



Service Manual High-efficiency standing gas boiler

Gas 320 Ace - Gas 620 Ace

HMI T-control
SCB-01
SCB-02

Dear Customer,

Thank you very much for buying this appliance.

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

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

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1 About this manual

1.1 Additional documentation

The following documentation is available in addition to this manual:

- Installation and user manual
- Product information
- Water quality instructions

1.2 Symbols used in the manual

This manual contains special instructions, marked with specific symbols. Please pay extra attention when these symbols are used.

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

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

 **Caution**
Risk of material damage.

 **Important**
Please note: important information.

The symbols mentioned below are of lower importance, but they can help you navigate or give useful information.

 **See**
Reference to other manuals or pages in this manual.

 Helpful information or extra guidance.

▶▶ Direct menu navigation, confirmations will not be shown. Use if you are familiar with the system.

2 Description of the product

2.1 Boiler types

The following boiler types are available:

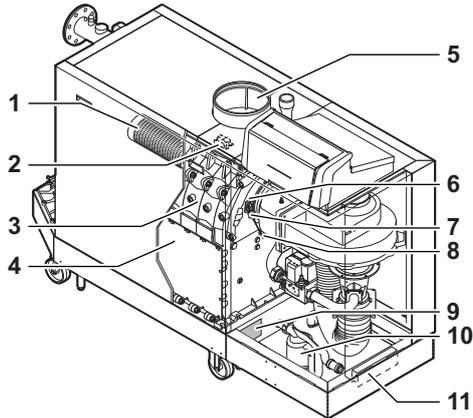
Tab.1 Boiler types

Name	Output ⁽¹⁾	Heat exchanger size
Gas 320 Ace 285	279 kW	5 sections
Gas 320 Ace 355	350 kW	6 sections
Gas 320 Ace 430	425 kW	7 sections
Gas 320 Ace 500	497 kW	8 sections
Gas 320 Ace 575	574 kW	9 sections
Gas 320 Ace 650	652 kW	10 sections
Gas 620 Ace 570	558 kW	2 x 5 sections
Gas 620 Ace 710	701 kW	2 x 6 sections
Gas 620 Ace 860	849 kW	2 x 7 sections
Gas 620 Ace 1000	994 kW	2 x 8 sections

Name	Output ⁽¹⁾	Heat exchanger size
Gas 620 Ace 1150	1147 kW	2 x 9 sections
Gas 620 Ace 1300	1303 kW	2 x 10 sections
(1) Nominal output P_{nc} 50/30 °C		

2.2 Main components

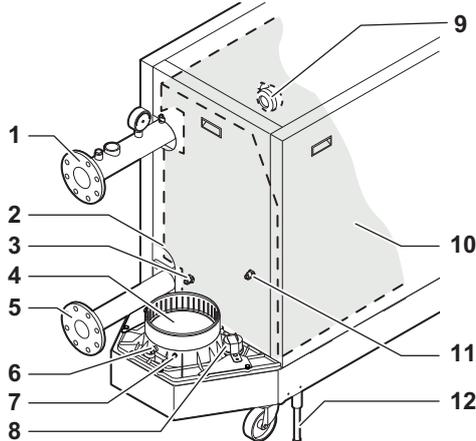
Fig.1 General - front



AD-3001552-01

- 1 Burner
- 2 Ignition / ionisation transformer
- 3 Heat exchanger
- 4 Inspection hatch
- 5 Air inlet connection
- 6 Flame inspection glass
- 7 Ignition / ionisation electrode
- 8 Heat exchanger temperature sensor
- 9 Data plate
- 10 Siphon
- 11 Document holder

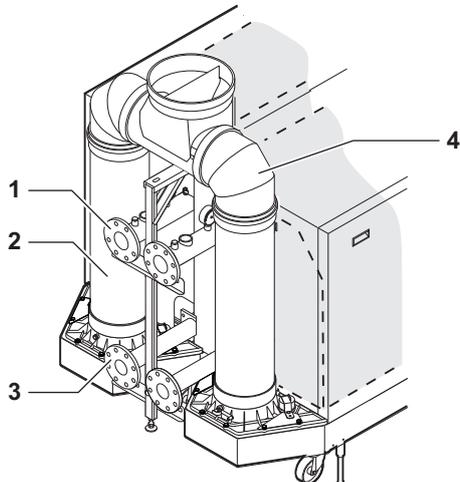
Fig.2 Gas 320 Ace - back



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- 1 Flow connection
- 2 Second return connection
- 3 Return temperature sensor (when no second return is fitted)
- 4 Flue gas outlet connection
- 5 Return connection
- 6 Flue gas measuring point
- 7 Flue gas temperature sensor
- 8 Condensate collector cap
- 9 Air pressure differential switch
- 10 Heat exchanger insulation kit (optional)
- 11 Return temperature sensor (when a second return is fitted)
- 12 Levelling foot

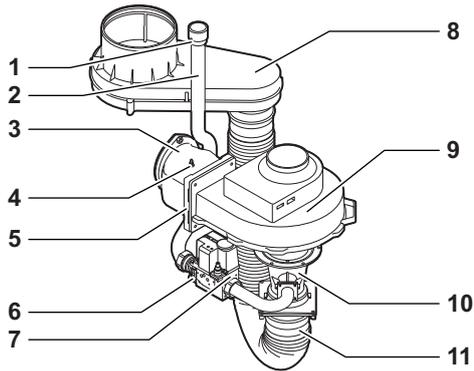
Fig.3 Gas 620 Ace - back



AD-3001554-02

- 1 Flow connection
- 2 Flue gas outlet
- 3 Return connection
- 4 Flue gas collector

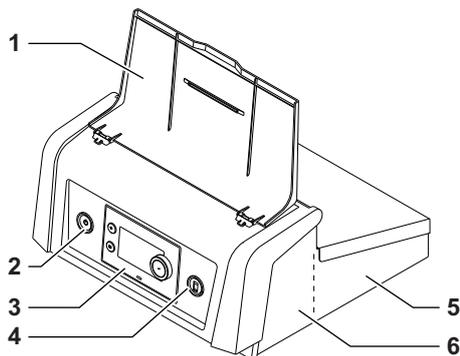
Fig.4 Gas - air unit



AD-3001555-01

- 1 Gas pressure measuring point
- 2 Gas supply tube
- 3 Gas - air connection piece
- 4 Pressure measurement point
- 5 Non-return valve
- 6 Gas filter
- 7 Gas valve
- 8 Air box
- 9 Fan
- 10 Venturi
- 11 Air supply hose

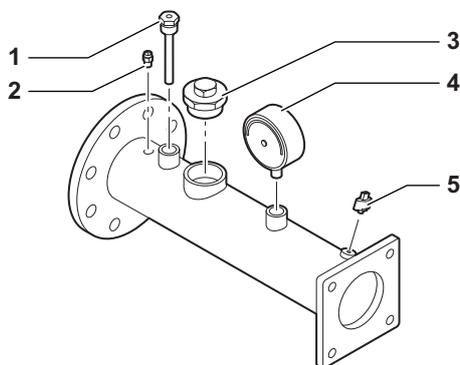
Fig.5 Control box



AD-3001556-01

- 1 Display cover
- 2 Power button
- 3 Control panel
- 4 Service connector
- 5 Control box rear part - for expansion PCBs with wire connections
- 6 Control box front part - for the control unit and connectivity expansion PCBs

Fig.6 Flow pipe



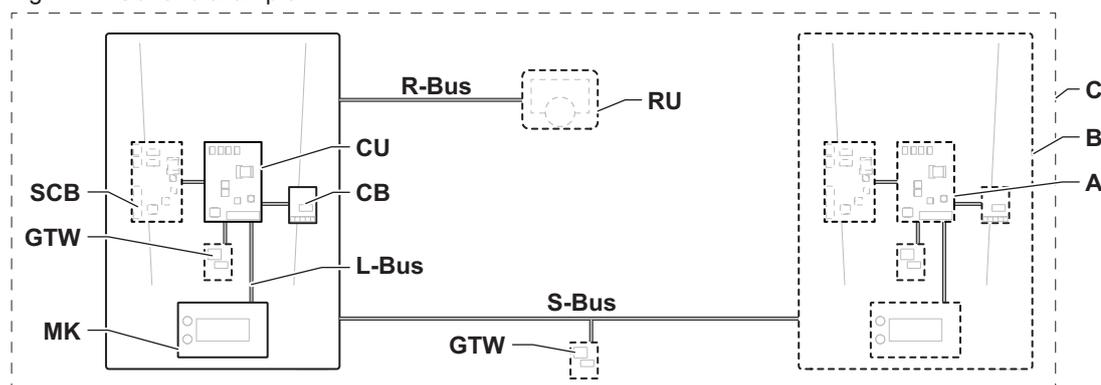
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- 1 Temperature sensor (external control) immersion tube (1/2")
- 2 Air vent (1/8")
- 3 Safety valve connection (1 1/2")
- 4 Pressure gauge (1/2")
- 5 Flow temperature sensor (M6)

2.3 Introduction to the e-Smart controls platform

The Gas 320/620 Ace boiler is equipped with the e-Smart controls platform. This is a modular system, and offers compatibility and connectivity between all products that make use of the same platform.

Fig.7 Generic example



AD-3001366-02

Tab.2 Components in the example

Item	Description	Function
CU	Control Unit: Control unit	The control unit handles all basic functionality of the appliance.
CB	Connection Board: Connection PCB	The connection PCB provides easy access to all connectors of the control unit.
SCB	Smart Control Board: Expansion PCB	An expansion PCB provides extra functionality, like an internal calorifier or multiple zones.
GTW	Gateway: Conversion PCB	A gateway can be fitted to an appliance or system, to provide one of the following: <ul style="list-style-type: none"> • Extra (wireless) connectivity • Service connections • Communication with other platforms
MK	Control panel: Control panel and display	The control panel is the user interface to the appliance.
RU	Room Unit: Room unit (for example, a thermostat)	A room unit measures the temperature in a reference room.
L-Bus	Local Bus: Connection between devices	The local bus provides communication between devices.
S-Bus	System Bus: Connection between appliances	The system bus provides communication between appliances.
R-Bus	Room unit Bus: Connection to a room unit	The room unit bus provides communication to a room unit.
A	Device	A device is a PCB, control panel or a room unit.
B	Appliance	An appliance is a set of devices connected via the same L-Bus
C	System	A system is a set of appliances connected via the same S-Bus

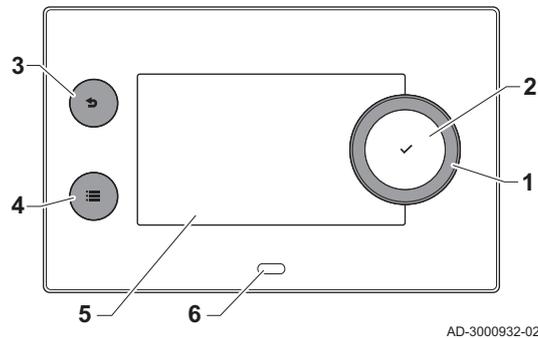
Tab.3 Specific devices delivered with the Gas 320/620 Ace boiler

Name visible in display	Software version	Description	Function
CU-GH13	1.3	Control unit CU-GH13	The CU-GH13 control unit handles all basic functionality of the Gas 320/620 Ace boiler.
MK3	1.85	Control panel HMI T-control	The HMI T-control is the user interface to the Gas 320/620 Ace boiler.
SCB-01	1.3	Expansion PCB SCB-01	The SCB-01 provides a 0-10 V connection for a PWM system pump and two potential-free contacts for status notification.
SCB-02	1.3	Expansion PCB SCB-02	The SCB-02 provides functionality for a DHW and central heating zone, a 0-10 V connection for a PWM system pump and two potential-free contacts for status notification.
GTW-Bluetooth	-	Gateway BLE Smart Antenna	The BLE Smart Antenna provides functionality to connect the boiler to an app via Bluetooth.

