



User Guide

Oil-fired boiler

ESSENCIO

CFU 22

CFU 29

Dear Customer,

Thank you very much for buying this appliance.

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

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

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
3.2	Technical data	10
3.2.1	Outside temperature sensor specifications	11
4	Description of the product	12
4.1	General description	12
4.2	Boiler	12
4.3	Control panel description	12
4.3.1	Control panel description	12
4.3.2	Description of the standby screen	12
4.3.3	Description of the home screen (direct access)	13
4.3.4	Description of the carousel (quick access)	14
5	Operation	16
5.1	Browsing in the menus	16
5.1.1	Zone direct access tree structure	16
5.1.2	Main menu quick access tree structure	17
5.2	Starting up the boiler	18
5.3	Shutting down the boiler	18
5.4	Frost protection	19
6	Settings	20
6.1	Personalising the control panel	20
6.2	Selecting the operating mode	20
6.3	Managing the central heating	21
6.3.1	Switching the central heating on/off	21
6.3.2	Changing the room temperature temporarily (override)	21
6.3.3	Activating and configuring a timer programme for heating	22
6.4	Managing domestic hot water production	23
6.4.1	Switching domestic hot water production on/off	23
6.4.2	Forcing domestic hot water production (override)	23
6.4.3	Modifying the domestic hot water set point temperatures	23
6.4.4	Activating and configuring a timer programme for domestic hot water production	24
6.5	Periods of absence or going on holiday	24
6.6	Personalising the zones	25
6.6.1	Definition of the term "zone"	25
6.6.2	Changing the name and symbol of a zone	26
6.7	Personalising the activities	26
6.7.1	Definition of the term "Activity"	26
6.7.2	Changing the name of an activity	27
6.7.3	Setting the activities temperature	27
6.8	Monitoring the energy consumption	28
6.9	Version information	28
7	Maintenance	30
7.1	General instructions	30
7.2	Configuring the maintenance message	30
7.3	Maintenance instructions	30
7.3.1	Check the hydraulic pressure	30
7.3.2	Topping up the installation with water	30
7.3.3	Chimney sweep instructions	31

7.3.4	Chimney mode	31
7.4	Venting the heating system	32
7.5	Draining the heating system	33
8	Troubleshooting	34
8.1	Resolving operating errors	34
8.2	Error codes	34
8.3	Error codes	35
8.4	Alarm codes	35
8.5	Resetting the burner safety unit	36
8.6	List of burner faults	36
9	Environmental	38
9.1	Disposal and recycling	38
9.2	Energy savings	38
10	Warranty	39
10.1	General	39
10.2	Terms of warranty	39
11	Appendix	41
11.1	Product fiche	41
11.2	Product fiche - Temperature controls	41
11.3	Product fiche	42

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.
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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>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>  Caution Power the appliance via a circuit that includes an omnipolar switch with contact opening distance of 3 mm or more.	Other countries	Only qualified professionals are permitted access to the inside of the appliance, in accordance with the prevailing 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.		
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 Have the boiler and heating system drained by a qualified professional 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. Evacuate the property. 4. Contact a qualified professional.
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.  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.

1.4 Liabilities

Tab.4

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.
User's liability	To guarantee optimum operation of the system, you must abide by the following instructions: • Read and follow the instructions given in the manuals provided with the appliance. • Call on a qualified professional to carry out installation and initial commissioning. • Get your installer to explain your installation to you. • Have the required inspections and maintenance carried out by a qualified installer. • Keep the instruction manuals in good condition close to the appliance.

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



1

 Alternating current.

2

 Protective earthing.

3

 Before installing and commissioning the appliance, carefully read the instruction manuals provided.

4

 Dispose of used products through an appropriate recovery and recycling structure.

5

 Caution: danger of electric shock, live parts. Disconnect the mains power prior to carrying out any work.

6

 Connect the appliance to the protective earthing.

MW-1000123-2

3 Technical specifications

3.1 Homologations

3.1.1 Certifications

The boiler complies with current standards.

CE identification number: 0085CQ0004

3.1.2 Oil categories

Tab.5

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)	

3.2 Technical data

Tab.6 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	<i>Prated</i>	kW	22	30
Useful heat output at rated heat output and high temperature regime ⁽²⁾	<i>P₄</i>	kW	22.4	29.8
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>P₁</i>	kW	7.0	9.3
Seasonal space heating energy efficiency	<i>η_s</i>	%	86	86
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	<i>η₄</i>	%	87.5	87.3
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>η₁</i>	%	91.2	90.6
Auxiliary electricity consumption				
Full load	<i>elmax</i>	kW	0.152	0.162
Part load	<i>elmin</i>	kW	0.043	0.046
Stand-by	<i>P_{SB}</i>	kW	0.004	0.004
Other specifications				
Standby heat loss	<i>P_{stby}</i>	kW	0.083	0.095

Product name			CFU 22	CFU 29
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.

3.2.1 Outside temperature sensor specifications

Tab.7 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

4 Description of the product

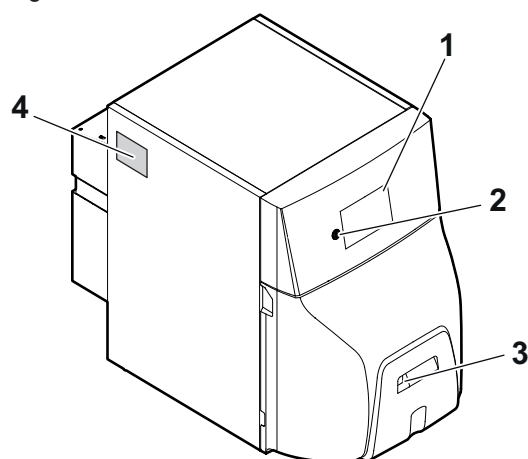
4.1 General description

The floor-standing oil boilers in the CFU range have the following specifications:

