
4. Confirm the menu selection by pressing the button.
⇒ The parameter **Select days** (500, 520, 540 or 560) appears.

Fig.104



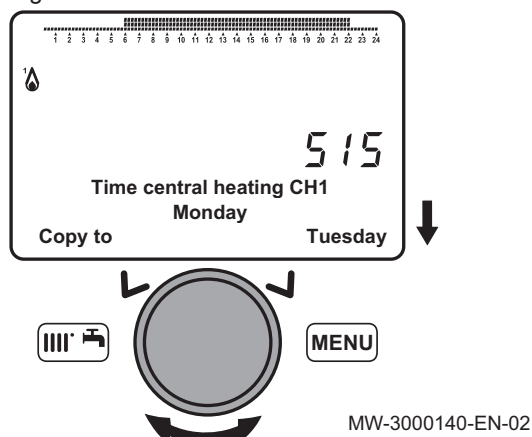
5. Confirm the menu selection by pressing the button.
⇒ The current selection flashes.
6. Select a day.
7. Confirm the menu selection by pressing the button.
8. Select a predefined or customised time range.

Fig.105



9. Select the parameter **Copy?** (515, 535, 555 or 575) by turning the button.
10. Confirm the menu selection by pressing the button.
⇒ The parameter **Copy to** appears.

Fig.106



11. Select a target day by turning the button.
12. Confirm the menu selection by pressing the button.

**Important**

- Repeat the copy to other days if necessary.
- Press the key to return to the main screen.

**See also**

- Changing the operating mode, page 85
- Selecting a heating circuit, page 88
- Selecting a Timer Program, page 91
- Customising the time ranges, page 92

Fig.107

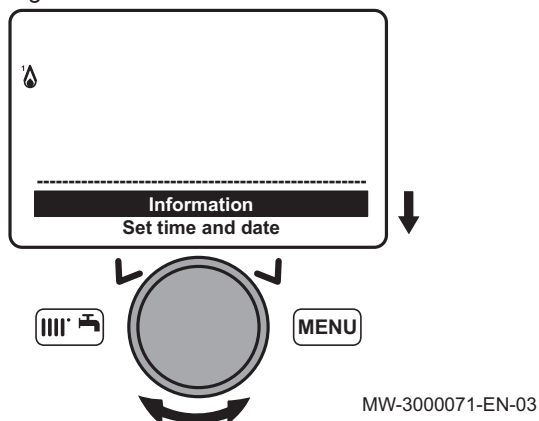


Fig.108

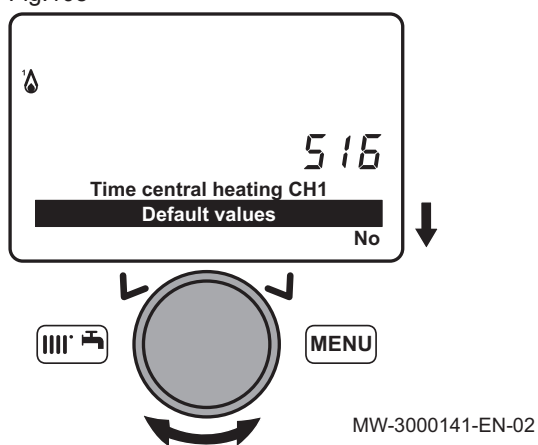
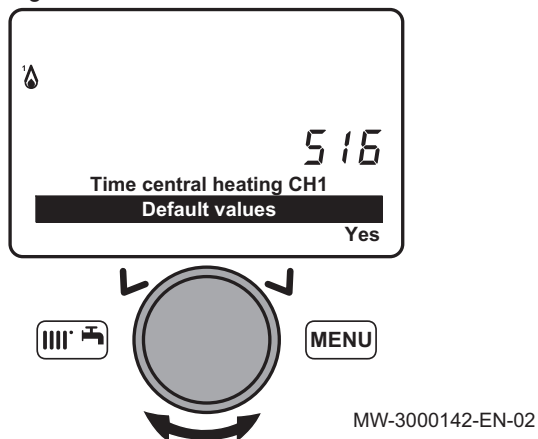


Fig.109



■ Resetting the timer programs to zero

1. Press the key to access the parameters.
2. Select the **Time central heating CH1** menu by turning the button.



Important

- For heating circuits 2 and 3, select the parameters **Time central heating CH2** or **Time setting 3/CHP**.
- For the domestic hot water circuit, select the parameter **Time hot water**.

3. Confirm the menu selection by pressing the button.
⇒ The parameter **Select days** (500, 520, 540 or 560) appears.

4. Select the parameter **Default values** (516, 536, 556 or 576) by turning the button.
5. Confirm the parameter selection by pressing the button.
⇒ The parameter **No** flashes.

6. Select the parameter **Yes** by turning the button.
7. Confirm the parameter selection by pressing the button.



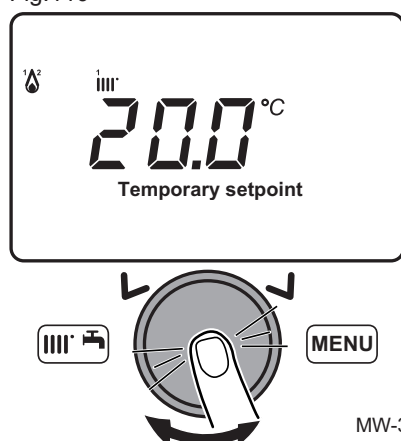
Important

Press the key to return to the main screen.



⇒ The reset to zero of the timer program is effective.

