



Installation and Service Manual

Oil-fired boiler

ESSENCIO

CFU 22

CFU 29

Contents

1	Safety	5
1.1	General safety instructions	5
1.2	Specific safety instructions	6
1.3	Recommendations	8
1.4	Liabilities	8
2	Symbols used	9
2.1	Symbols used in the manual	9
2.2	Symbols used on the appliance	9
3	Technical specifications	10
3.1	Homologations	10
3.1.1	Certifications	10
3.1.2	Oil categories	10
3.1.3	Declaration of conformity	10
3.1.4	Directives	10
3.2	Technical data	11
3.2.1	Outside temperature sensor specifications	13
3.2.2	Specifications for NTC 10 kilo ohm type sensors	13
3.3	Dimensions and connections	13
3.4	Electrical diagram	14
3.4.1	Electrical diagram of boiler	14
3.4.2	Burner electrical diagram	15
4	Description of the product	16
4.1	Main components	16
4.1.1	Boiler	16
4.1.2	Description of the optional SCB-04 PCB	16
4.1.3	Description of the Bluetooth SMART ANTENNA PCB	16
4.1.4	Burner	17
4.2	Operating principle	18
4.2.1	Control box operating cycle	18
4.3	Control panel description	19
4.3.1	Control panel description	19
4.3.2	Description of the standby screen	19
4.3.3	Description of the home screen (direct access)	19
4.3.4	Description of the carousel (quick access)	20
4.4	Standard delivery	21
4.5	Accessories and options	22
5	Connecting diagrams	23
5.1	One direct heating circuit with kit	23
5.2	One direct heating circuit with mixing valve + one domestic hot water tank	25
5.3	Two heating circuits including one with a mixing valve + one domestic hot water tank	27
6	Installation	29
6.1	Installation regulations	29
6.2	Choice of the location	29
6.2.1	Data plate	30
6.2.2	Dimensions of the boiler	30
6.2.3	Ventilation	30
6.2.4	Fitting the outdoor sensor	31
6.3	Transport	32
6.4	Unpacking and preparing the boiler	32
6.5	Assembly	34
6.6	Hydraulic connections	34
6.6.1	Connecting the heating circuit	34
6.6.2	Connecting the domestic hot water circuit	35
6.6.3	Connecting the expansion vessel	35
6.7	Oil connection	35
6.7.1	General	35
6.7.2	Oil supply	35
6.7.3	Connecting the oil supply line	35
6.8	Air supply/flue gas outlet connections	36

6.8.1	General	36
6.8.2	Determining the flue gas pipe	36
6.8.3	Type B connections	37
6.9	Electrical connections	38
6.9.1	Recommendations	38
6.9.2	Electrical power supply	39
6.9.3	Accessing the PCB	40
6.10	Filling the system	41
6.10.1	Water treatment	41
6.10.2	Flushing new installations and installations less than 6 months old	42
6.10.3	Flushing an existing installation	42
6.10.4	Filling the heating system	42
6.11	Completing the installation	42
7	Commissioning	44
7.1	General	44
7.2	Check list before commissioning	44
7.3	Commissioning procedure	44
7.3.1	Initial commissioning	44
7.3.2	Configuring the installation via the control panel	45
7.4	Oil settings	45
7.4.1	Factory setting values	45
7.4.2	Setting the burner	45
7.4.3	Setting the burner combustion	46
7.4.4	Use the ignition electrode checking tool	47
7.5	List of settings after commissioning	50
7.6	Final instructions for commissioning	51
8	Operation	52
8.1	Browsing in the menus	52
8.1.1	Zone direct access tree structure	52
8.1.2	Main menu quick access tree structure	53
8.2	Starting up the boiler	54
8.3	Shutting down the boiler	55
8.4	Frost protection	55
9	Settings	56
9.1	Definition of the term "zone"	56
9.2	Definition of the term "Activity"	56
9.3	Accessing the Installer level	57
9.4	List of parameters	57
9.4.1	List of Installer menu sub-menus	57
9.4.2	Sub-menu in the Counters menu	65
9.4.3	Version information	66
9.5	Setting the parameters	67
9.5.1	Setting the heating curve	67
9.5.2	Drying screed	67
9.5.3	Resetting or restoring settings	68
9.5.4	Using the parameter search	69
9.6	Reading out measured values	70
10	Maintenance	72
10.1	General instructions	72
10.2	Configuring the maintenance message	72
10.3	Standard inspection and maintenance operations	73
10.3.1	Chimney sweep instructions	73
10.3.2	Chimney mode	73
10.3.3	Check the hydraulic pressure	73
10.3.4	Check the leak-tightness of the flue gas discharge and the air inlet	74
10.3.5	Checking the boiler's automatic air vent	74
10.3.6	Cleaning the heating body	74
10.3.7	Burner Maintenance	75
10.3.8	Cleaning the casing	78
10.4	Specific maintenance operations	78
10.4.1	Checking the position of the ignition electrodes and the combustion head	78
10.4.2	Replacing the ignition electrodes	79

10.4.3	Replacing the burner turbine	79
10.4.4	Replacing the battery in the control panel	79
10.5	Venting the heating system	80
10.6	Draining the heating system	81
11	Troubleshooting	82
11.1	Resolving operating errors	82
11.2	Error codes	82
11.3	Error codes	85
11.4	Alarm codes	86
11.5	Displaying and clearing the error memory	87
11.6	Fault finding	87
11.6.1	Resetting the safety thermostat	87
11.6.2	List of burner faults	88
11.6.3	Resetting the burner safety unit	90
12	Decommissioning	92
12.1	Decommissioning procedure	92
12.2	Recommissioning procedure	92
12.3	Disposal and recycling	92
13	Spare parts	93
13.1	General	93
13.2	Boiler body	93
13.3	Insulation	94
13.4	Casing	95
13.5	PCB box	96
13.6	Burner	97

1 Safety

1.1 General safety instructions

Tab.1

Operation	 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. Cleaning and user maintenance shall not be made by children without supervision.
-----------	--

1.2 Specific safety instructions

Tab.2

Electrical	 Danger of electric shock Before any work, switch off the mains supply to the boiler.				
	 Caution A disconnection method must be allowed in the fixed pipes in accordance with the rules on installation in force in the country.				
	 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.				
Tab.3					
<table border="1"> <tr> <td>France</td><td>Only qualified professionals are permitted access to the inside of the appliance, in accordance with the NFC 15-100 electrical safety standard.</td></tr> <tr> <td>Other countries</td><td>Only qualified professionals are permitted access to the inside of the appliance, in accordance with the prevailing electrical safety standard.</td></tr> </table>		France	Only qualified professionals are permitted access to the inside of the appliance, in accordance with the NFC 15-100 electrical safety standard.	Other countries	Only qualified professionals are permitted access to the inside of the appliance, in accordance with the prevailing electrical safety standard.
France	Only qualified professionals are permitted access to the inside of the appliance, in accordance with the NFC 15-100 electrical safety standard.				
Other countries	Only qualified professionals are permitted access to the inside of the appliance, in accordance with the prevailing electrical safety standard.				
 Caution Power the appliance via a circuit that includes an omnipolar switch with contact opening distance of 3 mm or more.					
Accessibility	 Important Keep the boiler accessible at all times.				
	 Caution Install the boiler in a frost-free environment.				
	 Important Allow the space required to correctly install the boiler. Refer to the Overall space needed for the boiler section in the installation and service manual.				
	 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.				
Hydraulics	 Important Respect the minimum and maximum water inlet pressure to ensure correct operation of the boiler: refer to the chapter Technical Specifications.				
	 Warning Regularly check the presence of water and pressure in the heating system.				

Installation	 Caution The installation must comply in all matters with the standards and rules (DTU, EN and others) which govern works and interventions in individual homes, blocks of flats and other constructions.  Important Only qualified professionals are permitted to install the boiler, in accordance with prevailing local and national regulations.  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.
Temperature	 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.  Important Insulate the pipes in the system to reduce heat losses.
Flue gas smell	 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.
Maintenance	 Caution Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.  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. France: The annual service is obligatory pursuant to Decree No. 2009-649 of 9 June 2009.  Caution Remove the boiler casing only to perform maintenance and repair work. Always put the casing back in place after such work.  Caution Before any work, switch off the boiler's power supply and main oil supply.

1.3 Recommendations


Important

Keep this document close to the place where the appliance is installed.


Important

This manual can also be found on our internet site.

Tab.4

Casing components	Remove the casing only to perform maintenance and repair work. Put the casing back in place after maintenance and repair work.
Warning stickers	The instructions and warnings affixed to the appliance must never be removed or covered and must remain legible during the entire lifespan of the appliance. Immediately replace damaged or illegible instructions and warning stickers.

1.4 Liabilities

Tab.5

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 the appliance. • Failure to abide by the instructions on using the appliance. • Faulty or insufficient maintenance of the appliance.
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 appliance. • Install the appliance 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 Symbols used

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 Symbols used on the appliance

Fig.1

1



2



3



4



5



6



3 Technical specifications

3.1 Homologations

3.1.1 Certifications

Tab.6 Certifications

CE identification number	0085CQ0004
Chimney connection	Connection type: • B ₂₃

3.1.2 Oil categories

Tab.7

Type of oil that can be used	Maximum viscosity
Non-road or off-road diesel (NRD) Non-road diesel with a maximum EMAG content of 7 % ⁽¹⁾ i Important To be used exclusively for a boiler fitted with a burner with a preheater.	6 mm ² /s at 20 °C
Domestic fuel oil	6 mm ² /s at 20 °C
B10 domestic fuel oil Mixture of domestic fuel oil with a low sulphur content (< 50 mg/kg) with the addition of ≥ 5.9 to ≤ 10.9 % (by volume) of EMAG ⁽¹⁾	6 mm ² /s at 20 °C
B5 domestic fuel oil Mixture of domestic fuel oil with a low sulphur content (< 50 mg/kg) with the addition of ≥ 3 to ≤ 5.9 % (by volume) of EMAG ⁽¹⁾	6 mm ² /s at 20 °C
Domestic fuel oil with a low sulphur content (< 50 mg/kg) (EL).	6 mm ² /s at 20 °C
Domestic fuel oil with a low sulphur content with up to 10 % (< 50 mg/kg) of bio fuel oil added (EL Bio 10).	6 mm ² /s at 20 °C
(1) Fatty Acid Methyl Ester (FAME)	

3.1.3 Declaration of conformity

The unit complies with the standard type described in the EC declaration of conformity. It has been manufactured and commissioned in accordance with European directives.

The original declaration of conformity is available from the manufacturer.

3.1.4 Directives

This product complies with the requirements of the following European Directives and Standards:

- Pressure Equipment Directive 2014/68/EU, Article 4, paragraph 3
- Efficiency Directive 92/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
Applied standards: EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3
- Low Voltage Directive 2014/35/EU
Relevant standards: EN 60335-1+A11+A13, EN 60335-2-102+A1+A2
- Eco design directive 2009/125/EC
- Energy labelling directive 2017/1369/EC

In addition to the legal requirements and guidelines, the supplementary guidelines in this manual must also be followed.

Supplements or subsequent regulations and guidelines that are valid at the time of installation shall apply to all regulations and guidelines specified in this manual.

3.2 Technical data

Tab.8 Technical parameters for boiler space heaters

Product name			CFU 22	CFU 29
Condensing boiler			No	No
Low-temperature boiler ⁽¹⁾			Yes	Yes
B1 boiler			No	No
Cogeneration space heater			No	No
Combination heater			No	No
Rated heat output	P_{rated}	kW	22	30
Useful heat output at rated heat output and high temperature regime ⁽²⁾	P_4	kW	22.4	29.8
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	P_1	kW	7.0	9.3
Seasonal space heating energy efficiency	η_s	%	86	86
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	87.5	87.3
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	91.2	90.6
Auxiliary electricity consumption				
Full load	e_{lmax}	kW	0.152	0.162
Part load	e_{lmin}	kW	0.043	0.046
Stand-by	P_{SB}	kW	0.004	0.004
Other specifications				
Standby heat loss	P_{stby}	kW	0.083	0.095
Ignition burner power consumption	P_{ign}	kW	--	--
Annual energy consumption	Q_{HE}	GJ	74	100
Sound power level, indoors	L_{WA}	dB	61	61
Emissions of nitrogen oxides	NO_x	mg/kWh	116	116
(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.

Tab.9 General

	Unit	CFU 22	CFU 29
Useful output P_n - at 80/60°C Heating mode	kW	22.4	29.8
Nominal input Q_n - H_i Heating mode	kW	24	32
Efficiency H_i - 100% P_n - Average temperature 70°C Heating mode under full load	%	93.3	93.1
Efficiency H_i - 30% P_n - Average temperature 40 °C Heating mode under part load	%	97.3	96.6
Nominal water flow rate at P_n and $\Delta T = 20K$	m ³ /h	0.964	1.282
Standby losses P_{stby} at $\Delta T = 30K$	W	83	95
Loss through the outer casing at $\Delta t = 30K$	%	88	88

Tab.10 Hydraulic specifications

	Unit	CFU 22	CFU 29
Water content (excluding expansion vessel)	litre	24.5	30
Minimum operating pressure	MPa (bar)	0.05 (0.5)	0.05 (0.5)
Maximum operating pressure	MPa (bar)	0.3 (3)	0.3 (3)
Maximum water temperature	°C	90	90
Pressure loss of hydraulic circuit at $\Delta t = 10K$	mbar	19	34
Pressure loss of hydraulic circuit at $\Delta t = 15K$	mbar	9	15
Pressure loss of hydraulic circuit at $\Delta t = 20K$	mbar	5	9

Tab.11 Data on the combustion gases

	Unit	CFU 22	CFU 29
NOx emission according to EN267	mg/kWh	Class 3	Class 3
Flue gas mass flow rate Pn 40/30°C	kg/h	36	48
Flue gas circuit volume	litre	41	51
Flue gas temperature Pn 80/60°C	°C	<160	<160
Required depressurisation at the nozzle	Pa	5	5
Number of cast iron parts	Part	4	5
Number of baffle plates	Part	2	2

Tab.12 Electrical specifications

	Unit	CFU 22	CFU 29
Power supply voltage	VAC	230	230
Electrical protection rating	IP	IPx1B	IPx1B
Maximum absorbed power - Elmax	W	152	162
Minimum absorbed power - Elmin	W	43	46
Absorbed power - Stand-by - Psb	W	4	4

Tab.13 Other specifications

	Unit	CFU 22	CFU 29
Operating temperature range	°C	0 - 60	0 - 60
Maximum operating temperature	°C	90	90
Settings range for the heating water temperature	°C	30 - 90	30 - 90
Settings range for the domestic hot water temperature	°C	40 - 65	40 - 65
Safety thermostat	°C	110	110
Weight empty	kg	195	224

Tab.14 Burner specifications

	Unit	CFU 22	CFU 29
Burner type		F10N3-1.22	F10N3-1.29
Oil flow rate	kg/h	2.02	2.69

Tab.15 Bluetooth characteristics

	Unit	CFU 22	CFU 29
Bluetooth frequency band	MHz	2400 - 2483,5	2400 - 2483,5
Bluetooth power	dBm	+3	+3

3.2.1 Outside temperature sensor specifications

Tab.16 Outside temperature sensor

Temperature	°C	-20	-16	-12	-8	-4	0	4	8	12	16	20	24
Resistance	Ω (Ohm)	2392	2088	1811	1562	1342	1149	984	842	720	616	528	454

3.2.2 Specifications for NTC 10 kilo ohm type sensors

Tab.17 Flow and return sensors

Temperature	°C	0	10	20	25	30	40	50	60	70	80	90
Resistance	Ω (Ohm)	32014	19691	12474	10000	8080	5372	3661	2535	1791	1290	941

3.3 Dimensions and connections

Fig.2 Boiler only CFU 22

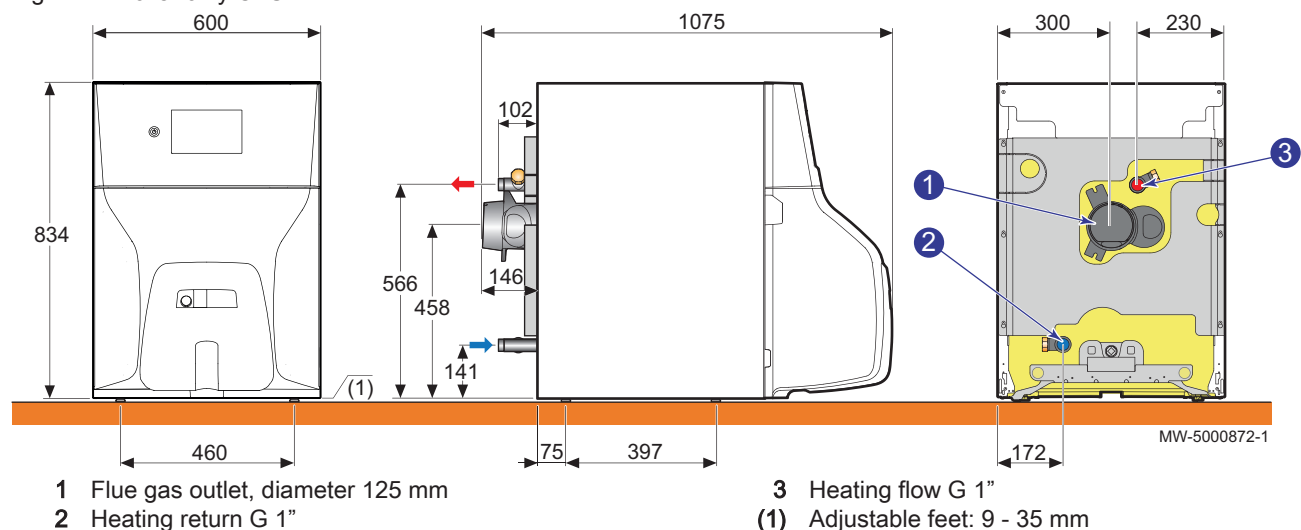
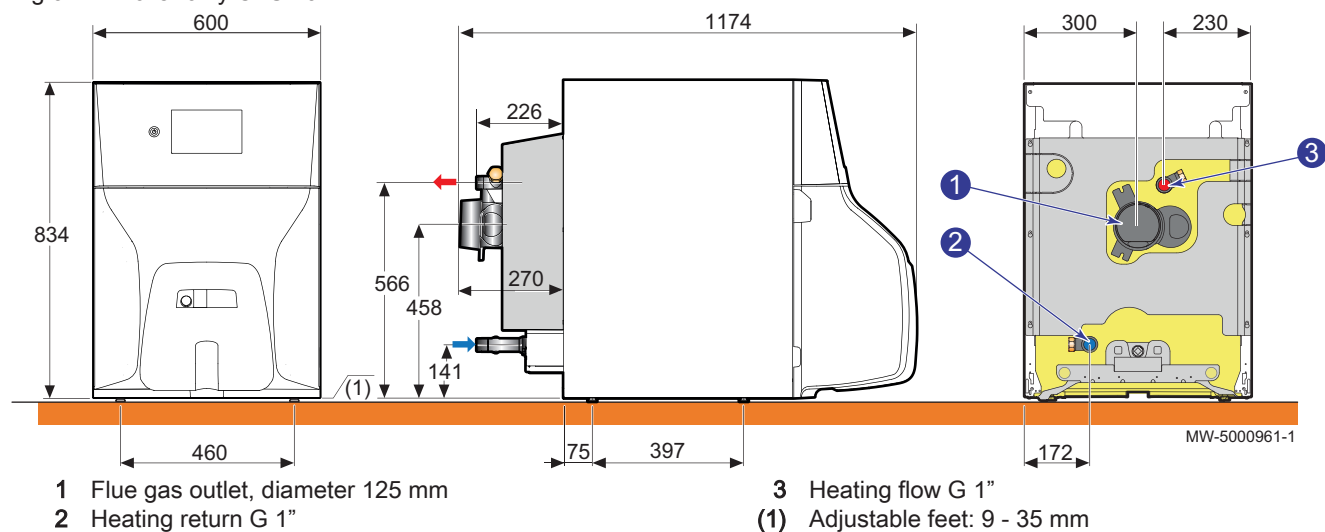


Fig.3 Boiler only CFU 29

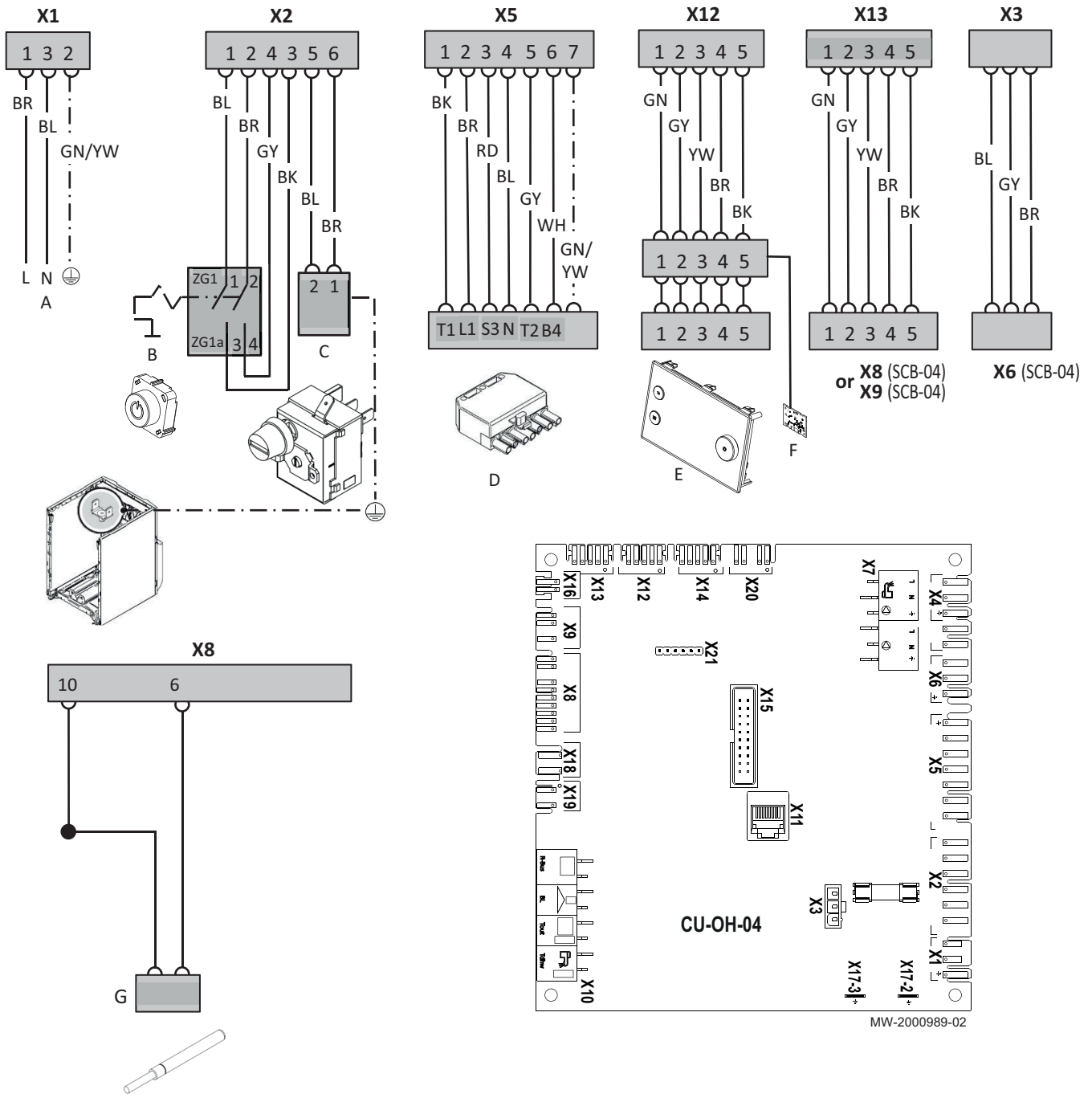


3.4 Electrical diagram

3.4.1 Electrical diagram of boiler

The boiler is managed by the CU-OH-04 main PCB. It is used to interconnect all the boiler components and control the boiler safety devices and primary circuit.

Fig.4



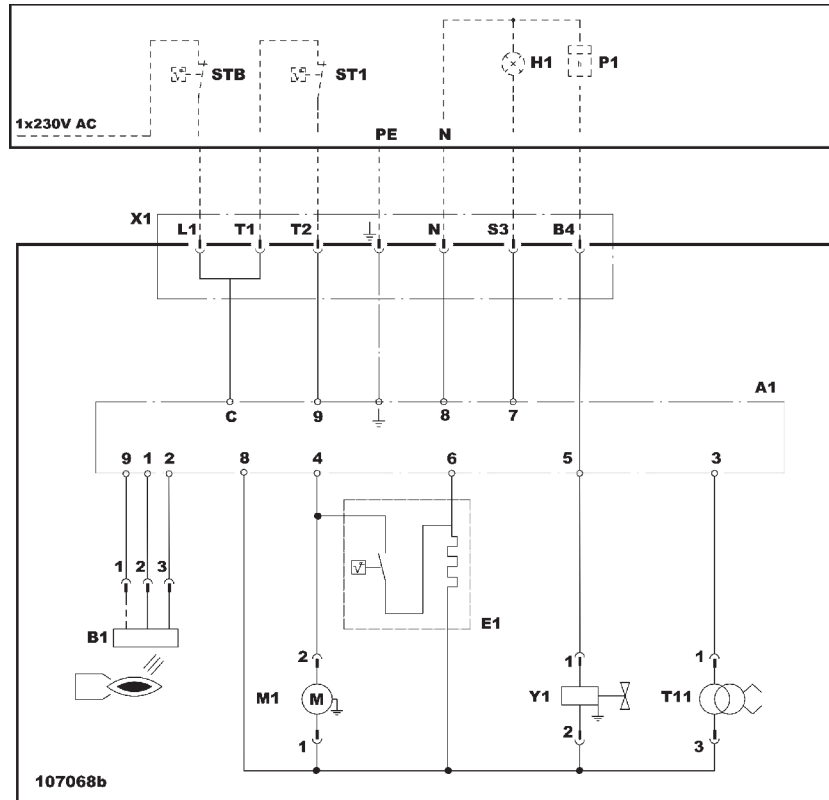
- A Power supply
- B On/Off switch
- C Safety thermostat
- D Burner connector
- E E-Pilot control panel
- F Bluetooth SMART ANTENNA PCB
- G Flow sensor
- X1 Power supply

- X2 Switch
- X3 SCB-04 optional PCB power supply
- X4 / X7 Domestic hot water pump/valve
- X5 Burner power supply
- X6 / X7 Boiler pump for kit
- X8 Sensors
- X9 ACI if used
- X10 - Input for SmartTC°

- | | | | |
|------------|--|--------------|--|
| | - BL input | X13 | Port L-Bus for SCB-04 optional PCB |
| | - Outdoor temperature sensor | X16 | Modulating pump |
| | - Domestic hot water temperature sensor | X17-2 | Protective earthing |
| X11 | Service port | X17-3 | Protective earthing |
| X12 | Port L-Bus for control panel E-Pilot (factory connected) | X18 | Return sensor connection for use of the optional hydraulic kit for controlling the modulating pump |

3.4.2 Burner electrical diagram

Fig.5



MW-1000905-2

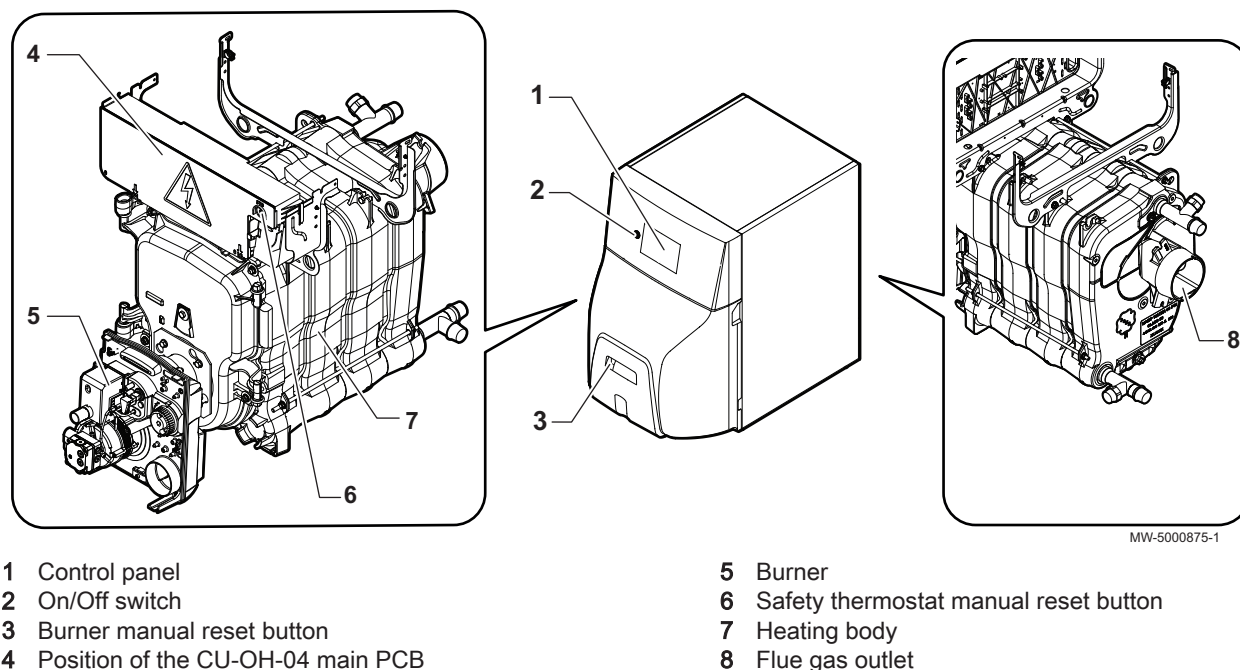
- | | | | |
|-----------|------------------------|------------|----------------------|
| A1 | Control and safety box | STB | Safety thermostat |
| B1 | Flame detector | ST1 | Thermostat stage 1 |
| E1 | Not available | T11 | Ignition transformer |
| H1 | Burner fault | X1 | 7-pin connector |
| M1 | Fan motor | Y1 | Oil solenoid valve |
| P1 | Hour run meter | | |

4 Description of the product

4.1 Main components

4.1.1 Boiler

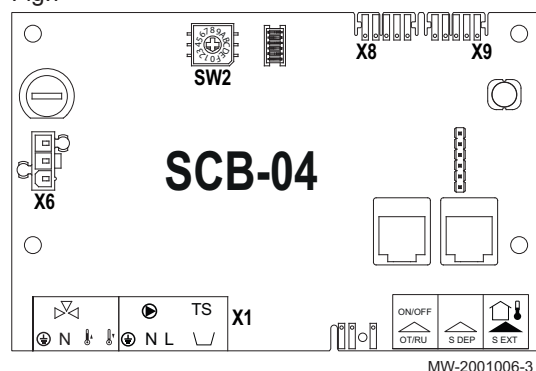
Fig.6



4.1.2 Description of the optional SCB-04 PCB

The optional SCB-04 PCB manages the boiler's additional circuits.