- Heating only with possibility to produce domestic hot water by combining them with a domestic hot water tank
- High-efficiency heating
- Low polluting emissions
- Heating body in cast iron
- Pre-assembled and pre-set oil burner
- Electronic control panel
- **Chimney connection:** Flue gas discharge via a chimney type connection
- **Forced flue connection:** Flue gas evacuation via a forced flue connection with combustion air supply kit

4.2 Boiler

Fig.2



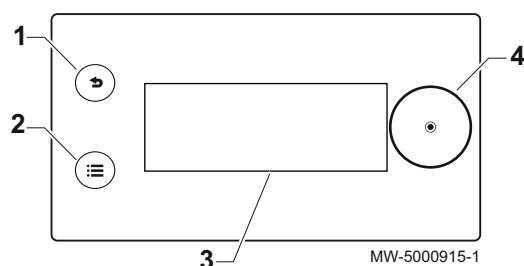
MW-5000851-1

- 1 Control panel
- 2 On/Off switch
- 3 Burner manual reset button
- 4 Data plate

4.3 Control panel description

4.3.1 Control panel description

Fig.3



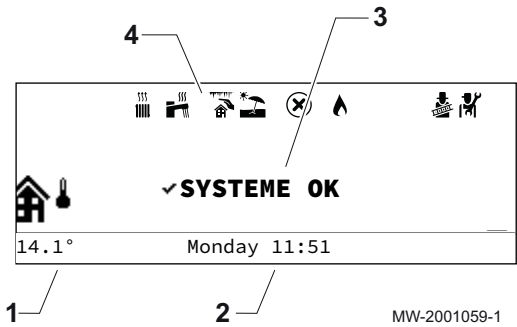
MW-5000915-1

- 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.4



- 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.8 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

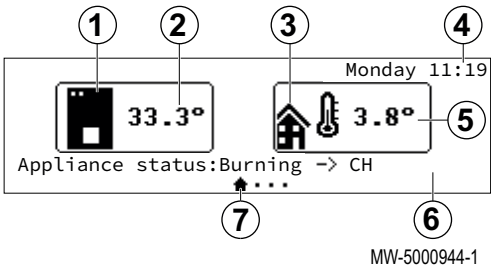
4.3.3 Description of the home screen (direct access)

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.

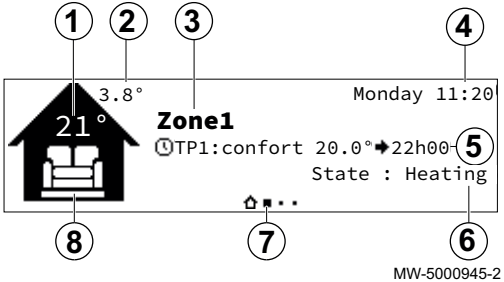
All the zone symbols and names can be changed.

Fig.5 Main home screen

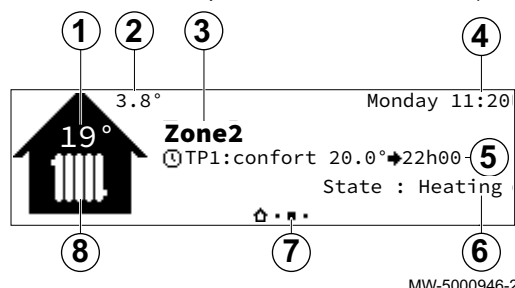


- 1 Boiler symbol
- 2 Boiler flow temperature
- 3 Outdoor temperature symbol
- 4 Day and time
- 5 Outdoor temperature
- 6 Boiler status
- 7 Active page

Fig.6 Zone1 home screen



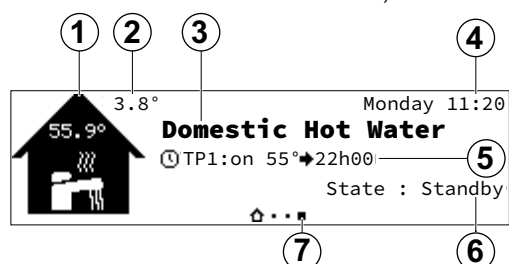
- 1 Temperature of the **Zone1** (only if a room temperature sensor is present in the zone)
- 2 Outdoor temperature
- 3 **Zone1** name
- 4 Day and time
- 5 Operating mode
- 6 **Zone1** status
- 7 Active page
- 8 **Zone1** symbol

Fig.7 **Zone2** home screen (only if the SCB-04 optional PCB is connected)

MW-5000946-2

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



MW-5000947-1

- 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.9



MW-5000948-1

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.9

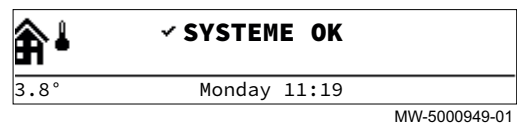
Accessible menus	Description	 See Chapter
	Central heating On/Off	Switching the central heating on/off
	Domestic Hot Water On/Off	Switching domestic hot water production on/off
	Heating temperature	Setting the activities temperature
	Water temperature	Modifying the domestic hot water set point temperatures
	Temporary heating temperature change	Changing the room temperature temporarily
	Hot water boost	Forcing domestic hot water production (override)
	System holiday mode	Periods of absence or going on holiday

Accessible menus	Description	See Chapter
	User settings	
	Zones settings	Changing the name and symbol of a zone
	Domestic Hot Water settings	Modifying the domestic hot water set point temperatures
	CH function on	Switching the central heating on/off
	DHW function on	Switching domestic hot water production on/off
	Outdoor temperature	• Force summer mode: The heating is stopped. Hot water is maintained. Force Summer Mode - 0 =Off - 1 =On • Summer Winter: Outside temperature below which the antifreeze protection is activated Can be set from 15 °C to 30.5 °C
	Energy counter	Monitoring the energy consumption
	System holiday mode	Periods of absence or going on holiday
	Test mode	Chimney mode
	Installer	Menu not accessible to the user
	Finder	Menu not accessible to the user
	Signals status set points	Menu not accessible to the user
	Energy counter	Monitoring the energy consumption
	Settings	Personalising the control panel
	Version information	Version information

5 Operation

5.1 Browsing in the menus

Fig.10 Standby screen



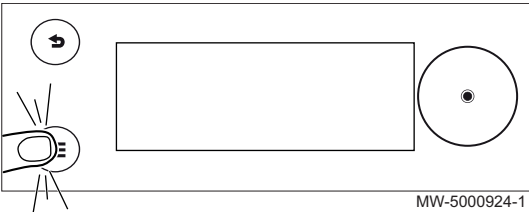
Press any key or turn the selector to turn on the backlight for the control panel screen.