10.2.14 Setting a temporary heating flow temperature

Fig.110

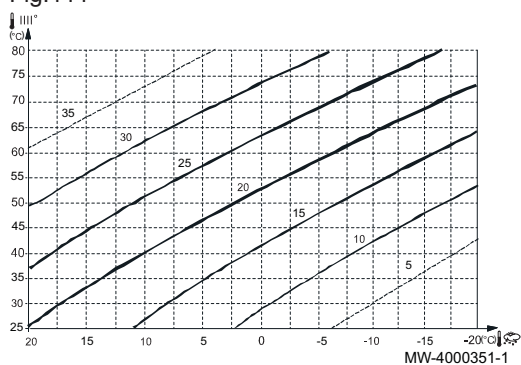


MW-3000143-EN-02

1. From the control panel main screen, turn the  button to increase or reduce the temperature value.
2. Confirm the menu selection by pressing the  button.

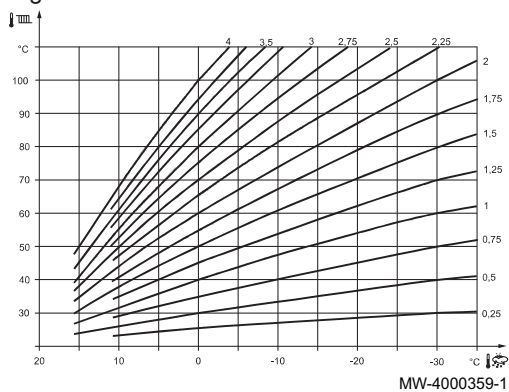
10.2.15 Heating curves

Fig.111



MW-4000351-1

Fig.112



MW-4000359-1

10.2.16 Managing boilers in cascade

Boilers in cascade are controlled and managed by the master boiler.

1. Set the following parameters on the master boiler:





Tab.75 Configuration of the master boiler in a cascade

Parameter number	Parameter	Description	Setting
3540	Auto source seq ch'over	Operating time before the automatic change of the master boiler sequence.	Number of hours
3541	Auto source seq exclusion	Exclusion of the boiler or boilers from the periodic sequence rotation.	<ul style="list-style-type: none"> • First • First and last • Last • None

**See also**

List of installer parameters, page 73

10.3 Accessing the information menu

1. Go to the parameters menu by pressing the  key.
2. Select the Information menu with the rotary button .
3. Confirm by pressing the rotary button .
4. Use the rotary button  to scroll through the various items of information.

**See also**

Information menu, page 70

11 Maintenance

11.1 General

We recommend having the boiler inspected and serviced at regular intervals.

**Caution**

Do not neglect to service the boiler. Contact a qualified professional or take out a maintenance contract for the obligatory annual servicing of the boiler.
Failure to service the appliance voids the warranty.

**Caution**

Adapt the frequency of inspection and maintenance to the conditions of use. This particularly concerns boilers used continuously (for specific processes).

**Danger of electric shock**

Before starting any maintenance work, switch off the boiler and protect it to ensure it cannot be accidentally switched back on.

**Caution**

Have an inspection carried out and the flues swept **at least once a year** or more, depending on the regulations in force in your country.

**Caution**

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

**Caution**

After maintenance or repair work, check the entire heating system to ensure that there are no leaks.

**Caution**

Only genuine spare parts may be used.

11.2 Standard inspection and maintenance operations

11.2.1 Performing the annual service

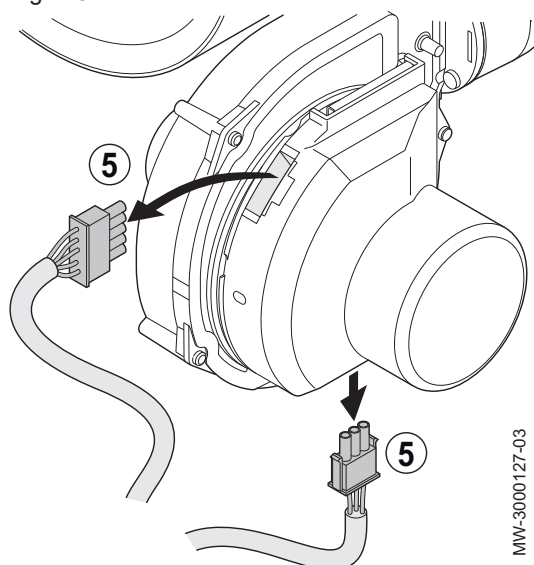
1. Check the outward appearance and tightness of the gaskets on the gas circuit and the combustion circuit.
2. Check for any impurities inside the combustion chamber. Use a vacuum cleaner for any cleaning work.
3. Check the condition of the insulation in the door and at the bottom of the combustion chamber and the condition of the gaskets on the combustion chamber door.
4. Check the condition and position of the ignition and flame detection electrodes, as well as the condition of the burner and its retaining device.
5. Check for any impurities inside the siphon.
6. Dry up as much as possible any water that may have stagnated in the bottom of the boiler as the result of a maintenance operation.
7. Check that there are no obstructions in the discharge and air intake pipes.
8. Check that the fan is working correctly.
9. Check the combustion and the correct calibration of the gas valve.
10. Check the pressure in the heating system.
11. Check the pressure in the expansion vessel.

**See also**

Cleaning the heat exchanger, page 101
 Checking the burner, page 101
 Cleaning the siphon, page 103
 Check the combustion, page 104