3 Use of the control panel

3.1 Control panel components

Fig.8 Control panel components



- 1 Rotary knob to select a tile, menu or setting
- 2 Confirm button ✓ to confirm the selection
- 3 Back button ↩:
- **Short button press:** Return to the previous level or previous menu
- **Long button press:** Return to home screen
- 4 Menu button ≡ to go to the main menu
- 5 Display
- 6 Status LED

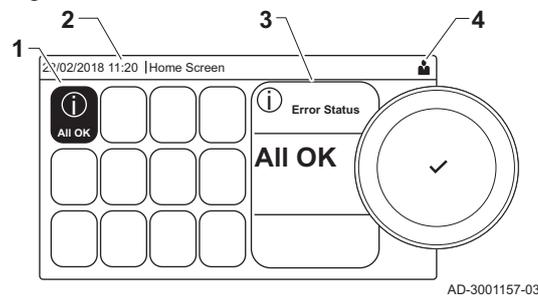
3.2 Description of the home screen

This screen is shown automatically after start-up of the appliance. The control panel automatically enters standby mode (black screen) if the buttons are not used for 5 minutes. Press one of the buttons on the control panel to activate the screen again.

You can navigate from any menu to the home screen by pressing the back button ↩ for several seconds.

The tiles on the home screen provide quick access to the corresponding menus. Use the rotary knob to navigate to the desired item and press the button ✓ to confirm the selection.

Fig.9 Icons on home screen

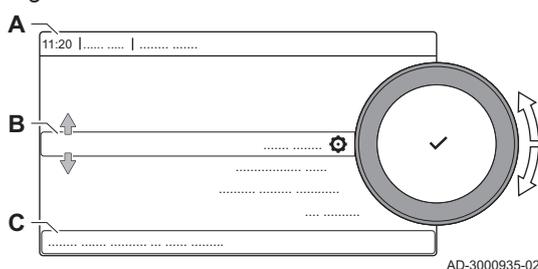


- 1 Tiles: the selected tile is highlighted
- 2 Date and time | Name of the screen (actual position in the menu)
- 3 Information about the selected tile
- 4 Icons indicating navigation level, operating mode, errors and other information.

3.3 Description of the main menu

You can navigate from any menu directly to the main menu by pressing the menu button ≡. The number of accessible menus depends on the access level (user or installer).

Fig.10 Items in the main menu



- A Date and time | Name of the screen (actual position in the menu)
- B Available menus
- C Brief explanation of the selected menu

Tab.4 Available menus for the user 👤

Description	Icon
Enable installer access	🔧
Bluetooth	📶
System Settings	⚙️
Version Information	i

Tab.5 Available menus for the installer 

Description	Icon
Disable installer access	
Installation Setup	
Commissioning Menu	
Advanced Service Menu	
Error History	
Bluetooth	
System Settings	
Version Information	

3.3.1 Description of the icons in the display

Tab.6 Icons

Icon	Description
	User menu: user-level parameters can be configured.
	Installer menu: installer-level parameter can be configured.
	Information menu: read out various current values.
	System settings: system parameters can be configured.
	Error indicator.
	Gas boiler indicator.
	Domestic hot water tank is connected.
	The outdoor temperature sensor is connected.
	Boiler number in cascade system.
	The solar calorifier is on and its heat level is displayed.
	Burner output level (1 to 5 bars, with each bar representing 20% output).
	The pump is running.
	Three-way valve indicator.
	Display of the system water pressure.
	Chimney sweep mode is enabled (forced full load or low load for O ₂ /CO ₂ measurement).
	Energy-saving mode is enabled.
	DHW boost is enabled.
	Timer program is enabled: The room temperature is controlled by a timer program.
	Manual mode is enabled: The room temperature is set to a fixed setting.
	Temporary overwrite of the timer program is enabled: The room temperature is changed temporarily.
	The holiday program (including frost protection) is active: The room temperature is reduced during your holiday to save energy.
	Frost protection is enabled: Protect the boiler and installation from freezing in winter.
	Service notification: service needed. Installer contact details are displayed or can be filled in.

Tab.7 Icons - On/off

Icon	Description	Icon	Description
	CH operation is enabled.		CH operation is disabled.
	DHW operation is enabled.		DHW operation is disabled.
	The burner is on.		The burner is off.

Icon	Description	Icon	Description
	Bluetooth enabled and connected (icon is non-transparent).		Bluetooth enabled and disconnected (icon is transparent).
	Heating enabled.		
	Cooling enabled.		
	Heating/cooling enabled.		Heating/cooling disabled.

Tab.8 Icons - Zones

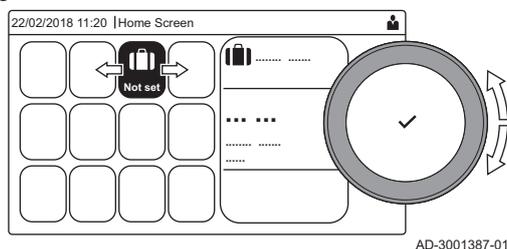
Icon	Description
	All zones (groups) icon.
	Living room icon.
	Kitchen icon.
	Bedroom icon.
	Study icon.
	Cellar icon.

4 Installer instructions

4.1 Accessing the user level menus

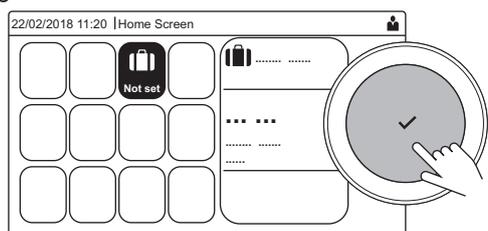
The tiles on the home screen provide quick access for the user to the corresponding menus.

Fig.11 Menu selection



AD-3001387-01

Fig.12 Confirm menu selection



AD-3001388-01

1. Use the rotary knob to select the required menu.

2. Press the ✓ button to confirm the selection.
 - ⇒ The available settings of this selected menu appear in the display.
3. Use the rotary knob to select the desired setting.
4. Press the ✓ button to confirm the selection.
 - ⇒ All options for change will appear in the display (if a setting cannot be changed, **Cannot edit read-only datapoint** will appear in the display).
5. Use the rotary knob to change the setting.
6. Press the ✓ button to confirm the selection.
7. Use the rotary knob to select the next setting or press the ↩ button to return to the home screen.

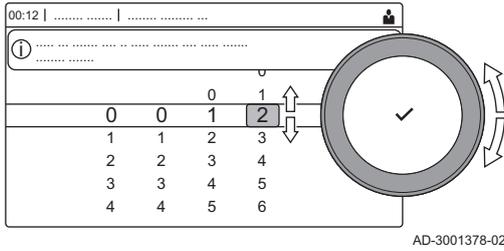
4.2 Accessing the installer level

Some settings are protected by installer access. Enable installer access in order to change these settings.

-  Use the rotary knob to navigate.
- Use the ✓ button to confirm your selection.

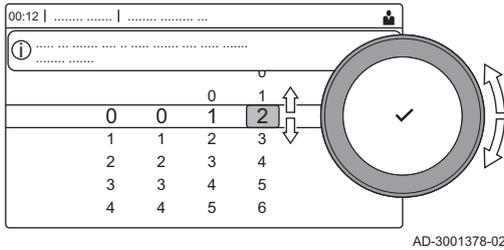
1. Access the installer level via the tile:
 - 1.1. Select the tile [].

Fig.13 Installer level



- 1.2. Use code: **0012**.
 ⇒ The tile [] shows that the installer access is **On**, and the icon in the top right of the display changes into .

Fig.14 Installer level



2. Access the installer level via the menu:
 - 2.1. Select **Enable installer access** from the **Main Menu**.
 - 2.2. Use code: **0012**.
 ⇒ When the installer level is enabled or disabled, the status of the tile [] changes into **On** or **Off**.

When the control panel is not used for 30 minutes, the installer access is disabled automatically. You can manually disable installer access by:

- Selecting the tile [].
- Selecting **Disable installer access** from the **Main Menu**.

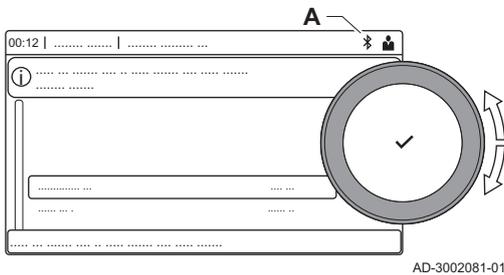
4.3 Establishing a Bluetooth connection

Proceed as follows to establish a Bluetooth connection:

▶▶ ≡ > **Bluetooth**

- 💡 Use the rotary knob to navigate.
 Use the button to confirm your selection.

Fig.15 Bluetooth enabled



1. Enable Bluetooth on the appliance:
 - A** Bluetooth is enabled when the Bluetooth icon is displayed
- 💡 In most cases Bluetooth is enabled in the factory settings.
 - 1.1. Press the button.
 - 1.2. Select **Bluetooth**.
 - 1.3. Select **Bluetooth**.
 - 1.4. Select **On**.
 ⇒ Bluetooth is now enabled.
2. Connect to the appliance with a mobile device:
 - 2.1. On the mobile device, connect to **CU-GH13_.....**
 ⇒ The appliance detects the incoming pairing request and displays the pairing code and Bluetooth status.
 - 2.2. Use the pairing code displayed on the appliance.
 - 2.3. Wait for the pairing process to finish before interacting with the appliance.

4.4 Commissioning the appliance

At first start-up of the appliance, the display will show the commissioning wizard. Depending on the appliance, some steps take a few minutes to complete, for example appliances that need to deaerate after installation or need to configure a boiler.

- 💡 Use the rotary knob to navigate.
 Use the button to confirm your selection.

1. Start up the appliance.

2. Follow the instructions on the display.



Important

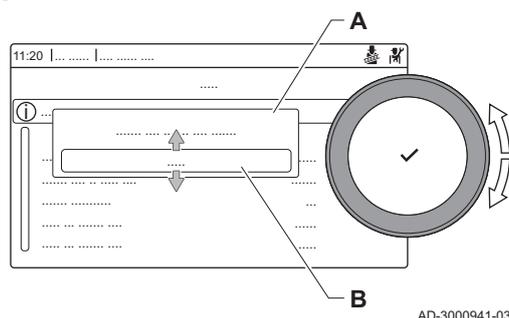
The appliance might take a few minutes during certain steps while commissioning. Do not shut off the appliance or try to bypass steps, unless stated otherwise on the display.

3. You can access individual commissioning steps:
 - 3.1. Press the button.
 - 3.2. Select **Commissioning Menu**.
 - 3.3. Select the commissioning step you wish to perform.