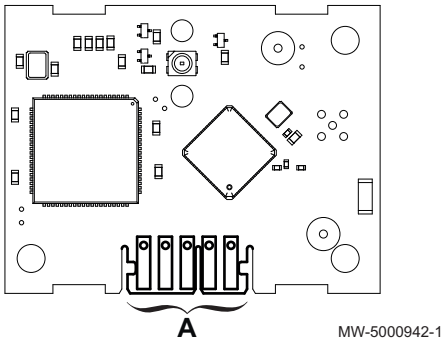
Fig.7



4.1.3 Description of the Bluetooth SMART ANTENNA PCB

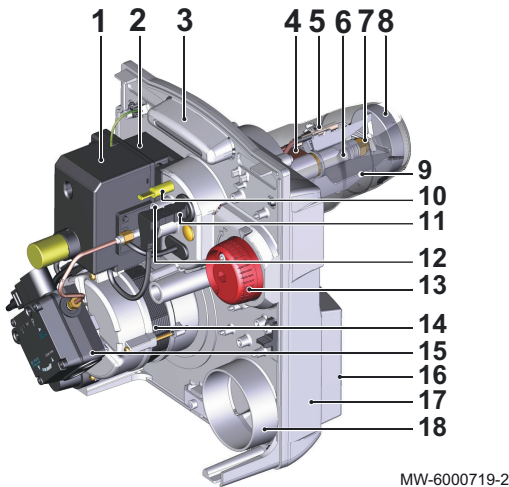
The Bluetooth SMART ANTENNA PCB is used to program boiler commissioning via a mobile application.

Fig.8



A Wired connection to the E-Pilot control panel PCB

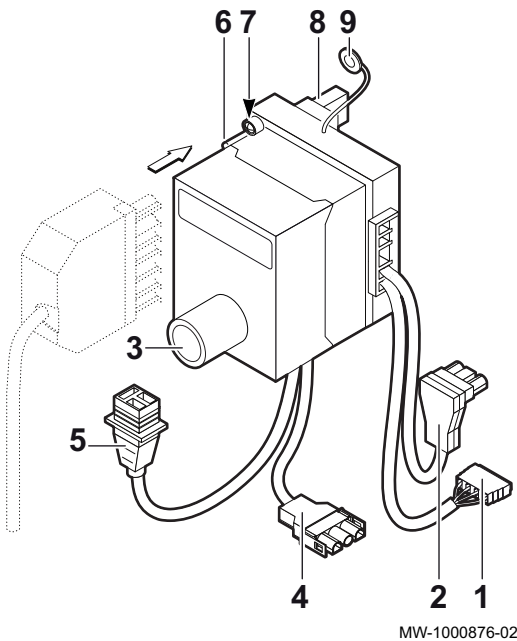
Fig.9



- 1 Safety and control box
- 2 Ignition transformer
- 3 Component plate
- 4 Not available
- 5 Ignition electrode
- 6 Injection nozzle line
- 7 Injection nozzle
- 8 Combustion head
- 9 Flame tube
- 10 Head air pressure measurement point
- 11 Flame detection cell
- 12 Combustion head position setting screw
- 13 Air shutter adjustment button
- 14 Motor
- 15 Oil pump
- 16 Air box
- 17 Housing
- 18 Air inlet

■ Base with wiring for control and safety box

Fig.10

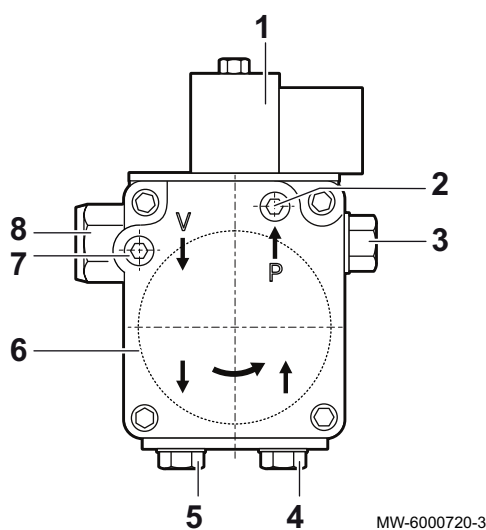


- 1 Not available
- 2 Flame detection cell connection
- 3 Reset button
- 4 Motor connection
- 5 Solenoid valve connection
- 6 Connection between the burner and the boiler - 7-pin connector
- 7 Green LED:
 - on: burner on
 - off: burner off
- 8 Transformer connection
- 9 Connection between the earth and the component plate

Caution
The base is a safety device and must not be opened.

The control and safety box is a safety device which must only be stacked on the base or removed when the current has been switched off using the main heating system switch.

Fig.11



■ Burner oil pump

- 1 Solenoid valve
- 2 Pressure gauge pressure measurement point (Pressure)
- 3 Flow towards injection nozzle
- 4 Oil intake
- 5 Oil return (dual pipe/single pipe conversion)
- 6 Oil filter
- 7 Vacuum gauge measurement point (Negative pressure)
- 8 Pump pressure setting screw

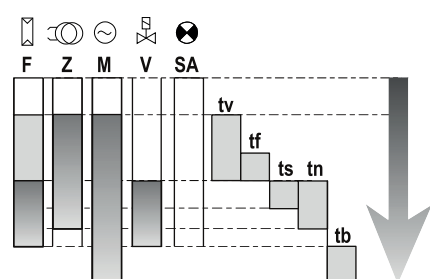
Tab.18

	Unit	CFU 22	CFU 29
Manufacturer's pressure range	bar	9 to 17	9 to 25
Maximum negative pressure	bar	0.35	0.35
Max. pump intake air flow at 10 bar	l/h	45	45

4.2 Operating principle

4.2.1 Control box operating cycle

Fig.12



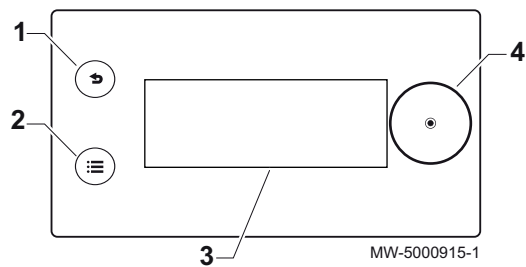
- F Flame detection
- Z Ignition
- M Burner motor
- V Solenoid valve
- SA External breakdown indicator
- tv Pre-ignition and pre-ventilation time
- tf Parasite light surveillance time
- ts Safety time
- tn Post-ignition time
- tb Post-ventilation time

Tab.19

Boiler model	Unit	CFU 22 CFU 29
Pre-ignition and pre-ventilation time	seconds	15
Parasite light surveillance time	seconds	0.5
Safety time	seconds	10
Post-ignition time	seconds	7
Post-ventilation time	seconds	45

4.3 Control panel description

Fig.13



4.3.1 Control panel description

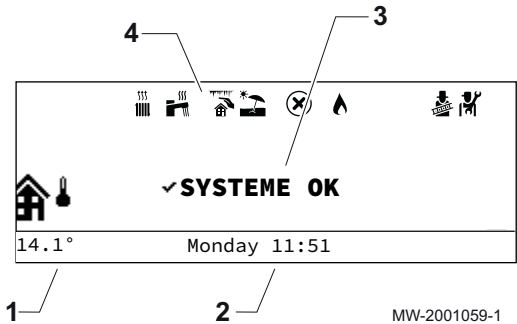
The control panel allows the end user, chimney sweep or installer to configure the boiler for central heating and domestic hot water production.

- 1 Back key
- 2 Main menu key
- 3 Display
- 4 Selector

4.3.2 Description of the standby screen

The standby screen is active if no key on the control panel is pressed within 5 minutes, and the backlight will go out.

Fig.14



- 1 Temperature measured by the outdoor temperature sensor (if present)
- 2 Day and time
- 3 General boiler status
- 4 Icons indicating the boiler status

Tab.20 Icons indicating the boiler status

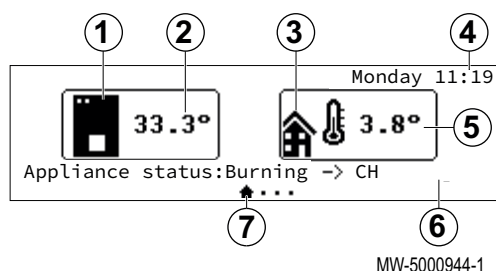
Icons	Description
	Steady icon: heating function activated Flashing icon: heating production running
	Steady icon: domestic hot water production function activated Flashing icon: domestic hot water production running
	Frost protection activated
	Summer mode activated, no heating possible
	Error
	Burner on
	Chimney-sweeping mode activated
	Installer level activated

4.3.3 Description of the home screen (direct access)

The home screen has several pages. Each page enables direct access to a zone.

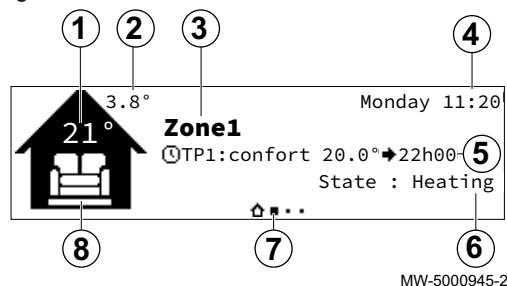
Display the home screen by turning the selector to the right.
All the zone symbols and names can be changed.

Fig.15 Main home screen



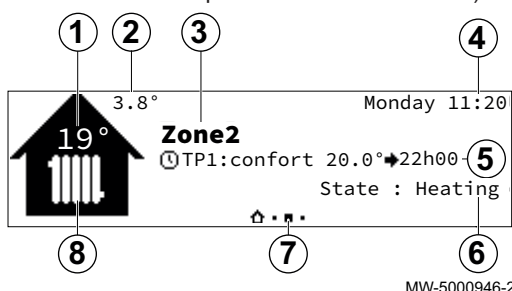
- 1 Boiler symbol
- 2 Boiler flow temperature
- 3 Outdoor temperature symbol
- 4 Day and time
- 5 Outdoor temperature
- 6 Boiler status
- 7 Active page

Fig.16 Zone1 home screen



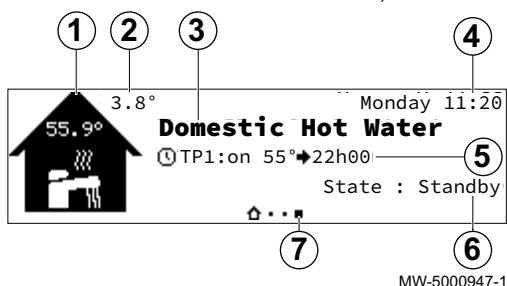
- 1 Temperature of the **Zone1** (only if a room temperature sensor is present in the zone)
- 2 Outdoor temperature
- 3 **Zone1** name
- 4 Day and time
- 5 Operating mode
- 6 **Zone1** status
- 7 Active page
- 8 **Zone1** symbol

Fig.17 Zone2 home screen (only if the SCB-04 optional PCB is connected)



- 1 Temperature of the **Zone2** (only if a room temperature sensor is present in the zone)
- 2 Outdoor temperature
- 3 **Zone2** name
- 4 Day and time
- 5 Operating mode
- 6 **Zone2** status
- 7 Active page
- 8 **Zone2** symbol

Fig.18 Home screen for the domestic hot water page (only if the domestic hot water sensor is connected)



- 1 Symbol for domestic hot water
- 2 Outdoor temperature
- 3 Name for domestic hot water
- 4 Day and time
- 5 Operating mode
- 6 Status for domestic hot water
- 7 Active page

Fig.19



4.3.4 Description of the carousel (quick access)

The carousel is used to quickly access the main control panel menu.

Display the carousel by pressing the Main menu key .

Scroll through the menu from right to left by turning the selector .

Tab.21

Accessible menus	Description	 See Chapter
	Central heating On/Off	Switching the central heating on/off User guide
	Domestic Hot Water On/Off	Switching domestic hot water production on/off User guide
	Heating temperature	Setting the activities temperature User guide
	Water temperature	Modifying the domestic hot water set point temperatures User guide
	Temporary heating temperature change	Changing the room temperature temporarily User guide
	Hot water boost	Forcing domestic hot water production (override) User guide
	System holiday mode	Periods of absence or going on holiday User guide
	User settings	
	Zones settings	Changing the name and symbol of a zone User guide
	Domestic Hot Water settings	Modifying the domestic hot water set point temperatures User guide
	CH function on	Switching the central heating on/off User guide
	DHW function on	Switching domestic hot water production on/off User guide
	Outdoor temperature	Outdoor temperature sub-menu
	Energy counter	Monitoring the energy consumption User guide
	System holiday mode	Periods of absence or going on holiday User guide
	Test mode	Chimney mode User guide
	Installer	List of Installer menu parameters Details of the Installer menu are included in the "List of parameters" chapter
	Finder	Using the parameter search
	Signals status set points	Reading out measured values
	Energy counter	Monitoring the energy consumption User guide
	Settings	Personalising the control panel User guide
	Version information	Version information User guide

4.4 Standard delivery

A boiler package containing:

- an oil boiler equipped with a control panel,
- a preset 1-stage oil burner (mounted),
- an outdoor temperature sensor
- One installation and service manual;
- One user manual.

4.5 Accessories and options

Various options are available, depending on the configuration of the installation and the country:

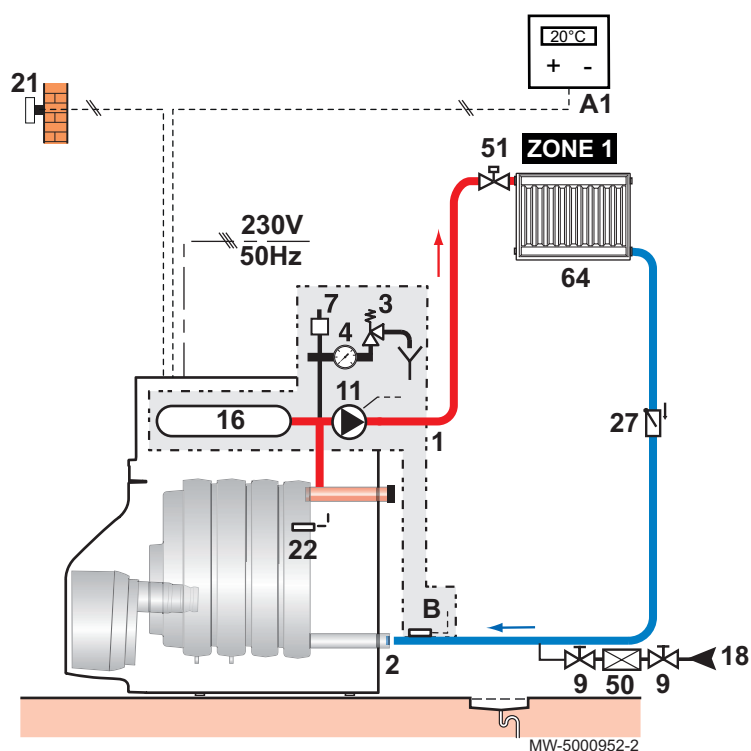
Tab.22 List of options

Description	Package
110-l domestic hot water tank	ER590
160-l domestic hot water tank	ER592
Hydraulic connection kit for 110 l/160 l domestic hot water tank	MY925
Connection kit for independent domestic hot water tank	MY926
Domestic hot water temperature sensor	AD212
Anode tester	MY456
Impressed current anode	MY475
Pump + 18 L heating expansion vessel kit with return sensor	MY445
Right connection kit	MY460
Left connection kit	MY465
Connection hose kit	MY470
Safety unit kit	MY480
Additional circuit PCB	MY440
Flue system accessories	Refer to the current pricing catalogue
Oil filter	MT11

5 Connecting diagrams

5.1 One direct heating circuit with kit

Fig.20



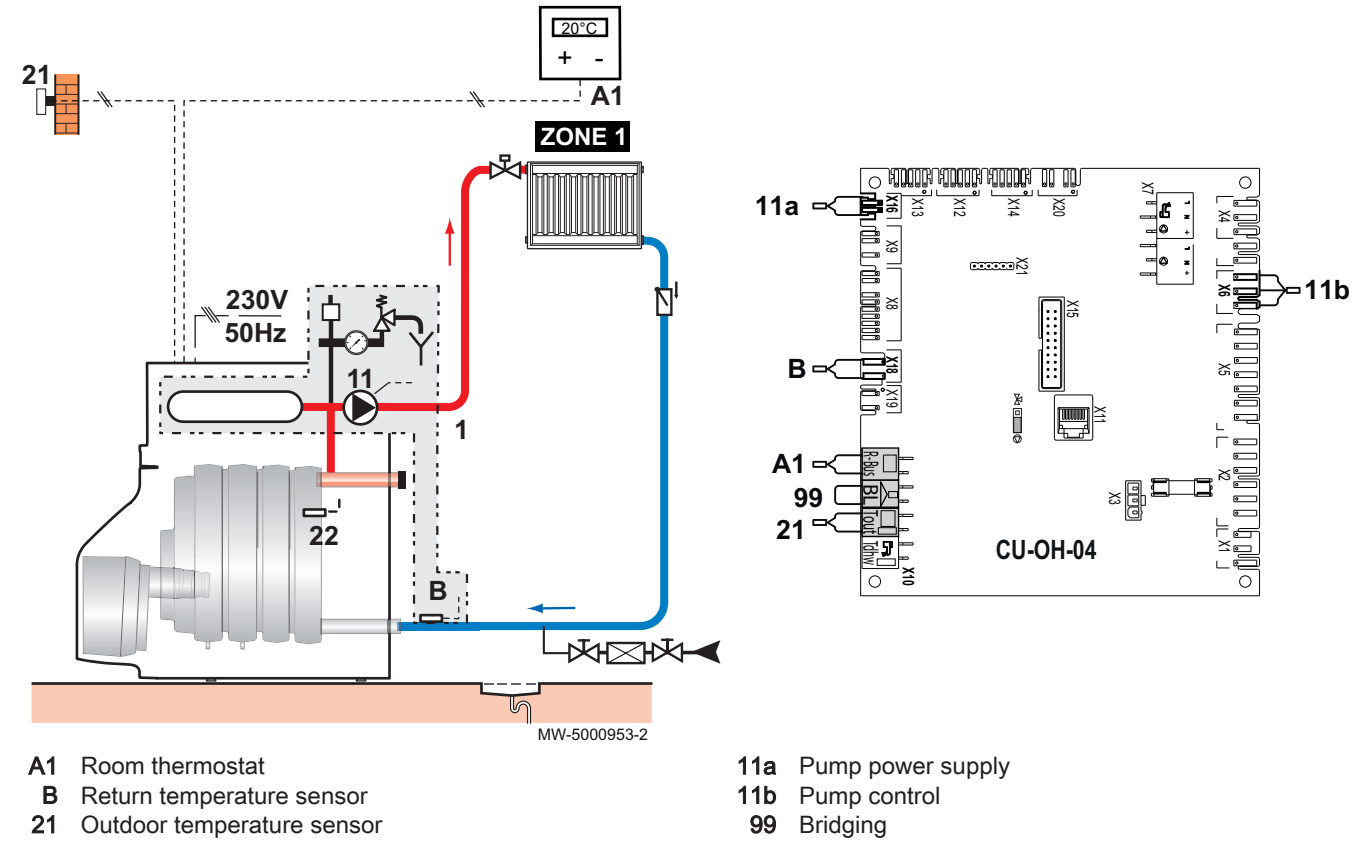
- A1 Programmable room thermostat
- B Return temperature sensor
- 1 Heating flow direct circuit
- 2 Heating return
- 3 Safety valve 0.3 MPa (3 bar)
- 4 Pressure gauge
- 7 Automatic air vent
- 9 Isolation valve
- 11 Heating pump
- 16 Closed expansion vessel

- 18 Heating circuit fill point

France: with disconnector in accordance with prevailing regulations

- 21 Outdoor temperature sensor
- 22 Boiler temperature sensor
- 27 Non-return valve
- 50 Disconnector
- 51 Thermostatic valve
- 64 Direct heating circuit (radiators)

Fig.21



Tab.23 Optional equipment required

Pump + 18 L heating expansion vessel kit	MY445
--	-------

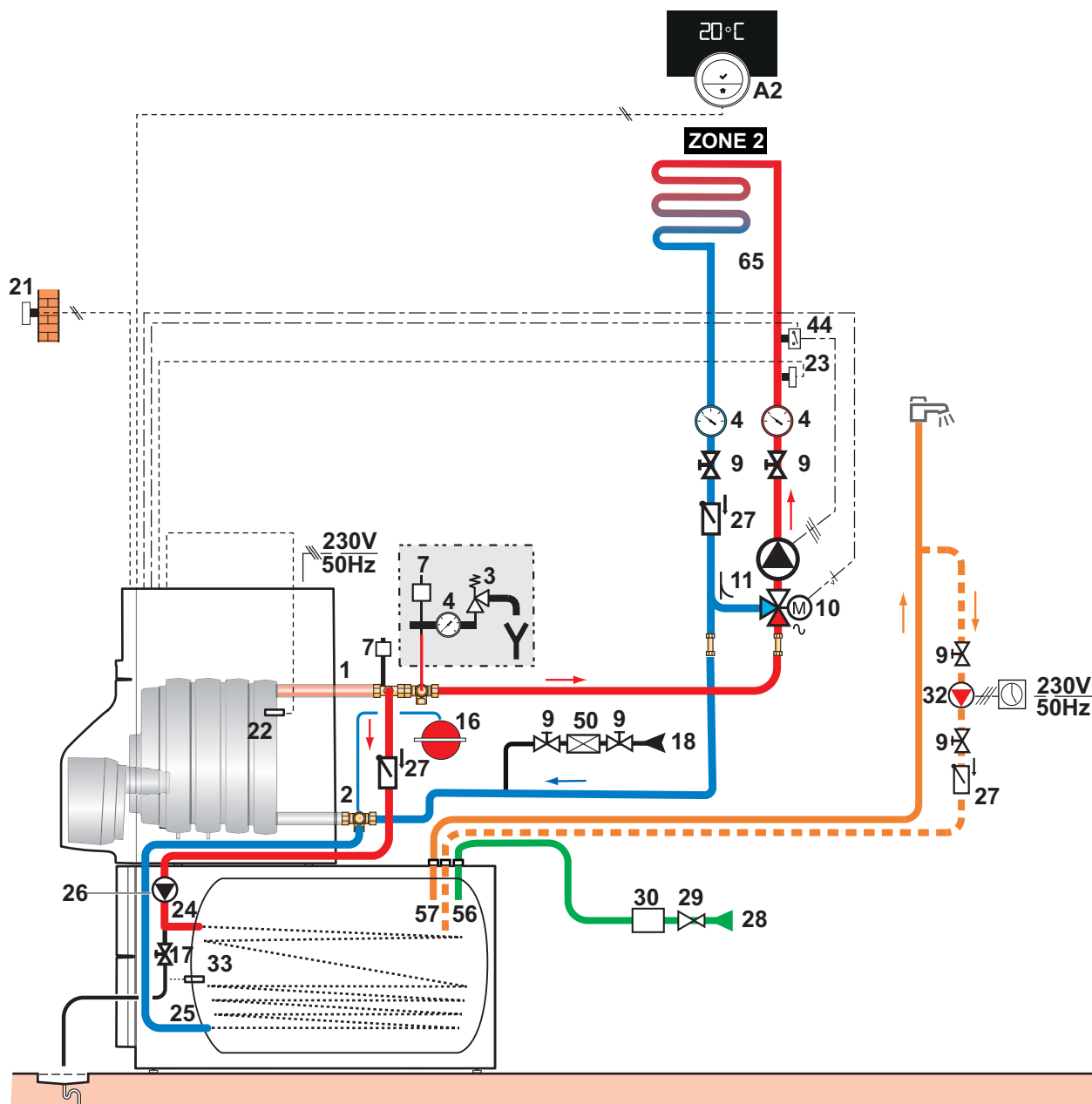
5.2 One direct heating circuit with mixing valve + one domestic hot water tank



Important

For underfloor heating, the connection must be made via a mixing valve. Direct connection is prohibited.