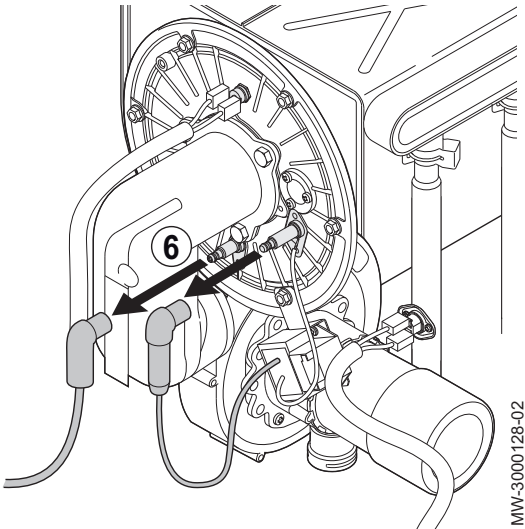
11.2.2 Removing the burner

Fig.113



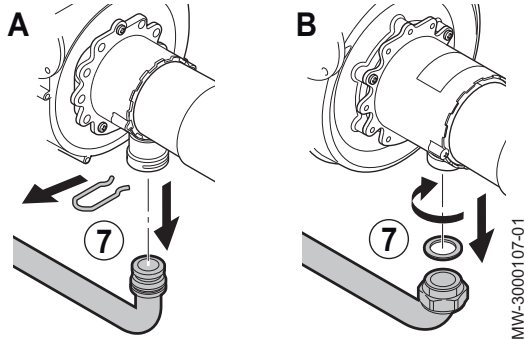
1. Switch off the mains supply to the boiler.
2. Close the gas inlet valve.
3. Close the valves on the heating circuits.
4. Access the internal boiler components.
5. Disconnect the power and command cables on the fan.

Fig.114



6. Disconnect the ignition electrode and the flame detection sensor.

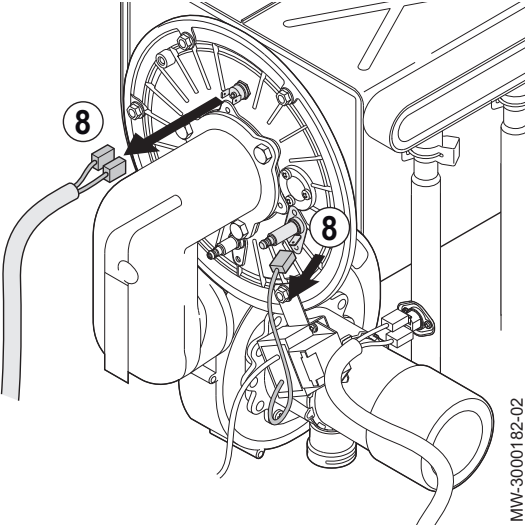
Fig.115



7. Remove the pipe connecting the gas valve to the Venturi unit.

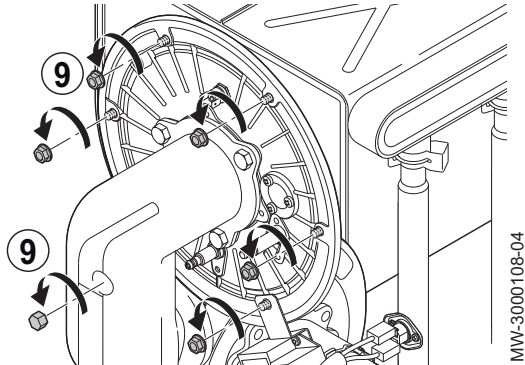
Version	Boiler model
A	SIRIUS THREE FS 50
B	SIRIUS THREE FS 70 SIRIUS THREE FS 90 SIRIUS THREE FS 110

Fig.116



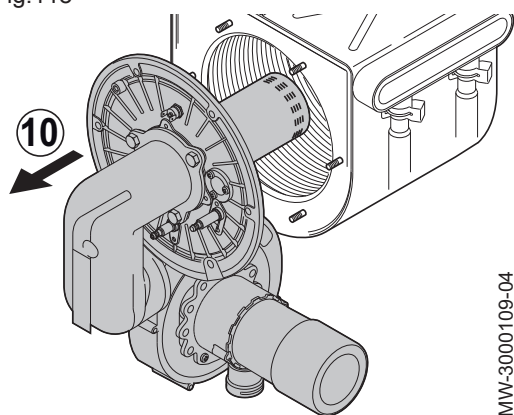
8. Disconnect the 2 wires from the safety thermostat on the combustion chamber door and the pin under the ignition electrode.

Fig.117



9. Remove the nuts holding the burner in place on the heat exchanger.

Fig.118



MW-3000109-04

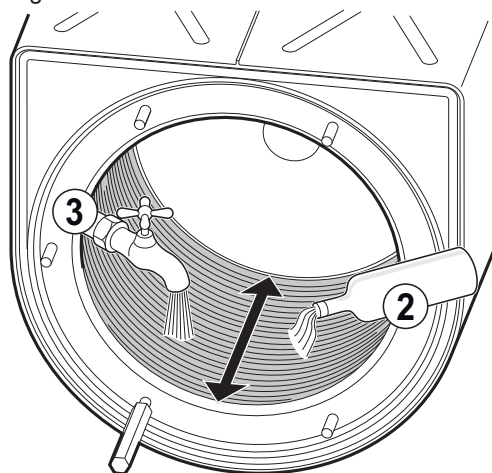
10. Remove the fan, the Venturi and the burner to access the inside of the heat exchanger.

**See also**

Accessing the internal boiler components, page 41

11.2.3 Cleaning the heat exchanger

Fig.119



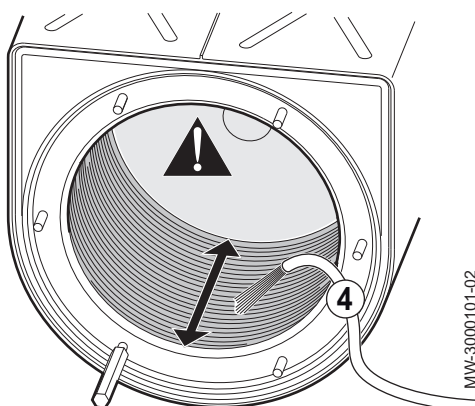
MW-3000100

1. Remove the burner.
2. Clean the pipes inside the heat exchanger using diluted white vinegar and a nylon brush.
3. Flush with water.

**Important**

The water will exit the heat exchanger by passing through the condensates discharge siphon.

Fig.120



MW-3000101-02

4. After twenty minutes, wash off any dirt with a powerful water jet.

**Caution**

Do not use a high-pressure cleaner.
Be careful not to direct the water jet straight at the insulating surface behind the heat exchanger. If the insulating surface is wet, it must be changed.