4.4.1 Chimney sweep menu

Select the tile [] to open the chimney sweep menu. The **Change load test mode** menu will appear:

Fig.16 Load test



- A Change load test mode
B Load test mode

AD-3000941-03

Tab.9 Load tests in the chimney sweep menu

Change load test mode	Settings
Off	No test
Low power	Part load test
Medium power	Full load test for Central Heating mode
High power	Full load test for Central Heating + Domestic Hot Water mode

Tab.10 Load test settings

Load Test menu	Settings
Func. test status	Select the load test to start the test.
System Flow Temp	Read the central heating flow temperature
T return	Read the central heating return temperature
Actual fan RPM	Read the actual fan speed
Actual flame current	Read the actual flame current
Fan RPM Max CH	Adjust the maximum fan speed during Central Heating mode
Fan RPM Min	Adjust the minimum fan speed during Central Heating + Domestic Hot Water mode
Fan RPM Start	Adjust the start fan speed



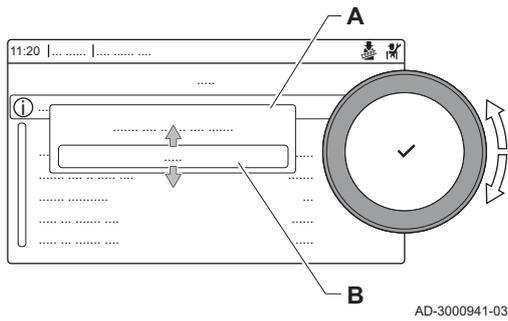
See also

Checking/setting values for O₂/CO₂ at full load, page 57
Checking/setting values for O₂/CO₂ at low load, page 59

■ Performing the full load test

1. Select the tile [].
⇒ The **Change load test mode** menu appears.

Fig.17 Full load test

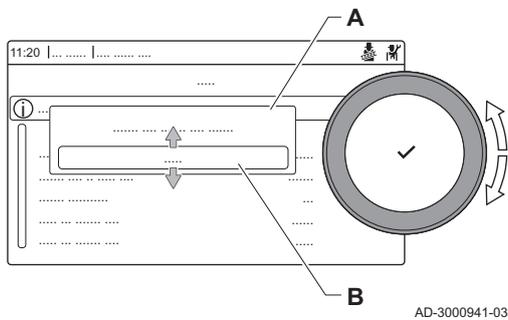


2. Select the test **Medium power**.

- A Change load test mode
- B Medium power

- ⇒ The full load test starts. The selected load test mode is shown in the menu and the icon appears in the top right of the screen.
- 3. Check the load test settings and adjust if necessary.
 - ⇒ Only the parameters shown in bold can be changed.

Fig.18 Low load test



■ Performing the low load test

1. If the full load test is still running, press the button to change the load test mode.
2. If the full load test was finished, select the tile to restart the chimney sweep menu.

- A Change load test mode
- B Low power

3. Select the **Low power** test in the menu **Change load test mode**.
 - ⇒ The low load test starts. The selected load test mode is shown in the menu and the icon appears in the top right of the screen.
4. Check the load test settings and adjust if necessary.
 - ⇒ Only the parameters shown in bold can be changed.
5. End the low load test by pressing the button.
 - ⇒ The message **Running load test(s) stopped!** is displayed.

4.4.2 Saving the commissioning settings

You can save all current settings on the control panel. These settings can be restored if necessary, for example after replacement of the control unit.

▶▶ > **Advanced Service Menu** > **Save as commissioning settings**

Use the rotary knob to navigate.
Use the button to confirm your selection.

1. Press the button.
2. Select **Advanced Service Menu**.
3. Select **Save as commissioning settings**.
4. Select **Confirm** to save the settings.

When you have saved the commissioning settings, the option **Revert commissioning settings** becomes available in the **Advanced Service Menu**.

4.5 Configuring the installation at installer level

Configure the installation by pressing the button and selecting **Installation Setup** . Select the control unit or circuit board you want to configure:

Tab.11

Icon	Zone or function	Description
	Internal DHW	Domestic hot water produced by boiler
	CIRCA / CH	Central heating circuit
	Auto filling CH	Adjust or start the automatic filling unit
	Commercial boiler	Gas boiler

Icon	Zone or function	Description
	Gas fired appliance	Gas boiler
	Shower time function	Activate the shower time function

Tab.12 Configuring a zone or function of CU-GH08 or SCB-02

Parameters, counters, signals	Description
Parameters	Set the parameters at installer level
Counters	Read the counters at installer level
Signals	Read the signals at installer level

4.5.1 Changing the control panel settings

You can change the control panel settings within system settings.

▶▶ ≡ > **System Settings**

 Use the rotary knob to navigate.
Use the  button to confirm your selection.

1. Press the ≡ button.
2. Select **System Settings** .
3. Perform one of the operations described in the table below:

Tab.13 Control panel settings

System Settings menu	Settings
Set Date and Time	Set the current date and time
Select Country and Language	Select your country and language
Daylight Saving Time	Enable or disable daylight saving time. When enabled daylight saving time will update the systems internal time to correspond with summer and winter time.
Installer Details	Read out the name and phone number of the installer
Set Heating Activity Names	Create the names for the activities of the timer program
Set Screen Brightness	Adjust the brightness of the screen
Set click sound	Enable or disable the click sound of the rotary knob
License Information	Read out detailed license information from the device platform application

4.5.2 Setting the installer details

You can store your name and phone number in the control panel to be read by the user. When an error occurs these contact details will be displayed.

▶▶ ≡ > **System Settings > Installer Details**

 Use the rotary knob to navigate.
Use the  button to confirm your selection.

1. Press the ≡ button.
Enable installer access if it is not enabled.
 - 1.1. Select **Enable installer access**.
 - 1.2. Use code **0012**.
2. Select **System Settings** .
3. Select **Installer Details**.
4. Enter the following data:

Installer name	Your company's name
Installer phone	Your company's phone number

4.5.3 Setting the parameters

You can change the settings of the control unit and the connected expansion boards, sensors etc. to configure the installation. The factory settings support the most common heating systems. The user or the installer can optimise the parameters as required.

i Important
Changing the factory settings may adversely affect the operation of the installation.

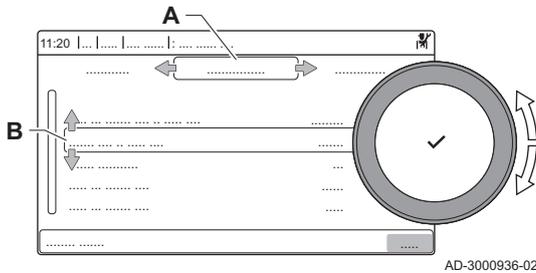
▶▶ ≡ > **Installation Setup** > select zone or device > **Parameters, counters, signals** > **Parameters**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
3. Select the zone or device you want to configure.
4. Select **Parameters, counters, signals**.
5. Select **Parameters**.

- A - **Parameters**
 - **Counters**
 - **Signals**
 - B List of settings or values
- ⇒ The list of available parameters is displayed.

Fig.19 Parameters, counters, signals



4.5.4 Setting the heating curve

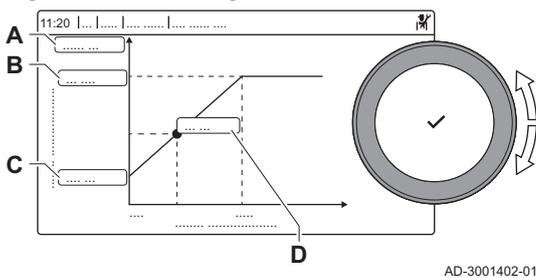
When an outdoor temperature sensor is connected to the installation, the relation between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This curve can be adjusted to the requirements of the installation.

▶▶ Select zone > **Heating Curve**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to configure.
2. Select **Control strategy**.
3. Select the setting **Outdoor Temp. based** or **Outdoor & room based**.
⇒ The option **Heating Curve** appears in the **Zone setup** menu.
4. Select **Heating Curve**.
⇒ A graphic display of the heating curve is shown.
5. Adjust the following parameters:

Fig.20 The heating curve



Tab.14 Settings

A	Slope:	Slope of the heating curve: • Underfloor heating circuit: slope between 0.4 and 0.7 • Radiator circuit: slope at approximately 1.5
B	Max:	Maximum temperature of the heating circuit
C	Base:	Ambient temperature setpoint
D	xx°C ; xx °C	Relationship between the heating circuit flow temperature and the outdoor temperature. This information is visible throughout the slope.

4.5.5 Increasing the domestic hot water temperature temporarily

You can temporarily increase the hot water temperature when the time program is active with the reduced temperature setpoint. Use this to deviate from the time program or testing of the hot water production.

▶▶ ≡ > **Installation Setup** > **Internal DHW** > **Hot water boost** > **Duration of temporary overwrite**



Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
3. Select **Internal DHW**.
4. Select **Hot water boost**.
5. Select **Duration of temporary overwrite**.
6. Set the duration in hours and minutes.
 - ⇒ The hot water temperature is increased to the **DHW comfort setpoint**.

You can abort the temporary increase by selecting **Reset**.

4.6 Maintaining the installation

4.6.1 Viewing the service notification

When a service notification appears on the display, you can view the details of the notification.



Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Select the tile [🔔].
 - ⇒ The **View Service Notification** menu opens.
2. Select the parameter or value you want to view.

4.6.2 Reading out measured values

The appliance continually registers various measured values from the system. You can read these values on the control panel.

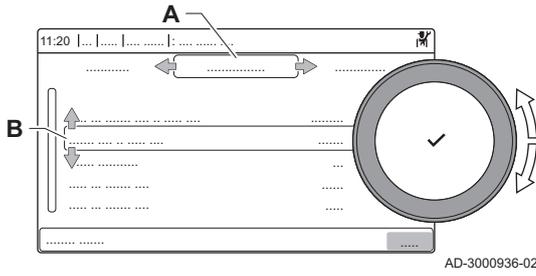
▶▶ ≡ > **Installation Setup** > select zone or device > **Parameters, counters, signals** > **Counters** or **Signals**



Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
 - Enable installer access if **Installation Setup** is not available.
 - 2.1. Select **Enable installer access**.
 - 2.2. Use code **0012**.
3. Select the zone or device you want to read out.
4. Select **Parameters, counters, signals**.

Fig.21 Parameters, counters, signals



5. Select **Counters** or **Signals** to read out a counter or signal.

- A - **Parameters**
- **Counters**
- **Signals**
- B List of settings or values

4.6.3 Viewing production and software information

You can read details about the production dates, hardware and software versions of the appliance and all connected devices.

▶▶ ≡ > **Version Information**

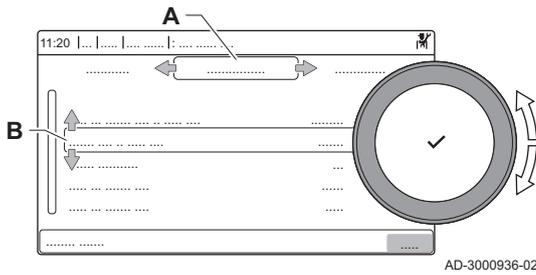
- 💡 Use the rotary knob to navigate.
- Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Version Information**.
3. Select the appliance, control board or any other device you want to view.

- A Select the appliance, control board or device
- B List of information

4. Select the information you want to view.

Fig.22 Version information



4.6.4 Manual deaeration

You can manually deaerate your appliance.

▶▶ ≡ > **Commissioning Menu > Deaeration program**

- 💡 Use the rotary knob to navigate.
- Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Commissioning Menu**.
3. Select **Deaeration program**.
 - ⇒ The manual de-aeration menu opens.
4. Follow the instructions on the display.

- 💡 You can press and hold ↺ to abort the procedure.