Important

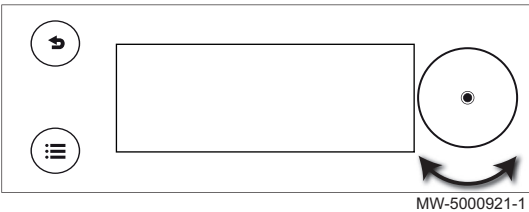
If no key is pressed within 3 minutes, the control panel backlight will go out.

Fig.11 Access to main menu



Press the key to access the main menu.

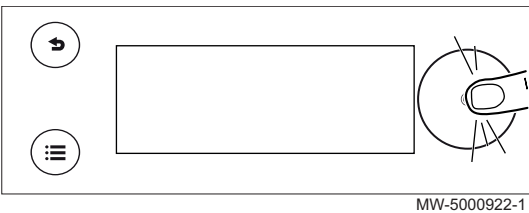
Fig.12 Selection



Turn the selector to select:

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

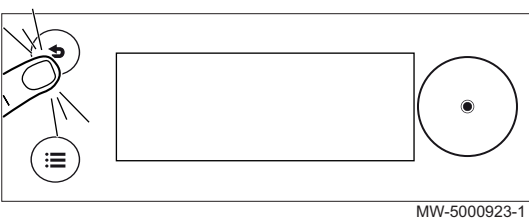
Fig.13 Confirmation



Press the selector to confirm:

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

Fig.14 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 .

5.1.1 Zone direct access tree structure

Tab.10

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.11

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

5.1.2 Main menu quick access tree structure

Tab.12

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.13

Accessible menus	Description	 See Chapter
	Central heating On/Off • Off • On	Switching the central heating on/off
	Domestic Hot Water On/Off • Off • On	Switching domestic hot water production on/off
	Heating temperature • Zone1 • Zone2 (only if the SCB-04 optional PCB is connected)	Setting the activities temperature
	Water temperature • DHW comfort setpoint • DHW reduced setpoint	Modifying the domestic hot water set point temperatures
	Temporary heating temperature change • Zone1 • Zone2 (only if the SCB-04 optional PCB is connected)	Changing the room temperature temporarily
	Hot water boost	Forcing domestic hot water production (override)
	System holiday mode	Periods of absence or going on holiday

Accessible menus	Description	See Chapter
	User settings	
	Zones settings	Changing the name and symbol of a zone
	Domestic Hot Water settings	Modifying the domestic hot water set point temperatures
	CH function on	Switching the central heating on/off
	DHW function on	Switching domestic hot water production on/off
	Outdoor temperature	• Force summer mode: The heating is stopped. Hot water is maintained. Force Summer Mode - 0 =Off - 1 =On • Summer Winter: Outside temperature below which the antifreeze protection is activated Can be set from 15 °C to 30.5 °C
	Energy counter	Monitoring the energy consumption
	System holiday mode	Periods of absence or going on holiday
	Test mode	Chimney mode
	Installer	Menu not accessible to the user
	Finder	Menu not accessible to the user
	Signals status setpoints	Menu not accessible to the user
	Energy counter	Monitoring the energy consumption
	System settings	Personalising the control panel
	Version information	Version information

5.2 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.
6. If an error message is displayed on the home screen, contact the installer.

5.3 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.

**For more information, see**

Selecting the operating mode, page 20

Periods of absence or going on holiday, page 24

5.4 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**

Have the boiler and heating system drained by a qualified professional 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.14

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.

6 Settings

6.1 Personalising the control panel

It is possible to personalise the control panel by modifying the basic settings.

1. Go to the menu:  **System settings**.

Tab.15

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

2. Carry out one of the following operations:

Tab.16

Menu	Parameter	Description
Country and language		Select country
		Select language
Date and time	AP082	Setting the date and time • year • month • day • hours • minutes • Enable daylight save : Enable daylight saving for the system to save energy during winter
Installer details	AP089	Installer name : Change the installer's name
	AP090	Installer phone : Change the installer's phone number
Activity names		Select one of the following activities: • Sleep • Home • Away • Morning • Evening • Custom Modify the name of activities used to program heating periods
Display settings	AP104	HMI contrast value : Setting the screen brightness
	AP105	Unit displayed : Selecting the unit displayed • 0 for °C • 1 for °F
	AP124	Child lock : Prevents children from accidentally altering the unit settings. • no = Screen locked • yes = Screen unlocked

3. Confirm by pressing the selector  to save the setting.
4. Go back to the main screen by pressing the back key .

6.2 Selecting the operating mode

One of 5 operating modes can be selected for each zone.

The recommended operating mode is **Programming** mode, which allows:

- the room temperature to be regulated as required
- the domestic hot water production periods to be programmed as required
- energy consumption to be optimised.