Fig.22



MW-5000954-1

A2 Programmable room thermostat: SmartTC°

- 1 Heating flow direct circuit
- 2 Heating return
- 3 Safety valve 0.3 MPa (3 bar)
- 4 Pressure gauge
- 7 Automatic air vent
- 9 Isolation valve
- 10 Three-way mixing valve
- 11 Heating pump
- 16 Closed expansion vessel
- 17 Drain valve
- 18 Heating circuit fill point

France: with disconnecter in accordance with prevailing regulations

- 21 Outdoor temperature sensor
- 22 Boiler temperature sensor
- 23 Temperature sensor after mixing valve
- 24 Domestic hot water tank exchanger primary inlet
- 25 Domestic hot water tank exchanger primary outlet
- 26 DHW booster pump
- 27 Non-return valve
- 28 Domestic cold water inlet
- 29 Pressure reducer - if the supply pressure exceeds 80 % of the safety valve rating
- 30 Calibrated and sealed safety unit

France: 0.7 MPa (7 bar) with release valve with indicator light

32 Domestic hot water loop pump (looping optional with programmer)

33 Domestic hot water temperature sensor

44 Safety thermostat

France: with manual reset for underfloor heating (France: DTU 65.8, NF P52-303-1).

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

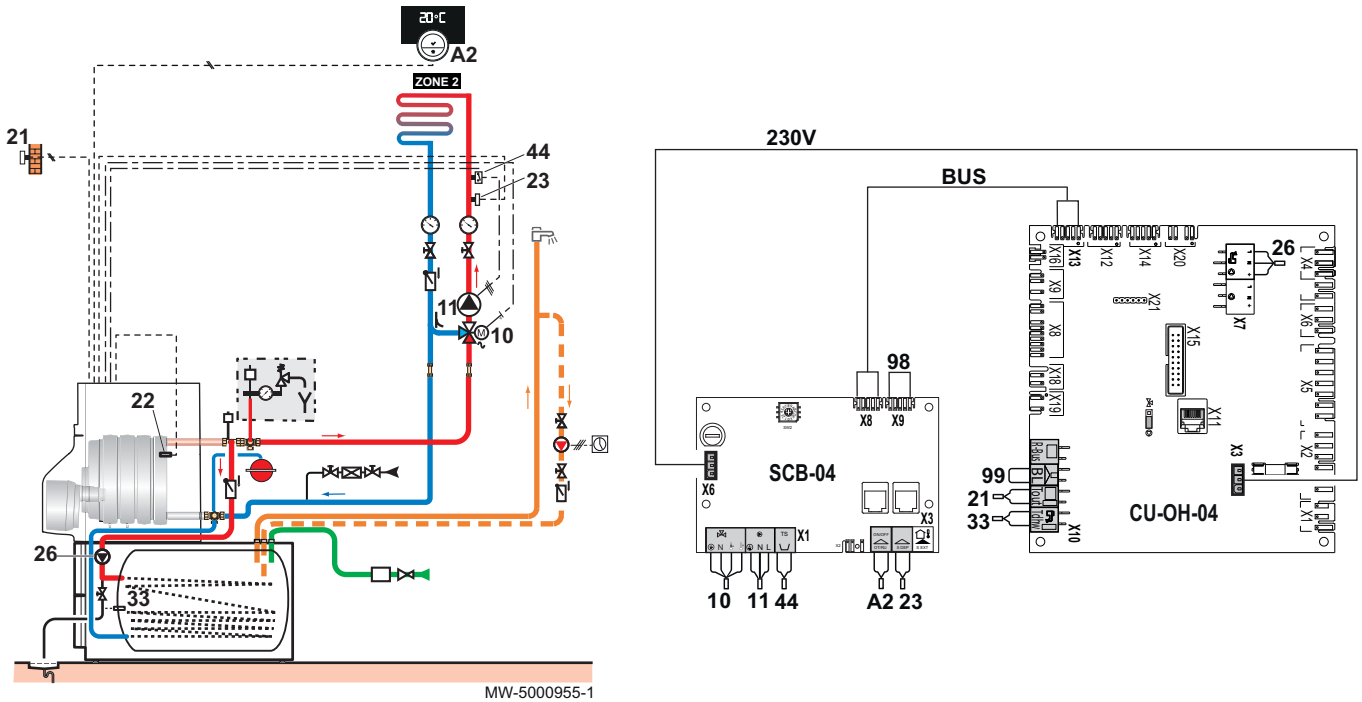
50 Disconnecter

56 Domestic hot water circulation loop return

57 Domestic hot water outlet

65 Heating circuit with mixing valve, may be low temperature heating circuit (underfloor heating or radiators).

Fig.23



- A2** Programmable room thermostat: SmartTC°
- 10** Three-way mixing valve
- 11** Heating pump
- 21** Outdoor temperature sensor
- 23** Temperature sensor after mixing valve

- 33** Domestic hot water temperature sensor
- 44** Safety thermostat
- 98** Terminal BUS
- 99** Bridging

Tab.24 Optional equipment required

Pump + 18 L heating expansion vessel kit	MY445
Domestic hot water tank	ER590 (110 l) or ER592 (160 l)
Boiler connection kit	MY925

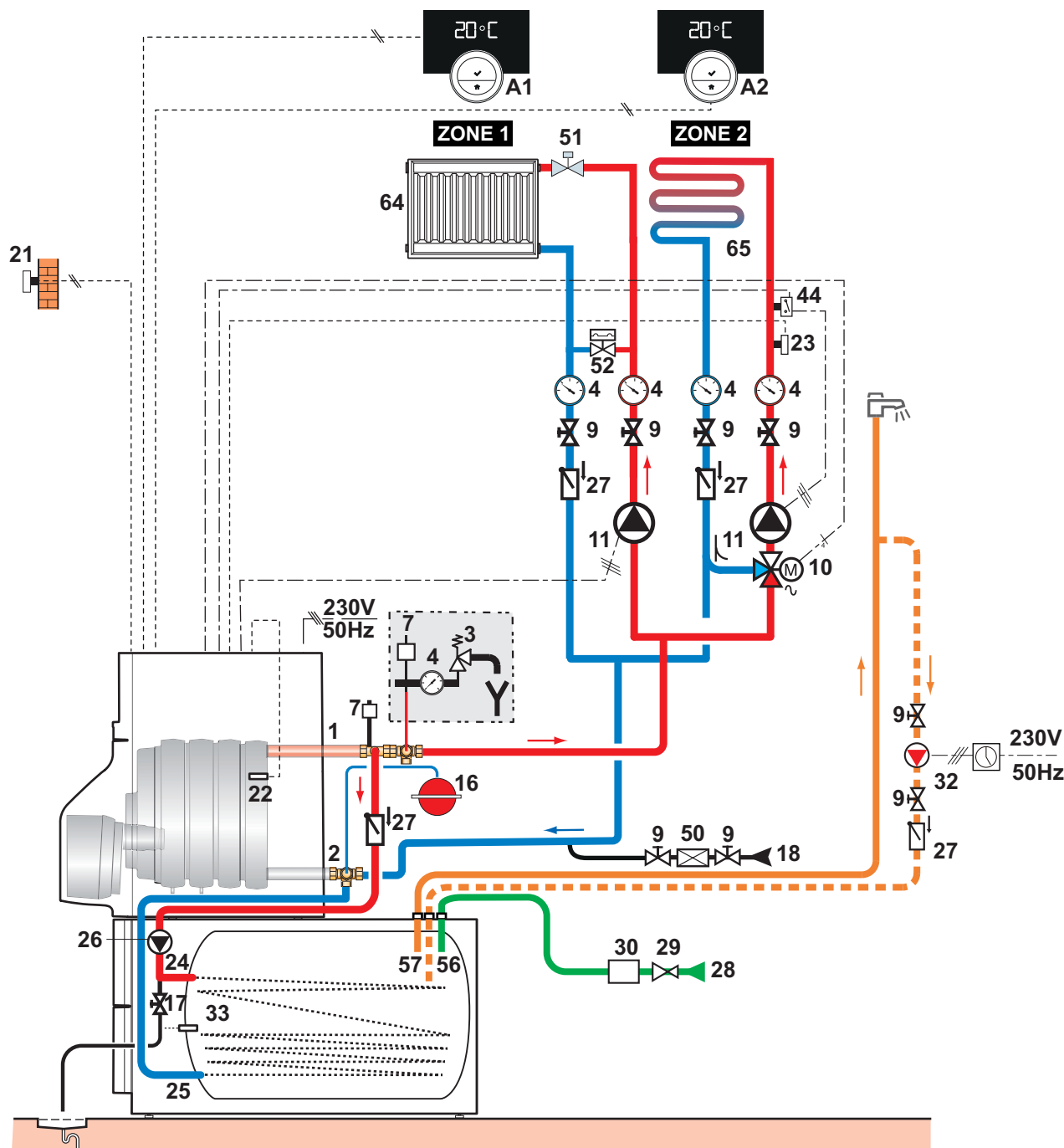
5.3 Two heating circuits including one with a mixing valve + one domestic hot water tank



Important

For underfloor heating, the connection must be made via a mixing valve. Direct connection is prohibited.

Fig.24



MW-5000956-2

- A1 Programmable room thermostat: SmartTC°
- A2 Programmable room thermostat: SmartTC°
- 1 Heating flow direct circuit
- 2 Heating return
- 3 Safety valve 0.3 MPa (3 bar)
- 4 Pressure gauge
- 7 Automatic air vent
- 9 Isolation valve
- 10 Three-way mixing valve
- 11 Heating pump

- 16 Closed expansion vessel
- 17 Drain valve
- 18 Heating circuit fill point

France: with disconnector in accordance with prevailing regulations

- 21 Outdoor temperature sensor
- 22 Boiler temperature sensor
- 23 Flow temperature sensor after mixing valve
- 24 Domestic hot water tank exchanger primary inlet

- 25
Domestic hot water tank exchanger primary outlet

26
DHW booster pump

27
Non-return valve

28
Domestic cold water inlet

29
Pressure reducer - if the supply pressure exceeds 80 % of the safety valve rating

30
Calibrated and sealed safety unit

France: 0.7 MPa (7 bar) with release valve with indicator light

32 Domestic hot water loop pump (looping optional with programmer)

33 Domestic hot water temperature sensor

44 Safety thermostat

France: with manual reset for underfloor heating (DTU 65.8, NF P52-303-1).

- Other countries: Safety device to safeguard against overheating of the underfloor heating system, in accordance with prevailing regulations.

50 Disconnecter

51 Thermostatic valve

52 Differential valve

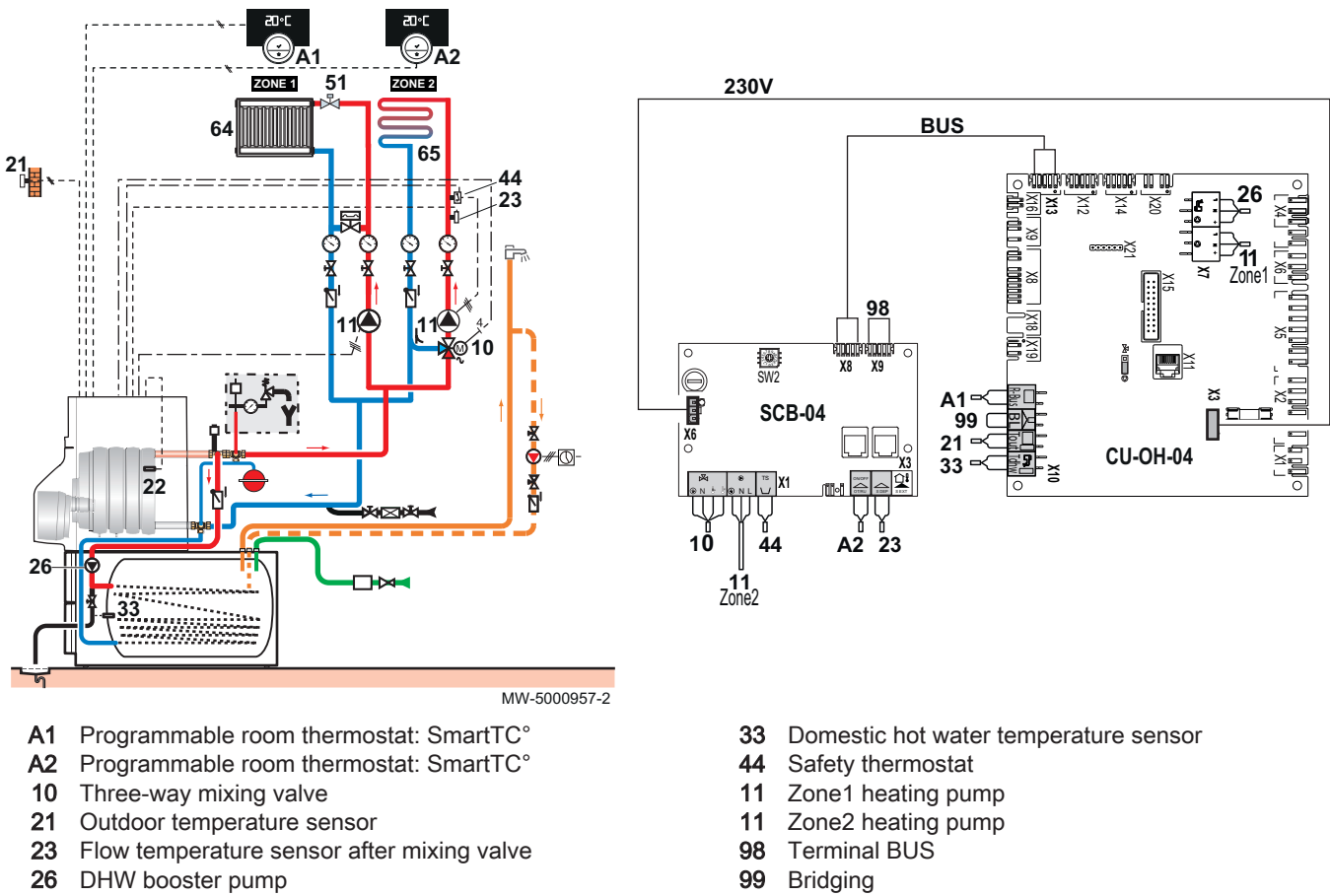
56 Domestic hot water circulation loop return

57 Domestic hot water outlet

64 Direct heating circuit (radiators)

65 Heating circuit with mixing valve, may be low temperature heating circuit (underfloor heating or radiators)

Fig.25



Tab.25
Optional equipment required

Pump + 18 L heating expansion vessel kit	MY445
Domestic hot water tank	ER590 (110 l) or ER592 (160 l)
Boiler connection kit	MY925

6 Installation

6.1 Installation regulations


Caution

Installation of the boiler must be done by a qualified professional in accordance with prevailing local and national regulations.

Tab.26 Residential buildings

France	• Order of 23 February 2018 amending the Order of 27 April 2009: Order of 23 February 2018 on the technical and safety regulations applicable to combustible gas installations in individual residential or collective buildings, and their communal areas. • Order of 1 July 2004: Technical and Safety rules applicable to the storage of petroleum-based products on premises not referred to in the legislation on classified installations or in the regulations on establishments open to the public. • DTU 65-17: Heating installation by hot water radiators. • Set of recommendations: Hot water central heating installations - Book 3114 from the Centre Scientifique et Technique du Bâtiment. • Local Sanitary Regulations (RSD) • For appliances connected to the electricity network: NF C15-100 Standard - Low voltage electrical installations
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Tab.27 Establishment open to the public

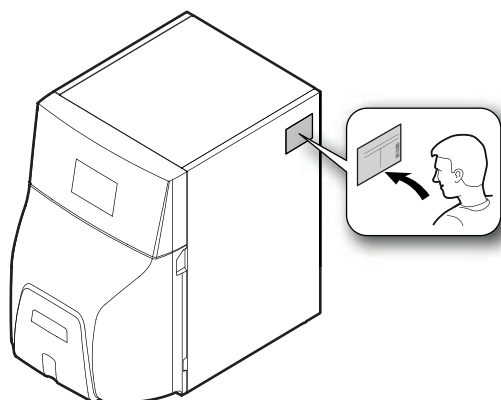
France	• Safety regulations against fire and panic in establishments open to the general public: Articles CH - Heating, ventilation, refrigeration, air conditioning and production of steam and domestic hot water. • Instructions specific to each type of establishment open to the general public (hospitals, stores, etc.). • Decree of 21 March 1968 establishing the technical and safety regulations governing the storage and use of petroleum products in areas which are not covered by the legislation on establishments which are hazardous, unhealthy or uncomfortable and the regulations on public buildings.
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6.2 Choice of the location

Decide on the ideal position for installation, bearing in mind any legal directives and the space required by the appliance.

- Install the boiler on a solid, stable structure capable of bearing the weight of the appliance when full of water and fully equipped.
- When choosing the position for installation of the boiler, bear in mind the positions authorised for the combustion gas discharge outlets and the air intake vent.
- Do not install the boiler near any heat sources.

Fig.26



MW-5000859-1

6.2.1 Data plate

The data plate identifies the product and provides the following information:

- Type of product
- Date of manufacture (Year - Week)
- Serial number
- Electrical power supply
- Operating pressure
- Electrical power
- IP rating
- CN1 and CN2 boiler configuration number



Important

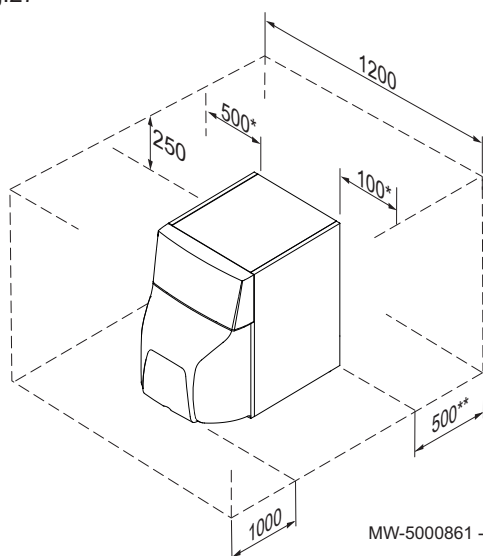
If the data plate cannot be accessed, a second self-adhesive data plate is provided in the documentation bag. Affix the data plate in a position where it is easy to read.



For more information, see

Restoring the factory settings, page 69

Fig.27



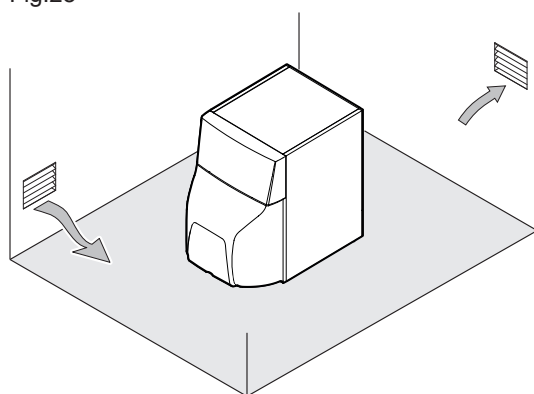
MW-5000861 -1

6.2.2 Dimensions of the boiler

Allow sufficient space around the boiler to ensure adequate access to the appliance and enable any and all maintenance operations to be carried out.

* It is possible to reverse the right and left dimensions.

Fig.28



MW-5000863-1

6.2.3 Ventilation

To allow the intake of combustion air, sufficient ventilation must be provided in the boiler room. The cross section and position of the ventilation must satisfy the prevailing regulations:

Tab.28

France	• DTU P 45-204: Gas installations (formerly DTU No. 61-1 - Gas installations - April 1982 + addendum no 1 July 1984). For boilers with a nominal output of between 25 and 70 kW: in the case of a direct air supply, the cross section of mandatory ventilation must have a minimum surface area of 70 cm². • Order of 21 March 1968 establishing the technical and safety regulations governing the storage and use of petroleum products in non-public areas and buildings.
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**Important**

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.

**Important**

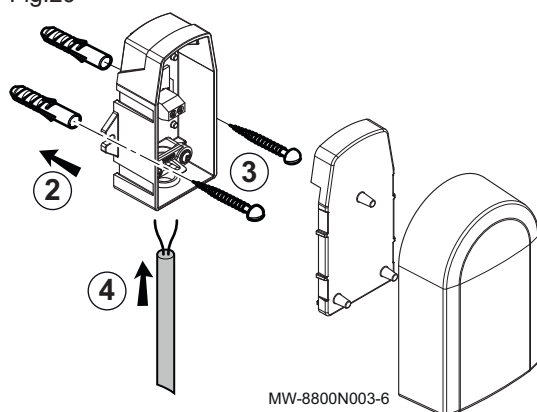
Do not block the air inlets, combustion product evacuation or condensation water flow pipes (even partially). Avoid any low points in the flue gas and condensates discharge circuit in order to prevent any condensates accumulation.

6.2.4 Fitting the outdoor sensor

Plugs diameter 4 mm/drill diameter 6 mm

1. Choose a recommended location for the outdoor sensor.
2. Put the 2 plugs in place, delivered with the sensor.
3. Secure the sensor using the screws provided (diameter 4 mm).
4. Connect the cable to the outdoor temperature sensor.

Fig.29

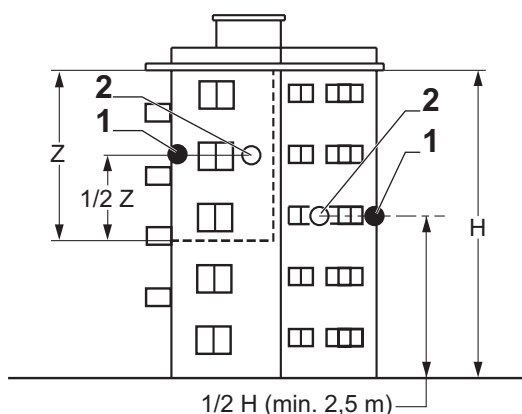


■ Recommended positions

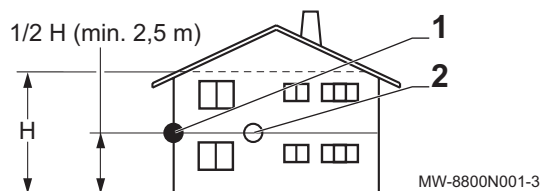
Place the outside sensor in a position that covers the following characteristics:

- On a façade of the area to be heated, on the north if possible.
- Half way up the wall of the area to be heated.
- Under the influence of changes in the weather.
- Protected from direct sunlight.
- Easy to access.

Fig.30



- 1 Optimum location
2 Possible position



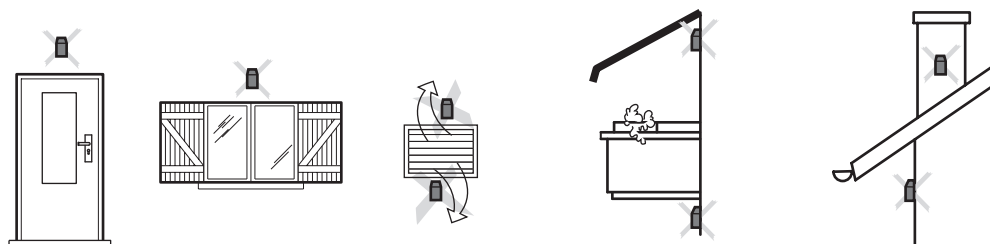
- H Inhabited height controlled by the sensor
Z Inhabited area controlled by the sensor

■ Positions to be avoided

Avoid placing the outside sensor in a position with the following characteristics:

- Masked by part of the building (balcony, roof, etc.).
- Close to a disruptive heat source (sun, chimney, ventilation grid, etc.).

Fig.31



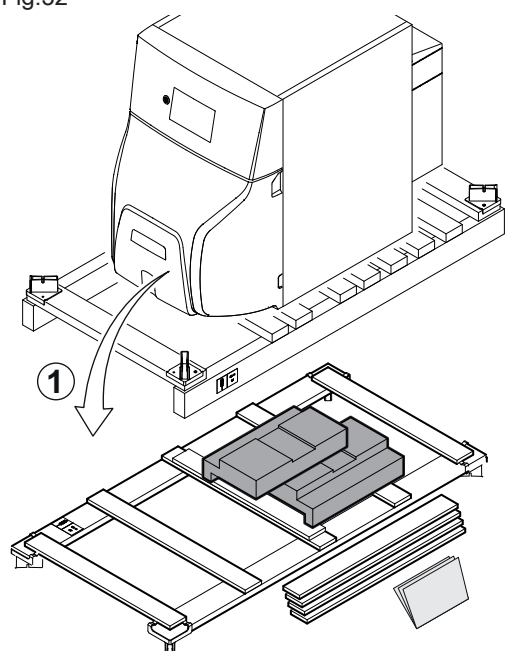
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6.3 Transport

- Transport the boiler pallet with a manual or electric pallet truck.
- Use carrying bars (not provided) to move the boiler.

6.4 Unpacking and preparing the boiler

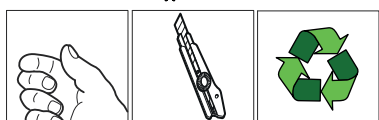
Fig.32



i Important

- This operation requires four people.
- Wear gloves to handle the boiler.

1. Remove the packaging from the boiler but leave the shipping pallet in place.



MW-2000955-1

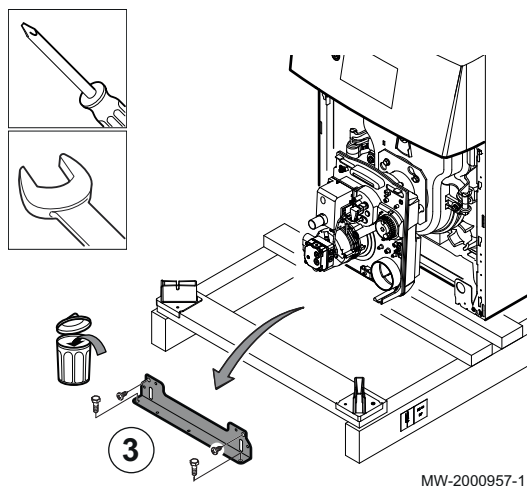
Fig.33



MW-2000956-1

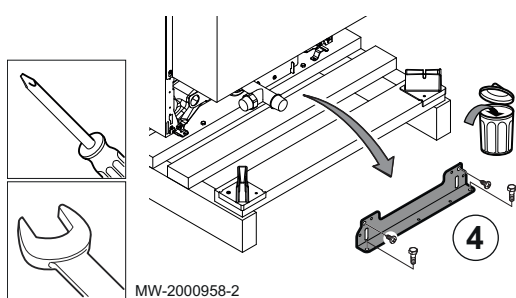
2. Remove the front panel by pulling firmly at both sides.