4.7 Resetting or restoring settings

4.7.1 Resetting the configuration numbers CN1 and CN2

The configuration numbers must be reset when indicated by an error message or when the control unit has been replaced. The configuration numbers can be found on the data plate of the appliance.

**Important**

All custom settings will be erased when the configuration numbers are reset. Depending on the appliance, there can be factory set parameters to enable certain accessories.

- Use the saved commissioning settings to restore these settings after the reset.
- If no commissioning settings were saved, write down custom settings before resetting. Include all relevant accessory related parameters.

▶▶ ≡ > **Advanced Service Menu > Set Configuration Numbers**



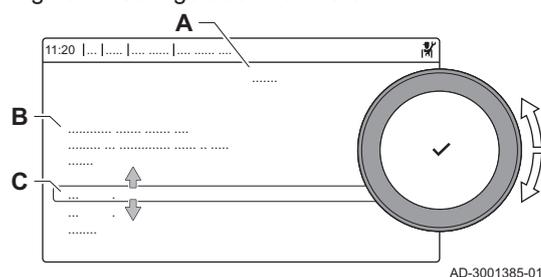
Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

- A Select the control unit
B Extra information
C Configuration numbers

1. Press the ≡ button.
2. Select **Advanced Service Menu**.
3. Select **Set Configuration Numbers**.
4. Select the device you want to reset.
5. Select and change the **CN1** setting.
6. Select and change the **CN2** setting.
7. Select **Confirm** to confirm the changed numbers.

Fig.23 Configuration numbers



4.7.2 Carrying out an auto detect

The auto detect-function scans the installation for devices and other appliances connected to the L-Bus and S-Bus. You can use this function when a connected device or appliance has been replaced or removed from the installation.

▶▶ ≡ > **Advanced Service Menu > Auto Detect**



Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Advanced Service Menu**.
3. Select **Auto Detect**.
4. Select **Confirm** to carry out the auto-detect.

4.7.3 Restoring the commissioning settings

This option is only available when the commissioning settings were saved on the control panel and allows you to restore these settings.

▶▶ ≡ > **Advanced Service Menu > Revert commissioning settings**



Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Advanced Service Menu**.
3. Select **Revert commissioning settings**.
4. Select **Confirm** to restore the commissioning settings.

4.7.4 Resetting to factory settings

You can reset the appliance to the default factory settings.

▶▶ ≡ > **Advanced Service Menu > Reset to Factory Settings**



Use the rotary knob to navigate.

Use the  button to confirm your selection.

1. Press the  button.
2. Select **Advanced Service Menu**.
3. Select **Reset to Factory Settings**.
4. Select **Confirm** to restore the factory settings.

4.8 Advanced settings

4.8.1 Service notification settings

This appliance can notify the user when service is needed. The controls will keep track of two counters:

- The total of burner operating hours since the last service (**AC002**)
- The total of hours on mains power supply since the last service (**AC003**)

When one of these counters meet the value set in parameters **AP009** or **AP011**, the user will be notified on the control panel.

Tab.15 Service notification parameter settings

Code	Display text	Advice
AP009	Service hours	Set this to a value that fits the operation conditions. Typically this is 3000 hours for a commercial boiler in a normal heating set-up.
AP010	Service notification	Set this to 1 = Custom notification as to use the values set in AP009 and AP011
AP011	Service hours mains	Set this to a value that fits the operation conditions. Typically this is 8750 hours (1 year) for a commercial boiler in a normal heating set-up.

4.8.2 Setting for process heat application



Important

The service life of the boiler may be reduced if it is used for process heat applications.

For this application, adjust the following parameters:

1. Set parameter **DP140** to **Process heat**.
2. Set parameters **DP005** and **DP070** to the required value for this installation.
3. If using a DHW sensor; set parameters **DP006** and **DP034** to the required value for this installation.

4.8.3 Changing the ΔT setting

The ΔT is factory set to 25 °C. It can be increased by a Remeha service technician. Contact Remeha for more information.



Important

When increasing the ΔT , the control unit limits the flow temperature to a maximum of 80 °C.

4.8.4 Settings for open-vented application

For this application, adjust the following parameter:

1. Set parameter **DP006** to 0,0 bar.
2. Set parameter **GP021** to 20°C.

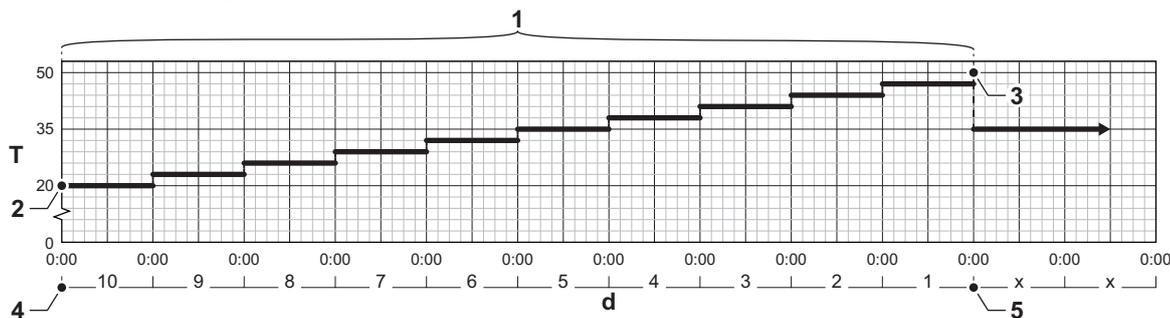
4.8.5 Screed drying

The screed drying function is used to force a constant flow temperature or a series of successive temperature levels to accelerate screed drying on underfloor heating.

i Important

- The settings for these temperatures must follow the screed layer's recommendations.
- Activation of this function via the parameter **CP470** forces the permanent display of the screed drying function and deactivates all other regulator functions.
- When the screed drying function is active on one circuit, all other circuits and the domestic hot water circuit continue to run.
- It is possible to use the screed drying function on circuits A and B. The parameter settings must be made on the PCB that controls the circuit concerned.

Fig.24 Screed drying curve



AD-3001406-01

- | | |
|--|--|
| d Number of days | 3 Screed drying stop temperature (parameter CP490) |
| T Heating set point temperature | 4 Start of the screed drying function |
| 1 Number of days on which the screed drying function is activated (parameter CP470) | 5 End of the screed drying function, back to normal running |
| 2 Screed drying start temperature (parameter CP480) | |

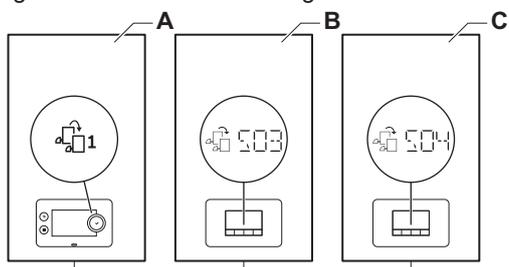
i Important

Every day at midnight, the screed drying start temperature set point is recalculated and the remaining number of days on which the screed drying function is running decreases.

4.8.6 Cascade control

With the HMI T-control mounted in the master boiler it is possible to manage up to 7 boilers in cascade. The system sensor is connected to the master boiler. All the boilers in the cascade are connected by an S-BUS cable. The boilers are automatically numbered:

Fig.25 Cascade numbering



AD-3000964-01

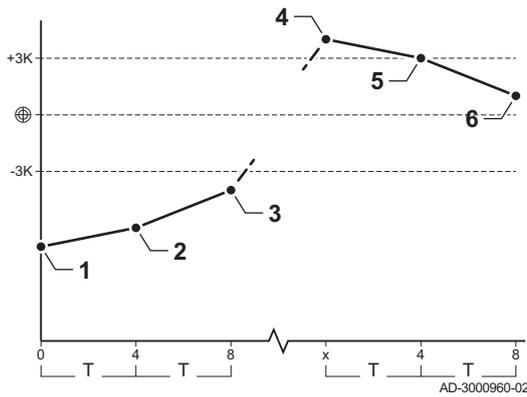
- A** The master boiler is number 1.
- B** The first slave boiler is number 3 (number 2 does not exist).
- C** The second slave boiler is number 4; and so on.

There are two options for cascade control management:

- Adding supplementary boilers successively (traditional control).
- Adding supplementary boilers simultaneously (parallel control).

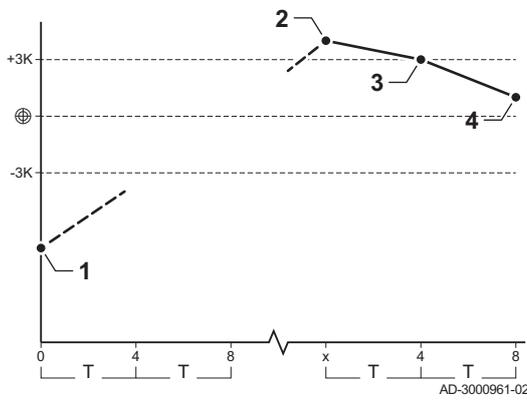
The cascade control management can be changed with parameter **NP006**.

Fig.26 Traditional cascade control management



- 1 First boiler starts running when system temperature is 3°C below set point.
 - 2 After 4 minutes the second boiler starts running if $\Delta T < 6K$ and the system temperature is still more than 3°C below set point.
 - 3 After 8 minutes the third boiler starts running if $\Delta T < 6K$ and the system temperature is still more than 3°C below set point.
 - 4 First boiler stops running when system temperature is 3°C above set point.
 - 5 After 4 minutes the second boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
 - 6 After 8 minutes the third boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
- T Duration between start and stop of boilers can be changed with parameter **NP009**.

Fig.27 Parallel cascade control management



- 1 All boilers in cascade start running when system temperature is 3°C below set point.
 - 2 First boiler stops running when system temperature is 3°C above set point.
 - 3 After 4 minutes the second boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
 - 4 After 8 minutes the third boiler stops running if $\Delta T < 6K$ and the system temperature is still more than 3°C above set point.
- T Duration between start and stop of boilers can be changed with parameter **NP009**.

Temperature type cascade algorithm; the setpoint sent to the running boiler is:

- Output; requested by the zones.
- Temperature; output setpoint requested by the zones + error calculation.

Output type cascade algorithm; the setpoint sent to the running boiler is:

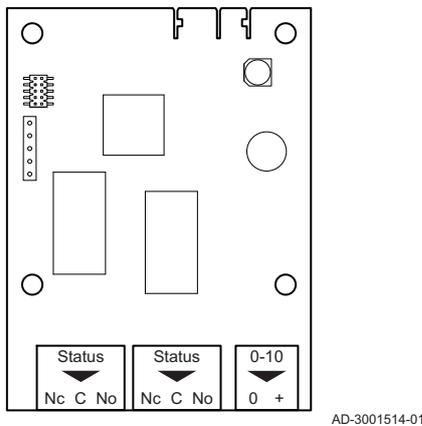
- Output; according to PI algorithms.
- Temperature; -90°C

The type of cascade algorithm can be changed with parameter **NP011**.

5 Installation examples

5.1 The SCB-01 expansion PCB

Fig.28 SCB-01 PCB



The SCB-01 has the following features:

- Two potential free contacts for status notifications
- 0–10 V output connection for a PWM system pump

Expansion PCBs are automatically recognised by the control unit of the boiler. If expansion PCBs are removed, the boiler will show an error code. To resolve this error, an auto-detect must be carried out after removal.