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

Tab.17

Type of access	Access path
Direct access: from the main home screen	→ Select the page corresponding to the required zone → Select: Operating mode
Quick access: from any screen	Not available

2. Select the desired operating mode using the  selector:

Tab.18

Operating mode	Description
Programming	The room temperature is modulated according to the timer programme chosen. The domestic hot water is produced according to the timer programme chosen. Recommended mode.
Manual	The room temperature is constant. The domestic hot water temperature remains at the comfort temperature permanently.
Temporary temperature change	The room temperature is forced for a defined period. The production of domestic hot water is forced at the comfort temperature for a defined period.
Holiday	The room temperature is reduced during an absence period to save energy. The domestic hot water temperature is reduced during an absence period to save energy.
Frost protection	The installation and equipment are protected against frost during the winter period.

3. Select: **Confirm**, to save the new operating mode.
4. Go back to the main screen by pressing the back key .

6.3 Managing the central heating

6.3.1 Switching the central heating on/off

The heating function can be switched off for all circuits.
This can lead to energy savings, for example, during the summer period.

1. Go to the menu: **Central heating On/Off**.

Tab.19

Type of access	Access path
Direct access: from the main home screen	→ Press the selector  → Select: Central heating On/Off
Quick access: from any screen	→ Press the  key → Select: Central heating On/Off

2. Select the desired value:
 - **Off** to stop the heating function.
 - **On** to switch the heating function on again.
3. Select: **Confirm**, to save the setting.
4. Go back to the main screen by pressing the back key .

6.3.2 Changing the room temperature temporarily (override)

Regardless of the operating mode selected for a zone, it is possible to modify the room temperature for a defined period. Once this time has elapsed, the selected operating mode will restart.

- Go to the menu:  **Temporary heating temperature change**.

Tab.20

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

- Select the required zone:
 - Zone1**
 - Zone2** (only if the SCB-04 optional PCB is connected)
- Set the temperature using the  selector.
- Set the override end time using the  selector.
- Select: **Confirm** to confirm the override.
- Go back to the main screen by pressing the back key .

6.3.3 Activating and configuring a timer programme for heating

A timer programme can be used to vary the room temperature in a living zone depending on activities during the day.

This can be programmed for each day of the week.

- Go to the menu: **Time programmes heating**.

Tab.21

Type of access	Access path
Direct access: from the main home screen	→ Select the page corresponding to the required zone → Select: Time programmes heating
Quick access: from any screen	Not available

- ⇒ Three timer programmes are available. The programme that is currently active is marked with a tick.
- 2. Select: **ZoneTimeProg Select** to activate another timer programme.
- 3. Select the programme to be modified:
 - Schedule 1**
 - Schedule 2**
 - Schedule 3**
- ⇒ The programmed activities for Monday are displayed.
The last activity of the day remains active until the first activity of the following day.
- 4. Select the day to be modified.
- 5. Carry out the following actions according to your needs:
 - Modify** the timings for programmed activities.
 - Add** a new time range.
 - Delete** a programmed activity.
 - Copy** programmed daily activities to other days with **Copy to other days**.

Fig.15

Program 1	< Monday >
06:00	Confort 22.0 °C
22:00	Reduced 16.0 °C
---	---
---	---

MW-5000950-1

Tab.22 Example of a timer programme

Start of the period (can be set)	Name of assigned activity (can be set)	Assigned temperature (for information)
05:00	Comfort	20.0 °C
08:00	Reduced	16.0 °C
10:00	Absence	6.0 °C
16:00	Comfort	20.0 °C
22:00	Reduced	16.0 °C
---	---	---

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

6.4 Managing domestic hot water production

6.4.1 Switching domestic hot water production on/off

The domestic hot water production can be switched off.

This can lead to energy savings, for example, during the summer period.

1. Go to the menu: **Domestic Hot Water On/Off**.

Tab.23

Type of access	Access path
Direct access: from the main home screen	→ Press the selector  → Select: Domestic Hot Water On/Off
Quick access: from any screen	→ Press the  key → Select: Domestic Hot Water On/Off

2. Select the desired value:
 - **Off** to shut down domestic hot water production.
 - **On** to start up domestic hot water production.
3. Select: **Confirm**, to save the setting.
4. Go back to the main screen by pressing the back key .

6.4.2 Forcing domestic hot water production (override)

Regardless of the selected operating mode, you can force domestic hot water production to the comfort temperature (**DHW comfort setpoint** parameter) for a defined period.

1. Go to the menu:  **Hot water boost**.

Tab.24

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

2. Set the **Hot water boost** end time using the selector .
3. Select: **Confirm**, to save the new operating mode.
⇒ Hot water boost mode starts immediately.
4. Go back to the main screen by pressing the back key .

6.4.3 Modifying the domestic hot water set point temperatures

The production of domestic hot water operates with two set point temperature parameters:

- **DHW comfort setpoint**
- **DHW reduced setpoint**

These set point temperatures can be modified as required.

1. Go to the menu:  **Water temperature**.

Tab.25

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

2. Select the desired set point:
 - **DHW comfort setpoint**
 - **DHW reduced setpoint**

3. Set the desired temperature using the  selector.
4. Go back to the main screen by pressing the back key .

6.4.4 Activating and configuring a timer programme for domestic hot water production

A timer programme can be used to vary the domestic hot water temperature depending on activities during the day.

This can be programmed for each day of the week.

1. Go to the desired menu:

Tab.26

Type of access	Access path
Direct access: from the main home screen	→ Select the page corresponding to the required zone → Select: Time programmes
Quick access: from any screen	Not available

Fig.16

Program 1	 Monday 
06:00	Confort 22.0°
22:00	Reduced 16.0°
---	---
---	---

MW-5000950-1

- ⇒ Three timer programmes are available. The programme that is currently active is marked with a tick.
2. Select **DHW timeprog. select** to activate another timer programme.
3. Select the programme to be modified:
 - **Schedule 1**
 - **Schedule 2**
 - **Schedule 3**
- ⇒ The programmed activities for Monday are displayed.
The last activity of the day remains active until the first activity of the following day.
4. Select the day to be modified.
5. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new time range.
 - **Delete** a programmed activity.
 - **Copy** programmed daily activities to other days with **Copy to other days**.