5. Check the burner.
6. Clean the siphon.
7. Remount the burner.

**See also**

Removing the burner, page 99
Checking the burner, page 101
Cleaning the siphon, page 103
Remounting the burner, page 103

11.2.4 Checking the burner

1. Remove the burner.
2. Check whether the surface of the burner is damaged in any way.
⇒ Replace the burner and its gasket if they are damaged.
3. Check the safety thermostats.

**Important**

Replace the safety thermostats if they are damaged.

Fig.121

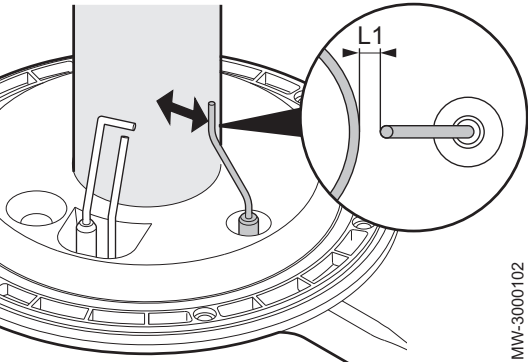


Fig.122

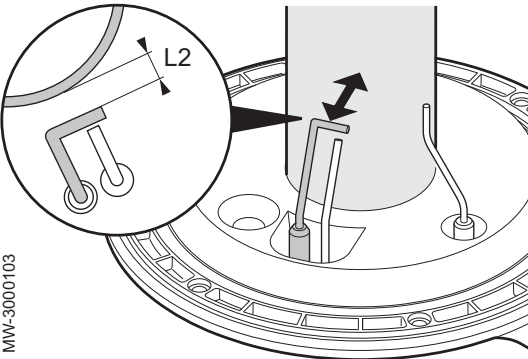
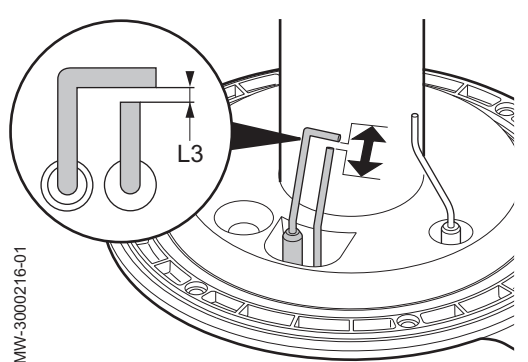


Fig.123



4. Clean the burner with a vacuum cleaner.

i Important
Do not use a brush as it may damage the burner.

5. Check the L1 distance between the flame detection electrode and the burner.

Tab.76 Flame detection electrode and burner

Boiler	L1 distance
SIRIUS THREE FS 50 SIRIUS THREE FS 70 SIRIUS THREE FS 90	7.5 mm / tolerance of +/- 1 mm
SIRIUS THREE FS 110	5 mm / tolerance of +/- 1 mm

i Important
Replace the flame detection electrode if it is damaged.

6. Check the L2 distance between the ignition electrode and the burner.

Tab.77 Ignition electrode and burner

Boiler	L2 distance
SIRIUS THREE FS 50 SIRIUS THREE FS 70 SIRIUS THREE FS 90	10 mm / tolerance of +/- 1 mm
SIRIUS THREE FS 110	7.5 mm / tolerance of +/- 1 mm

i Important
Replace the ignition electrode if it is damaged.

7. Check the L3 distance between the ignition electrode and the ground electrode.

Tab.78 Ignition electrode and ground electrode

Boiler	L3 distance
SIRIUS THREE FS 50 SIRIUS THREE FS 70 SIRIUS THREE FS 90 SIRIUS THREE FS 110	4 mm / tolerance of +/- 0.5 mm

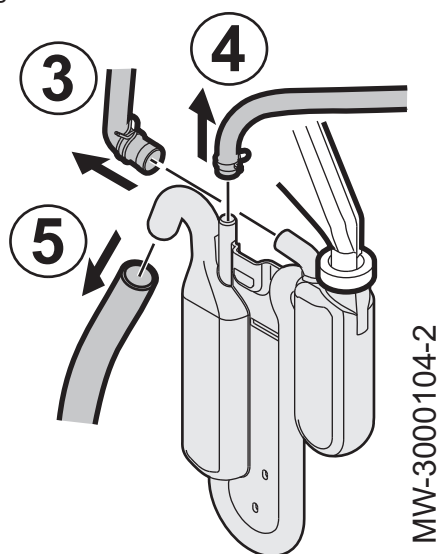
i Important
Replace the ignition electrode if it is damaged.

8. Check whether the insulation on the inside surface of the burner is damaged in any way. The surface must be clean and free of any damage. Replace the insulation if it is damaged.
9. Remount the burner.

See also
Removing the burner, page 99
Remounting the burner, page 103

11.2.5 Cleaning the siphon

Fig.124



1. Remove the burner.
2. Access the siphon.
3. Disconnect the pipe coming from the combustion chamber (SIRIUS THREE FS 50 and SIRIUS THREE FS 70 only).
4. Disconnect the pipe from the flue gas exchanger.
5. Disconnect the condensates discharge pipe.


Important

Use a pair of pliers to remove the spring tightening clamps.

6. Remove the siphon from the heating body by taking out the retaining screw with a cross-head screwdriver.
7. Clean the bottom of the siphon with water.
8. Completely fill the siphon.


Danger

Fill the siphon to the top. If the siphon is empty, there is a danger of poisoning by combustion products.

9. Put the siphon back on the heating body and put the retaining screw back in place with a cross-head screwdriver.
10. Reconnect the pipe from the combustion chamber, the pipe from the flue gas exchanger and, finally, the condensates discharge pipe.


Important

Use a pair of pliers to put the spring tightening clamps back in place.