5.2 Connecting diagrams

5.2.1 How to use the installation examples

In this chapter, a few installation examples are given. Each example provides a quick overview of a simple hydraulic set-up, together with the connections that have to be made and the parameters to be set on the PCB's.

i Important

- To use these examples, basic installation knowledge is needed.
- This explanation shows schemes for the SCB-10 with an AD249 fitted. On a SCB-02, not all zones are available.

The installation example tables are laid out as follows:

The schemes are divided in columns. All relevant connections and settings are grouped per column.

Fig.29 Zone

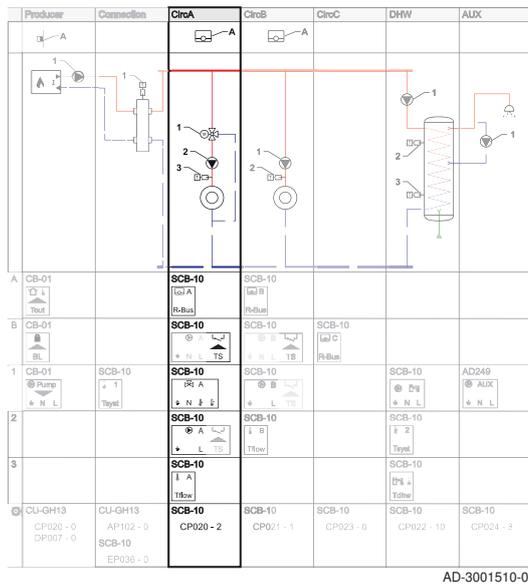
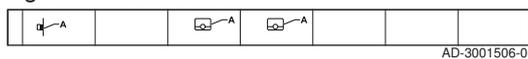
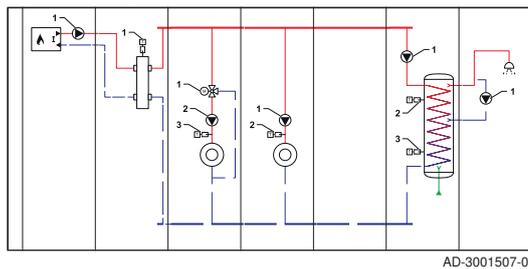


Fig.30 Heat demand



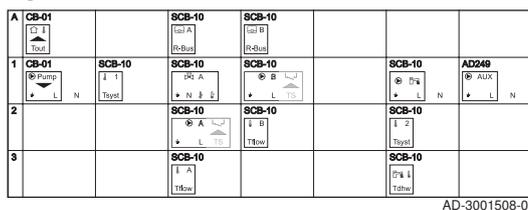
Heat demand: The top row shows the heat demand (if applicable) for the zone.

Fig.31 Hydraulic connections



Hydraulic connections: Only the essential parts are shown, parts to be connected to a PCB are numbered.

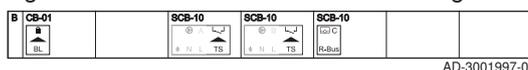
Fig.32 Electrical connections to be made



Electrical connections: The numbers in the hydraulic connections refer to the connectors on this row. There are multiple digits to identify the type of connection:

- A** Heat demand device.
- 1,2,...** The numbers in the hydraulic connections refer to the connectors on this row. Connect component no. 1 from the hydraulic scheme to the connector shown on line 1.

Fig.33 Electrical connections to be bridged



Electrical connections to be bridged: These connectors must be bridged. Some bridges are already factory-fitted, some need to be fitted for the specific installation example.

5 Installation examples

Fig.34 Parameters to be set

CU-GH13 CP020 - 0 DP007 - 0	CU-GH13 AP102 - 0 SCB-10	SCB-10 CP020 - 2	SCB-10 CP021 - 1	SCB-10 CP023 - 0	SCB-10 CP022 - 10	SCB-10 CP024 - 8
--	--	----------------------------	----------------------------	----------------------------	-----------------------------	----------------------------

AD-3001509-01

Parameters to be set: The parameters are separated per PCB, and must be set on that specific PCB.

Fig.35 Parameter list

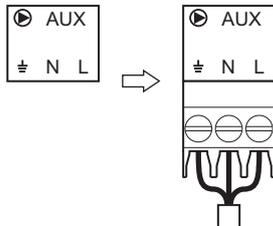
Code	Display text	Menu path	Set to
CP020	Zone Function	Installation Setup > CU-GH08 > CIRCA > Parameters, counters, signals > Parameters	0 = Disable
AP102	Boiler Pump function	Installation Setup > CU-GH08 > Gas fired appliance > Parameters, counters, signals > Parameters	0 = No
DP007	Dhw 3vv Standby	Installation Setup > CU-GH08 > Internal DHW > Parameters, counters, signals > Parameters	0 = CH position

AD-3001998-01

Parameter list: The parameters from the table above are repeated in this list to show their display text, navigation paths, and settings.

The connectors can be found on the mentioned PCB. Take the following into account when making the connections:

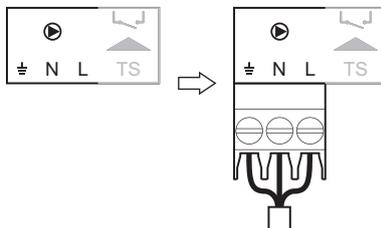
Fig.36 Normal connector



AD-3001511-01

These connectors can be connected normally.

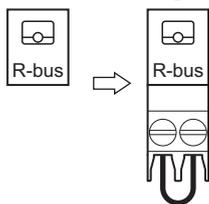
Fig.37 Combined connector



AD-3001512-01

These connectors combine two plugs into one connector. In the installation examples they appear with one highlighted part, which is to be used.

Fig.38 Connector to be bridged

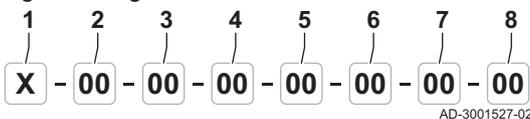


AD-3001513-01

Row **B** shows all connectors to be bridged. Connect a bridge to this connector.

5.2.2 How to find the desired installation example

Fig.39 Eight sections



Each example has a code describing the hydraulic set-up. The hydraulic code consists of eight sections. The first section is a letter, and the following sections consist of two numbers each:

Tab.16 Meaning of the letter and numbers

Numbers	Scheme type H (Hydraulic)
1	Letter for scheme type
2	Number for the producer
3	Number for the connection
4	Number for zone 1
5	Number for zone 2
6	Number for zone 3
7	Number for DHW zone
8	Number for DHW extension

Fig.40 Zone name examples

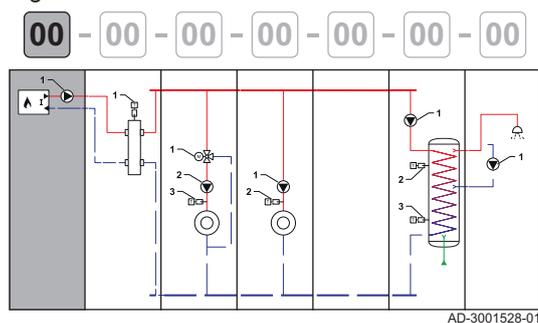
CircA 1	CircB 1	CircC 1	DHW 1	AUX 1
CircA	CircA 1		DHW	
CircB 1	CircA 1		DHW	

AD-3002008-01

The zones, DHW zone, and DHW extension zone can have different names, depending on the devices used. A "1" after the zone name means that the zone is controlled by an expansion PCB, of which the rotary switch has been set to "1". The zone name is shown on top of the columns.

The numbers of each section are linked to a specific configuration. Please see the following tables for the configuration:

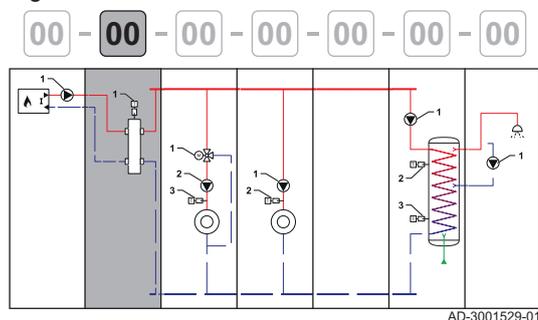
Fig.41 Producer



Tab.17 Producer

Number	Description
00	Unknown / undefined producer
01	Boiler with primary heating circuit (no pump)
02	Boiler with primary heating circuit (internal pump)
03	Boiler with primary heating circuit (external pump)
04	Boiler with heating and domestic hot water (internal pump)
05	Boiler with heating and domestic hot water (external pump)
06	Boiler with primary and secondary heating circuit (internal pump)
07	Boiler with primary and secondary heating circuit (external pump)
08	Cascade of two boilers with primary heating circuit (no pump)
09	Cascade of three boilers with primary heating circuit (no pump)
10	Cascade of two boilers with primary heating circuit (internal pump)
11	Cascade of three boilers with primary heating circuit (internal pump)
12	Cascade of two boilers with primary heating circuit (external pump)
13	Cascade of three boilers with primary heating circuit (external pump)
14	Cascade of two boilers with primary and secondary heating circuit (internal pump)
15	Cascade of three boilers with primary and secondary heating circuit (internal pump)
16	Cascade of two boilers with primary and secondary heating circuit (external pump)
17	Cascade of three boilers with primary and secondary heating circuit (external pump)
18	Cascade of two boilers with primary heating circuit (no pump) + hydraulic valves
19	Cascade of two boilers with primary heating circuit (external pump) + hydraulic valves
20	Gas boiler and heat pump serial connected
21	Gas boiler and heat pump parallel connected

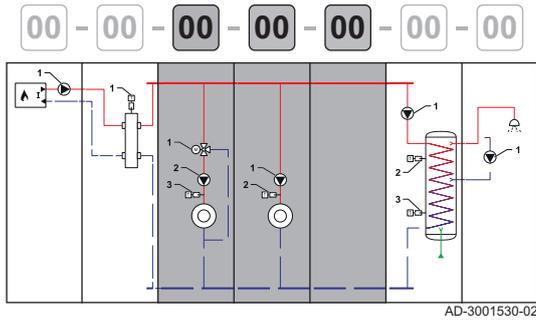
Fig.42 Connection



Tab.18 Connection

Number	Description
00	Empty (no connection)
01	Direct connection
02	Low loss header
03	Plate heat exchanger
04	Buffer tank with one sensor
05	Buffer tank with two sensors
06	Buffer tank with electrical heating
07	Buffer tank with solar heating
08	Low loss header with Tflow sensor

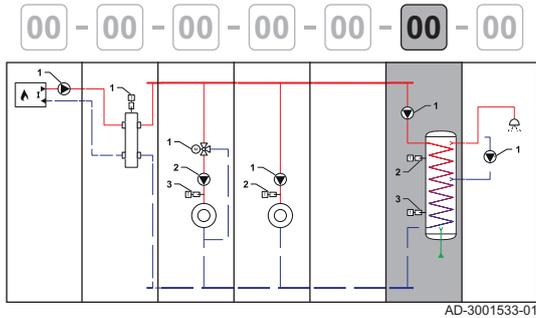
Fig.43 Zones



Tab.19 Zones

Number	Description
00	Empty (no zone)
01	Direct circuit
02	Mixing circuit
03	Swimming pool (direct)
04	High temperature
05	Fan convector (direct)
06	Domestic hot water tank
07	Domestic hot water tank (electrical)
08	Time program
09	Process heat
10	Domestic hot water tank (layered)
11	Domestic hot water tank (internal)
12	Underfloor heating (mixing)
13	Heat interface unit
14	Direct circuit (without pump)
15	Direct circuit with diverter valve (without pump)