Fig.34



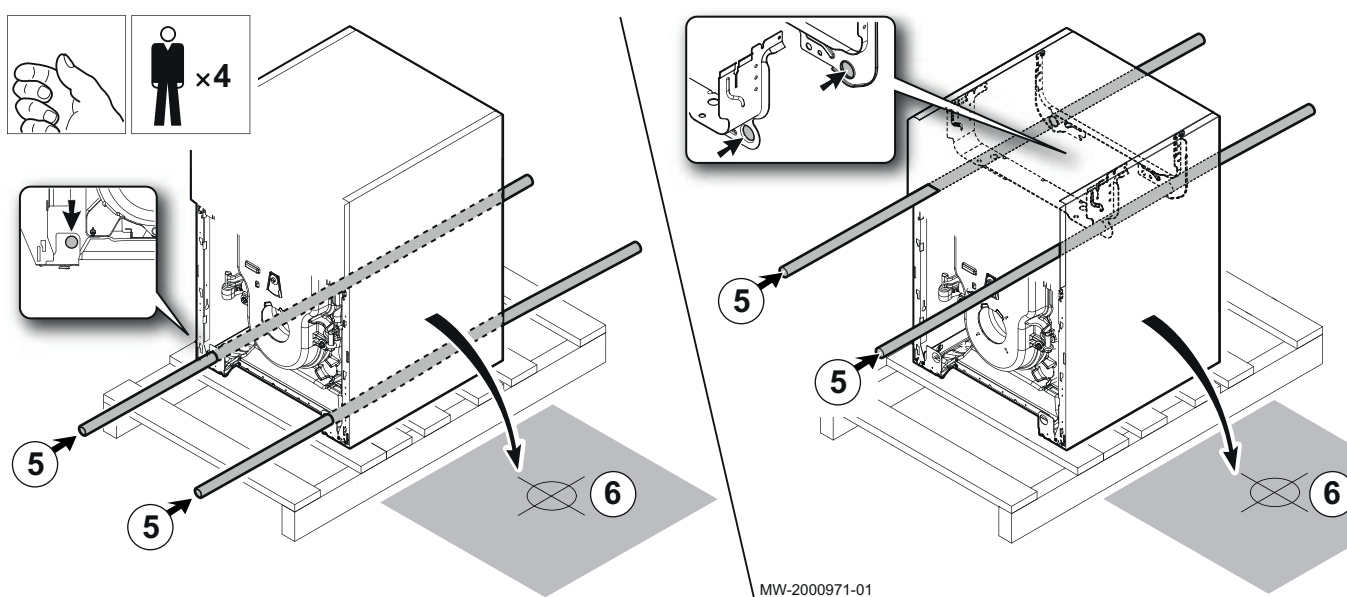
3. Remove the front transport bracket.

Fig.35



4. Remove the rear transport bracket.

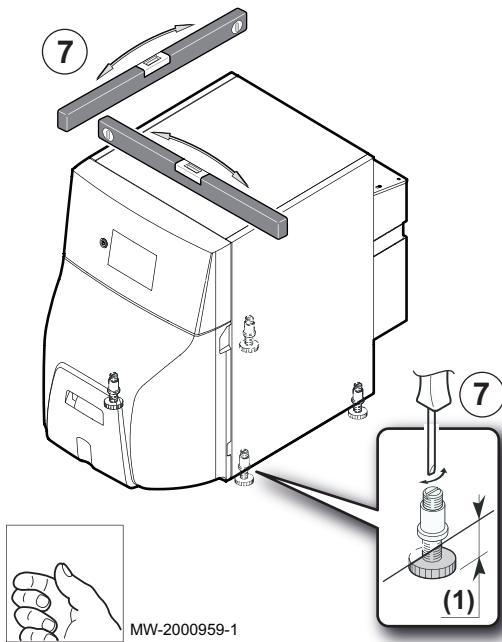
Fig.36



5. Lower the boiler from the transport pallet using lifting bars. Use steel tubes 1/2" in diameter and 1400 mm in length. It is not necessary to remove the burner to insert the lifting bars.

6. Install the boiler on the base provided for that purpose.

Fig.37



7. Level the boiler using the adjustable feet.

- (1) Adjustable feet
Factory setting: 30 mm - adjustment range: 20 to 40 mm

6.5 Assembly

Depending on the configuration of the installation, respect the following order of assembly:

1. Put the domestic hot water tank in place.
2. Put the equipment kit in place on the boiler.
3. Put the boiler in place.
4. Put the boiler / domestic hot water tank connection kit in place.

6.6 Hydraulic connections

6.6.1 Connecting the heating circuit

Flush the heating circuit to evacuate any particles that may damage certain devices such as safety valves, pumps, valves, etc.

On older heating installations, it is strongly recommended that a sludge collector (with magnetic bar) is placed on the heating return at the boiler inlet.



Caution

There must be no complete or partial closing devices between the boiler and the safety valves.



Caution

The heating system must be designed and constructed in such a way as to prevent the return of water from the heating circuit and the substances in it to the drinking water network. A disconnecter must be installed for filling the heating circuit in accordance with prevailing regulations.



Caution

In installations with thermostatic protection, only safety valves bearing the letter "H" may be connected, and then only to the "heating flow" connection. Their drainage capacity must correspond to the boiler's maximum nominal output.

1. Install a T-piece fitted with a 1/4 turn valve on the heating return to fill the heating installation.
2. Install a disconnecter to fill the heating circuit.
3. Connect all the elements as per the connection diagrams.

6.6.2 Connecting the domestic hot water circuit



See

For the connection of a domestic hot water tank, refer to the instructions that come with the connection kit.

6.6.3 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

Tab.29 Volume of the expansion vessel depending on the volume of the installation

Initial pressure of the expansion vessel	Volume of the installation (in litres)							
	100	125	150	175	200	250	300	> 300
50 kPa (0.5 bar)	4.8	6.0	7.2	8.4	9.6	12.0	14.4	Volume of the installation x 0.048
100 kPa (1 bar)	8.0	10.0	12.0	14.0	16.0	20.0	24.0	Volume of the installation x 0.080
150 kPa (1.5 bar)	13.3	16.6	20.0	23.3	26.6	33.3	39.9	Volume of the installation x 0.133

Terms and conditions of validity:

- Safety valve calibrated to 0.3 MPa (3 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.

6.7 Oil connection

6.7.1 General

The burner is delivered for a **dual pipe** oil connection comprising an intake hose and another hose for return to the tank.

- The use of a floating strainer is strongly recommended to prevent deposits from being sucked up from the bottom of the tank. In case of a boiler replacement, clean the storage tank.
- Respect the oil categories.

6.7.2 Oil supply

Before installing the boiler, check that the tank is full of oil and that this oil is the one recommended for running the burner installed.

6.7.3 Connecting the oil supply line

1. Place an integrated oil filter on the oil intake to prevent fouling of the injection nozzle. We recommend using a deaerator filter.

Boiler model	Sieve
CFU 22	70 µm
CFU 29	70 µm

2. Connect the oil supply tube to the filter, ensuring that the diameters recommended by the manufacturer in the manual supplied with the filter are observed.

Boiler model	Oil flow rate
CFU 22	2.02 kg/h
CFU 29	2.69 kg/h

**Important**

If a deaerator filter is used, this will require a single-pipe oil supply (a single pipe between the tank and the oil filter), with a smaller cross section than a dual-pipe supply.

Example: for CFU 22 (flow rate of 2.02 kg/h), if the suction height is 2.0 m and the duct length is 26 m, the internal cross section of the pipe will be 4 mm.

3. Check that there is no air intake between the tank and the oil filter.

6.8 Air supply/flue gas outlet connections

6.8.1 General

**Caution**

The flue gas temperature may reach 160 °C. You must always use flue gas pipes capable of withstanding periods of condensation.

- Parts which can be dismantled allow for inspection of the flue gas pipe along its entire length.
- The horizontal sections on the flue gas side are constructed with a 3% gradient to the boiler. The condensates that form in the pipes must be discharged through a dedicated device unique to them.
- The clear cross section must comply with the prevailing standard.
- The chimney must be swept before installing the discharge flue.
- To obviate any transmission of boiler operating noise into the home, the flue system pipes must not be bricked into the walls. Use a sleeve.
- Affix the pipes to the wall using clamps and bracket(s). The pipes come under stress each time the system is started up and may eventually work free of their fixings. Should this happen, the boiler continues to operate but pollutes the air in the premises. This risk is even higher, proportional to the length of the flue system pipes to the wall or chimney.
- Do not evacuate combustion products towards or close to living spaces.

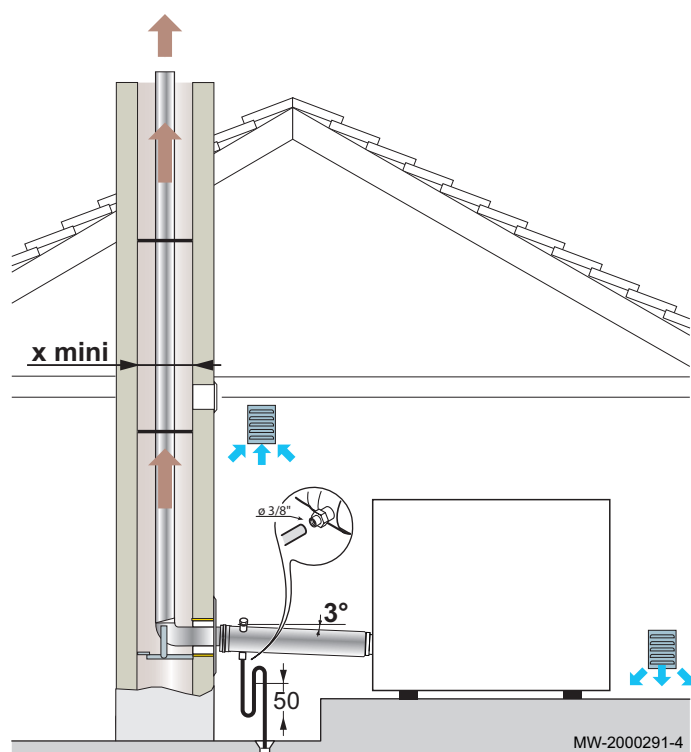
6.8.2 Determining the flue gas pipe

Tab.30 Determining the flue gas pipe

	Unit	CFU 22	CFU 29
Draught required at maximum boiler output	Pa	5	5
Flue gas mass flow rate	Kg/h	56	67
Flue gas temperature	°C	160	160
Flue gas nozzle (minimum recommended diameter)	mm	125	125
Chimney height (recommended minimum)	m	7	7

6.8.3 Type B connections

Fig.38 Rigid type B₂₃ connection - Flue gas pipes (combustion air taken from the boiler room)



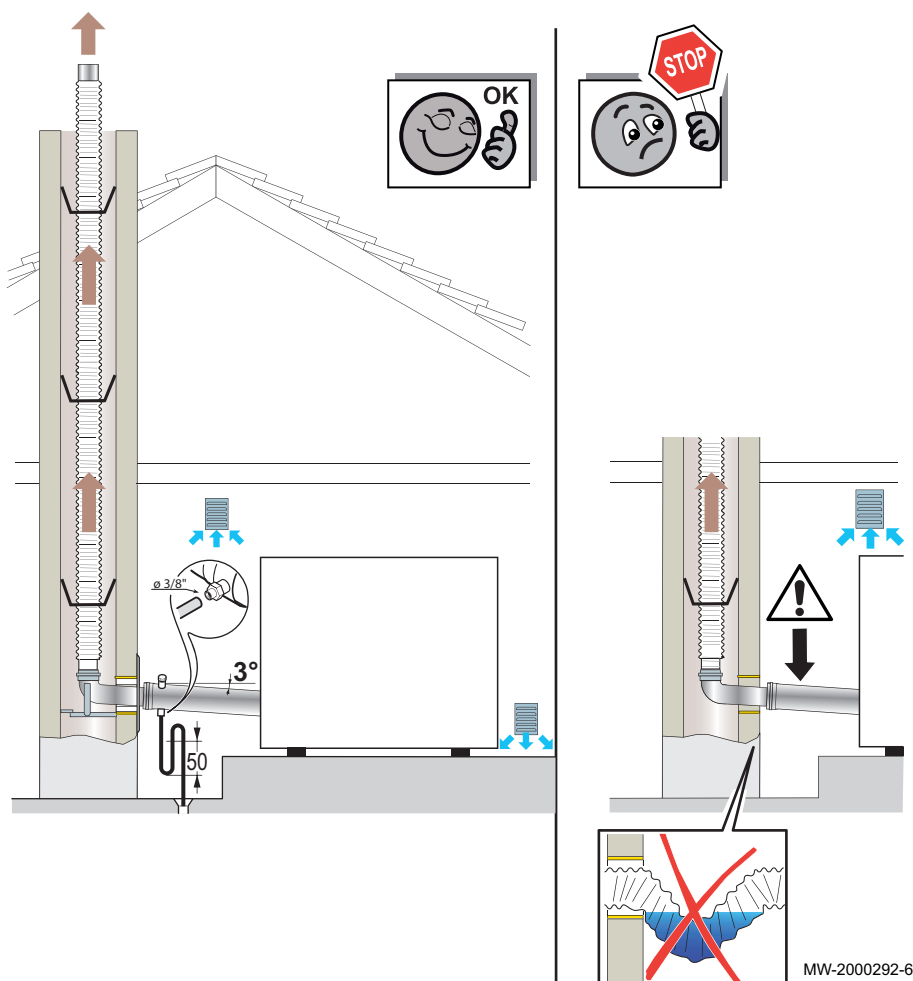
X - Square cross-section: 140 x 140 mm minimum

- Round flue: 160 mm minimum

**Caution**

The flue gas temperature may be lower than 160 °C. You must always use flue gas pipes capable of withstanding periods of condensation.

Fig.39 Flexible type B₂₃ connection - Flue gas pipes (combustion air taken from the boiler room)



MW-2000292-6

**Caution**

The flue gas temperature may be lower than 160 °C. You must always use flue gas pipes capable of withstanding periods of condensation.

6.9 Electrical connections

6.9.1 Recommendations

**Warning**

Make the appliance's electrical connections in compliance with the requirements of the prevailing standards, the information given in the electrical diagrams delivered with the appliance, and the recommendations in this instruction manual. Only qualified professionals may carry out electrical connections, always with the power off.

Earth the appliance before making any electrical connections.

Disconnect the power supply at the mains before carrying out any work on the appliance or accessories connected to the appliance.

The boiler is entirely pre-wired. Do not modify the connections inside the control panel.

The mains supply is made via the connection cable pre-wired in the appliance.

If the power cable is damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.

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

All other external connections can be made to the connection connectors (low voltage).

Tab.31

France	Earthing must comply with the NFC 15-100 standard.
---------------	--

**Caution**

- Separate the sensor cables from the 230 V circuit cables, both outside and inside the boiler.
- The installation must be fitted with a main switch.

All connections are made to the terminal blocks provided for that purpose in the boiler connection box.

The output available per outlet is 450 W (2 A, with $\cos \phi = 0.7$) and the inrush current must be less than 16 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.

**Important**

Failure to comply with these instructions could lead to interference and control unit malfunctioning or even damage to the electronic circuitry.

6.9.2 Electrical power supply

Tab.32

Power supply voltage	230 V AC/50 Hz
Power supply	Single phase
Fuses	4 A for the CU-OH-04 main PCB 2.5 A for the optional SCB-04 PCB The fuses protect the PCBs.
Power supply connection cable	Pre-fitted in the boiler

**Caution**

- Please ensure the polarities shown on the terminals are followed, i.e live (L), neutral (N) and earth ($\div$)
- When the boiler switch is in the Off position, the current still circulates inside the appliance. The boiler's power supply must be switched off at the circuit breaker before any work is carried out.
- The boiler power supply should have a circuit breaker with a max rating of 6 A.

6.9.3 Accessing the PCB

Fig.40

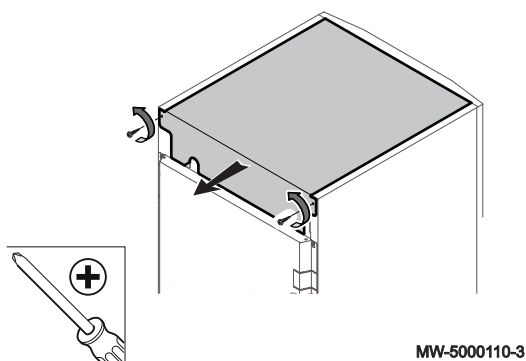


Fig.41

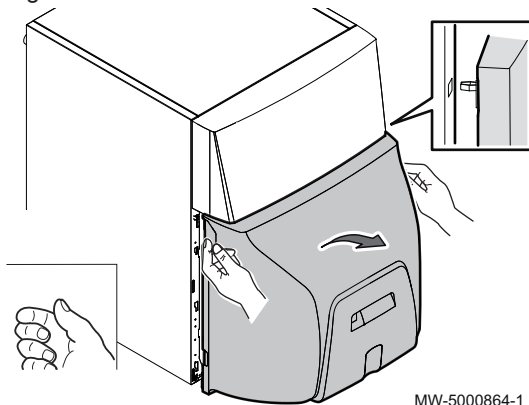


Fig.42

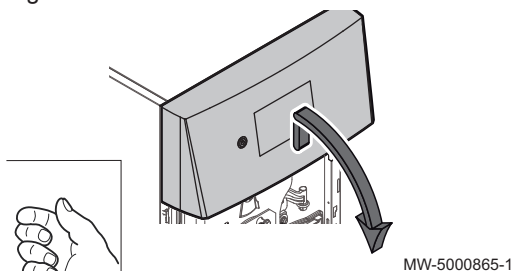
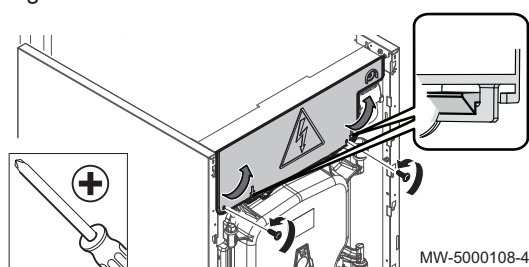


Fig.43



1. Unscrew and remove the upper panel.

2. Remove the lower front panel.

3. Gently lift the upper front panel.
4. Remove the upper front panel.

5. Lift the flap on the control panel.

Fig.44

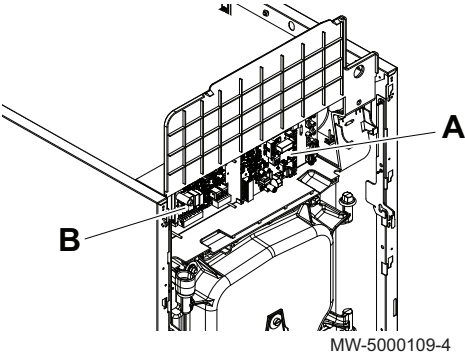
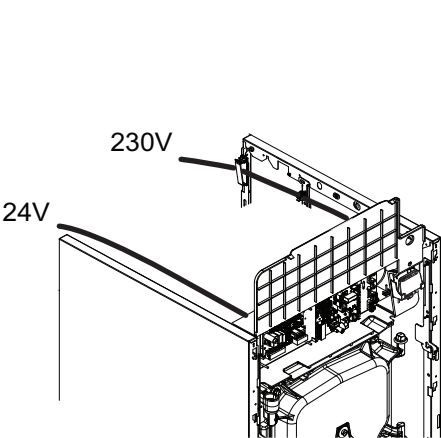


Fig.45



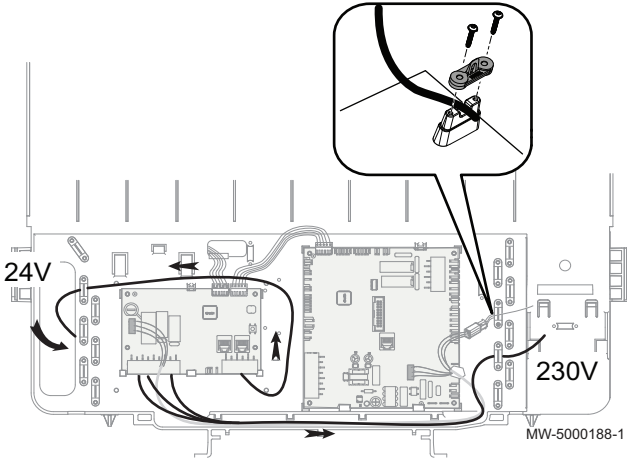
6. Access the PCB housing.

Marker	Description
A	CU-OH-04 main PCB
B	SCB-04 optional PCB if connected

7. Perform a reset when the PCB is replaced.



See
Return to the factory settings



8. When replacing the PCB, secure the cable(s) with traction arrester devices.



Danger
Separate the sensor cables from the 230 V circuit cables.



For more information, see
Restoring the factory settings, page 69

6.10 Filling the system

6.10.1 Water treatment

In many cases, the boiler and the heating system can be filled with mains water, without treating the water.



Caution
Do not add any chemical products to the heating water without first consulting a water treatment specialist. For example: antifreeze, water softeners, products to increase or reduce the pH value, chemical additives and/or inhibitors. These may cause faults in the boiler and damage the heat exchanger.



Important

- Flush the installation with at least 3 times the volume of water contained in the heating system.
- Flush the DHW circuit with at least 20 times its volume of water.

The water in the installation must comply with following characteristics:

Tab.33 Heating water specifications

Specification	Unit	Total output of the installation (kW)			
		≤ 70	70 - 200	200 - 550	> 550
Degree of acidity (untreated water)	pH	6.5 - 8.5	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5
Degree of acidity (treated water)	pH	7.0 - 9.0	7.5 - 9.5	7.5 - 9.5	7.5 - 9.5
Conductivity at 25°C	μS/cm	≤ 800	≤ 800	≤ 800	≤ 800
Chlorides	mg/litre	≤ 150	≤ 150	≤ 150	≤ 150
Other components	mg/litre	< 1	< 1	< 1	< 1
Total water hardness ⁽¹⁾	°f	1 - 35	1 - 20	1 - 15	1 - 5
	°dH	1.5 - 20.0	0.5 - 11.2	0.5 - 8.4	0.5 - 2.8
	mmol/litre	0.1 - 3.5	0.1 - 2.0	0.1 - 1.5	0.1 - 0.5

(1) For installations with constant heating and a maximum total system output of 200 kW, the appropriate maximum total water hardness is 8.4°dH (1.5 mmol/l, 15°f). For installations of more than 200 kW, the appropriate maximum total hardness is 2.8°dH (0.5 mmol/l, 5°f).

**Important**

If water treatment proves necessary, De Dietrich recommends the following manufacturers:

- Cillit
- Climalife
- Fernox
- Permo
- Sentinel

6.10.2 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 with a powerful universal cleaner.
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).

6.10.3 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).

6.10.4 Filling the heating system

Before filling the heating system, rinse it thoroughly.

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.

6.11 Completing the installation

1. Ensure that the boiler equipment and thermostats are functioning properly.
2. Ensure that the thermostats are properly set.
3. Put the front panel(s) back in place.

4. Tidy away or scrap the various packaging items.
5. Hand over all manuals to the end user.

7 Commissioning

7.1 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.

7.2 Check list before commissioning

1. Check that the installation and the boiler are full of water and correctly vented.
2. Check that the storage tank is filled with fuel and that the fuel provided matches the fuel oil recommended.
3. Check the tightness of the oil line.
4. Degas the oil supply line from the tank to the oil filter in the boiler.
5. Check the water pressure in the heating system. The recommended water pressure is 0.15 MPa (1.5 bar).
6. Check the tightness of the pipe connections (fuel and water).
7. Check the electrical connections.

7.3 Commissioning procedure

7.3.1 Initial commissioning



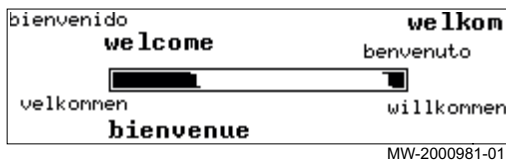
Caution

Initial commissioning must be performed by a qualified professional.

When the control panel is first switched on, a venting cycle can be started during the start-up cycle. The display shows various brief items of information for checking. These items of information are displayed one after the other.

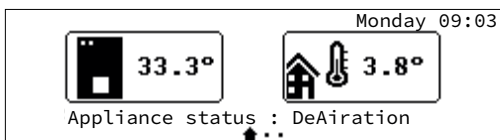
1. Open the oil inlet.
2. Turn on the boiler using the ON/OFF switch.
⇒ The boiler is switched on. The **Welcome** message is displayed.
3. Select country.
4. Select language.
5. Set the: Date and time.
6. Select: **Confirm**, to save the settings.
7. Set the components (thermostats, control system) so that they request heat.
8. The boiler starts its start-up cycle.
9. The venting cycle is run automatically on start-up of the appliance, if an error occurs or during manual reset if the following conditions are met:
 - domestic hot water sensor connected;
 - domestic hot water temperature below 35°C;

Fig.46



MW-2000981-01

Fig.47



MW-5000951-1

7.3.2 Configuring the installation via the control panel

1. Go to the menu: **Zone Function**.

Tab.34

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Zone1 → Select: Zone Function

2. Select the desired **Zone Function** using the selector .
 - 0 = Disable: Zone1 is not activated.
 - 1 = Direct: Zone1 is configured in a direct circuit.
3. Press the , to confirm the value.
4. Go back to the main screen by pressing the back key .

7.4 Oil settings

7.4.1 Factory setting values

Tab.35

Boiler model	Unit	CFU 22	CFU 29
Burner output	kW	22	29
Injection nozzle type		Danfoss 0.40/60°S	Danfoss 0.50/60°S
Oil pressure	bar	23	22
O ₂ ⁽¹⁾	(% volume)	4	4
Air pressure at the head ⁽²⁾	mbar	2.5	4.1
(1) For information only: CO ₂ value = 12.5%			
(2) Value given for information only, do not use this value as a setting criterion			

7.4.2 Setting the burner

1. Check the dimension Y and modify it if necessary using the screw.

Tab.36 Dimensions X and Y

	Unit	CFU 22	CFU 29
Head adjustment (measurement X)	mm	21	23
Dimension Y	mm	6	6

Fig.48

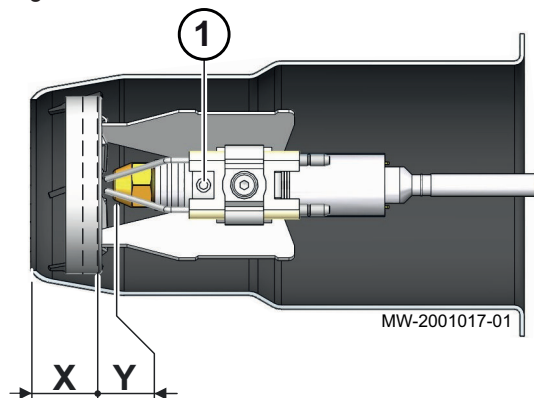
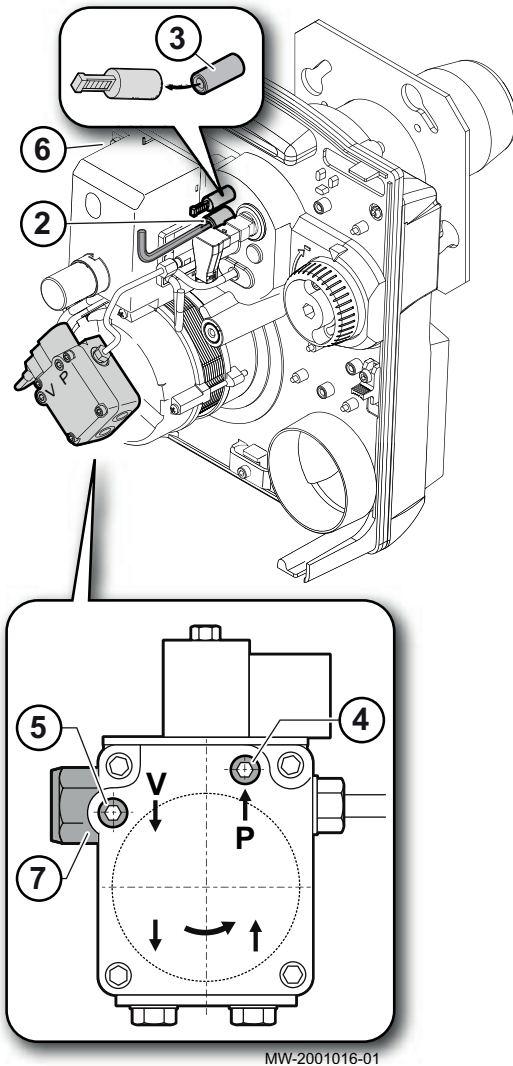


Fig.49



2. Check the dimension X and modify it if necessary using the screw.
3. Connect the pressure gauge to measure the air pressure at the head.
4. Fit the pressure gauge to the oil pump to measure the oil pressure.
5. Fit the vacuum gauge to the oil pump to check the vacuum.
6. Start the burner.
⇒ Check that the LED is lit.
7. Adjust the oil pressure using the setting screw on the burner oil pump.