Tab.27 Example of a timer programme

Start of the period (can be set)	Name of assigned activity (can be set)	Assigned temperature (for information)
06:00	ON	55 °C
08:00	Reduced	14 °C
---	---	--
---	---	--
---	---	--
---	---	--

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

6.5 Periods of absence or going on holiday

In case of prolonged absence, the room temperature and domestic hot water temperature can be reduced to save energy. To do this, activate the **System holiday mode** operating mode for all zones, including for domestic hot water.

- Go to the menu:  **System holiday mode**.

Tab.28

Type of access	Access path
Direct access: from the main home screen	→ Press the selector  → Select: System holiday mode
Quick access: from any screen	→ Press the  key → Select: System holiday mode

- Set the following parameters:

Tab.29

Description	Holiday period on Central Heating and Domestic Hot Water zones
will start at	Set the date and time for the start of the absence period.
ends at	Set the date and time for the end of the absence period.

- Select: **Confirm**, to save the settings.
- Go back to the main screen by pressing the back key .

6.6 Personalising the zones

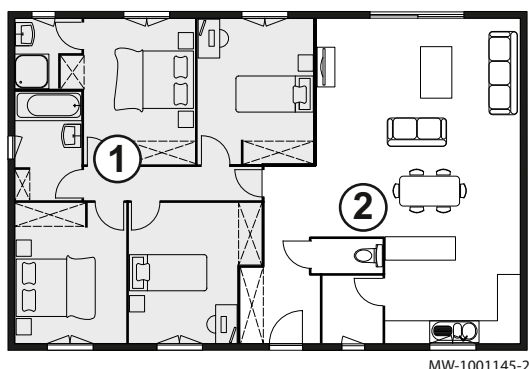
6.6.1 Definition of the term "zone"

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

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

All the zone symbols and names can be changed.

Fig.17



Tab.30 Available symbols

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

Tab.31 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

Symbol	Symbol value	Symbol allocation
	12	Internal Boiler Tank
	13	Time Program

6.6.2 Changing the name and symbol of a zone

The names and symbols of the various zones are factory-configured. It is possible to personalise the name and symbol for the installation zones.

1. Go to the menu: **Zones settings**.

Tab.32

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

2. Select the required zone:
 - **Zone1**
 - **Zone2** (only if the SCB-04 optional PCB is connected)
3. Select **General**.
4. Select **Zone friendly Name**.
5. Enter the new name for the zone (maximum 20 characters) and confirm with **OK**.
6. Enter the chosen name in the following table:

Factory-set name	New name
Zone1	
Zone2 (only if the SCB-04 optional PCB is connected)	

7. Select **Icon display zone**.
8. Select the circuit symbol and confirm with **OK**.
9. Confirm by pressing the selector .
10. Go back to the main screen by pressing the back key .

6.7 Personalising the activities

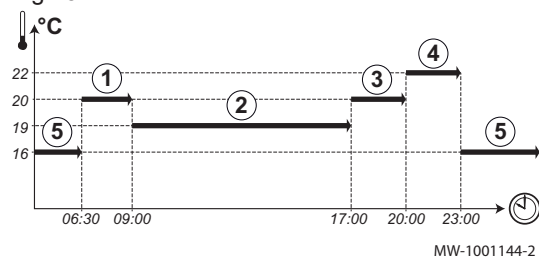
6.7.1 Definition of the term "Activity"

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.

Tab.33 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

Fig.18



6.7.2 Changing the name of an activity

The name of the different activities is factory-set: **Morning**, **Sleep**, **Home**, **Evening**, **Away** and **Custom**. It is possible to personalise the name of the activities for all of the installation zones.

1. Go to the menu: **Activity names**.

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:  System settings → Select: Activity names

2. Select the required activity:
 - **Morning**
 - **Sleep**
 - **Home**
 - **Evening**
 - **Away**
 - **Custom**
3. Enter the new name for the activity (maximum 20 characters) and confirm with **OK**.
4. Enter the chosen name in the following table:

Factory-set name	New name
Morning	
Sleep	
Home	
Evening	
Away	
Custom	

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

6.7.3 Setting the activities temperature

It is possible to set the temperature for each activity in each available zone.

1. Go to the menu: **Heating temperature**.

Tab.35

Type of access	Access path
Direct access: from the main home screen	→ Select the page corresponding to the required zone → Press the selector  → Select: Heating temperature
Quick access: from any screen	→ Press the  key → Select  Heating temperature → Select the desired zone: • Zone1 • Zone2 (only if the SCB-04 optional PCB is connected)

2. Select the required activity:

Tab.36

Activity	Parameter	Parameter name for the Zone1 or for the Zone2 (only if the SCB-04 optional PCB is connected)
Sleep	CP080	Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C
Home	CP081	Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C
Away	CP082	Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C
Morning	CP083	Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C
Evening	CP084	Room setpoint temperature of the user zone activity Can be set from 5 °C to 30 °C

3. Set the temperature value assigned to the chosen activity.

4. Confirm by pressing the selector  to save the setting.

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

6.8 Monitoring the energy consumption

If the installation is equipped with an energy meter, the energy consumption can be monitored.

1. Go to the menu: **Energy counter**.

Tab.37

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

2. Select the desired parameter:

Tab.38

Parameter name	Parameter	Description
CH Energy Consumed	AC005	Energy consumed for central heating
DHW Energy Consumed	AC006	Energy consumed for domestic hot water

⇒ The energy consumed since the last energy consumption meter reset is displayed.

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

6.9 Version information

Tab.39

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.40

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

7 Maintenance

7.1 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.

7.2 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.41

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 .

7.3 Maintenance instructions

7.3.1 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.

7.3.2 Topping up the installation with water

1. Open the valves on all radiators connected to the heating system.
2. Set the room thermostat to as low a temperature as possible.
3. Put the boiler in shut-down/frost protection mode.