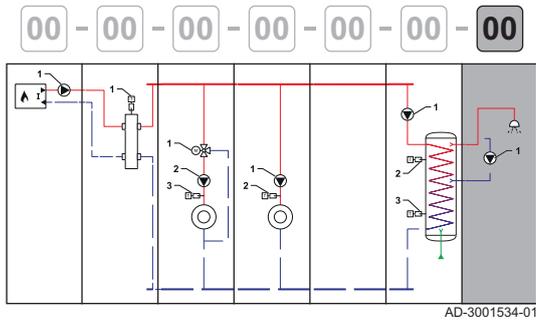
Fig.44 DHW Zone



Tab.20 DHW Zone

Number	Description
00	Empty (no zone)
01	Domestic hot water tank with one sensor and pump
02	Domestic hot water tank with two sensors and pump
03	Domestic hot water tank with solar heating
04	Domestic hot water tank with electrical heating
05	Domestic hot water tank with one sensor

Fig.45 DHW Extension zone



Tab.21 DHW Extension zone

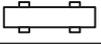
Number	Description
00	Empty (no zone)
01	Domestic hot water loop (with pump)
02	Domestic hot water (without pump)
03	Time program (on/off pump output)
04	Process heat (24/7 only this zone possible)
05	Domestic hot water tank (internal)

5.2.3 Symbols used

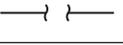
Tab.22 Tubing

Symbol	Explanation	Symbol	Explanation
	Flow pipe		Return pipe
	Flow collector pipe		Return collector pipe
	Drinking water supply		

Tab.23 Hydraulic components

Symbol	Explanation	Symbol	Explanation
	Mixing valve or diverter valve		Valve, electronically actuated
	Plate heat exchanger		Low loss header
	Pump		Safety group

Tab.24 Sensors and contacts

Symbol	Explanation	Symbol	Explanation
	Outdoor temperature sensor		Temperature sensor
	Safety thermostat		Electrical cable

Tab.25 Heat demand sources

Symbol	Explanation	Symbol	Explanation
	Room thermostat	0-10V	0-10V input

Tab.26 Heat producers

Symbol	Explanation	Symbol	Explanation
	(Gas) Fueled boiler		Heat pump
I	Primary heating circuit		

Tab.27 Heat consumers

Symbol	Explanation	Symbol	Explanation
	Heating zone		Hot air heating zone
	Radiator		Underfloor heating
	Water tap		Shower

5.2.4 SCB-02 Installation example H-01-01-02-06-00-00-00

Tab.28 Hydraulic scheme

	Producer	Connection	CH 1 / CircB 1	DHW 1			
H	01 ⁽¹⁾	01 ⁽²⁾	02 ⁽³⁾	06 ⁽⁴⁾	00 ⁽⁵⁾	00 ⁽⁶⁾	00 ⁽⁷⁾
	AD-3001435-01		AD-3001437-01				
	AD-3001484-01	AD-3001475-01	AD-3001432-01	AD-3001538-01	AD-3001486-01		
<p>(1) 01: Boiler with primary heating circuit (no pump) (2) 01: Direct connection (3) 02: Mixing circuit (4) 06: Domestic hot water tank (5) 00: Empty (no zone) (6) 00: Empty (no zone) (7) 00: Empty (no zone)</p>							

Tab.29 Electrical connections to be made on CB-01, SCB-02

	Producer	Connection	CH 1 / CircB 1	DHW 1			
A	CB-01 Tout		SCB-02 R-Bus				
1			SCB-02 N L	SCB-02 N L			
2			SCB-02 N L	SCB-02 Tdhw			
3			SCB-02 Tflow				

Tab.30 Electrical connections to be bridged on CB-01

	Producer	Connection	CH 1 / CircB 1	DHW 1			
B (1) 	CB-01  BL						
(1) Bridge: These connectors must be bridged. Some bridges are already factory-fitted, some need to be fitted for this specific installation example.							

Tab.31 Parameters to be set

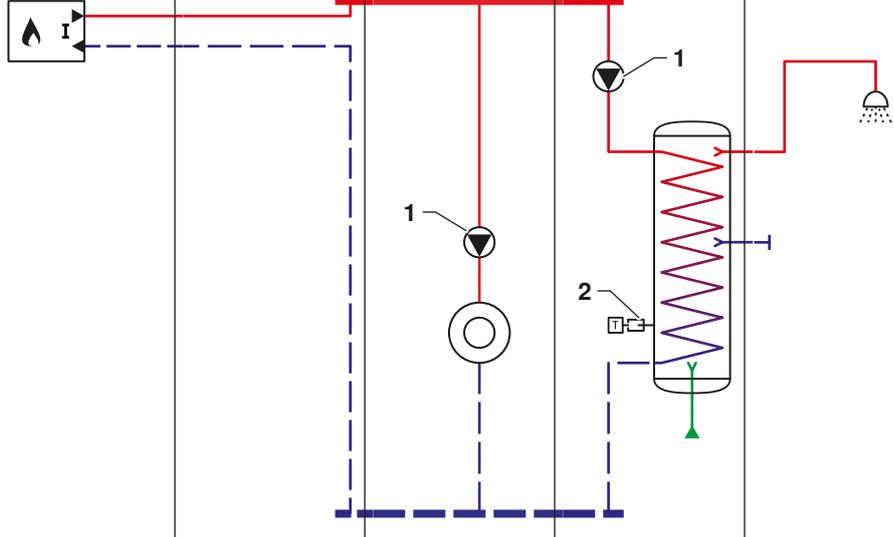
	Producer	Connection	CH 1 / CircB 1	DHW 1			
 (1)	CU-GH13 AP102 = 0 CP020 = 0 DP007 = 0		SCB-02 CP021 = 2	SCB-02 CP020 = 6			
(1) Parameters to be set: The parameters are separated per PCB, and must be set on that specific PCB.							

Tab.32 Parameter list

Code	Display text	Menu path	Set to
AP102	Boiler Pump function	☰ > Installation Setup > CU-GH13 > Gas fired appliance > Parameters, counters, signals > Parameters > General	0 = No
CP020	Zone Function	☰ > Installation Setup > CU-GH13 > CIRCA > Parameters, counters, signals > Parameters > General	0 = Disable
DP007	Dhw 3wv Standby	☰ > Installation Setup > CU-GH13 > Internal DHW > Parameters, counters, signals > Parameters > General	0 = CH position
CP021	Zone Function	☰ > Installation Setup > SCB-02 > CH 1 > Parameters, counters, signals > Parameters > General	2 = Mixing Circuit
CP020	Zone Function	☰ > Installation Setup > SCB-02 > DHW 1 > Parameters, counters, signals > Parameters > General	6 = DHW tank

5.2.5 SCB-02 Installation example H-01-01-01-06-00-00-00

Tab.33 Hydraulic scheme

	Producer	Connection	CH 1 / CircB 1	DHW 1			
H	01 ⁽¹⁾	01 ⁽²⁾	01 ⁽³⁾	06 ⁽⁴⁾	00 ⁽⁵⁾	00 ⁽⁶⁾	00 ⁽⁷⁾
	 AD-3001435-01		 AD-3001437-01				
							
	AD-3001484-01	AD-3001475-01	AD-3001464-02	AD-3001538-01	AD-3001486-01		
<p>(1) 01: Boiler with primary heating circuit (no pump) (2) 01: Direct connection (3) 01: Direct circuit (4) 06: Domestic hot water tank (5) 00: Empty (no zone) (6) 00: Empty (no zone) (7) 00: Empty (no zone)</p>							

Tab.34 Electrical connections to be made on CB-01, SCB-02

	Producer	Connection	CH 1 / CircB 1	DHW 1			
A	CB-01 		SCB-02 				
1			SCB-02 	SCB-02 			
2				SCB-02 			

Tab.35 Electrical connections to be bridged on CB-01

	Producer	Connection	CH 1 / CircB 1	DHW 1			
B (1) 	CB-01  BL						

(1) Bridge: These connectors must be bridged. Some bridges are already factory-fitted, some need to be fitted for this specific installation example.

Tab.36 Parameters to be set

	Producer	Connection	CH 1 / CircB 1	DHW 1			
 (1)	CU-GH13 AP102 = 0 CP020 = 0 DP007 = 0		SCB-02 CP021 = 1	SCB-02 CP020 = 6			

(1) Parameters to be set: The parameters are separated per PCB, and must be set on that specific PCB.

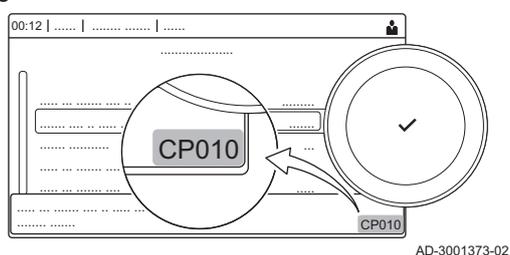
Tab.37 Parameter list

Code	Display text	Menu path	Set to
AP102	Boiler Pump function	☰ > Installation Setup > CU-GH13 > Gas fired appliance > Parameters, counters, signals > Parameters > General	0 = No
CP020	Zone Function	☰ > Installation Setup > CU-GH13 > CIRCA > Parameters, counters, signals > Parameters > General	0 = Disable
DP007	Dhw 3wv Standby	☰ > Installation Setup > CU-GH13 > Internal DHW > Parameters, counters, signals > Parameters > General	0 = CH position
CP021	Zone Function	☰ > Installation Setup > SCB-02 > CH 1 > Parameters, counters, signals > Parameters > General	1 = Direct
CP020	Zone Function	☰ > Installation Setup > SCB-02 > DHW 1 > Parameters, counters, signals > Parameters > General	6 = DHW tank

6 Settings

6.1 Introduction to parameter codes

Fig.46 Code on a HMI T-control



The controls platform makes use of an advanced system to categorise parameters, measurements and counters. Knowing the logic behind these codes, makes it easier to identify them. The code consists of two letters and three numbers.

Fig.47 First letter

CP010
AD-3001375-01

The first letter is the category the code relates to.

- A** Appliance: Appliance
- C** Circuit: Zone
- D** Domestic hot water: Domestic hot water
- E** External: External options
- G** Gas fired: Gas-fired heat engine
- P** Producer: Central heating

Category D codes are appliance controlled only. When the domestic hot water is controlled by an SCB, it is handled like a circuit, with C-category codes.

Fig.48 Second letter



The second letter is the type.
P Parameter: Parameters
C Counter: Counters
M Measurement: Signals

Fig.49 Number



The number is always three digits. In certain cases, the last of the three digits relates to a zone.

6.2 Searching the parameters, counters and signals

You can search and change data points (Parameters, counters, signals) of the appliance, connected control boards and sensors.

▶▶ ≡ > **Installation Setup > Search datapoints**

💡 Use the rotary knob to navigate.
 Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
3. Select **Search datapoints**.
4. Select the search criteria (code):
 - 4.1. Select the first letter (datapoint category).
 - 4.2. Select the second letter (datapoint type).
 - 4.3. Select the first number.
 - 4.4. Select the second number.
 - 4.5. Select the third number.

💡 The * symbol can be used to indicate any character within the search field.