**Important**

Comply with the oil pressure values in accordance with the burner output.

8. Measure the vacuum.

**Important**

The vacuum must not exceed 0.35 bar.

9. Take a combustion measurement.
10. Readjust the air shutter settings to adjust the O_2 (CO_2) as required.
11. Check the burner start-up.

7.4.3 Setting the burner combustion

Check the combustion by measuring the percentage of O_2 (CO_2) in the flue gas discharge pipe.

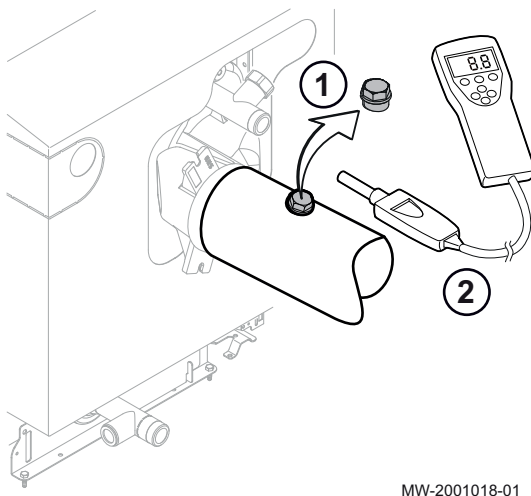
- To obviate any measurement errors, the pathway taken by the combustion products between the chimney and the boiler nozzle must be leak proof.
- The boiler must run for at least 5 minutes if the boiler is at temperature and for 10 minutes if the boiler is cold.

1. Unscrew the plug in the flue gas measurement point.
2. Connect the flue gas analyser, ensuring that the opening around the sensor is completely sealed when taking measurements.
3. Measure the O_2 (CO_2) content in the flue gases.

**Important**

For installations at altitude (above 2000 m) and/or with a long forced flue, if the air shutter is fully open (position 150), reduce the pump pressure to limit the burner output and obtain the desired O_2 (CO_2) level.

Fig.50



4. Fill in the table below with the values measured.

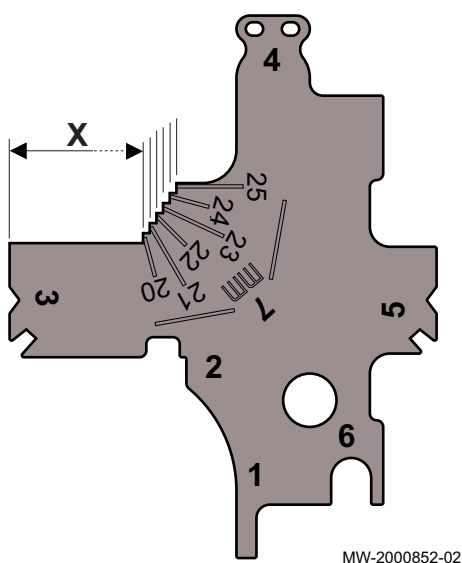
Tab.37 Measured values

	Unit	Measured values
Burner output ⁽¹⁾	kW	
Fuel oil pressure	MPa (bar)	
O ₂	%	
CO ₂	%	
Air pressure at the head	mbar	
Vacuum	bar	
Number of rings	/	
(1) This value is not measured, but defined by the boiler model		

5. If the O₂ (CO₂) level does not match the required value, correct the O₂ (CO₂) value by adjusting the air shutter and immobilising it with the tightening screw.
6. If necessary, adjust the combustion hygiene settings via the dimension X to meet the combustion requirements applicable in the country.
7. Once the measurement has been completed, put the flue gas sampling plug back in place.

7.4.4 Use the ignition electrode checking tool

Fig.51



- 1 Electrode gap (flame tube removed)
- 2 Angle of electrodes when they are removed
- 3 Angle of electrodes (flame tube fitted)
- 4 Electrode gap
- 5 Angle of electrodes (flame tube removed)
- 6 Minimum distance between the electrodes and the deflector
- 7 Head adjustment (measurement X)

The boiler is:

- supplied with the burner fitted,
- pre-set in the factory.

The ignition electrode checking tool is supplied in the documentation bag.

Check the following ignition electrode positions to ensure these work correctly:

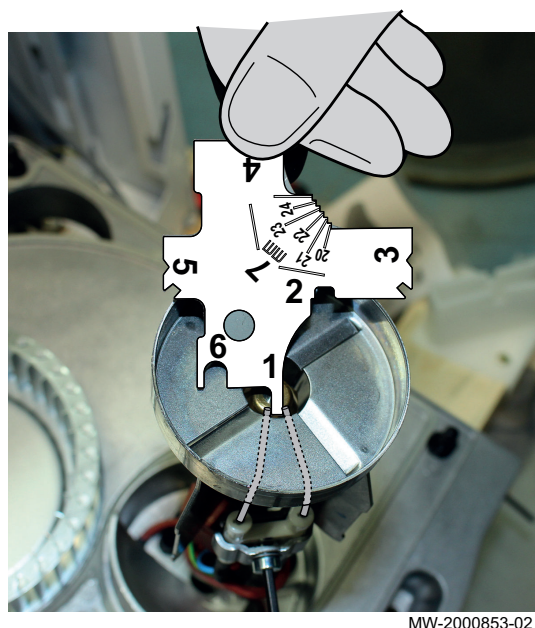
- during initial commissioning of the boiler,
- during burner maintenance.



Important

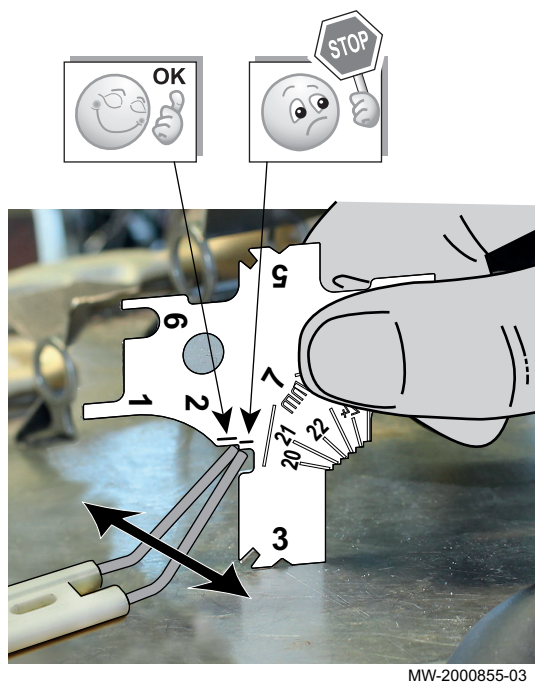
The following steps may be carried out independently of one another.

Fig.52



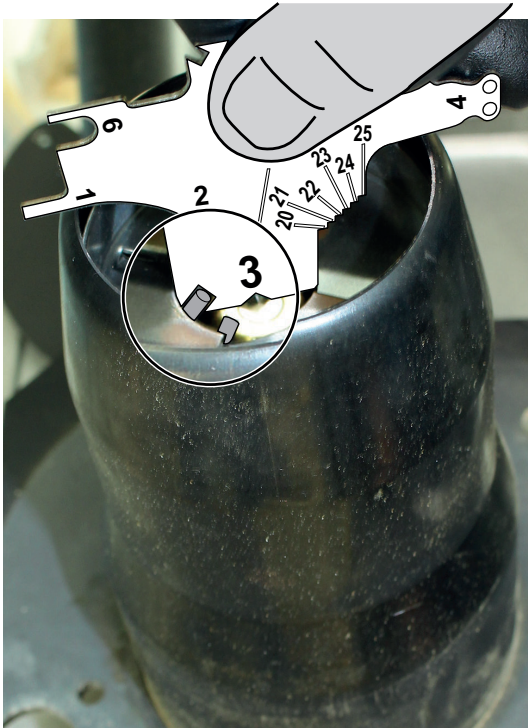
1. Setting 1: Electrode gap.
 - 1.1. Remove the flame tube.
 - 1.2. Adjust the electrode gap: marker no. 1 must be between the two electrodes.
 - 1.3. Refit the flame tube.

Fig.53



2. Setting 2: Angle of electrodes.
 - 2.1. Place the electrodes on a flat surface.
 - 2.2. Place marker no. 3 on the tool on the same flat surface.
 - 2.3. Adjust the electrodes so that they fit in position no. 2.

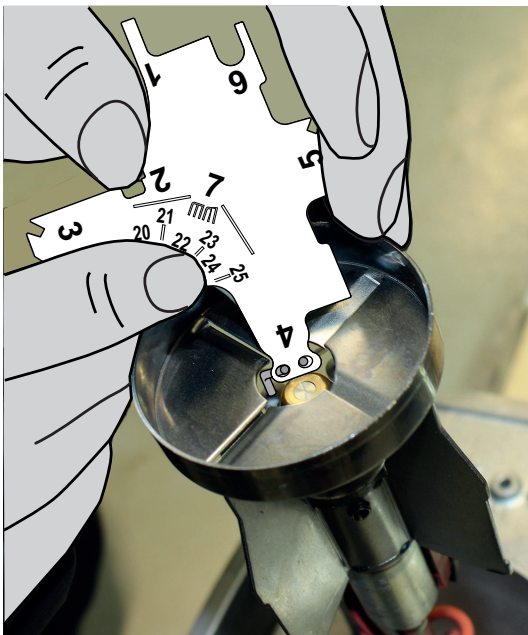
Fig.54



MW-2000858-02

3. Setting 3: Angle of electrodes (flame tube fitted)
 - 3.1. Position the tool fully up against the injection nozzle.
 - 3.2. Adjust the electrodes so that they fit into the notch marked no. 3 by pivoting the tool.

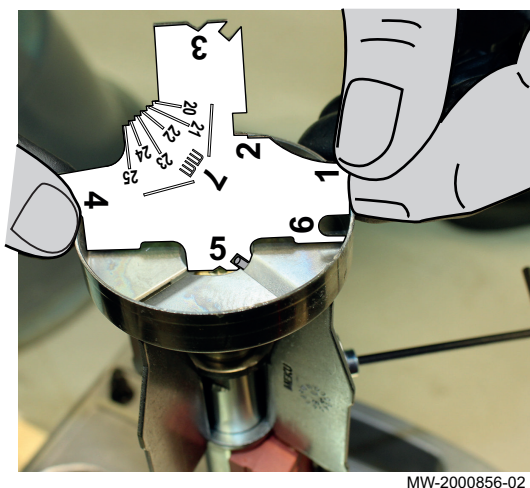
Fig.55



MW-2000857-2

4. Setting 4: Electrode gap.
 - 4.1. Adjust the electrodes so that they fit into the notches marked no. 4.
 - 4.2. The distance between the two electrodes and between the electrodes and the injection nozzle must be respected.

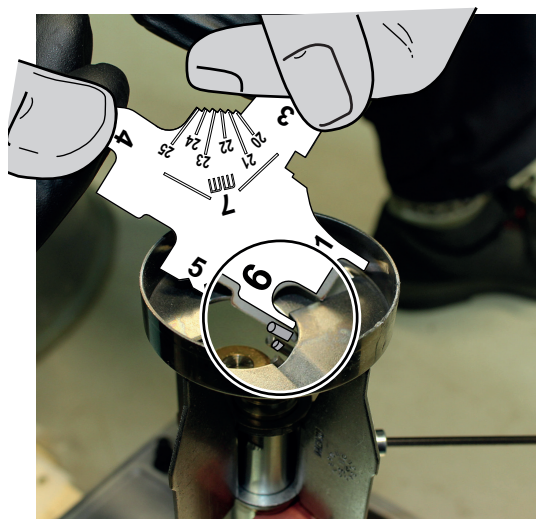
Fig.56



MW-2000856-02

5. Setting 5: Angle of electrodes (flame tube removed).
 - 5.1. Position the tool on the deflector, fully up against the injection nozzle.
 - 5.2. Adjust the electrodes so that they fit through the notch marked no. 5 by pivoting the tool.

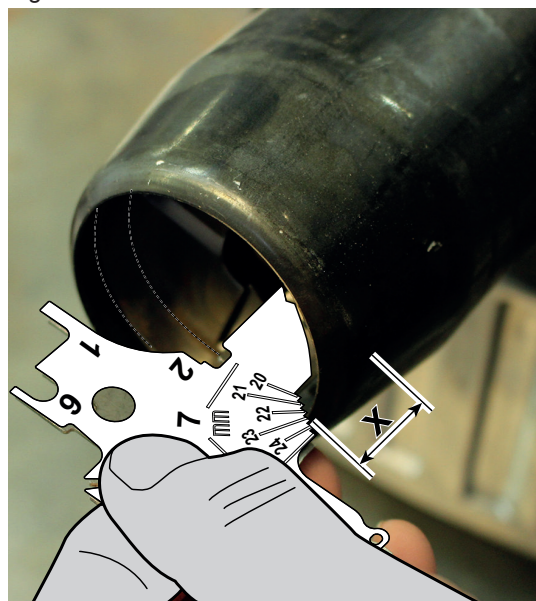
Fig.57



MW-2000854-03

6. Setting 6: Minimum distance between the electrodes and the deflector.
 - 6.1. Position the tool.
 - 6.2. Adjust the electrodes so that the marker no. 6 fits between the electrodes and the deflector.

Fig.58



2. Set the heating curve.



For more information, see
Setting the heating curve, page 67

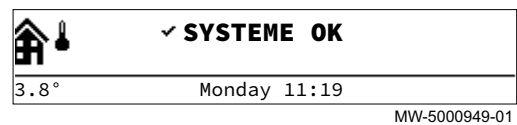
7.6 Final instructions for commissioning

1. Put the front panel(s) back in place.
2. Bring the heating system temperature up to approximately 50°C.
3. Set the boiler to automatic operation.
4. After about 10 minutes, vent the air in the heating system.
5. Check the hydraulic pressure. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 0.15 and 0.18 MPa (1.5 and 1.8 bar)).
6. Instruct the user in the operation of the system, boiler and control panel.
7. Inform the user of the periodicity of maintenance work to be carried out.
8. Hand over all manuals to the user.
⇒ Commissioning of the boiler is now complete.

8 Operation

8.1 Browsing in the menus

Fig.59 Standby screen

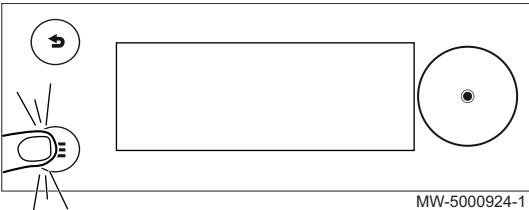


Press any key or turn the selector to turn on the backlight for the control panel screen.



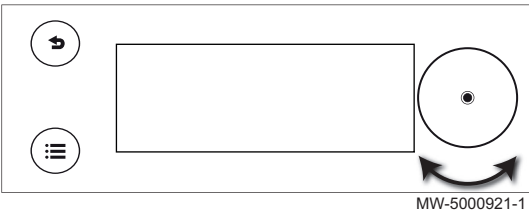
Important
If no key is pressed within 3 minutes, the control panel backlight will go out.

Fig.60 Access to main menu



Press the key to access the main menu.

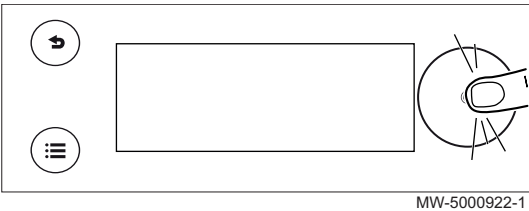
Fig.61 Selection



Turn the selector to select:

- a menu,
- a page on the home screen,
- a parameter,
- a setting.

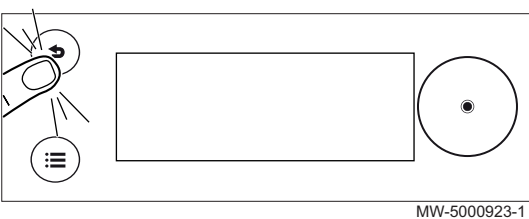
Fig.62 Confirmation



Press the selector to confirm:

- a menu,
- a page on the home screen,
- a parameter,
- a setting.

Fig.63 Back to home screen



Press the return key as many times as necessary to return to the home screen.

To return to the home screen, press and hold the back key .

8.1.1 Zone direct access tree structure

Tab.38

Type of access	Access path
Direct access: from the main home screen	→ Press the selector → Turn the selector to access the various zones
Quick access: from any screen	Not available

Tab.39

Display	Available parameters	 See Chapter
Main home screen	System holiday mode	Periods of absence or going on holiday User guide
	CH function on	Switching the central heating on/off User guide
	DHW function on	Switching domestic hot water production on/off User guide
	Forced summer On/Off	Personalising the control panel User guide
Zone1	Set heating temperatures	Setting the temperatures for the activities User guide
	Operating mode	Selecting the operating mode User guide
	Time programmes heating	Activating and configuring a timer programme User guide
Zone2 (only if the SCB-04 optional PCB is connected)	Set heating temperatures	Setting the temperatures for the activities User guide
	Operating mode	Selecting the operating mode User guide
	Time programmes heating	Activating and configuring a timer programme User guide
Domestic hot water	Set heating temperatures	Setting the temperatures for the activities User guide
	Operating mode	Selecting the operating mode User guide
	Time programmes heating	Activating and configuring a timer programme User guide

8.1.2 Main menu quick access tree structure

Tab.40

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Turn the selector  to access the various menus

Tab.41

Accessible menus	Description	 See Chapter
	Central heating On/Off • Off • On	Switching the central heating on/off User guide
	Domestic Hot Water On/Off • Off • On	Switching domestic hot water production on/off User guide
	Heating temperature • Zone1 • Zone2 (only if the SCB-04 optional PCB is connected)	Setting the activities temperature User guide

Accessible menus	Description	 See Chapter
	Water temperature - DHW comfort setpoint - DHW reduced setpoint	Modifying the domestic hot water set point temperatures User guide
	Temporary heating temperature change - Zone1 - Zone2 (only if the SCB-04 optional PCB is connected)	Changing the room temperature temporarily User guide
	Hot water boost	Forcing domestic hot water production (override) User guide
	System holiday mode	Periods of absence or going on holiday User guide
	User settings	
	Zones settings	Changing the name and symbol of a zone User guide
	Domestic Hot Water settings	Modifying the domestic hot water set point temperatures User guide
	CH function on	Switching the central heating on/off User guide
	DHW function on	Switching domestic hot water production on/off User guide
	Outdoor temperature	Outdoor temperature sub-menu
	Energy counter	Monitoring the energy consumption User guide
	System holiday mode	Periods of absence or going on holiday User guide
	Test mode	Chimney mode User guide
	Installer	List of Installer menu parameters
	Finder	Using the parameter search
	Signals status setpoints	Reading out measured values
	Energy counter	Monitoring the energy consumption User guide
	System settings	Personalising the control panel User guide
	Version information	Version information User guide

8.2 Starting up the boiler

1. Check that the storage tank is filled with fuel.
2. Open the oil inlet valve.
3. Switch on the boiler.
4. Check the hydraulic pressure in the installation indicated on the user interface.



Important

Recommended hydraulic pressure between 0.15 and 0.2 MPa (1.5 and 2.0 bar).

5. Confirm the selection by pressing the selector .
 - ⇒ If the boiler is connected to a domestic hot water tank, the boiler begins an automatic venting cycle that lasts around 3 minutes and is repeated each time the power is cut. If there is a problem, an error message is displayed on the home screen.

8.3 Shutting down the boiler

The boiler must be shut down in certain situations, for example during any intervention on the equipment. In other situations, such as an extended

absence period, we recommend that the  **System holiday mode** operating mode is used in order to benefit from the boiler anti-blocking function and to protect the installation from frost.

To shut down the boiler:

1. Switch off the boiler.

8.4 Frost protection



Caution

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



Caution

The integrated protection system only protects the boiler, not the heating system.



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.



Important

To prevent the radiators and the installation from freezing in places where that risk exists (e.g. in a garage or an equipment room), we recommend connecting an outdoor temperature sensor to the boiler.

If the temperature of the water in the boiler falls too much, the integrated protection device switches itself on. This device functions as follows:

Tab.42

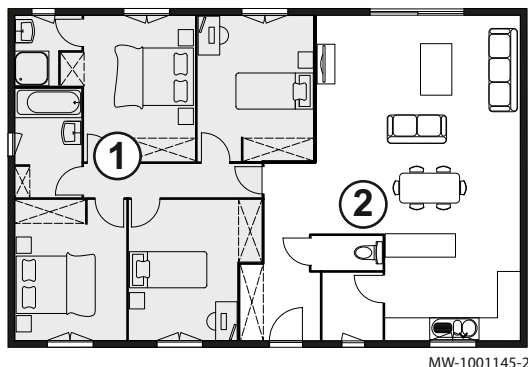
Water temperature	Operating description
< 7 °C	The circulating pump starts up and shuts down if the water temperature is higher than 10 °C. The circulating pump continues to run for a short time.
< 4 °C	The boiler starts up and shuts down if the water temperature is higher than 35 °C.

9 Settings

9.1 Definition of the term "zone"

Zone: term given to the different hydraulic circuits (**Zone1**, **Zone2**). It indicates several rooms served by the same circuit.

Fig.64



- ① **Zone1**
- ② **Zone2** (only if the SCB-04 optional PCB is connected)

All the zone symbols and names can be changed.

Tab.43 Available symbols

Symbol	Symbol value	Symbol allocation
	0	None
	1	All
	2	Bedroom
	3	Livingroom
	4	Study
	5	Outdoor
	6	Kitchen
	7	Basement

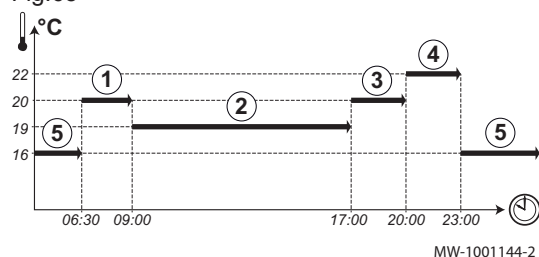
Tab.44 Available symbols (only if the SCB-04 optional PCB is connected)

Symbol	Symbol value	Symbol allocation
	8	Swimming Pool
	9	DHW Tank
	10	DHW Electrical Tank
	11	DHW Layered Tank
	12	Internal Boiler Tank
	13	Time Program

9.2 Definition of the term "Activity"

Activity: this term is used when programming time ranges. It refers to the client's desired comfort level for different activities during the course of the day. One set point temperature is associated to each activity. The last activity of the day remains valid until the first activity of the following day.

Fig.65



Tab.45 Example

Start of the activity	Activity	Set point temperature
6:30	Morning ①	20 °C
9:00	Sleep ②	19 °C
17:00	Home ③	20 °C
20:00	Evening ④	22 °C
23:00	Away ⑤	16 °C

9.3 Accessing the Installer level

Certain parameters, which may affect the operation of the appliance, are protected by an access code. Only the installer is authorised to modify these parameters.

1. Go to the menu: **Installer**.

Tab.46

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the key → Select: Installer

2. Enter the code **0012**.
⇒ You are in the following menu: **Installer**.

If no action is taken for 30 minutes, the system will automatically exit the Installer level.

9.4 List of parameters

9.4.1 List of Installer menu sub-menus

The appliance parameters are described directly in the user interface. Some of these parameters are listed in the following chapters with additional information and their default values.

Tab.47

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the key → Select: Installer

Tab.48

Sub-menu	Parameter	Description	See Chapter
Installation setup		Zone1	Zone1 sub-menu
		Zone2 (only if the SCB-04 optional PCB is connected)	Zone2 sub-menu
		Domestic Hot Water	Domestic Hot Water sub-menu
		Outdoor temperature Parameters and variables related to outdoor temperature sensors	Outdoor temperature sub-menu
		Oil boiler Parameters and variables related to oil boiler	Oil boiler sub-menu

Sub-menu	Parameter	Description	 See Chapter
Signals		Zone1	Reading out measured values
		Zone2 (only if the SCB-04 optional PCB is connected)	
		Domestic Hot Water	
		Outdoor temperature Parameters and variables related to outdoor temperature sensors	
		Oil boiler Parameters and variables related to oil boiler	
Counters		Zone1	List of Meter menu parameters
		Zone2 (only if the SCB-04 optional PCB is connected)	
		Domestic Hot Water	
		Oil boiler Parameters and variables related to oil boiler	
Commissioning		Test mode	Commissioning menu
		Output test	
		Input test	
View service reminder	AP010	Service notification The type of service needed based on burn and powered hours	Configuring the maintenance message
	AC002	Service Burning hrs Number of hours that the appliance has been producing energy since last service	
	AC003	Hours Op. Service Number of hours since the previous servicing of the appliance	
	AC004	Burner Starts Number of generator startings since the previous servicing.	
	AC001	Hours on mains Number of hours that the appliance has been on mains power	
Error history			Displaying and clearing the error memory
Installer details	AP089	Installer name Name of the installer	Personalising the control panel User guide
	AP090	Installer phone Telephone number of the installer	
Advanced menu		Auto detect	Resetting or restoring settings
		Set configuration code	
		Resetting to factory settings	
		Finder	
Exit installer mode		Enables the Installer to return to User mode	

■ Zone1 sub-menu

These parameters are found on the **CU-OH-04** main PCB.

CP : Circuits Parameters = Heating circuit parameters

Tab.49

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Zone1

Tab.50

Sub-menu	Parameter	Description	Factory setting
Zone Function	CP020	Type of direct zone connected • 0 =Disable • 1 =Direct	1
Set heating temperatures	CP080	Sleep: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	16
	CP081	Home : Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	20
	CP082	Away: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	6
	CP083	Morning: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	21
	CP084	Evening: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	22
OperatingZoneMode	CP320	Operating mode of the zone • 0 =Scheduling • 1 = Manual • 2 =Antifrost • 3 =Temporary	0
Time programmes heating		• Schedule 1 • Schedule 2 • Schedule 3	
 See Chapter: Setting the heating curve	CP230	Heating curve temperature gradient of the zone	1.5
	CP210	Comfort footpoint of the temperature of heat curve of the circuit	15
	CP220	Reduced footpoint of the temperature of heat curve of the circuit	15
	CP000	Maximum Flow Temperature setpoint zone	90
General		Zone friendly Name	Zone1
		Friendly Name of the user zone short	CIRCA
	CP660	Choice icon to display this zone	3
	CP040	Pump post runtime of the zone	3
	CP070	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	16
	CP340	Type of reduced night mode, stop or maintain heating of circuit • 0 =Stop heat demand • 1 = Continue heat demand	1
	CP640	Opentherm Logic level contact of the zone	1
	CP780	Selection of the control strategy for the zone	0

Sub-menu	Parameter	Description	Factory setting
Advanced menu	CP750	Maximum zone preheat time	0
	CP520	Power setpoint per zone	100
	CP670	Configuration of pairing room unit per zone	
Commercial name of the appliance			

■ Zone2 sub-menu

These parameters are found on the **SCB-04** optional PCB.

Only if the **SCB-04** optional PCB is connected.