4. Open the fill valve.
5. Close the filling valve when the pressure gauge shows a pressure of 0.15 MPa (1.5 bar).
6. Put the boiler in heating mode.
7. When the pump has stopped, vent again and top up the water pressure.

**Important**

Filling and venting the installation twice a year should be sufficient to obtain an adequate hydraulic pressure. If it is often necessary to top up the installation with water, contact your installer.

7.3.3 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. Unscrew the plug on the flue gas measurement point.
4. Install the measuring device.
5. Take the combustion measurements to determine losses through flue gases and smoke.
6. Refit the plug on the flue gas measurement point.

7.3.4 Chimney mode

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

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

Tab.42

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:

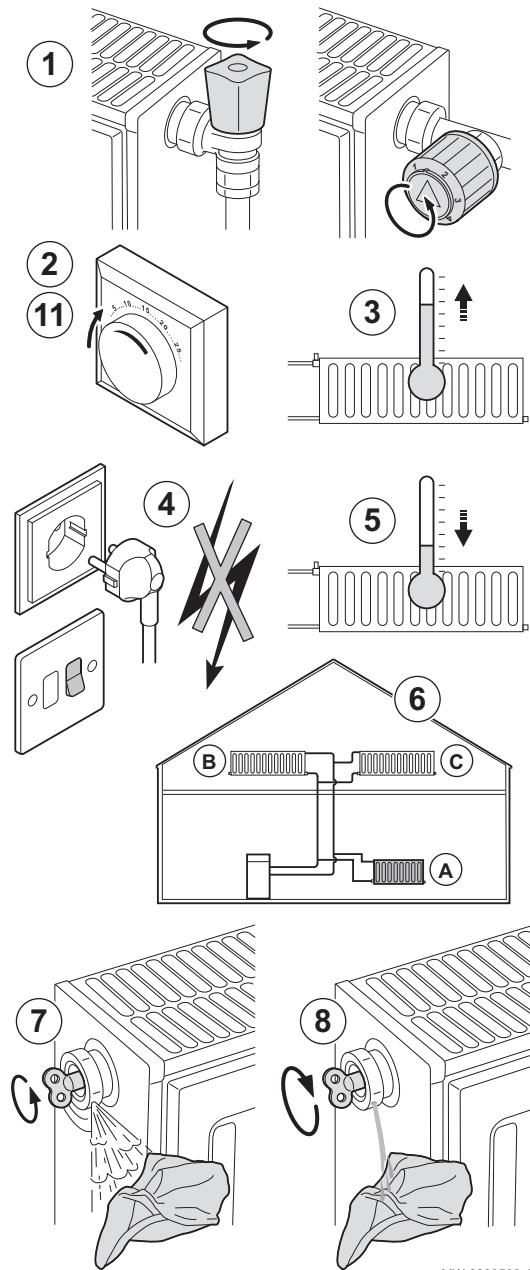
Tab.43

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 .

7.4 Venting the heating system

Fig.19



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

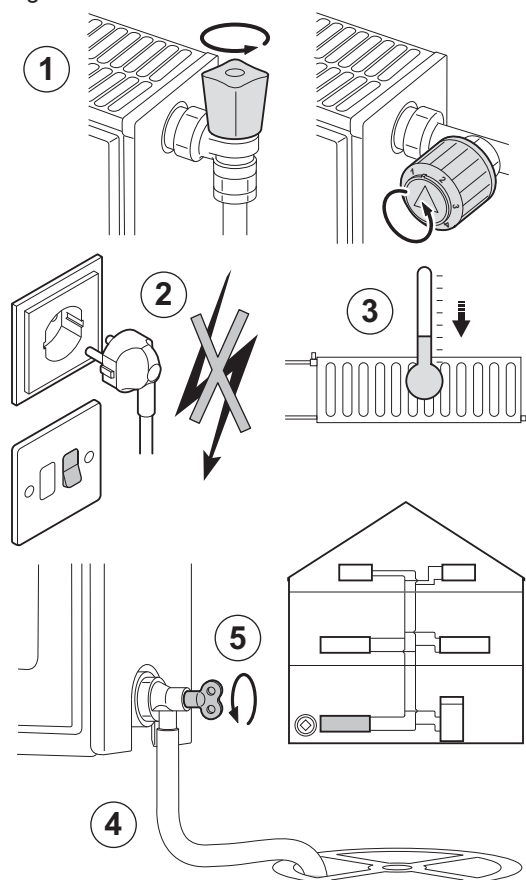
After the power is switched on, the boiler always runs through an automatic venting program lasting approx. 3 minutes.

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.

MW-2000560-1

7.5 Draining the heating system

Fig.20



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.

8 Troubleshooting

8.1 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.44

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.
4. If the code is displayed again, contact the installer.

8.2 Error codes

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

When one of the codes below is displayed, contact the professional responsible for maintenance of the boiler.

Tab.45 List of error codes

Error code	Message	Description
H00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range
H00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range
H00.06	TReturn Missing	Return temperature sensor was expected but not detected
H00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range
H00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range
H00.32	TOutside Open	Outside temperature sensor is either removed or measures a temperature below range
H00.33	TOutside Closed	Outside temperature sensor is either shorted or measures a temperature above range
H00.79	TSwimming Pool Open	Swimming Pool Flow temperature sensor is either removed or measures a temperature below range
H00.80	TSwimmingPool Closed	Swimming Pool Flow temperature sensor is either shorted or measures a temperature above range
H01.03	Flame Loss Warning	Warning off unintended flame loss detection
H02.00	Reset In Progress	Reset In Progress
H02.02	Wait Config Number	Waiting For Configuration Number
H02.03	Conf Error	Configuration Error
H02.04	Parameter Error	Parameter Error:
H02.05	CSU CU mismatch	CSU does not match CU type
H02.09	Partial block	Partial blocking of the device recognized
H02.10	Full Block	Full blocking of the device recognized

Error code	Message	Description
H02.16	Int CSU Timeout	Internal CSU Timeout
H02.25	ACI error	ACI error
H02.36	Funct device lost	Functional device has been disconnected
H02.37	Uncritic device lost	Uncritical device has been disconnected
H02.40	Function unavailable	Function unavailable
H02.48	Funct Gr Conf Fault	Function Group Configuration Fault
H02.60	Unsupported function	The zone doesn't support the selected function
H07.01	Burner fault	Burner fault has occurred

8.3 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.