Fig.50 Search

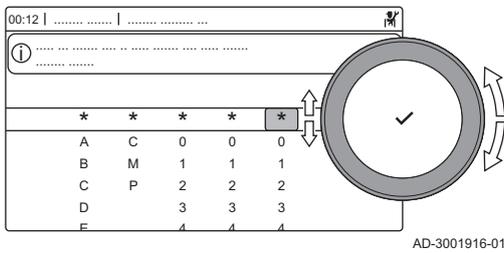
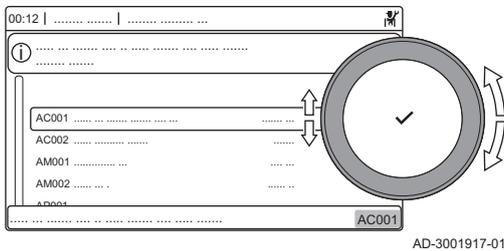


Fig.51 List of datapoints



- ⇒ The list of datapoints appears in the display. Only the first 30 results are shown when searching.
5. Select the desired datapoint.

6.3 List of parameters

6.3.1 CU-GH13 control unit parameters - Gas 320 Ace

All tables show the factory setting for the parameters.



Important

The tables also list parameters that are only applicable if the boiler is combined with other equipment.

Tab.38 Navigation for basic installer level

Level	Menu path
Basic installer	≡ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General

(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.

Tab.39 Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	Outdoor temperature	0	0	0	0	0	0
CP000	MaxZoneT-FlowSetpoint	Maximum Flow Temperature setpoint zone	7 - 90 °C	CIRCA	80	80	80	80	80	80
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 - 30 °C	CIRCA	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 - 30 °C	CIRCA	20	20	20	20	20	20
CP320	Operating-ZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	1	1	1	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 - 30 °C	CIRCA	20	20	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	0	0	0	0	0	0
CP570	ZoneTime-Prog Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	CIRCA	0	0	0	0	0	0
CP660	Icon display zone	Choice icon to display this zone	0 = None 1 = All 2 = Bedroom 3 = Livingroom 4 = Study 5 = Outdoor 6 = Kitchen 7 = Basement	CIRCA	0	0	0	0	0	0
CP750	MaxZone Preheat time	Maximum zone preheat time	0 - 240 Min	CIRCA	0	0	0	0	0	0

Tab.40 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.41 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
AP001	BL function	BL input function selection	1 = Full blocking 2 = Partial blocking 3 = User reset locking	Gas fired appliance	1	1	1	1	1	1
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 - 6 bar	Gas fired appliance	0.8	0.8	0.8	0.8	0.8	0.8
AP008	Release wait time	Waiting time after closing the release contact to start the heat generator.	0 - 255 Sec	Gas fired appliance	0	0	0	0	0	0
AP009	Service hours	Number of heat generator operating hours for raising a service notification	100 - 25500 Hours	Gas fired appliance	8750	8750	8750	8750	8750	8750
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification	Gas fired appliance	1	1	1	1	1	1
AP011	Service hours mains	Hours powered to raise a service notification	100 - 51000 Hours	Gas fired appliance	17500	17500	17500	17500	17500	17500
AP013	Release function	Function of the release input contact	0 = Disabled 1 = Full blocking 2 = Central heat blocked	Gas fired appliance	1	1	1	1	1	1
AP018	Sets release input	Configuration of the release input contact (normally open or normally closed)	0 = Normally open 1 = Normally closed	Gas fired appliance	0	0	0	0	0	0
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60	Outdoor temperature	0	0	0	0	0	0
AP073	Summer Winter	Outdoor temperature: upper limit for heating	15 - 30.5 °C	Outdoor temperature	22	22	22	22	22	22
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 10	Outdoor temperature	3	3	3	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-30 - 20 °C	Outdoor temperature	-10	-10	-10	-10	-10	-10
AP091	Outside Sens. Source	Type of outside sensor connection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	0	0	0	0	0	0
AP098	BL1 contact config.	BL1 input contact configuration	0 = Open 1 = Closed	Gas fired appliance	1	1	1	1	1	1

Code	Display text	Description	Adjustment range	Subme- nu	285	355	430	500	575	650
CP020	Zone Function	Functionality of the zone	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 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank	CIRCA	1	1	1	1	1	1
CP040	Postrun zone pump	Pump post runtime of the zone	0 - 20 Min	CIRCA	0	0	0	0	0	0
CP060	RoomT. Holiday	Wished room zone temperature on holiday period	5 - 20 °C	CIRCA	6	6	6	6	6	6
CP070	MaxReduceRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 - 30 °C	CIRCA	16	16	16	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 - 90 °C	CIRCA	15	15	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 - 90 °C	CIRCA	15	15	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	CIRCA	1.5	1.5	1.5	1.5	1.5	1.5
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	CIRCA	3	3	3	3	3	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit	-5 - 5 °C	CIRCA	0	0	0	0	0	0
CP340	TypeReducedNight-Mode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1	1	1	1
CP470	Zone screed drying	Setting of the screed drying program of the zone	0 - 30 Days	CIRCA	0	0	0	0	0	0
CP480	ScreedStart-Temp	Setting of the start temperature of the screed drying program of the zone	20 - 50 °C	CIRCA	20	20	20	20	20	20
CP490	ScreedStop-Temp	Setting of the stop temperature of the screed drying program of the zone	20 - 50 °C	CIRCA	20	20	20	20	20	20
CP640	OTH LogicLevel contact	Opentherm Logic level contact of the zone	0 = Open 1 = Closed	CIRCA	1	1	1	1	1	1
CP730	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	CIRCA	0	0	0	0	0	0
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	CIRCA	0	0	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
CP780	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room Temp. based 2 = Outdoor Temp. based 3 = Outdoor & room based	CIRCA	0	0	0	0	0	0
EP014	SCB func. 10V PWMIn	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature control 2 = Power control	0-10 volt input	0	0	0	0	0	0
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1000 - 4500 Rpm	Gas fired appliance	5200	5500	3500	3800	4300	4100
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	900 - 3700 Rpm	Gas fired appliance GVC Pneumatic	1400	1550	950	1050	1100	1050
GP009	Fan RPM Start	Fan speed at appliance start	900 - 5000 Rpm	Gas fired appliance GVC Pneumatic	2500	2500	1300	1400	1400	1400
PP015	CH Pump postrun time	Central heating pump post run time	1 - 99 Min	Gas fired appliance	3	3	3	3	3	3
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 - 100 %	Gas fired appliance	100	100	100	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 - 100 %	Gas fired appliance	20	20	20	20	20	20
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 - 25 °C	Gas fired appliance	10	10	10	10	10	10

Tab.42 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > Advanced
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.43 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0	0	0	0
AP004	Hydr Valve Wait Time	Heat generator wait time to open the hydraulic valve	0 - 255 Sec	Gas fired appliance	0	0	0	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	7 - 90 °C	Gas fired appliance	40	40	40	40	40	40

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 - 90 °C	Producer Generic Gas fired appliance	90	90	90	90	90	90
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed low-loss header)	0 = No 1 = Yes	Gas fired appliance	0	0	0	0	0	0
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 - 90 °C	CIRCA	90	90	90	90	90	90
CP290	ConfigZone-PumpOut	Configuration of Zone Pump Output	0 = Zone output 1 = CH mode 2 = DHW mode 3 = Cooling mode 4 = Error report 5 = Burning 6 = Service flag 7 = System error 8 = DHW looping 9 = Primary pump	CIRCA	0	0	0	0	0	0
CP520	Zone Power setpoint	Power setpoint per zone	0 - 100 %	CIRCA	100	100	100	100	100	100
CP530	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone	20 - 100 %	CIRCA	100	100	100	100	100	100
CP680	ConfPairing RU Zone	Select the Bus channel of the room unit for this zone	0 - 255	CIRCA	0	0	0	0	0	0
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 - 7000 Rpm	Gas fired appliance	5200	5500	3500	3800	4300	4100
DP010	Hysteresis DHW	Temperature hysteresis for the heat generator to start on domestic hot water production	1 - 10 °C	Gas fired appliance	5.5	5.5	5.5	5.5	5.5	5.5
DP011	Stop offset DHW	Temperature offset to stop heat generator on domestic hot water production	0 - 100 °C	Gas fired appliance	5	5	5	5	5	5
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 - 99 Sec	Gas fired appliance	10	10	10	10	10	10
DP140	DHW load type	DHW load type (0 : Combi, 1 : Solo)	0 = Combi 1 = Solo	Gas fired appliance	1	1	1	1	1	1
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	1	1	1	1	1	1
GP017	Max power	Maximum power percentage in kilo Watt	0 - 1000 kW	Gas fired appliance	293.9	353.1	414.5	496.2	565.9	642
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	5 - 40 °C	Gas fired appliance	25	25	25	25	25	25
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	0 - 255	Gas fired appliance	10	10	10	10	10	10

Code	Display text	Description	Adjustment range	Submenu	285	355	430	500	575	650
GP042	Fan RPM Max	Maximum fan speed	0 - 65535 Rpm	GVC Pneumatic	5700	5800	3700	4000	4500	4300
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 - 300 kW	Gas fired appliance	54	68	82	95	109	122
PP007	Min anti-cycle time	Minimum heat generator holding time that can be reached after a stop	1 - 20 Min	Gas fired appliance	3	3	3	3	3	3
PP012	Stabilization time	Stabilization time after heat generator start for central heating	0 - 180 Sec	Gas fired appliance	30	30	30	30	30	30

6.3.2 CU-GH13 control unit parameters - Gas 620 Ace

All tables show the factory setting for the parameters.



Important

The tables also list parameters that are only applicable if the boiler is combined with other equipment.

Tab.44 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.45 Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	Outdoor temperature	0	0	0	0	0	0
CP000	MaxZoneT-FlowSetpoint	Maximum Flow Temperature setpoint zone	7 - 90 °C	CIRCA	80	80	80	80	80	80
CP080	User T.Room Activity	Room setpoint temperature of the user zone activity	5 - 30 °C	CIRCA	16	16	16	16	16	16
CP081					16	16	16	16	16	16
CP082					16	16	16	16	16	16
CP083					16	16	16	16	16	16
CP084					16	16	16	16	16	16
CP085	16	16	16	16	16	16				
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 - 30 °C	CIRCA	20	20	20	20	20	20
CP320	Operating-ZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	1	1	1	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 - 30 °C	CIRCA	20	20	20	20	20	20

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	0	0	0	0	0	0
CP570	ZoneTime- Prog Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	CIRCA	0	0	0	0	0	0
CP660	Icon display zone	Choice icon to display this zone	0 = None 1 = All 2 = Bedroom 3 = Livingroom 4 = Study 5 = Outdoor 6 = Kitchen 7 = Basement	CIRCA	0	0	0	0	0	0
CP750	MaxZone Preheat time	Maximum zone preheat time	0 - 240 Min	CIRCA	0	0	0	0	0	0