CP : Circuits Parameters = Heating circuit parameters

Tab.51

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Zone2

Tab.52

Sub-menu	Parameter	Description	Factory setting
Zone Function	CP020	Type of direct zone connected • 0 =Disable • 1 =Direct • 2 =Mixing Circuit • 3 =Swimming pool • 4 =High Temperature • 5 =Fan Convector • 6 =DHW tank • 7 =Electrical DHW • 8 =Time Program	2
Set heating temperatures	CP080	Sleep: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	16
	CP081	Home : Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	20
	CP082	Away: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	6
	CP083	Morning: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	21
	CP084	Evening: Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C	22
OperatingZoneMode	CP320	Operating mode of the zone • 0 =Scheduling • 1 =Manual • 2 =Antifrost • 3 =Temporary	0
Time programmes heating		• Schedule 1 • Schedule 2 • Schedule 3	

Sub-menu	Parameter	Description	Factory setting
 See Chapter: Setting the heating curve	Heat curve		
	CP230	Heating curve temperature gradient of the zone	0.7
	CP210	Comfort footpoint of the temperature of heat curve of the circuit	15
	CP220	Reduced footpoint of the temperature of heat curve of the circuit	15
	CP000	Maximum Flow Temperature setpoint zone	50
General		Friendly Name of the user zone	
		Friendly Name of the user zone short	
	CP660	Choice icon to display this zone	3
	CP040	Pump post runtime of the zone	4
	CP030	Bandwidth of mixing valve zone where modulation takes place.	12
	CP050	Shift between calculated setpoint and mixing valve circuit setpoint	4
	CP070	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	16
	CP340	Type of reduced night mode, stop or maintain heating of circuit • 0 = Stop heat demand • 1 = Continue heat demand	1
	CP640	Opentherm Logic level contact of the zone	1
	CP780	Selection of the control strategy for the zone	0
 See Chapter: Drying screed	Screed drying		
	CP470	Zone screed drying Setting of the screed drying program of the zone	0
	CP480	ScreedStartTemp Setting of the start temperature of the screed drying program of the zone	20
	CP490	ScreedStopTemp Setting of the stop temperature of the screed drying program of the zone	20
Advanced menu	CP330	The time needed by the valve to be fully opened	60
	CP750	Maximum zone preheat time	2
	CP770	The zone is after a Buffer tank	1
	CP520	Power setpoint per zone	100
	CP670	ConfPairing RU Zone Configuration of pairing room unit per zone	
Commercial name of the appliance			

■ Domestic Hot Water sub-menu

A domestic hot water sensor must be connected to the CU-OH-04 main PCB to display these parameters.

DP : Direct Hot Water Parameters = Domestic hot water tank parameters

Tab.53

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Domestic Hot Water

Tab.54

Sub-menu	Parameter	Description	Factory setting
Set heating temperatures	DP070	DHW comfort setpoint: Comfort temperature setpoint from the Domestic Hot Water tank	55
	DP080	DHW reduced setpoint: Reduced temperature setpoint from the Domestic Hot Water tank	10
DHW mode	DP200	DHW primary mode current working setting • 0 =Scheduling • 1 = Manual • 2 =Antifrost • 3 =Temporary	0
DHW timeprog. select	DP060	Time program selected for DHW. 0 =Schedule 1 1 =Schedule 2 2 =Schedule 3	0
Anti-legionella	DP004	Legionella calor.: Legionella mode protection calorifier • 0 =Disabled • 1 =Weekly • 2 =Daily	0
	DP160	DHW AntiLeg Setpoint: Setpoint for DHW anti legionella Can be set from 60 °C to 90 °C	65
General	DP046	DhwMaxTemp: Maximum Domestic Hot Water temperature Can be set from 0 °C to 95 °C	90
	DP213	Postrun DHW pump/3wv: Post run time of the DHW pump/3 way valve after DHW production Can be set from 0 Min to 99 Min	3
	DP337	DHW holiday setpoint: Holiday temperature setpoint from the Domestic Hot Water tank Can be set from 10 °C to 60 °C	10
	DP005	Calorifier Tf offset: Flow setpoint offset for loading calorifier Can be set from 0 °C to 30 °C	20
	DP006	Hyst calorifier: Hysteresis to start heating calorifier Can be set from 2 °C to 15 °C	6
	DP034	DhwCalorifierOffset: Offset for calorifier sensor Can be set from 0 °C to 10 °C	0
Water flow and pressure	DP037	DhwPumpSpeedMin: Minimum Domestic Hot Water pump speed Can be set from 0 % to 100 %	40
	DP038	DhwPumpSpeedMax: Maximum Domestic Hot Water pump speed Can be set from 20 % to 100 %	100
Advanced	DP007	Dhw 3wv Standby: Position of three way valve during standby • 0 =CH position • 1 =DHW position	0
	DP055	DHW TAS protection: Enable/disable the TAS protection of the DHW tank • 0 =No • 1 =Yes	1
	DP140	DHW load type: DHW load type (0 : Combi, 1 : Solo) • 0 = Combi (Instantaneous) • 1 =Solo	1
	DP150	DHW Thermostat: Set DHW Thermostat function On or Off • 0 =Off • 1 =On	1

■ Outdoor temperature sub-menu

These parameters are found on the CU-OH-04 main PCB.

CP : Circuits Parameters = Heating circuit parameters

Tab.55

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Outdoor temperature

Tab.56

Parameter name	Parameter	Description	Factory setting
Force summer mode	AP074	The heating is stopped. Hot water is maintained. Force Summer Mode • 0 =Off • 1 =On	0
Summer Winter	AP073	Outdoor temperature: upper limit for heating Can be set from 15 °C to 30.5 °C	22
Frost min out temp	AP080	Outside temperature below which the antifreeze protection is activated • can be set from -30 °C to 20 °C • set to -30 °C = function deactivated	3
Building Inertia	AP079	Inertia of the building used for heat up speed Can be set from 0 to 10 • 0 = 10 hours for a building with low thermal inertia, • 3 = 22 hours for a building with normal thermal inertia, • 10 = 50 hours for a building with high thermal inertia. Modification of the factory setting is only useful in exceptional cases.	3
Outdoor sensor	AP056	Enable outdoor sensor • 0 =No outside sensor • 1 =AF60 • 2 =QAC34 When connecting the sensor, the parameter changes automatically.	0
Outside Sens. Source	AP091	Type of outside sensor connection to be used • 0 =Auto • 1 =Wired sensor • 2 = not available • 3 =Internet measured • 4 =None	0

■ Oil boiler sub-menu

These parameters are found on the CU-OH-04 main PCB.

CP : Circuits Parameters = Heating circuit parameters

Tab.57

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Oil boiler

Tab.58

Sub-menu	Description
General	 See Refer to the following tables
Water flow and pressure	 See Refer to the following tables
Blocking input	 See Refer to the following tables
Manual heat demand	 See Refer to the following tables
Service settings	 See Refer to the following tables
Advanced	 See Refer to the following tables

Tab.59 General

Parameter name	Parameter	Description	Factory setting
CH Set Max System	AP063	Maximum flow temperature setpoint for burning at central heating Can be set from 20 °C to 90 °C	90
CH function on	AP016	Enable central heating heat demand processing • 0 =Off • 1 =On	1
DHW function on	AP017	Enable domestic hot water heat demand processing • 0 =Off • 1 =On	1
Boiler Pump function	AP102	Configuration of the boiler pump as zone pump or system pump (feed lowloss header) • 0 =No • 1 =Yes	1
CH Pump postrun time	PP015	Central heating pump post run time Can be set from 0 Min to 99 Min	0
Pump type	AP068	Type of pump : pwm modulated or on/off. A return sensor is needed for modulating pump • 0 = On/Off • 1 = Modulating If a return sensor is connected, the parameter changes to 1 automatically.	0

Tab.60 Water flow and pressure

Parameter name	Parameter	Description	Factory setting
Max. CH pump speed	PP016	Maximum central heating pump speed (%) Can be set from 20 % to 100 %	100
Min CH pump speed	PP018	Minimum central heating pump speed (%) Can be set from 20 % to 100 %	40

Parameter name	Parameter	Description	Factory setting
Water press sensor	AP097	Enable/Disable presence of water pressure sensor • 0 =No • 1 =Yes	0
De-aeration cycle	AP101	De-air cycle settings • 0 =No deair at power up • 1 =Always deair at pwr • 2 =Deair only at 1 pwr	1

Tab.61 Blocking input BL input > Select BL func

Parameter name	Parameter	Description	Factory setting
BL input setting	AP001	Blocking input setting (1: Full blocking, 2: Partial blocking, 3: User reset locking) • 1 =Full blocking • 2 =Partial blocking • 3 =User reset locking • 4 =Backup relieved • 5 = Generator relieved	1

Tab.62 Manual heat demand

Parameter name	Parameter	Description	Factory setting
Manual Heat Demand	AP002	Enable manual heat demand function • 0 =Off • 1 =With setpoint • 2 = TOutdoor Control	0
Setpoint manual HD	AP026	Flow temperature setpoint for manual heat demand Can be set from 7 °C to 90 °C	40

Tab.63 Service settings

Parameter name	Parameter	Description	Factory setting
Service notification	AP010	The type of service needed based on burn and powered hours • 0 =None • 1 =Custom notification	0
Service hours mains	AP011	Hours powered to raise a service notification Can be set from 100 Hours to 25500 Hours	8750

Tab.64 Advanced

Parameter name	Parameter	Description	Factory setting
Burner power output	AP064	Burner power output (kW) Can be set from 0 W to 99000 W	24000

9.4.2 Sub-menu in the Counters menu

The appliance parameters are described directly in the user interface. Some of these parameters are listed in the following chapters with additional information and their default values.

Tab.65

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Counters → Select: Oil boiler

Tab.66

Sub-menu	Parameter	Description
Zone1		
Zone2 (only if the SCB-04 optional PCB is connected)	CC001	Zone Pump Run Hours : Numbers of pump operating hours of the zone
	CC010	Zone Nbr Pump Starts : Numbers of times the pump of the zone has started
Domestic Hot Water	DC002	DHW valve cycles : Numbers of Domestic Hot Water diverting valve cycles
	DC003	Hrs DHW 3wv : Number of hours during which the diverting valve is in DHW position
	DC004	DHW burner starts : Number of burner starts for Domestic Hot Water
	DC005	DHW burning hours : Number of burning hours in Domestic Hot Water
Oil boiler	AC026	Pump running hours : Counter that shows the number of pump running hours
	AC027	Pump starts : Counter that shows the number of pump starts
	DC003	Hrs DHW 3wv : Number of hours during which the diverting valve is in DHW position
	DC002	DHW valve cycles : Numbers of Domestic Hot Water diverting valve cycles
	AC005	CH Energy Consumed : Energy consumed for central heating
	AC006	DHW Energy Consumed : Energy consumed for domestic hot water
	PC003	Hrs Burning total : Total number of burning hours. For heating and domestic hot water
	DC005	DHW burning hours : Number of burning hours in Domestic Hot Water
	PC002	Burner starts total : Total number of burner starts. For heating and domestic hot water
	DC004	DHW burner starts : Number of burner starts for Domestic Hot Water
	AC002	Service Burning hrs : Number of hours that the appliance has been producing energy since last service
	AC003	Hours Op. Service : Number of hours since the previous servicing of the appliance
	AC004	Burner Starts : Number of generator startings since the previous servicing.
	PC004	Burner flame loss : Number of burner flame loss

9.4.3 Version information

Tab.67

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Version information

Tab.68

PCB	Available information
CU-OH-04 PCB	• Software version • Hardware version • Version OBD • Serial number • Reference
SCB-04PCB	• Software version • Hardware version • Version OBD • Serial number • Reference
Display E-Pilot	• Software version • Hardware version • Version OBD • Serial number • Reference

9.5 Setting the parameters

9.5.1 Setting the heating curve

The relationship between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This can be adjusted according to the requirements of the installation.

1. Go to the menu: **Heat curve**.

Tab.69

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level Installer  → Select: Installation setup • Zone1 → Heat curve • Zone2 → Heat curve

2. Set the following parameters:

Tab.70

Parameter name	Parameter	Description
Zone Heating Curve	CP230	Heating curve temperature gradient of the zone • underfloor heating circuit: gradient between 0.4 and 0.7 • radiator circuit: gradient of approx. 1.5
Zone HCZP Comfort	CP210	Comfort footpoint of the temperature of heat curve of the circuit Default value: 15 °C = automatic mode If the curve base point temperature is set to 15 °C, then it becomes equal to the room setpoint temperature.
Zone HCZP Reduced	CP220	Reduced footpoint of the temperature of heat curve of the circuit Default value: 15 °C = automatic mode If the curve base point temperature is set to 15 °C, then it becomes equal to the room setpoint temperature.
MaxZoneTFlowSetpoint	CP000	Maximum Flow Temperature setpoint zone

3. Go back to the main screen by pressing the back key .

9.5.2 Drying screed

The screed drying function reduces the drying time of the screed for underfloor heating. This function can be activated for individual zones.

Every day at midnight, the set point temperature is recalculated and the number of days is decreased.

1. Go to the menu: **Screed drying**.

Tab.71

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level Installer  → Select: Installation setup → Select: Zone2 → Select: Screed drying

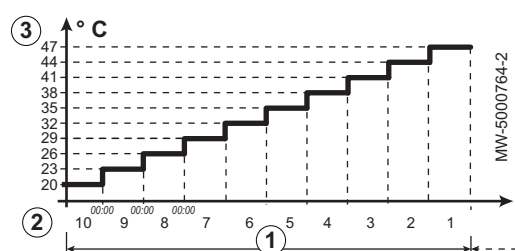
2. Set the following parameters:

Tab.72

Parameter name	Parameter	Description
Zone screed drying	CP470	Setting of the screed drying program of the zone
ScreedStartTemp	CP480	Setting of the start temperature of the screed drying program of the zone
ScreedStopTemp	CP490	Setting of the stop temperature of the screed drying program of the zone

3. Go back to the main screen by pressing the back key .

Fig.66 Example



- 1 Number of days of drying
- 2 Drying start temperature
- 3 Drying end temperature

The screed drying programme will start immediately and continue for the selected number of days.

At the end of the programme, the selected operating mode will restart.

Tab.73 Example: Adjustment of the temperature setting every 7 days

Days	Start temperature	End temperature	Temperature variation
1 to 7	+25 °C	+55 °C	Temperature increased every day by 5 °C
8 to 14	+55 °C	+55 °C	Temperature maintained at +55 °C without dropping at night
15 to 21	+55 °C	+25 °C	Temperature decreased every day by 5 °C

9.5.3 Resetting or restoring settings

■ Configure the CN1 and the CN2 for the boiler

The configuration numbers must be reset if the **CU-OH-04** PCB is replaced or if there is a setting error.

1. Go to the menu: **Set configuration code**.

Tab.74

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level Installer  → Select: Advanced menu → Select: Set configuration code → Select: CU-OH-04

2. Set the parameters:

- **CN1**
- **CN2**

The values appear on the boiler's data plate.

3. Select: **Confirm**, to save the settings.

4. Go back to the main screen by pressing the back key .

■ Auto-detecting options and accessories

This function should be used after replacing a boiler PCB in order to detect all the devices connected to the CAN local bus.

1. Go to the menu: **Set configuration code**.

Tab.75

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level Installer  → Select: Advanced menu → Select: Auto detect → Select: CU-OH-04

2. Select: **Confirm** to carry out the auto-detect.
⇒ The system will restart automatically.

■ Restoring the factory settings

1. Go to the menu: **Set configuration code**.

Tab.76

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level Installer  → Select: Advanced menu → Select: Reset to factory settings

2. Select: **Confirm** to restore the factory settings.
⇒ The system will restart automatically.

9.5.4 Using the parameter search

This function is used to search for a parameter.

1. Go to the menu:  **Search**.

Tab.77

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Search → Enter the code: 0012

2. Select the desired parameter using the selector .

First digit	Second digit	Third digit	Fourth digit	Fifth digit
• A • C • D • P	• C • C • P	• 0 • to • 9	• 0 • to • 9	• 0 • to • 9

3. Press the selector  to confirm the search.
⇒ The parameter searched for is displayed.
4. Go back to the main screen by pressing the back key .

9.6 Reading out measured values

Tab.78

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Go to level  Installer → Select: Signals

Tab.79

Sub-menu	Parameter	Description of the parameters
Zone1	CM190	Zone Troom setpoint: Wished room temperature setpoint of the zone
	CM070	Zone Tflow Setpoint: Current Flow temperature setpoint of zone
	CM120	ZoneCurrentMode: Zone Current Mode
	CM130	ZoneCurrent activity: Current activity of the zone
	CM200	ZoneCurrentHeatMode: Displaying current operating mode of the zone
	CM210	ZoneTout temp: Current outdoor temperature of the zone
Zone2 (only if the SCB-04 optional PCB is connected)	CM040	Zone Tflow /DHW temp: Measure Zone Flow Temperature or DHW temperature
	CM070	Zone Tflow Setpoint: Current Flow temperature setpoint of zone
	CM120	ZoneCurrentMode: Zone Current Mode
	CM130	ZoneCurrent activity: Current activity of the zone
	CM200	ZoneCurrentHeatMode: Displaying current operating mode of the zone
	CM050	Status Pump zone: Status of the Pump of zone
	CM290	ZoneSecSwimPoolPump: Status of the secondary pump used for the swimming pool of the zone
Domestic Hot Water	DM001	DHW tank temp bottom: DHW tank temperature bottom
	DM029	DHW setpoint: Domestic Hot Water temperature setpoint
	AM001	DHW active: Is the appliance currently in domestic hot water production mode?
	DM009	Auto/Derog DHWstatus: Automatic/derogation status of Domestic Hot Water mode
	DM019	DHW activity: Domestic Hot Water current activity
	AM010	Pump speed: The current pump speed
	AM016	System Flow Temp: Flow temperature of appliance.
	AM018	T return: Return temperature of appliance. The temperature of the water entering the appliance.
	DM007	DHW TAS status: Status of the anti corrosion protection (TAS) of the Domestic Hot Water tank
Outdoor temperature	AM027	Outside temperature: Instantaneous outside temperature
	AM091	SeasonMode: Seasonal mode active (summer / winter)
		Low average Out Temp: Low average of outside sensor temperature
		High average OutTemp: High average of outside sensor temperature
	AP078	Out sensor detected: Outside sensor detected in the application

Sub-menu	Parameter	Description of the parameters
Oil boiler	AM012	Status Appliance: Current main status of the appliance.
	AM014	Sub status Appliance: Current sub status of the appliance.
		ChimneyModeStatus: Status of the Chimney mode
	AM101	Internal setpoint: Internal system flow temperature setpoint
	AM016	System Flow Temp: Flow temperature of appliance.
	AM018	T return: Return temperature of appliance. The temperature of the water entering the appliance.
	AM015	Pump running?: Pump running?
	AM010	Pump speed: The current pump speed
	AM037	3 way valve: Status of the three way valve
		FGTS signal: Flue gas temperature switch signal (1 : when FGTS is closed) Not applicable for this configuration
		FGPS signal: Flue gas pressure switch signal (1 : when FGPS is closed) Not applicable for this configuration
		Burner: Status of burner relay (1 : closed)
		Flame: Flame presence
		Blocking input: Blocking input status

10 Maintenance

10.1 General instructions

Maintenance operations are important for the following reasons:

- To guarantee optimum performance;
- Extend the boiler's service life;
- To provide an installation which offers the customer optimum comfort over time.



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

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



Caution

Failure to service the appliance voids the warranty.
France: The annual service is obligatory pursuant to Decree No. 2009-649 of 9 June 2009.



Danger of electric shock

Before service work is started, the boiler has to be de-energised and secured from accidentally being switched back on.



Caution

Only genuine spare parts may be used.



Caution

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



Caution

Before working on the appliance, ensure that it is switched off and safe.

10.2 Configuring the maintenance message

The control panel is used to display a message whenever maintenance is necessary.

1. Go to the menu: **View service reminder**.

Tab.80

Type of access	Access path
Direct access: from the main home screen	Not available
Access: from any screen	→ Press the  key → Select:  Installer → Select: View service reminder

2. Select the desired type of notification:

Type of notification:	Description
None	No maintenance message
Custom notification	The maintenance message is displayed after the number of boiler operating hours.

3. Select: **Custom notification**
4. Select **Service hours mains** (AP011) to set the operating hours before a maintenance notification is issued.
5. Go back to the main screen by pressing the back key .

10.3 Standard inspection and maintenance operations

An annual inspection with tightness check is obligatory.

1. Check the combustion each time the flues are swept.
2. Check the hydraulic pressure.
3. Check the leak-tightness of the flue gas discharge and the air inlet.
4. Check the boiler's automatic air vent, if fitted.
5. Clean the heating body.
6. Clean the burner.
7. Check the electrode condition. Change them if necessary.
8. Cleaning the casing.

10.3.1 Chimney sweep instructions

Check the combustion each time the flues are swept.

1. Clean the flue system.
2. Access the flue gas measurement point.
3. Install the measuring device.
4. Take the combustion measurements to determine losses through flue gases and smoke.
5. Plug the measuring point.

10.3.2 Chimney mode

The chimney sweep can access the **Test mode** menu.

1. Go to the menu: **Test mode**.

Tab.81

Type of access	Access path
Direct access: from the main home screen	Not available
Access: from any screen	→ Press the  key → Select:  Test mode

2. Select one of the following parameters:

Tab.82

Parameter name	Parameter	Description
ChimneyModeStatus		Status of the Chimney mode • 0 =Off • 2 =Medium power
System Flow Temp	AM016	Flow temperature of appliance. This value is given for information only.
Power output	AM051	Relative power output of the appliance This value is given for information only.
CH Set Max System	AP063	Maximum flow temperature setpoint for burning at central heating Can be set from 20 °C to 90 °C

3. Go back to the main screen by pressing the back key .

10.3.3 Check the hydraulic pressure

1. Checking the hydraulic pressure in the installation.
2. If the hydraulic pressure is less than 0.08 MPa (0.8 bar), top up the level of water in the heating installation so that the hydraulic pressure is between 0.15 and 0.2 MPa (1.5 and 2.0 bar).
3. Carry out a visual check for any water leaks.

10.3.4 Check the leak-tightness of the flue gas discharge and the air inlet

1. Check the leak-tightness of the flue gas discharge and air inlet connections.
2. Check that the grate guard over the boiler room air inlet is not fouled.

10.3.5 Checking the boiler's automatic air vent

1. Take off the cap on the automatic air vent.
2. If there is water inside the automatic air vent, replace the automatic air vent.

10.3.6 Cleaning the heating body

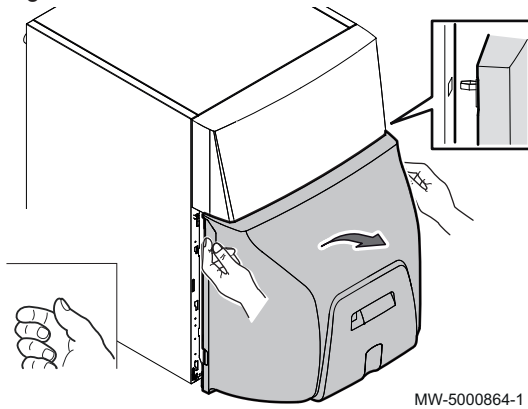


Danger

Switch off the power supply to the boiler.

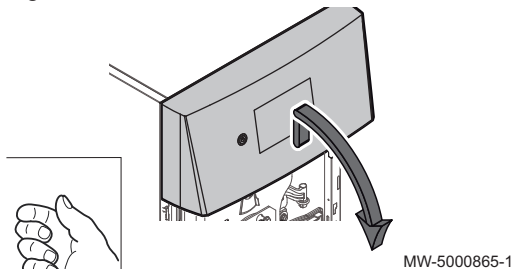
1. Remove the lower front panel.

Fig.67



MW-5000864-1

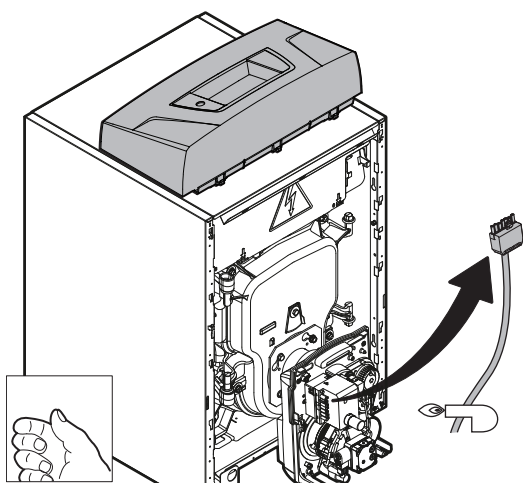
Fig.68



MW-5000865-1

2. Unhook and remove the upper front panel from the boiler.

Fig.69



MW-6000731-03

3. Disconnect the burner cable.

Fig.70

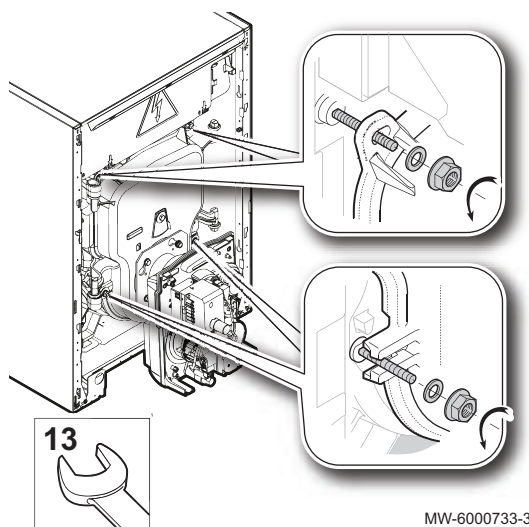
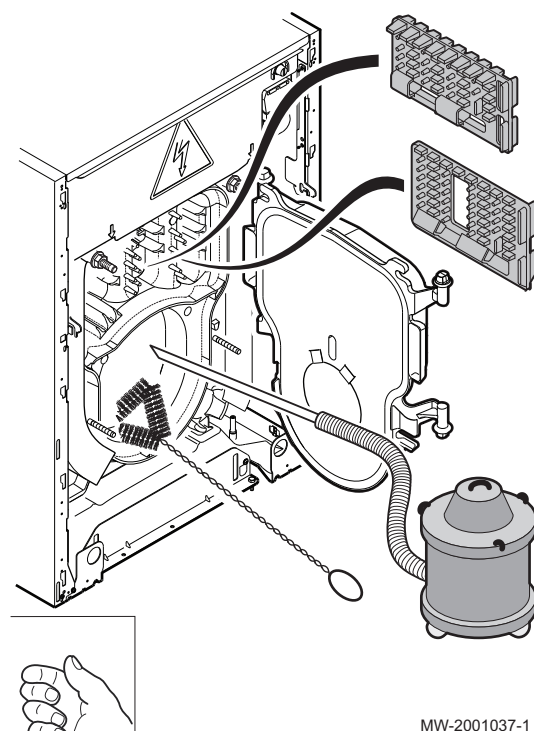


Fig.71



4. Unscrew the 4 screws in the combustion chamber door (13 mm spanner).

5. Remove the baffle plates.
6. Carefully sweep the flue ways with the brush supplied for that purpose.
7. Sweep the combustion chamber.
8. Remove soot from the bottom of the flue ways and the combustion chamber using a vacuum cleaner with a nozzle with a diameter of less than 40 mm.
9. Put the baffle plates back in place.
10. Close the door of the combustion chamber.
11. To re-assemble, proceed in reverse order of disassembly.

10.3.7 Burner Maintenance

The burner must be checked, cleaned and adjusted annually.



Important

A major increase in the flue gas temperature indicates that the boiler is clogged and it should be cleaned.

1. Switch off the main switch on the heating system.
2. Disconnect the burner from the electrical installation.
3. Check the condition of the combustion chamber and the flue gas circuits.
4. Sweep the flues if necessary.
5. Check and clean the oil filter.
⇒ Replace it if necessary.
6. Check the condition of the injection nozzle.
7. Check the condition of the electrodes.
8. Check and clean the upper and lower aeration vents in the boiler room.