When one of the codes below is displayed, contact the professional responsible for maintenance of the boiler.

Tab.46 List of fault codes

Error code	Message	Description
E00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range
E00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range
E01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence: occurs after 3 H01.03 faults in the same heating request
E01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature
E02.13	Blocking Input	Blocking Input of the Control Unit from device external environment
E02.15	Ext CSU Timeout	External CSU Timeout
E02.41	FG press sw present	The Fluegas pressure switch is present
E02.42	Flue T press sw pres	Flue temperature pressure switch is present
E02.44	FG press	Fluegas pressure switch not switched error

8.4 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.

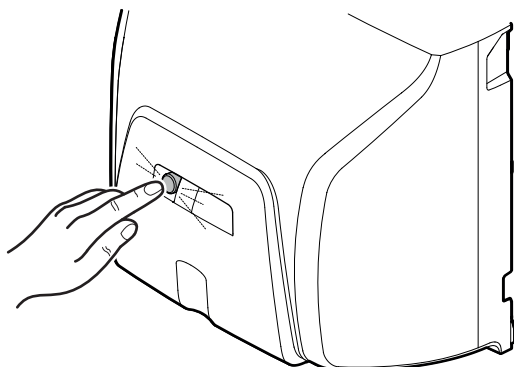
When one of the codes below is displayed, contact the professional responsible for maintenance of the boiler.

Tab.47 List of alarm codes

Alarm code	Message	Description
A00.32	TOutside Open	Outside temperature sensor is either removed or measures a temperature below range
A00.33	TOutside Closed	Outside temperature sensor is either shorted or measures a temperature above range
A00.34	TOutside Missing	Outside temperature sensor was expected but not detected
A00.81	RoomTempMissing	Room Temperature sensor was expected but not detected
A02.18	OBD Error	Object Dictionary Error

8.5 Resetting the burner safety unit

Fig.21



MW-5000917-2

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

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.

2. If the burner fault persists, contact the professional who handles maintenance of the boiler.

8.6 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.

If one of the codes below is displayed, contact the professional responsible for maintenance of the boiler.

Tab.48 List of burner faults

Faults	Description
The burner does not start.	No voltage: burner fault. No continuity between L1 and T1: Green LED on the control box off while there is a thermostatic demand.
The motor does not start.	Faulty motor. Faulty capacitor.
Mechanical noises.	Motor bearings damaged. Friction on the turbine.
No ignition arc	Short-circuit on ignition electrodes. Ignition electrodes spaced too far apart. Electrodes clogged, wet. Connection fault on the electrode cables. Faulty insulation on the ignition electrodes. Faulty ignition electrode cables. Faulty transformer.
The control box switches to safety mode (fixed red LED).	Flame detection cell clogged. Flame blow-off. Faulty ignition cables or flame detection cell. No oil.
The pump does not draw in oil.	Damaged pump/motor coupling. Strainer, pipework or oil leak. Oil inlet/flow connection fitted the wrong way round. Stop valves closed. Filter or strainer on the tank clogged. Oil tank empty.
Pump noises.	The pump is drawing in air. The pump is idling.

Faults	Description
Poor combustion hygiene.	Incorrect setting. Lack of air. Injection nozzle clogged. No spraying. Combustion head clogged. Air inlets clogged. Boiler room insufficiently ventilated
No flame.	No ignition arc. No oil.

9 Environmental

9.1 Disposal and recycling

Fig.22



Recycling



Warning

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

9.2 Energy savings

Energy-saving advice:

- Do not block ventilation outlets.
- Do not cover the radiators. Do not hang curtains in front of the radiators.
- Install reflective panels behind the radiators to prevent heat losses.
- Insulate the pipes in rooms that are not heated (cellars and lofts).
- Close the radiators in rooms not in use.
- Do not run hot (or cold) water pointlessly.
- Install an energy-saving shower head, which can save up to 40 % energy.
- Take showers rather than baths. A bath consumes twice as much water and energy.

10 Warranty

10.1 General

We would like to thank you for buying one of our appliances and for your trust in our product.

In order to ensure continued safe and efficient operation, we recommend that the product is regularly inspected and maintained.

Your installer and our service department can assist with this.

10.2 Terms of warranty

Tab.49

Germany	The following provisions are not exclusive of the buyer being able to benefit from the legal warranty stipulated in Articles 1641 to 1648 of the Civil Code.
Portugal	The following provisions do not adversely affect consumers' rights, as laid down in Decree-Law 67/2003 of 8 April amended by Decree-Law 84/2008 of 21 May, warranties on sales of consumer goods and other implementing rules.
Other countries	The following provisions do not affect the application, in favour of the buyer, of the legal provisions with regard to hidden defects that are applicable in the buyer's country.

Tab.50

Italy, Portugal	The duration of our warranty is shown on the certificate delivered with the appliance.
Portugal	Our warranty is limited to the replacement or repair of the parts found to be defective by our technical services team.
Other countries	Our warranty is valid for two years.
All countries: Except Germany and Russia	Your appliance is covered by a contractual guarantee against manufacturing defects as of the date of purchase stated on the installer's invoice. Our warranty does not cover replacement or repair costs for parts that may become defective due to normal wear, incorrect usage, the intervention of unqualified third parties, inadequate or insufficient supervision or maintenance, a mains supply that is not appropriate or the use of unsuitable or poor quality fuel.
All countries: Except Germany, Italy, Poland, Russia and Turkey	The warranty period is stated in our price list.
All countries: Except Germany, Austria, Portugal and Russia	Our warranty is limited to the replacement or repair of the parts found to be defective by our technical services team, excluding labour, transfer and transport costs.