11. Remount the burner.


See also

Removing the burner, page 99
 Accessing the internal boiler components, page 41
 Remounting the burner, page 103

11.2.6 Remounting the burner

1. Remount the pipe connecting the gas valve to the Venturi unit.
2. Remount the burner, the Venturi and the fan.


Important

Do not forget to remount the igniter on the burner.


Caution

Respect the torque on the burner fastening nuts: 5 N.m +/- 0.5.


Caution

Always use a new tightness gasket to reconnect the gas supply.

3. Reconnect the ignition electrode, the safety thermostat on the combustion chamber door and the flame detection sensor.
4. Open all valves.
5. Check the tightness of the burner using a leak detection spray.
6. Put the covers back in place on the boiler.


Important

For the SIRIUS THREE FS 50 and SIRIUS THREE FS 70 models, put the panel located in front of the burner back in place.

7. Reconnect the earth wire.
8. Re-commission the boiler.


See also

Commissioning procedure, page 57

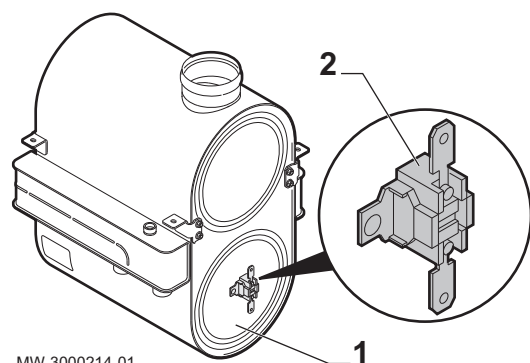
11.2.7 Thermal fuse in the heat exchanger

The thermal fuse is located in the rear part of the heat exchanger and is connected in series to the safety thermostat.

The function of the thermal fuse is to ensure the protection of the heat exchanger against the danger of overheating if the insulation malfunctions.

Intervention by the device is signalled by the on-screen display of the anomaly **110:Lockout SLT**.

Fig.125



MW-3000214-01

- 1 Rear of the heat exchanger
- 2 Thermal fuse


Important

When replacing the thermal fuse, also replace the insulating surface inside the heat exchanger. This insulating surface has been damaged by overheating.


See also

Removing the burner, page 99

11.2.8 Check the combustion

Measure the CO value in the flue gasses. If the CO level is above 250 ppm perform the following actions:

- Check if the flue exhaust is installed correctly.
- Check if the used gas type matches with the boiler settings.
- Check if the burner is not damaged and remove pollution from the burner.
- Recheck the correctness of the gas/air ratio.


Caution

If CO level is still above 250 ppm turn off the appliance and get in contact with your supplier.

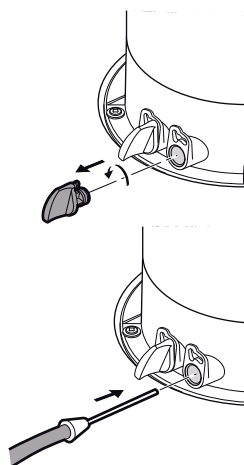

Important

The CO-concentration in the flue gasses shall always be in accordance with the rules of installation in the country in which the appliance is installed.


See also

Performing the annual service, page 99

Fig.126



MW-4000279-1

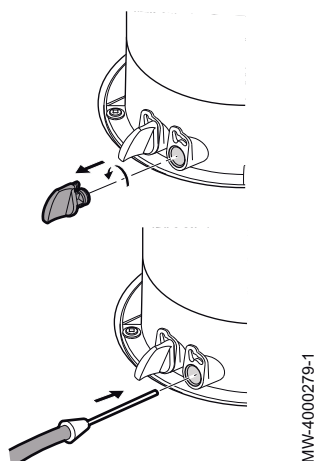
■ Checking combustion (maximum heat input)

1. Check the combustion with maximum heat input.
2. Coaxial pipes: if necessary, check the return into circulation of any combustion products. The sensor will then be connected to the outlet connected to the combustion air intake circuit.


See also

Using the fixed-speed boiler, page 88
 CO₂ checking and setting values, page 63
 Checking combustion (reduced heat input), page 105
 Setting the air/gas ratio (maximum heat input), page 59

Fig.127



■ Checking combustion (reduced heat input)

1. Check the combustion with reduced heat input.
2. Coaxial pipes: if necessary, check the return into circulation of any combustion products. The sensor will then be connected to the outlet connected to the combustion air intake circuit.



See also

- Using the fixed-speed boiler, page 88
- CO₂ checking and setting values, page 63
- Setting the air/gas ratio (maximum heat input), page 59
- Setting the air/gas ratio (reduced heat input), page 60

11.3 Replacing the 4 A fuses on the electrical terminal blocks



Danger of electric shock

Before any work, switch off the mains supply to the boiler.

Fig.128

1. Pivot the fuse-holder socket **N** towards you.

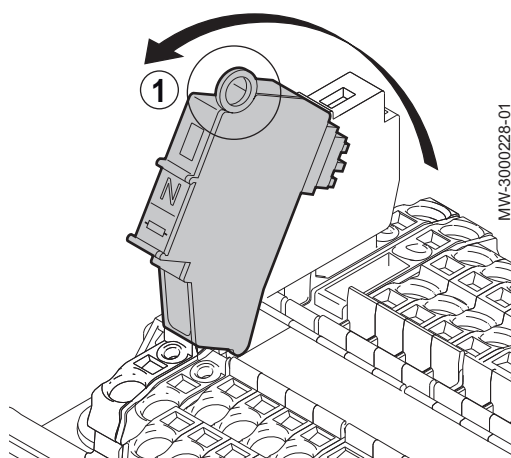
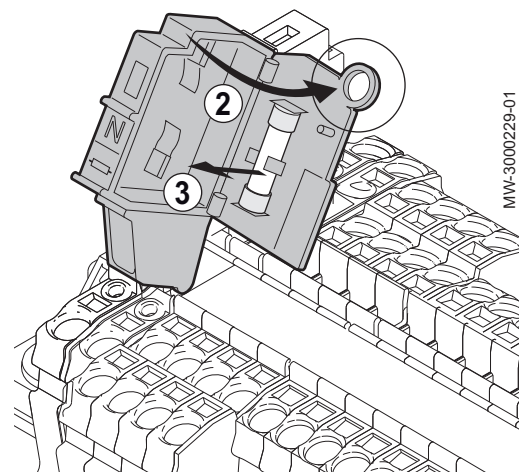