9. Clean all the burner components.

i Important
A product for cleaning the combustion head is available optionally in the stock of spare parts.

- 10. Replace any faulty parts.
- 11. Put the burner in the operating position.
- 12. Fit the vacuum gauge and pressure gauge on the burner pump.
- 13. Check the electrical connections on the burner.
- 14. Switch on the main switch on the installation.
- 15. Start the burner.
- 16. Adjust the burner.
- 17. Take combustion measurements (boiler in operational state).
- 18. Note the results of the measurements taken and the equipment replaced on the control sheet.
- 19. Perform a final operational check and complete the final checks.

For more information, see
Factory setting values, page 45

■ **Burner fault**

Tab.83

Colour of the LED on the reset button	Burner status
Red	Burner faulty

! Caution
The control and safety box is a safety device which must not be opened.

- 1. Press the reset button on the control and safety box for 1 second to reset.

i Important
The reset button is only active if the control box is switched on.

■ **Putting the burner in the maintenance position**

- 1. Disconnect the electrical connector from the connection.
- 2. Unscrew the screws in the 2 bolts by a maximum of 2 turns (4-mm Allen key)
- 3. Move the right hand bolt down and the left hand bolt up.
- 4. Extract the component plate from the housing.
- 5. Position the component plate on the housing screws

! Caution
Do not use the turbine as a support point in order to stop it from turning.

- 6. Clean the inside of the flame tube using a cleaning product for boilers.

■ **Replacing the oil nozzle**

For injection nozzle selection, refer to the table in the chapter on “Oil settings/Factory setting values”.

Fig.72

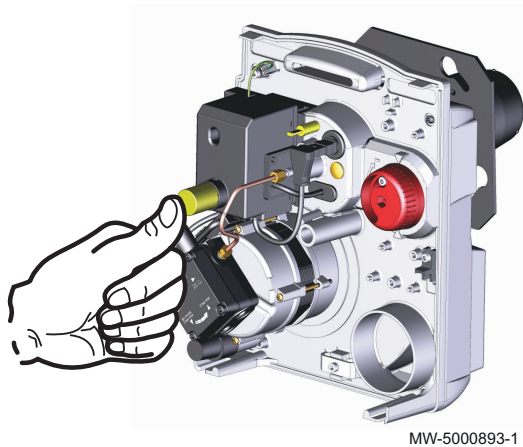


Fig.73

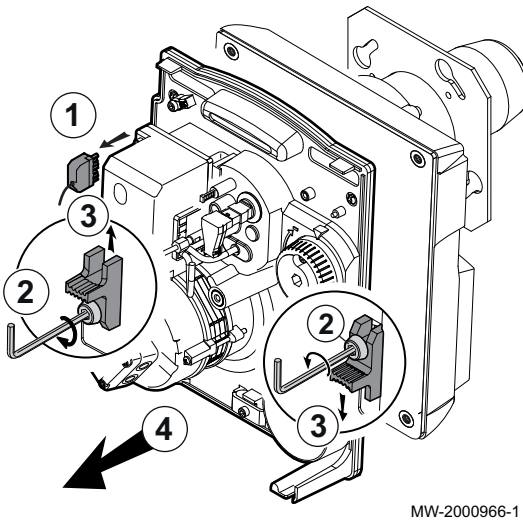
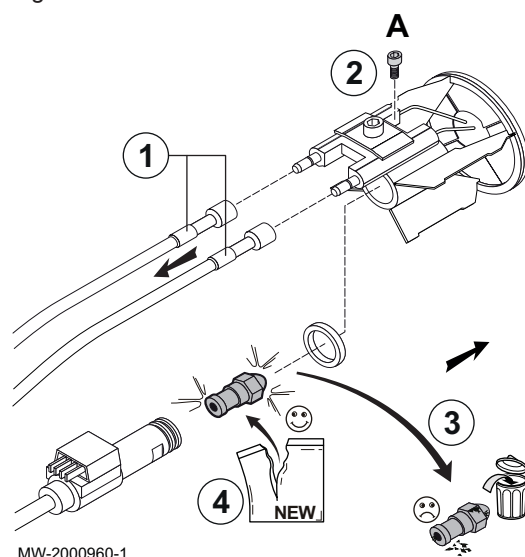


Fig.74



MW-2000960-1

1. Disconnect the ignition electrode cables.
2. Remove the combustion head using screw A (4 Allen key).
3. Remove the combustion head.
4. Remove the injection nozzle (16 spanner) and recycle it.
5. Check the binding on the injection nozzle according to the boiler output.
6. Replace the injection nozzle.
7. Refit the combustion head.
8. Connect the ignition electrodes.

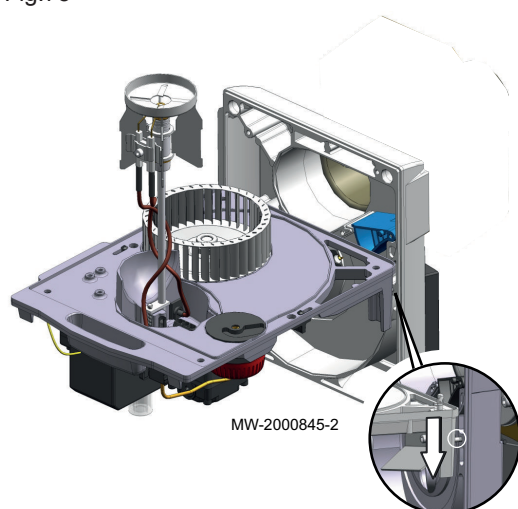
■ Cleaning the combustion head

1. Fill a container with a solution of 10 % NET05 cleaning product to 90 % water.
2. Fully submerge the combustion head in the solution for 10 to 20 minutes.
3. Thoroughly rinse the combustion head in clean water.
4. Remove any residual deposits using a cloth or a brush.
5. Dry the combustion head with a cloth.

■ Cleaning the burner turbine

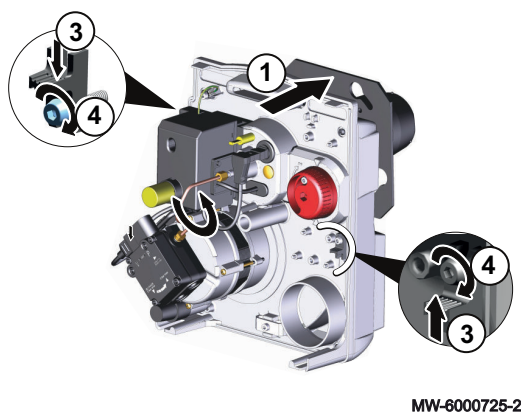
1. Clean the burner turbine and the inside of the suction box using a suitable brush and compressed air.
2. Check and, if necessary, modify the setting of the air shutter according to the information in the chapter "Adjusting the air shutter".
3. To re-assemble, proceed in reverse order of disassembly.

Fig.75



MW-2000845-2

Fig.76



MW-6000725-2

■ Putting the burner in the operating position

1. Carefully insert the oil line into the flame tube.
2. Fix the component plate onto the housing.
3. Reposition the 2 bolts and secure them in place.
4. Tighten the 2 screws.
5. Connect the electrical connector.

10.3.8 Cleaning the casing

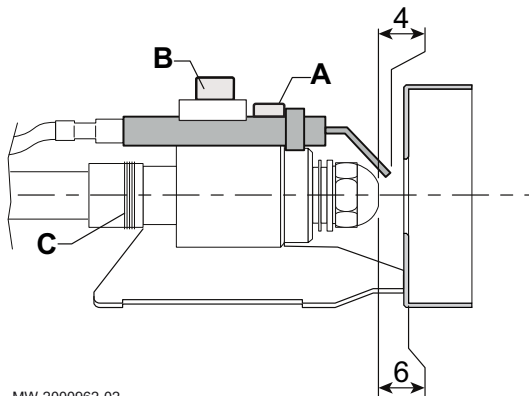
1. Clean the outside of the boiler using a damp cloth and a gentle detergent.

10.4 Specific maintenance operations

The standard inspection and maintenance operations may reveal the necessity to carry out additional maintenance work.

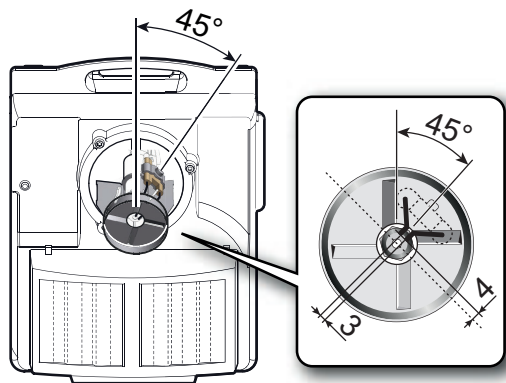
10.4.1 Checking the position of the ignition electrodes and the combustion head

Fig.77



MW-2000962-02

Fig.78



MW-2000961-01

1. Check the dimensions opposite (the dimensions are shown in mm):
2. Change the position of the ignition electrodes by releasing them using the tightening screw **B**.
3. Check the dimension between the deflector and the injection nozzle using the screw **A** and the 1 mm thick rings **C** (if necessary).

4. Position the combustion head.
5. Check the orientation of the combustion head and the position of the electrodes using the electrode checking tool.
6. Tighten the screw **A**.
7. Place the ignition cables around the injection nozzle line.
8. Connect the ignition electrode cables.



Important

Ensure that the flame remains visible to prevent any issues in monitoring the flame.



For more information, see

Use the ignition electrode checking tool, page 47

10.4.2 Replacing the ignition electrodes


Caution

Avoid any stress on the base of the ignition electrodes so as not to break the porcelain.


Caution

Incorrectly adjusted electrodes increase wear and may cause short circuits.

1. Unscrew the retaining screws in the 2 electrodes (3-mm Allen key).
2. Remove the 2 ignition electrodes simultaneously.
3. Put the new ignition electrodes in place.
4. Adjust the gap on the electrodes.

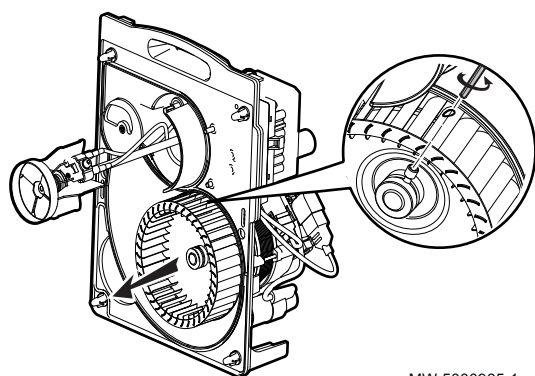
10.4.3 Replacing the burner turbine

1. Remove the old turbine.
2. Put the new turbine in place.
3. Retighten the turbine mounting bolts.
4. Check the positioning of the burner turbine.
5. To reassemble, proceed in reverse order to disassembly.


Important

Removal of the turbine also allows access to the motor.

Fig.79



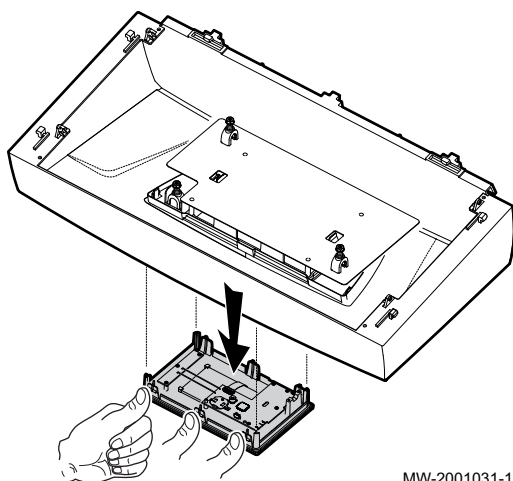
MW-5000965-1

10.4.4 Replacing the battery in the control panel

If the clock is switched off, the control panel battery takes over to keep the correct time.

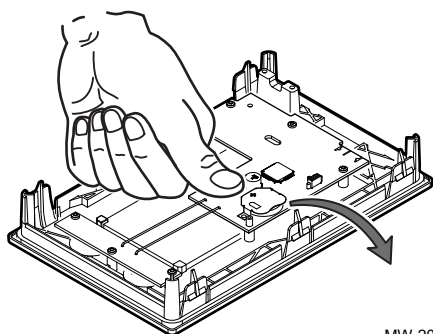
1. Remove the control panel by pressing with your fingers.

Fig.80



MW-2001031-1

Fig.81



MW-2001032-1

2. Remove the battery by pushing it gently forwards.
3. Insert a new battery.

**Important**

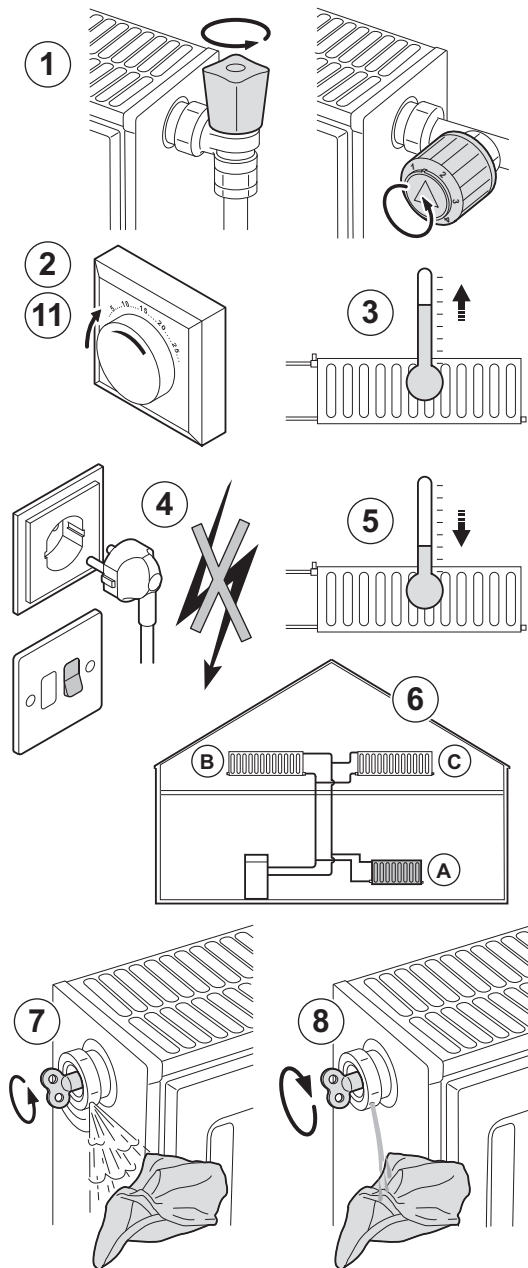
Battery type:

- CR2032, 3V
- Do not use rechargeable batteries
- Do not discard used batteries in the dustbin. Take them to an appropriate collection place.

4. Re-assemble everything.

10.5 Venting the heating system

Fig.82



MW-2000560-1

Any air in the boiler, pipes or valves must be vented in order to prevent annoying noises that may be generated during heating or when drawing water.

1. Open the valves of all the radiators and/or underfloor heating circuits connected to the system.
2. Set the room thermostat to the highest possible temperature.
3. Wait until the radiators are warm.
4. Shut down the boiler.
5. Wait approximately 10 minutes, until the radiators feel cold.
6. Bleed the radiators. Work from the lowest to the highest.
7. Open the venting valve with the bleed key, keeping a cloth pressed against the vent.

**Warning**

The water may still be hot.

8. Wait until water comes out of the venting valve and then close the venting valve.
9. Start the boiler.

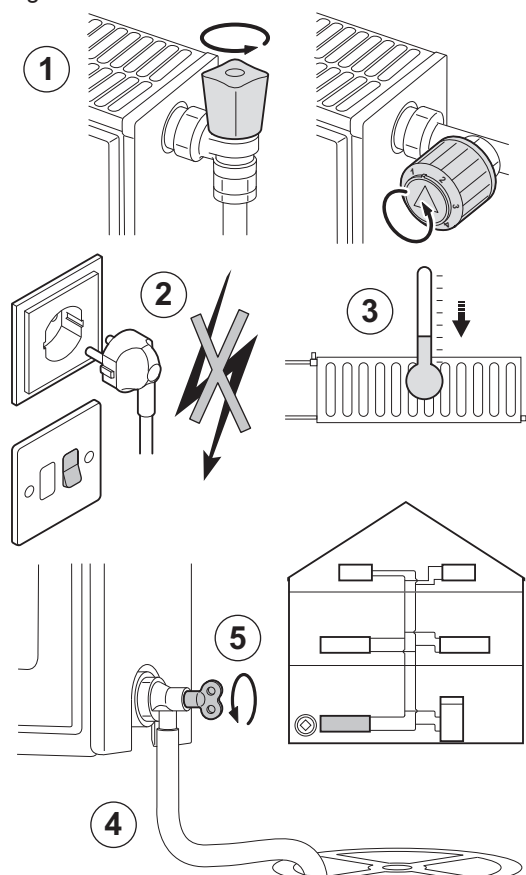
**Important**

After the power is switched on, the boiler always runs through an automatic venting program lasting approx. 3 minutes.

10. After venting, check that the water pressure in the system is still adequate. If necessary, top up the water level in the heating system
11. Adjust the room thermostat or temperature control.

10.6 Draining the heating system

Fig.83



MW-2000561-1

It may be necessary to drain the central heating system if radiators need to be replaced, if there is a major water leak or if there is a risk of freezing.

1. Open the valves on all the radiators connected to the system.
2. Shut down the boiler.
3. Wait approximately 10 minutes, until the radiators feel cold.
4. Connect a drain hose to the lowest draining point. Place the end of the hose in a drain or at a place where drained pipe water will not cause any damage.
5. Open the central heating system filling/draining valve. Drain the installation.



Warning

The water may still be hot.

6. Close the drain valve when no more water comes from the draining point.

11 Troubleshooting

11.1 Resolving operating errors

If the boiler malfunctions, a code is displayed on the main screen of the control panel. This code is important for the correct and rapid diagnosis of the type of malfunction and for any technical assistance that may be needed.

There are 3 types of error:

Tab.84

Type of code	Code format
Error	Hxx.xx
Fault	Exx.xx
Alarm	Axx.xx

1. Make a note of the code displayed on the screen.
2. Remedy the problem described by the error code or contact the installer.
3. Switch the boiler off and back on to check that the cause of the error has been removed.

11.2 Error codes

An error code is a temporary status resulting from the detection of an anomaly on the boiler.

The control panel will try to automatically restart the boiler until it comes on, except for the case of code **H07.01** which requires a manual reset using the button on the burner safety unit.

Tab.85 List of error codes

Error code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
H00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	No	Yes
H00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	No	Yes
H00.06	TReturn Missing	Return temperature sensor was expected but not detected • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	Yes	No
H00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	Yes	Yes

Error code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
H00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	Yes	Yes
H00.32	TOutside Open	Outside temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	Yes	No
H00.33	TOutside Closed	Outside temperature sensor is either shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	Yes	Yes
H00.79	TSwimming Pool Open	Swimming Pool Flow temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	No	Yes
H00.80	TSwimmingPool Closed	Swimming Pool Flow temperature sensor is either shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	No	Yes
H01.03	Flame Loss Warning	Warning off unintended flame loss detection • Check that the oil valve is actually open • Check the burner settings • Check that the flame detection cell is in good condition • Check whether the safety thermostat is off  See Chapter: List of burner faults	Yes	No
H02.00	Reset In Progress	Reset In Progress	Yes	No
H02.02	Wait Config Number	Waiting For Configuration Number • Configure CN1 / CN2 according to the values specified on the data plate Replacement of the PCB: boiler not configured	Yes	Yes
H02.03	Conf Error	Configuration Error The configuration parameters entered are incorrect: • Configure CN1 / CN2 according to the boiler data plate Main PCB replaced: boiler not configured: • Running the automatic detection function	Yes	Yes
H02.04	Parameter Error	Parameter Error: Bad configuration of the main PCB parameters: • Restoring the factory settings • If the error is still present: change the main PCB	Yes	Yes

Error code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
H02.05	CSU CU mismatch	CSU does not match CU type Memory error: • Software change (software number or version parameter inconsistent with the memory)	Yes	Yes
H02.09	Partial block	Partial blocking of the device recognized BL input on the main PCB terminal block open: • Check the contact on the BL input. • Check the wiring • Check the AP001 parameter.	Yes	No
H02.10	Full Block	Full blocking of the device recognized BL input on the main PCB terminal block open: • Check the contact on the BL input. • Check the wiring • Check the AP001 parameter.	Yes	No
H02.16	Int CSU Timeout	Internal CSU Timeout Internal error	No	Yes
H02.25	ACI error	ACI error Titan Active System in short or open circuit: • Check the connection cable • Check that the anode has not short-circuited and is not broken	Yes	No
H02.36	Funcnt device lost	Functional device has been disconnected No communication between the main PCB and the optional PCB • Check the connection of the supply cable between the PCBs • Check the connection of the BUS cable between the PCBs • Run automatic detection	Yes	No
H02.37	Uncritic device lost	Uncritical device has been disconnected No communication between the main PCB and the optional PCB • Check the connection of the supply cable between the PCBs • Check the connection of the BUS cable and the PCBs • Run automatic detection	Yes	No
H02.40	Function unavailable	Function unavailable • Incorrectly set parameter	No	Yes
H02.48	Funcnt Gr Conf Fault	Function Group Configuration Fault Check that the selected configuration is possible with the system. If so: • Check configuration • Check that all the sensors are present	No	Yes

Error code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
H02.60	Unsupported function	The zone doesn't support the selected function Function not supported by the zone	No	Yes
H07.01	Burner fault	Burner fault has occurred  See Chapter: List of burner faults No ignition arc: • Check the ignition transformer • Check the ignition electrodes • Check the high voltage wiring • Check the earthing Flame present but flame signal weak: • Check that the flame detection cell is correctly aligned • Check the position and condition of the combustion head • Check the oil supply • Check the ignition electrode • Check the ignition electrode wiring • Check the earthing • Check that the flame detection cell is in good condition • Check that there is no recirculation of flue gases No flame signal: • Check that the oil valve is actually open • Check that the flame detection cell is in good condition • Check that the injection nozzle is not blocked • Check that there is no recirculation of flue gases • Check if there is no oil inlet (faulty oil pump) Air present in the oil circuit Air present in the oil circuit: • Check the leak-tightness of the oil supply pipe on the installation Burner control and safety box defective • Replace the control and safety box Requires a manual reset using the button on the burner safety unit	Yes	No

11.3 Error codes

If an error code is still present after several automatic start-up attempts, the boiler switches to fault mode.

The boiler will only resume normal operation once the causes of the lock-out have been eliminated by the installer.

As a result of:

- a manual reset,
- a reset by a maintenance message.

Tab.86 List of fault codes

Error code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
E00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range - Poor sensor connection: - Check the wiring between the main PCB and the sensor - Check that the sensor has been correctly fitted - Sensor failure: - Check the Ohmic value of the sensor - Replace the sensor if necessary	Yes	No
E00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range - Poor sensor connection: - Check the wiring between the main PCB and the sensor - Check that the sensor has been correctly fitted - Sensor failure: - Check the Ohmic value of the sensor - Replace the sensor if necessary	Yes	No
E01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence: occurs after 3 H01.03 faults in the same heating request - Air present in the oil circuit - Check that the oil valve is actually open - Check that the flame detection cell is in good condition - Check that there is no recirculation of flue gases	Yes	No
E01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature Check the boiler's hydraulic circuit.	Yes	No
E02.13	Blocking Input	Blocking Input of the Control Unit from device external environment - Check the wiring - Check the component connected to the contact BL.	Yes	No
E02.15	Ext CSU Timeout	External CSU Timeout Memory read error or write error - Restoring the factory settings - If the error is still present: change the main PCB	Yes	No
E02.41	FG press sw present	The Fluegas pressure switch is present Check that the wiring corresponds to the type of boiler indicated by the CN1 and CN2 on the boiler data plate.	Yes	No
E02.42	Flue T press sw pres	Flue temperature pressure switch is present Check that the wiring corresponds to the type of boiler indicated by the CN1 and CN2 on the boiler data plate.	Yes	No
E02.44	FG press	Fluegas pressure switch not switched error	Yes	No

11.4 Alarm codes

An alarm code is a temporary boiler status resulting from the detection of an anomaly. If an alarm code still remains after several automatic start-up attempts, the boiler goes into fault mode.

Tab.87 List of alarm codes

Alarm code	Message	Description	Code linked to the CU-OH-04 PCB	Code linked to the SCB-04 PCB
A00.32	TOutside Open	Outside temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary	No	Yes
A00.33	TOutside Closed	Outside temperature sensor is either shorted or measures a temperature above range	No	Yes
A00.34	TOutside Missing	Outside temperature sensor was expected but not detected	No	Yes
A00.81	RoomTempMissing	Room Temperature sensor was expected but not detected	No	Yes
A02.18	OBD Error	Object Dictionary Error Internal error	Yes	Yes

11.5 Displaying and clearing the error memory

The error memory stores the 32 most recent errors. You can check the details of each error and then clear it from the error memory.

1. Go to the menu: **Error history**.

Tab.88

Type of access	Access path
Direct access: from the main home screen	Not available
Quick access: from any screen	→ Press the  key → Select:  Installer → Select: Installation setup → Select: Error history

⇒ The list of the 32 most recent errors is displayed with the error code, a short description and the date.

2. Carry out the following actions according to your needs:
 - Show the details of an error: select the desired error.
 - Clear the error memory, press and hold the selector .
3. Select: **Confirm**, to save the setting.
4. Go back to the main screen by pressing the back key .

11.6 Fault finding

11.6.1 Resetting the safety thermostat

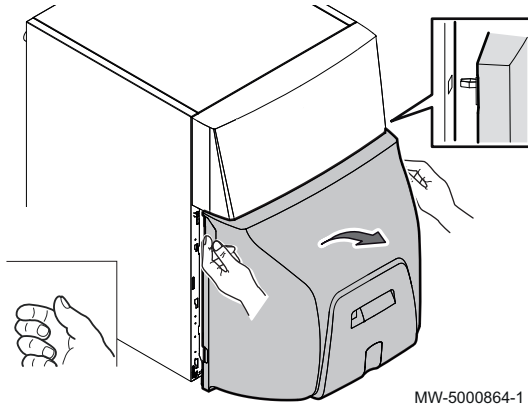


Danger

Switch off the power supply to the boiler.

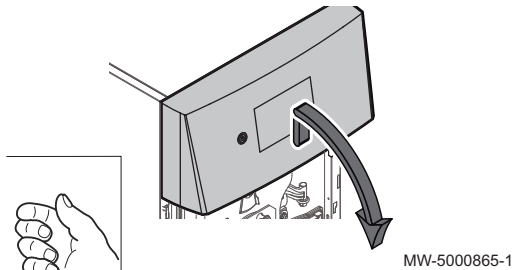
If the safety thermostat is triggered, the code **H01.03** is displayed on the control panel.

Fig.84



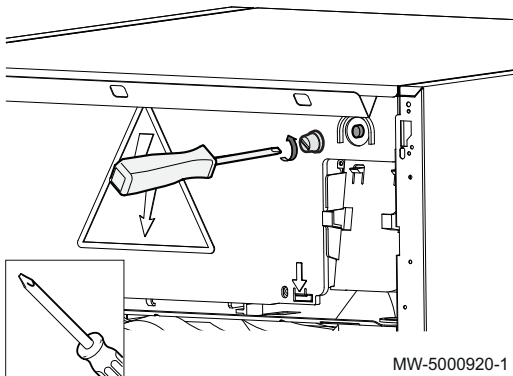
1. Remove the lower front panel.