Tab.51

Austria	The supply of spare parts is guaranteed ten years from the date of purchase stated on the installer's invoice.
All countries except: Germany and Russia	The warranty is only valid for sub-sets such as motors, pumps, electrical valves, etc. if these parts have never been dismantled. The rights established in European Directive 99/44/EEC, implemented by legal decree No. 24 of 2 February 2002 and published in Official Journal No. 57 of 8 March 2002, remain in force.

Tab.52

Italy	As a manufacturer, we can by no means be held liable if the appliance is used incorrectly, is poorly maintained or not maintained at all, or is not installed correctly (it is your responsibility to ensure that installation and maintenance works are carried out by a qualified professional and by an after-sales service company, respectively). In particular, we cannot be held liable for material damage, intangible losses or physical injury resulting from an installation that does not comply with: • the legal and regulatory requirements laid down by national laws and the regulations of local authorities, • our instructions and prescriptions on installation and maintenance in accordance with prevailing legislation.
Other countries	We can by no means be held liable if the appliance is used incorrectly, is poorly maintained or not maintained at all, or is not installed correctly (it is your responsibility to ensure that installation is carried out by a qualified professional).
All countries: Except Germany, Italy and Russia	As a manufacturer, we can by no means be held liable if the appliance is used incorrectly, is poorly maintained or not maintained at all, or is not installed correctly (it is your responsibility to ensure that installation is carried out by a qualified installer). In particular, we cannot be held liable for material damage, intangible losses or physical injury resulting from an installation that does not comply with: • Legal or regulatory requirements or provisions laid down by the local authorities, • National or local regulations and special provisions relating to the installation, • Our manuals and installation instructions, in particular in terms of regular maintenance of the appliances, • All countries: Except The Netherlands: the codes of practice.

11 Appendix

11.1 Product fiche

Tab.53 Product fiche for boiler space heaters

Brand name - Product name		CFU 22	CFU 29
Seasonal space heating energy efficiency class		B	B
Rated heat output (<i>Prated or Psup</i>)	kW	22	30
Seasonal space heating energy efficiency	%	86	86
Annual energy consumption	GJ	74	100
Sound power level L_{WA} indoors	dB	61	61



See

For specific precautions on assembly, installation and maintenance: see the "Safety Instructions" chapter.

11.2 Product fiche - Temperature controls

Tab.54 Product fiche for the temperature controls

		E-Pilot
Class		II
Contribution to space heating energy efficiency	%	2

11.3 Product fiche

Fig.23 The boiler's product fiche indicates the space heating energy efficiency of the product.

Seasonal space heating energy efficiency of boiler		(1)
		'I' %
Temperature control	Class I = 1%, Class II = 2%, Class III = 1.5%, Class IV = 2%, Class V = 3%, Class VI = 4%, Class VII = 3.5%, Class VIII = 5%	(2)
from fiche of temperature control		+ [] %
Supplementary boiler	Seasonal space heating energy efficiency (in %)	(3)
from fiche of boiler		([] - 'I') x 0.1 = ± [] %
Solar contribution	Tank rating ⁽¹⁾ A* = 0.95, A = 0.91, B = 0.86, C = 0.83, D - G = 0.81	(4)
from fiche of solar device	Collector size (in m ²) Tank volume (in m ³) Collector efficiency (in %)	
('III' x [] + 'IV' x []) x 0.9 x ([] / 100) x [] = + [] %		
(1) If tank rating is above A, use 0.95		
Supplementary heat pump	Seasonal space heating energy efficiency (in %)	(5)
from fiche of heat pump		([] - 'I') x 'II' = + [] %
Solar contribution AND Supplementary heat pump		(6)
select smaller value	0.5 x (4) OR 0.5 x (5) = - [] %	
Seasonal space heating energy efficiency of package		(7)
		[] %
Seasonal space heating energy efficiency class of package		
☐ G <30% ☐ F ≥30% ☐ E ≥34% ☐ D ≥36% ☐ C ≥75% ☐ B ≥82% ☐ A ≥90% ☐ A* ≥98% ☐ A** ≥125% ☐ A*** ≥150%		
Boiler and supplementary heat pump installed with low temperature heat emitters at 35°C ?		
from fiche of heat pump	(7)	[] + (50 x 'II') = [] %

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

AD-3000743-01

- I The value of the seasonal space heating energy efficiency of the preferential space heater, expressed in %.
- II The factor for weighting the heat output of preferential and supplementary heaters of a package as set out in the following table.
- III The value of the mathematical expression: $294/(11 \cdot \text{Prated})$, whereby "Prated" is related to the preferential space heater.
- IV The value of the mathematical expression $115/(11 \cdot \text{Prated})$, whereby "Prated" is related to the preferential space heater.

Tab.55 Weighting of boilers

$P_{\text{sup}} / (P_{\text{rated}} + P_{\text{sup}})^{(1)(2)}$	II, package without hot water storage tank	II, package with hot water storage tank
0	0	0
0.1	0.3	0.37
0.2	0.55	0.70
0.3	0.75	0.85
0.4	0.85	0.94
0.5	0.95	0.98
0.6	0.98	1.00
≥ 0.7	1.00	1.00
(1) The intermediate values are calculated by linear interpolation between the two adjacent values.		
(2) Prated is related to the preferential space heater or combination heater.		

Tab.56 Package efficiency

		CFU 22	CFU 29
Seasonal energy efficiency of the package for space heating combined with E-Pilot	%		

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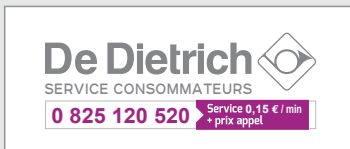
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