Fig.129

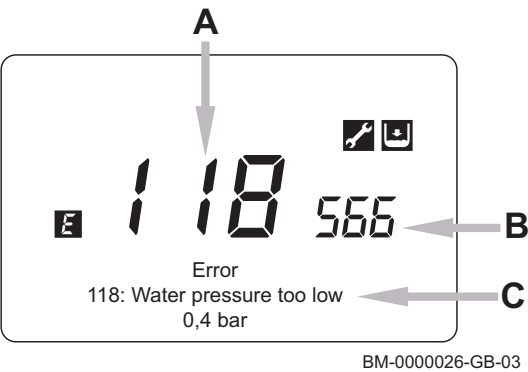


2. Open the fuse-holder socket with the eyelet.
3. Take out the damaged fuse and replace it with an identical one (4 A).
4. Check the fuse L, proceeding in the same way.

12 Troubleshooting

12.1 Error codes

Fig.130



- A Error code
- B Secondary error code
- C Description of the error



Important



Press the **(MENU)** key to return to the main display.

- The **E** symbol continues to be displayed on the control panel.
- If the error is not resolved after one minute, the error code is displayed on the control panel a second time.

**Important**

If the display of the error code persists, contact the accredited assistance service.

**Important**

If the error code simultaneously displays the  and  symbols, contact the accredited technical support service.

12.1.1 List of error codes

Tab.79 List of error codes

E	Display	Description of the error	Probable causes	Check/Solution
10	10:Outside sensor	Outdoor temperature sensor.	The outdoor temperature sensor is not correctly connected to the boiler	Check that the outdoor temperature sensor has been correctly connected to the boiler sensor terminal block
			The outdoor temperature sensor is not compatible with the LMS 14 control system	Contact your manufacturer to check the compatibility of the outdoor temperature sensor with the boiler
			The outdoor temperature sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table (1 K sensor)
20	20:Boiler sensor 1	NTC flow back sensor.	The flow sensor is not correctly connected	Check that the flow sensor has been correctly connected to the boiler PCB
			The flow sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the water temperature using the "Resistance/Temperature" correspondence table (10 K sensor)
28	28:Flue gas temp sensor	NTC flue gas sensor.	The flue gas sensor is not correctly connected	Check that the flue gas sensor has been correctly connected to the boiler PCB
			The flue gas sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table (20 K sensor)
40	40:Return sensor 1	NTC return sensor	The return sensor is not correctly connected	Check that the return sensor has been correctly connected to the boiler PCB
			The return sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the water temperature using the "Resistance/Temperature" correspondence table (10 K sensor)

E	Display	Description of the error	Probable causes	Check/Solution
46	46:Return sensor cascade	Cascade return temperature sensor error	The return sensor is not correctly connected	Check that the return sensor has been correctly connected to the boiler PCB
			The return sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the water temperature using the "Resistance/Temperature" correspondence table (10 K sensor)
50	50:HW sensor 1	DHW sensor	The sensor is not correctly connected to the boiler sensor terminal block	Check that the sensor has been correctly connected to the boiler sensor terminal block
			The DHW temperature sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table (10 K sensor)
52	52:HW sensor 2	Solar DHW sensor (if incorporating a solar installation)	The sensor is not correctly connected to the boiler sensor terminal block	Check that the sensor has been correctly connected to the boiler sensor terminal block.
			The return temperature sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table (PT 1000 sensor)
60	60:Room sensor 1	Room temperature sensor 1 error	The sensor is not correctly connected to the boiler sensor terminal block	Check that the room sensor has been correctly connected to the boiler sensor terminal block
65	65:Room sensor 2	Room temperature sensor 2 error	The sensor is not correctly connected to the boiler sensor terminal block	Check that the room sensor has been correctly connected to the boiler sensor terminal block
68	68:Room sensor 3	Room temperature sensor 3 error	The sensor is not correctly connected to the boiler sensor terminal block	Check that the room sensor has been correctly connected to the boiler sensor terminal block
78	78:Water pressure sensor	Hydraulic pressure sensor error	The hydraulic pressure sensor is not connected to the PCB	Check that the connectors between the sensor and the PCB are correctly connected
			The hydraulic pressure sensor does not work	Replace the hydraulic pressure sensor. Please note that this action requires the boiler to be drained
73	73:Collector sensor 1	Solar collector sensor (if incorporating a solar installation)	The sensor is not correctly connected to the boiler sensor terminal block	Check that the sensor has been correctly connected to the boiler sensor terminal block
			The solar collector sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table (PT 1000 sensor)
83	83:BSB short-circuit	Communication problem between the boiler PCB and the control unit	The wire connecting the control unit to the boiler is not connected properly	Check that the wire connecting the control unit to the boiler has been correctly connected to the boiler sensor terminal block
84	84:BSB address collision	Address conflict between several control units	The remote controls have not been configured correctly	Check that the control unit is not configured on the same circuit as another unit
91	91:Data loss in EEPROM	Loss of data in EEPROM	Faulty PCB	Change the PCB