Fig.85



2. Lift up the upper front panel slightly and tilt it downwards.

Fig.86



3. Remove the protection from the reset button using a flat screwdriver.
4. Press the reset button on the safety thermostat.
5. To reassemble, proceed in reverse order to disassembly.

11.6.2 List of burner faults

Before carrying out any work, the following checks must be performed:

- Check that the boiler and the burner are switched on.
- Check that the oil supply is correct.
- Check that there is a heating demand for the regulator or thermostat on the boiler.
- Check that the flue gas circuit allows correct combustion.

Tab.89 List of burner faults

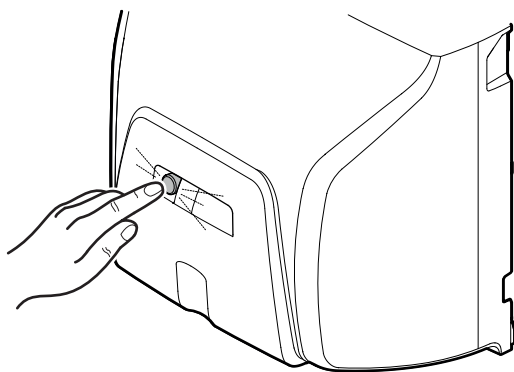
Faults	Description
The burner does not start.	No voltage: burner fault. • Reset the safety thermostat. • Check the fuses and the switches. • Increase the setpoint of the thermostats or the regulator (set it above the boiler temperature). No continuity between L1 and T1: Green LED on the control box off while there is a thermostatic demand. • Check the thermostatic loop between L1 and T1 • Replace the control and safety box.
The motor does not start.	Faulty motor. • Replace the motor. Faulty capacitor. • Replace the capacitor.
Mechanical noises.	Motor bearings damaged. • Replace the motor. Friction on the turbine. • Check its position.
No ignition arc	Short-circuit on ignition electrodes. • Adjust the gap on the ignition electrodes. Ignition electrodes spaced too far apart. • Adjust the gap on the ignition electrodes. Electrodes clogged, wet. • Clean or replace the ignition electrodes. Connection fault on the electrode cables. • Check the connections. Faulty insulation on the ignition electrodes. • Replace the ignition electrodes. Faulty ignition electrode cables. • Replace the ignition cables. Faulty transformer. • Replace the ignition transformer.
The control box switches to safety mode (fixed red LED).	Flame detection cell clogged. • Clean the cell. Flame blow-off. • Correct the burner setting. • Replace the injection nozzle. Faulty ignition cables or flame detection cell. • Replace the ignition cables or the detection cell. No oil.

Faults	Description
The pump does not draw in oil.	Damaged pump/motor coupling. • Replace the coupling. Strainer, pipework or oil leak. • Replace the strainer. Oil inlet/flow connection fitted the wrong way round. • Change the connection. Stop valves closed. • Open the valves. Filter or strainer on the tank clogged. • Replace the filter or strainer. Oil tank empty. • Check the oil tank level.
Pump noises.	The pump is drawing in air. • Check the seal on the intake pipework. The pump is idling. • Clean the filter and the intake pipework. • Check the pipes are correctly sized. • Check that the pipes are not constricted or crushed.
Poor combustion hygiene.	Incorrect setting. • Check the burner settings. Lack of air. • Correct the air flow. Injection nozzle clogged. • Replace the injection nozzle. No spraying. • Connect the solenoid valve. • Replace the injection nozzle. • Replace the pump. Combustion head clogged. • Clean the combustion head. Air inlets clogged. • Clean the air inlets. Boiler room insufficiently ventilated • Improve the ventilation.
No flame.	No ignition arc. • Check the electrodes and replace them if necessary. • Check the igniter, replace it if necessary. No oil.

11.6.3 Resetting the burner safety unit

If the indicator light on the safety unit is red, there is a burner fault.

Fig.87



MW-5000917-2

1. Reset the burner safety unit by pressing and holding the reset button for one second.

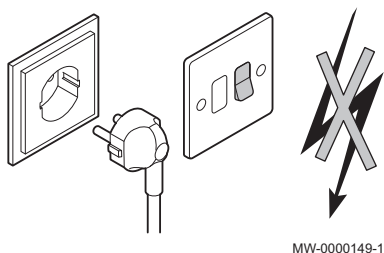
**Important**

To reset the safety unit, the burner must be switched on.

12 Decommissioning

12.1 Decommissioning procedure

Fig.88



If you need to decommission the boiler, either temporarily or permanently, proceed as follows:

1. Switch the on/off switch to off.
2. Switch off the power supply to the boiler.
3. Close the oil inlet.
4. Ensure that the boiler and system are protected against frost damage.
5. Have the boiler and the chimney carefully swept.
6. Close the door of the boiler to prevent air circulating inside it.
7. Remove the pipe connecting the boiler to the chimney and close the nozzle with a plug.
8. Drain the domestic hot water tank and the domestic water pipes (for systems with a domestic hot water tank).

12.2 Recommissioning procedure



Warning

Only qualified professionals are authorised to 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. Fill the central heating system.
3. Check the oil tank level.
4. Open the oil inlet.
5. Start up the boiler.

12.3 Disposal and recycling

Fig.89



Recycling



Warning

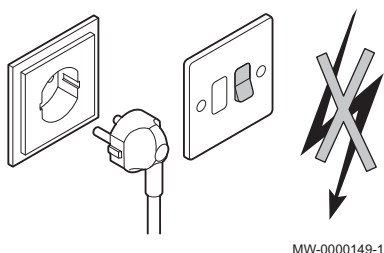
Removal and disposal of the boiler must be carried out by a qualified installer in accordance with local and national regulations.

Cutting the mains supply

Proceed as follows to dismantle the boiler:

1. Cut the electrical power to the boiler.
2. Close the oil shut-off device upstream of the boiler.
3. Disconnect the cables on the electrical components.
4. Close the water mains.
5. Drain the installation.
6. Remove the air/flue gas pipes.
7. Disconnect all pipes on the boiler.
8. Scrap or recycle the boiler.

Fig.90



13 Spare parts

13.1 General

If inspection or maintenance work bring to light the need to replace a component in the boiler:

Provide the reference number given in the spare parts list when ordering a spare part.

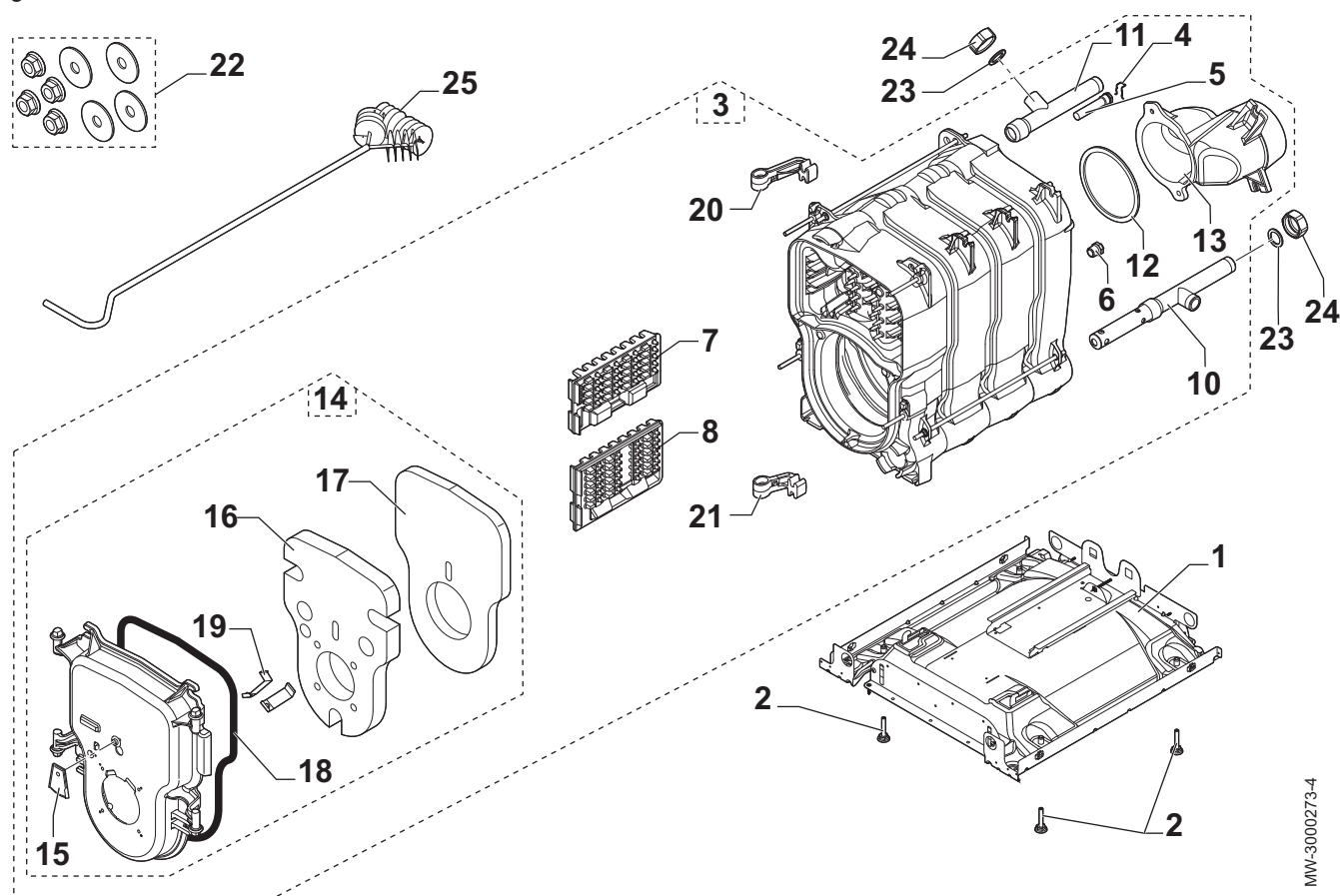


Caution

Only genuine spare parts may be used.

13.2 Boiler body

Fig.91



MW-3000273-4

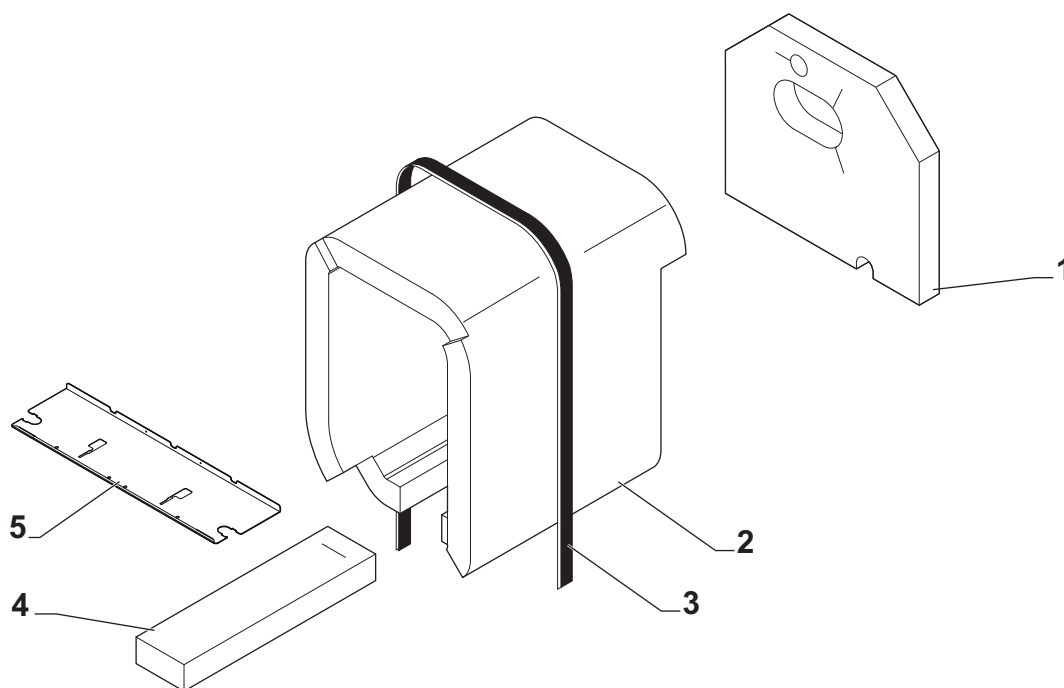
Tab.90

Marker	Reference	Description	CFU 22	CFU 29
1	7716349	4-part base frame	x	
1	7716350	5-part base frame		x
2	7737843	Adjustable foot M8x45	x	x
3	7626927	Assembled 4-part boiler body	x	
3	7626928	Assembled 5-part boiler body		x
4	97581286	Spring for sensor tube	x	x
5	300022089	1/2" sensor tube, length 95	x	x
6	94950110	1/2" plug	x	x
7	7611260	Central baffle	x	x
8	7610971	Right baffle	x	x
10	7618533	Injector return pipe 1"	x	x
11	7618512	Flow pipe 1 1/4 - 1	x	x

Marker	Reference	Description	CFU 22	CFU 29
12	300025136	Nozzle gasket	x	x
13	7619918	Nozzle	x	x
14	7613788	Burner door	x	x
15	7626744	Burner door flap	x	x
16	7609824	Front door insulation	x	x
17	7610487	Back door insulation	x	x
18	95086032	Silicon cord	x	x
19	7617996	Insulation spring	x	x
20	7615044	Top hinge	x	x
21	81990204	Bottom hinge	x	x
22	81998983	Body screws bag	x	x
23	95013062	Green gasket 30x21x2	x	x
24	94950198	Brass plug G1" female	x	x
25	96960223	Brush	x	x

13.3 Insulation

Fig.92



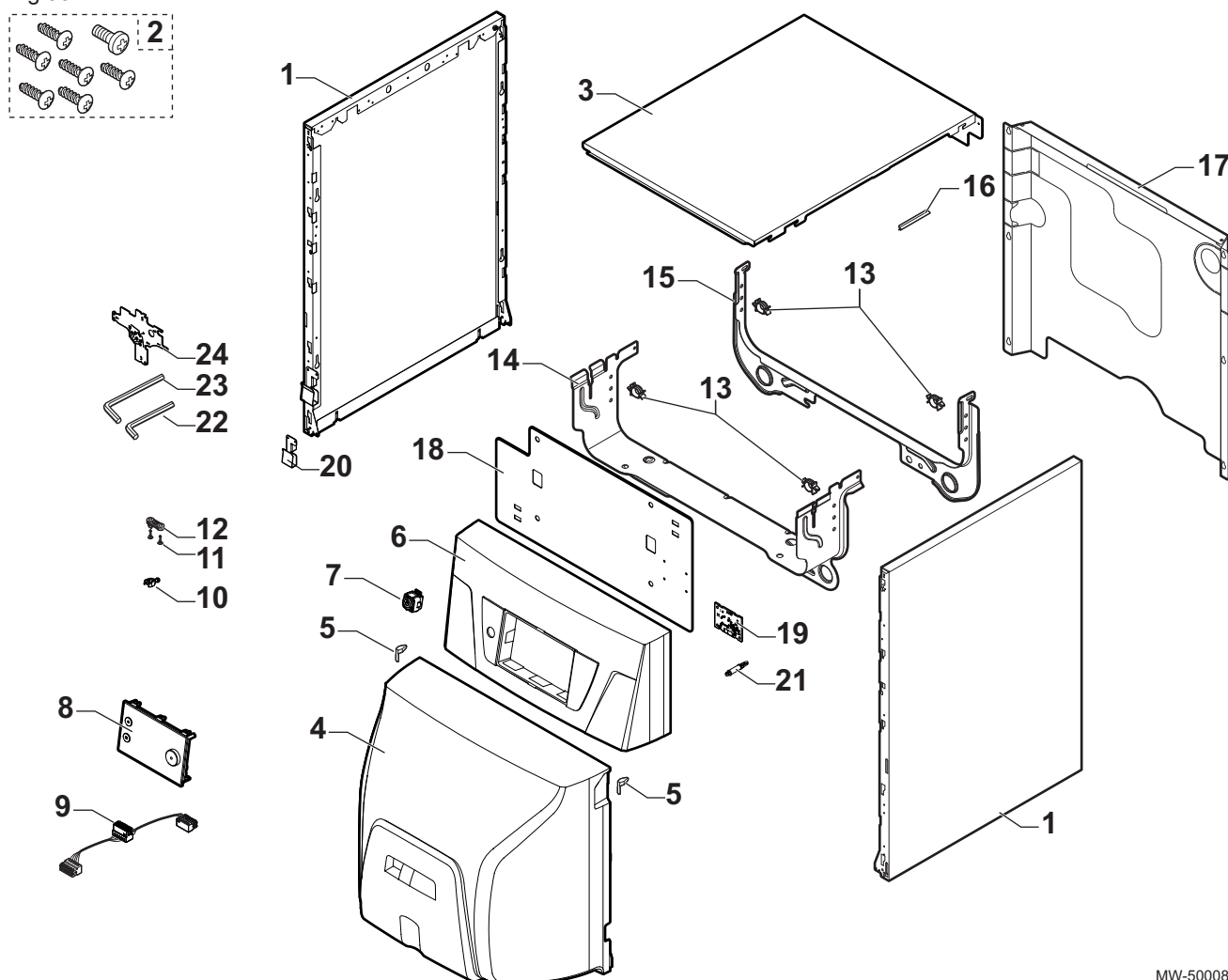
MW-5000958-1

Tab.91

Marker	Reference	Description	CFU 22	CFU 29
1	7610413	Rear insulation	x	x
2	7614961	Side insulation for 4-part model	x	
2	7621638	Side insulation for 5-part model		x
3	94180100	Caristrap strapping	x	x
4	7619732	Base frame insulation, 4-parts	x	
4	7621263	Base frame insulation, 5-parts		x
5	7731318	PCB unit protection	x	x

13.4 Casing

Fig.93



MW-5000878-2

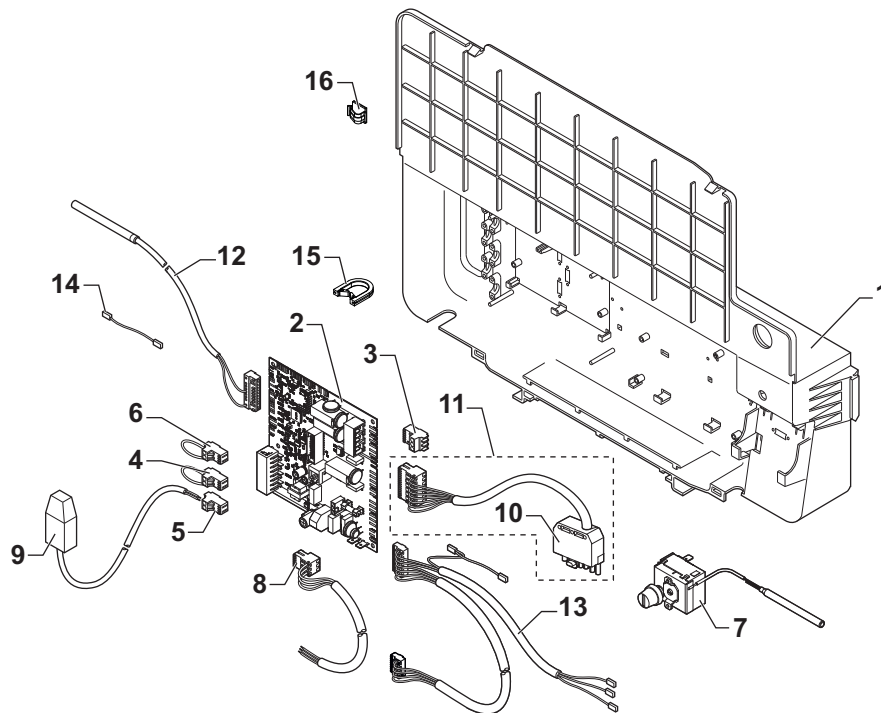
Tab.92

Marker	Reference	Description	CFU 22	CFU 29
1	200019179	Side panel	x	x
2	7626746	Screw bag	x	x
3	7730130	Top panel	x	x
4	7724144	Front panel	x	x
5	200019786	Spring kit	x	x
6	7727148	Control panel support	x	x
7	7675263	Grey switch	x	x
8	7743847	E-Pilot control panel	x	x
9	7732476	E-Pilot cable	x	x
10	7608040	Traction arrester device	x	x
11	7684459	KB 35x12 screw kit	x	x
12	7618888	Traction arrester device	x	x
13	95320950	Cable clamp	x	x
14	7616933	Front crosspiece	x	x
15	7616506	Rear feed-through	x	x
16	95365613	Contact spring for sensor pocket	x	x
17	7617935	4-part rear panel	x	
17	7617952	5-part rear panel		x
18	7730755	Control panel plate	x	x
19	7715094	Bluetooth SMART ANTENNA PCB	x	x

Marker	Reference	Description	CFU 22	CFU 29
20	7728924	Oil hose mounting	x	x
21	7723176	Electronic spacer	x	x
22	V508482	Allen key 3 mm 65x20	x	x
23	97949451	Allen key 4 mm 240x40	x	x
24	7659874	Ignition electrode checking tool	x	x

13.5 PCB box

Fig.94



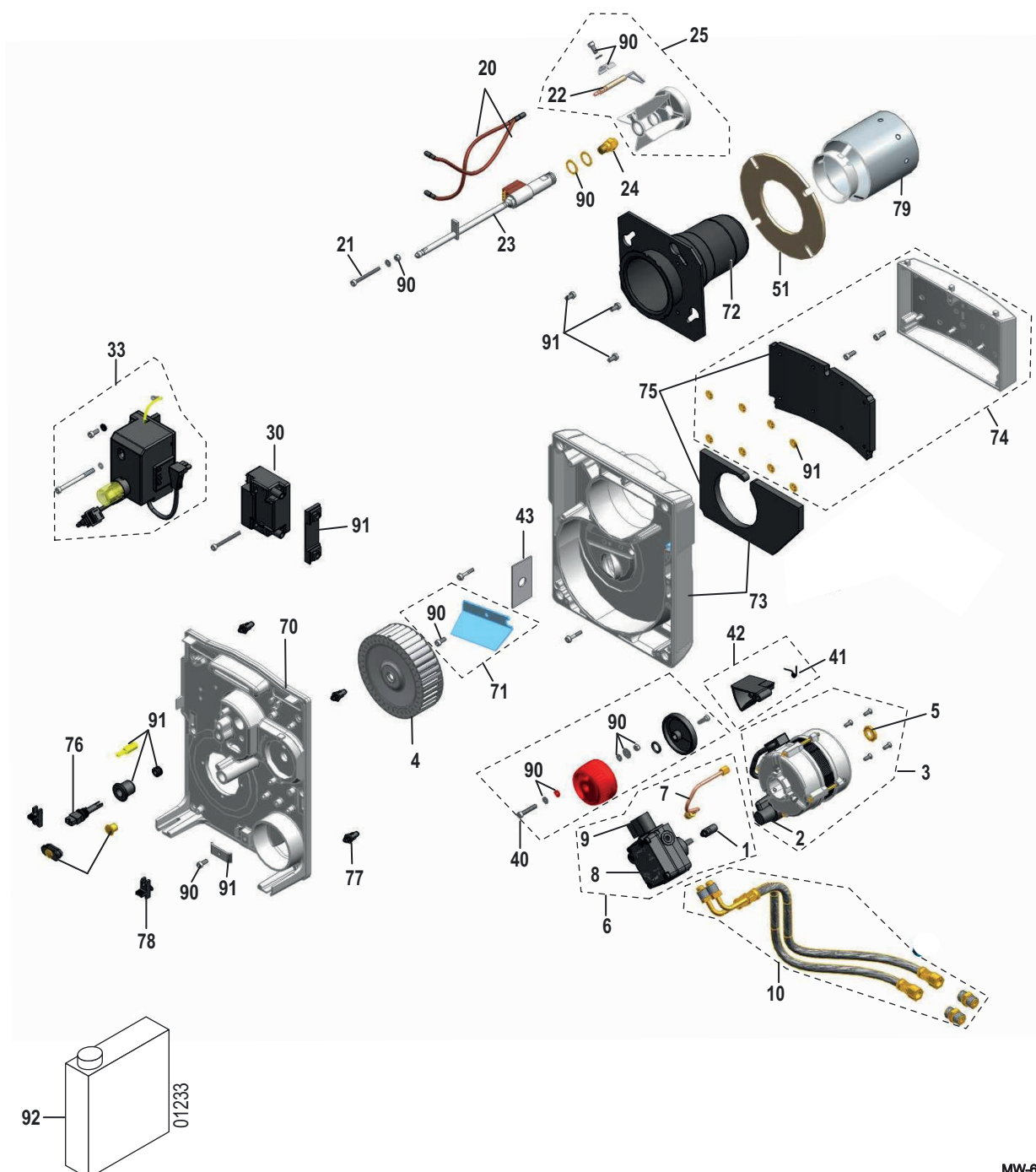
MW-2001104-1

Tab.93

Marker	Reference	Description	CFU 22	CFU 29
1	7616162	PCB box	x	x
2	7633727	CU PCB	x	
2	7633773	CU PCB		x
3	300009074	3-pin connector	x	x
4	200009965	2-pin connector	x	x
5	300009070	2-pin connector - outside sensor	x	x
6	300025621	2-pin connector - open therm	x	x
7	95363311	110 °C safety thermostat	x	x
8	300024876	Power supply cable	x	x
9	95362450	Outdoor temperature sensor	x	x
10	95317395	Male 7-pin connector	x	x
11	7619172	Burner cable	x	x
12	7609661	Sensor harness	x	x
13	7727991	Output switch harness	x	x
14	200005553	Earth wire	x	x
15	7727349	CGC grommet	x	x
16	7742703	DN10 adhesive clip	x	x

13.6 Burner

Fig.95



MW-6000718-2

Tab.94

Marker	Reference	Description	CFU 22	CFU 29
1	97902600	Motor coupling	x	x
2	97955489	Capacitor for Rotomatika motor	x	x
3	97955487	90-W motor	x	x
4	300027692	Turbine	x	x
5	97955490	Motor spacer	x	x
6	7643473	Suntec oil pump + pipe sub-set AS471618	x	x
7	97955554	Supply pipe for Suntec pump	x	x
8	97941728	Oil pump filter for Suntec pump	x	x
9	97909075	Solenoid valve coil	x	x

Marker	Reference	Description	CFU 22	CFU 29
10	7675673	1.0 m flexible oil pipe	x	x
20	97955556	High-voltage cable	x	x
21	97955837	Setting screw	x	x
22	7703797	Ignition electrode	x	x
23	97955497	Unheated injection nozzle line	x	x
24	300013710	Danfoss injection nozzle 0.40 - 60°S	x	
24	97903410	Danfoss injection nozzle 0.50 - 60°S		x
25	7703796	Combustion head	x	x
30	300022191	Transformer	x	x
33	200011220	Control and safety boxBB LE-P	x	x
40	97955506	Air regulator	x	x
41	97955508	Spring	x	x
42	97955507	Air shutter	x	x
43	300028324	Air inlet panel Ø16	x	
51	7641125	Burner gasket	x	x
70	97955511	Component plate	x	x
71	97955515	Duo-press® 40 mm	x	x
72	7712608	Flame tube Ø60 + Flange	x	
72	7712609	Flame tube Ø62 + Flange		x
73	200019998	P0 housing without insertion	x	x
74	97955513	Air box	x	x
75	97955514	Air box foam + housing foam	x	x
76	7712611	Flame detection cell	x	x
77	97956305	Tapered interlocks x10	x	x
78	97956254	Bolts + screws x2	x	x
90	97955516	Set of screws	x	x
91	97955517	Special material	x	x
92	300024055	Combustion head cleaning product	x	x

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