E	Display	Description of the error	Probable causes	Check/Solution
98	98:Extension module 1	Extension module 1 error	Extension module 1 is not correctly connected to the PCB	Check that the extension module 1 is correctly connected to the PCB
			Extension module 1 is not receiving a 230 V power supply	Check that the extension module 1 is correctly receiving a 230 V power supply via the power supply terminal block of auxiliary circuit 1
			Module 1 is not configured correctly	Check that the extension module 1 has been correctly configured in the "configuration" menu
99	99:Extension module 2	Extension module 2 error	Extension module 2 is not correctly connected to the PCB	Check that the extension module 2 is correctly connected to the PCB
			Extension module 2 is not receiving a 230 V power supply	Check that the extension module 2 is correctly receiving a 230 V power supply via the power supply terminal block of auxiliary circuit 1
			Module 2 is not configured correctly	Check that the extension module 2 has been correctly configured in the "configuration" menu
100	100:2 clock time masters	2 master clocks	Configuration error	Check that a single master is declared in the cascade. (Parameter 6630 cascade configuration section)
102	102:Clock without backup	Master clock with no power reserve	Configuration error	Check the configuration of parameter 6640 Clock operation in the cascade menu
103	103:Communication failure	Communication error.	Communication error on the cascade	Check the connections
				Check the cascade configuration
109	109:Boiler temp supervision	Boiler temperature monitoring.	The boiler has overheated, probably due to air in the hydraulic circuit	Manually vent the hydraulic circuit
			The boiler's flow/return sensors have been reversed	Check that the flow and return sensor connections inside the boiler have not been reversed
110 & 111	110:Lockout SLT	Safety thermostat cut-off for overheating	The water flow is insufficient	Check that the hydraulic circuit circulating pump is correctly operating.
			There is air in the hydraulic circuit	Manually vent the hydraulic circuit
			The safety thermostat is not connected correctly	Check that the safety thermostat is correctly connected to the boiler PCB
117	117:Water pressure too high	Pressure in hydraulic circuit too high.	The hydraulic pressure in the heating circuit is too high	Check the setting of the hydraulic circulating pump. If this is in manual mode, reduce the setpoint. Otherwise, depressurise using an air vent
118	118:Water pressure too low	Pressure in hydraulic circuit too low.	The hydraulic pressure in the heating circuit is too low	Open the water inlet valve to increase the pressure in the hydraulic circuit. Check that the circulating pump is operating
125	125:Boiler temp too high	Maximum boiler temperature exceeded	The water flow is insufficient	Check the operating status of the circulating pump
128	128:Loss of flame in op	Flame extinguished.	The flame has gone out	Check that the gas inlet valve is open and that the gas pressure is not too low. Also check that the combustion product discharge and air supply pipes are not blocked
130	130:Flue gas temp too high	Cut-off by NTC flue gas sensor for overheating.	The flue gases are too hot. This may be caused by the heating body being overly clogged	Clean the heating body

E	Display	Description of the error	Probable causes	Check/Solution
133	133:Safety time exceeded	Ignition error (4 attempts).	The boiler has not been supplied with gas	Check that the gas pipe valves are open
			The gas circuit has not been vented	Vent the gas pipe using the control valve located on the boiler
			The power supply has been reversed	Reverse the live-neutral polarity on the boiler power supply terminal block
151	151:BMU internal	Internal error on heating PCB.	The PCB is faulty	Change the PCB
152	152:Parameterization	General parameter setting error.	The PCB is faulty	Change the PCB
153	153:Unit locked	Appliance locked manually.	The main PCB is faulty	Check that the rotary button on the display is not locked in the pressed down position
				Change the main PCB
160	160:Fan speed threshold	Fan operation error.	The fan is not correctly connected to the boiler	Check that fan's control and supply outlets are correctly connected to the fan
			The fan is not responding correctly (wear due to prolonged use)	Switch off the boiler and let it rest for several minutes to allow the fan to cool down
			The fan does not work	Replace the fan
162	162:Air pressure switch	Air pressure switch	The flue gas differential pressure switch has been triggered several times over the last 24 hours	Use a pressure gauge to check that the pressure difference between the air supply and the combustion products does not exceed 600 Pa at the connections on the concentric nozzle. If this is the case, the pipes for the air supply and combustion products may be blocked or may be longer than recommended in this manual.
			The flue gas pressure switch is not correctly connected to the PCB	Check that the connectors on the PCB (X7) and on the flue gas pressure switch are correctly connected.
178	178:Limit thermostat CH1	Safety thermostat CC1, fault on heating circuit 1.	The water flow is insufficient	Check that the hydraulic circuit circulating pump is correctly operating.
			There is air in the hydraulic circuit	Manually vent the hydraulic circuit
			The safety thermostat is not connected correctly	Check that the safety thermostat is correctly connected to the boiler PCB
179	179:Limit thermostat CH2	Safety thermostat CC2, fault on heating circuit 2.	The water flow is insufficient	Check that the hydraulic circuit circulating pump is correctly operating.
			There is air in the hydraulic circuit	Manually vent the hydraulic circuit
			The safety thermostat is not connected correctly	Check that the safety thermostat is correctly connected to the boiler PCB
321	321:HW outlet sensor	Domestic hot water sensor damaged.	The sensor is not correctly connected to the boiler sensor terminal block	Check that the sensor has been correctly connected to the boiler sensor terminal block
			The DHW temperature sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table

E	Display	Description of the error	Probable causes	Check/Solution
343	343:Solar integration missing	General parameter setting error on the solar system (if incorporating a solar system).	The solar installation has not been correctly configured on the boiler	Check the configuration of the solar system on the boiler
353	353:Casc sens B10 missing	B10 cascade sensor missing.	The sensor is not correctly connected to the boiler sensor terminal block	Check that the sensor has been correctly connected to the boiler sensor terminal block
			The DHW temperature sensor does not work	Use a suitable multimeter to check the resistance (Ω) of the sensor according to the room temperature using the "Resistance/Temperature" correspondence table
372	372:Limit thermostat CH3	Safety thermostat CC3, fault on heating circuit 2	The water flow is insufficient	Check that the hydraulic circuit circulating pump is correctly operating.
			There is air in the hydraulic circuit	Manually vent the hydraulic circuit
			The safety thermostat is not connected correctly	Check that the safety thermostat is correctly connected to the boiler PCB
373	373:Extension module 3	Extension module 3.	Extension module 3 is not correctly connected to the PCB	Check that the extension module 3 is correctly connected to the PCB
			Extension module 3 is not receiving a 230 V power supply	Check that the extension module 3 is correctly receiving a 230 V power supply via the power supply terminal block of auxiliary circuit 1
			Module 3 is not configured correctly	Check that the extension module 3 has been correctly configured in the "configuration" menu
385	385:Mains undervoltage	Power supply voltage too low.	The power supply voltage is too low	Use a voltmeter to check the power supply voltage.
				Check the earthing of the installation
386	386:Fan speed tolerance	Fan threshold speed not reached.	The fan is not responding correctly (wear due to prolonged use)	Switch off the boiler and let it rest for several minutes to allow the fan to cool down.
430	430:Dyn water pres too low	Safety cut-off for absence of circulation (check made by a pressure sensor).	The hydraulic circuit pressure is too low	Open the water inlet valve to increase the pressure in the hydraulic circuit.
				Check that the circulating pump is operating
432	432:Function ground missing	Earthing function not connected.	The boiler is not earthed properly	Check that the earth connection is correct on the power supply terminal block
E110	110:Lockout SLT	Code E110 displayed	Overheating due to a breach in the insulation	Remove the heat exchanger.
				Replace the insulation behind the burner bracket.
				Replace the safety thermofuse behind the heat exchanger.

**Important**

This list is not exhaustive. Other error codes may be displayed. Contact the accredited technical support service.

■ 110:Lockout SLT error

The code 110:Lockout SLT is displayed when overheating occurs due to a breach in the insulation:

- Remove the heat exchanger.

- Replace the insulation behind the burner bracket.
- Replace the safety thermofuse behind the heat exchanger.

■ Error 162: Air pressure switch

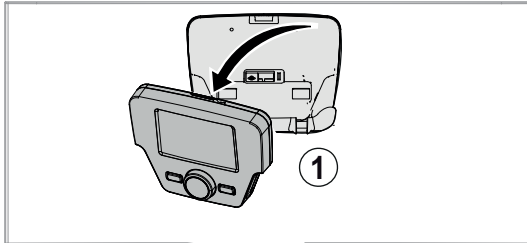
The error 162: Air pressure switch signifies that the flue gas differential pressure switch has been triggered several times over the last 24 hours.

Check that the air inlet and combustion products discharge pipes are not blocked. Unblock these if necessary.

After this procedure, proceed as follows to restart the boiler:

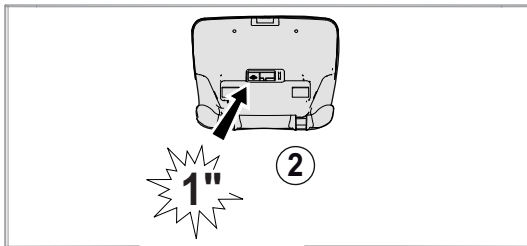
1. Unclip the HMI by hand then remove it from its support: pull firmly on the slots at the bottom of the HMI.

Fig.131



MW-4000273-2

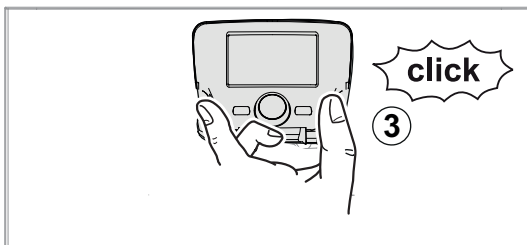
Fig.132



MW-4000274-2

2. Press the red button RESET on the boiler for 1 second using a pointed object.


Fig.133



MW-4000275-2

3. Clip the HMI back onto its support.



12.2 Automatic error code clearing

If the symbol  is displayed at the same time as the error code, the error code is automatically cleared when the cause that prompted it stops.

A flow or return temperature in excess of the critical value prompts an error code. The error code is automatically cleared when the temperature drops below the critical value.

12.3 Clearing error codes

If the probable cause of an error code is resolved but the error code continues to be displayed, proceed as follows to clear the error code:

1. Press the  button.
⇒ The command **Reset? Yes** is displayed on the control panel.
2. Confirm by pressing the  button.
⇒ The error code disappears after a few seconds.

13 Decommissioning

13.1 Decommissioning procedure


Caution

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

To switch off the boiler temporarily or permanently, proceed as follows:

1. Switch the boiler off.
2. Cut the electrical power to the boiler.
3. Close the gas valve on the boiler.
4. Drain the central heating system or ensure frost protection.
5. Close the door of the boiler to prevent air circulating inside it.
6. Remove the pipe connecting the boiler to the chimney and close the nozzle with a plug.

13.2 Recommissioning procedure


Caution

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

Should it prove necessary to carry out the recommissioning of the boiler, proceed as follows:

1. Re-establish electrical power to the boiler.
2. Remove the siphon.
3. Fill the siphon with water.
⇒ The siphon must be completely full.
4. Put the siphon back in place.
5. Fill the central heating system.
6. Open the boiler gas valve.
7. Start up the boiler.


See also

Check-list before commissioning, page 56

14 Disposal/recycling

14.1 Disposal and recycling


Caution

Only qualified professionals are permitted to remove and dispose of the boiler, in accordance with local and national regulations.

Fig.134



If you need to remove the boiler, proceed as follows:

1. Switch off the boiler.
2. Cut the power supply to the boiler.
3. Close the main gas valve.
4. Close the water mains.
5. Close the gas valve on the boiler.
6. Drain the installation.
7. Remove the air/flue gas pipes.
8. Disconnect all pipes.
9. Dismantle the boiler.

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