Tab.46 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.47 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
AP001	BL function	BL input function selection	1 = Full blocking 2 = Partial blocking 3 = User reset locking	Gas fired appliance	1	1	1	1	1	1
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 - 6 bar	Gas fired appliance	0.8	0.8	0.8	0.8	0.8	0.8
AP008	Release wait time	Waiting time after closing the release contact to start the heat generator.	0 - 255 Sec	Gas fired appliance	0	0	0	0	0	0
AP009	Service hours	Number of heat generator operating hours for raising a service notification	100 - 25500 Hours	Gas fired appliance	8750	8750	8750	8750	8750	8750
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification	Gas fired appliance	1	1	1	1	1	1
AP011	Service hours mains	Hours powered to raise a service notification	100 - 51000 Hours	Gas fired appliance	1750 0	1750 0	1750 0	1750 0	1750 0	1750 0
AP013	Release function	Function of the release input contact	0 = Disabled 1 = Full blocking 2 = Central heat blocked	Gas fired appliance	1	1	1	1	1	1
AP018	Sets release input	Configuration of the release input contact (normally open or normally closed)	0 = Normally open 1 = Normally closed	Gas fired appliance	0	0	0	0	0	0
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60	Outdoor temperature	0	0	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
AP073	Summer Winter	Outdoor temperature: upper limit for heating	15 - 30.5 °C	Outdoor temperature	22	22	22	22	22	22
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 10	Outdoor temperature	3	3	3	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-30 - 20 °C	Outdoor temperature	-10	-10	-10	-10	-10	-10
AP091	Outside Sens. Source	Type of outside sensor connection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	0	0	0	0	0	0
AP098	BL1 contact config.	BL1 input contact configuration	0 = Open 1 = Closed	Gas fired appliance	1	1	1	1	1	1
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convecteur 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank	CIRCA	1	1	1	1	1	1
CP040	Postrun zone pump	Pump post runtime of the zone	0 - 20 Min	CIRCA	0	0	0	0	0	0
CP060	RoomT. Holiday	Wished room zone temperature on holiday period	5 - 20 °C	CIRCA	6	6	6	6	6	6
CP070	MaxReduceRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 - 30 °C	CIRCA	16	16	16	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 - 90 °C	CIRCA	15	15	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 - 90 °C	CIRCA	15	15	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	CIRCA	1.5	1.5	1.5	1.5	1.5	1.5
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	CIRCA	3	3	3	3	3	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit	-5 - 5 °C	CIRCA	0	0	0	0	0	0
CP340	TypeReducedNight-Mode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1	1	1	1
CP470	Zone screed drying	Setting of the screed drying program of the zone	0 - 30 Days	CIRCA	0	0	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
CP480	ScreedStart-Temp	Setting of the start temperature of the screed drying program of the zone	20 - 50 °C	CIRCA	20	20	20	20	20	20
CP490	ScreedStop-Temp	Setting of the stop temperature of the screed drying program of the zone	20 - 50 °C	CIRCA	20	20	20	20	20	20
CP640	OTH LogicLevel contact	Opentherm Logic level contact of the zone	0 = Open 1 = Closed	CIRCA	1	1	1	1	1	1
CP730	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	CIRCA	0	0	0	0	0	0
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	CIRCA	0	0	0	0	0	0
CP780	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room Temp. based 2 = Outdoor Temp. based 3 = Outdoor & room based	CIRCA	0	0	0	0	0	0
EP014	SCB func. 10V PWMIn	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature control 2 = Power control	0-10 volt input	0	0	0	0	0	0
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1000 - 4500 Rpm	Gas fired appliance	5200	5500	3500	3800	4300	4100
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	900 - 3700 Rpm	Gas fired appliance GVC Pneumatic	1900	1850	1300	1250	1400	1350
GP009	Fan RPM Start	Fan speed at appliance start	900 - 5000 Rpm	Gas fired appliance GVC Pneumatic	2500	2500	1400	1400	1500	1600
PP015	CH Pump postrun time	Central heating pump post run time	1 - 99 Min	Gas fired appliance	3	3	3	3	3	3
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 - 100 %	Gas fired appliance	100	100	100	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 - 100 %	Gas fired appliance	20	20	20	20	20	20
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 - 25 °C	Gas fired appliance	10	10	10	10	10	10

Tab.48 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > Advanced
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.49 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0	0	0	0
AP004	Hydr Valve Wait Time	Heat generator wait time to open the hydraulic valve	0 - 255 Sec	Gas fired appliance	0	0	0	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	7 - 90 °C	Gas fired appliance	40	40	40	40	40	40
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 - 90 °C	Producer Generic Gas fired appliance	90	90	90	90	90	90
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed low-loss header)	0 = No 1 = Yes	Gas fired appliance	0	0	0	0	0	0
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 - 90 °C	CIRCA	90	90	90	90	90	90
CP290	ConfigZone-PumpOut	Configuration of Zone Pump Output	0 = Zone output 1 = CH mode 2 = DHW mode 3 = Cooling mode 4 = Error report 5 = Burning 6 = Service flag 7 = System error 8 = DHW looping 9 = Primary pump	CIRCA	0	0	0	0	0	0
CP520	Zone Power setpoint	Power setpoint per zone	0 - 100 %	CIRCA	100	100	100	100	100	100
CP530	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone	20 - 100 %	CIRCA	100	100	100	100	100	100
CP680	ConfPairing RU Zone	Select the Bus channel of the room unit for this zone	0 - 255	CIRCA	0	0	0	0	0	0
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 - 7000 Rpm	Gas fired appliance	5200	5500	3500	3800	4300	4100
DP010	Hysteresis DHW	Temperature hysteresis for the heat generator to start on domestic hot water production	1 - 10 °C	Gas fired appliance	5.5	5.5	5.5	5.5	5.5	5.5
DP011	Stop offset DHW	Temperature offset to stop heat generator on domestic hot water production	0 - 100 °C	Gas fired appliance	5	5	5	5	5	5

Code	Display text	Description	Adjustment range	Submenu	570	710	860	1000	1150	1300
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 - 99 Sec	Gas fired appliance	10	10	10	10	10	10
DP140	DHW load type	DHW load type (0 : Combi, 1 : Solo)	0 = Combi 1 = Solo	Gas fired appliance	1	1	1	1	1	1
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	1	1	1	1	1	1
GP017	Max power	Maximum power percentage in kilo Watt	0 - 1000 kW	Gas fired appliance	294.2	352.9	414.5	495.8	565.6	642
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	5 - 40 °C	Gas fired appliance	25	25	25	25	25	25
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	0 - 255	Gas fired appliance	10	10	10	10	10	10
GP042	Fan RPM Max	Maximum fan speed	0 - 65535 Rpm	GVC Pneumatic	5700	5800	3700	4000	4500	4300
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 - 300 kW	Gas fired appliance	80	91	128	127	153	170
PP007	Min anti-cycle time	Minimum heat generator holding time that can be reached after a stop	1 - 20 Min	Gas fired appliance	3	3	3	3	3	3
PP012	Stabilization time	Stabilization time after heat generator start for central heating	0 - 180 Sec	Gas fired appliance	30	30	30	30	30	30

6.3.3 SCB-01 expansion PCB parameters

All tables show the factory setting for the parameters.



Important

The tables also list parameters that are only applicable if the boiler is combined with other equipment.

Tab.50 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > SCB-01 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.51 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	Default setting
EP018	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted 3 = Generator on 4 = Generator off 5 = Reserved 6 = Reserved 7 = Service request 8 = Generator on CH 9 = Generator on DHW 10 = CH pump on 11 = Locking or Blocking 12 = Cooling mode	Status information	No Action
EP019	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted 3 = Generator on 4 = Generator off 5 = Reserved 6 = Reserved 7 = Service request 8 = Generator on CH 9 = Generator on DHW 10 = CH pump on 11 = Locking or Blocking 12 = Cooling mode	Status information	No Action
EP028	Function 10V-PWM	Selects the function of the 0-10 Volt output	0 = 0-10V 1 (Wilo) 1 = 0-10V 2 (Gr. GENI) 2 = PWM signal (Solar) 3 = 0-10V 1 limited 4 = 0-10V 2 limited 5 = PWM signal limited 6 = PWM signal (UPMXL)	0-10 volt or PWM out	0-10V 1 (Wilo)
EP029	Source 10V-PWM	Selects the source signal for the 0-10 Volt output	0 = PWM 1 = Requested power 2 = Actual power	0-10 volt or PWM out	PWM

6.3.4 SCB-02 expansion PCB parameters

All tables show the factory setting for the parameters.



Important

The tables also list parameters that are only applicable if the boiler is combined with other equipment.

Tab.52 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > SCB-02 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.53 Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	Default setting
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	Outdoor temperature	Off
CP010 CP011	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 - 90 °C	DHW 1 CIRCB 1	90 °C 50 °C
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 - 30 °C	DHW 1	16 °C 16 °C 16 °C 16 °C 16 °C 16 °C
CP086 CP087 CP088 CP089 CP090 CP091	User T.Room Activity	Room setpoint temperature of the user zone activity	5 - 30 °C	CIRCB 1	16 °C 16 °C 16 °C 16 °C 16 °C 16 °C
CP200 CP201	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 - 30 °C	DHW 1 CIRCB 1	20 °C 20 °C
CP320 CP321	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary	DHW 1 CIRCB 1	Manual Manual
CP350 CP351	ComfortZoneDHWtemp	Comfort Domestic Hot Water Temperature Setpoint of zone	40 - 80 °C	DHW 1 CIRCB 1	65 °C 40 °C
CP360 CP361	ReducedZoneDHWtemp.	Reduced Domestic Hot Water Temperature Setpoint of zone	10 - 60 °C	DHW 1 CIRCB 1	10 °C 10 °C
CP510 CP511	Temporary Room Setp	Temporary room setpoint per zone	5 - 30 °C	DHW 1 CIRCB 1	20 °C 20 °C
CP550 CP551	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	DHW 1 CIRCB 1	Off Off
CP570 CP571	ZoneTimeProg Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3 3 = Cooling	DHW 1 CIRCB 1	Schedule 1 Schedule 1 Schedule 1
CP660 CP661	Icon display zone	Choice icon to display this zone	0 = None 1 = All 2 = Bedroom 3 = Livingroom 4 = Study 5 = Outdoor 6 = Kitchen 7 = Basement 8 = Swimming Pool 9 = DHW Tank 10 = DHW Electrical Tank 11 = DHW Layered Tank 12 = Internal Boiler Tank 13 = Time Program	DHW 1 CIRCB 1	DHW Tank Livingroom
CP750 CP751	MaxZone Preheat time	Maximum zone preheat time	0 - 240 Min	DHW 1 CIRCB 1	0 Min 60 Min

Tab.54 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > SCB-02 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.55 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	Default setting
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60 2 = QAC34	Outdoor temperature	No outside sensor
AP073	Summer Winter	Outdoor temperature: upper limit for heating	15 - 30.5 °C	Outdoor temperature	22 °C
AP075	Season cross-over	Temperature variance from set outdoor upper temp. limit in which the generator will not heat or cool	0 - 10 °C	Outdoor temperature	4 °C
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 10	Outdoor temperature	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-30 - 30.5 °C	Outdoor temperature	-10 °C
AP091	Outside Sens. Source	Type of outside sensor connection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	Auto
CP000 CP001	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 - 90 °C	DHW 1 CIRCB 1	90 °C 55 °C
CP020 CP021	Zone Function	Functionality of the zone	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 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 12 = DHW Commercial Tank 13 = DHW FWS 31 = DHW FWS EXT 200 = BSB 254 = Occupied	DHW 1 CIRCB 1	DHW tank Mixing Circuit
CP030 CP031	Bandwidth Mix. Valve	Bandwidth of mixing valve zone where modulation takes place.	4 - 16 °C	DHW 1 CIRCB 1	12 °C 12 °C
CP040 CP041	Postrun zone pump	Pump post runtime of the zone	0 - 99 Min	DHW 1 CIRCB 1	2 Min 4 Min
CP050 CP051	Mixing Valve shift	Shift between calculated setpoint and mixing valve circuit setpoint	0 - 16 °C	DHW 1 CIRCB 1	0 °C 4 °C
CP060 CP061	RoomT. Holiday	Wished room zone temperature on holiday period	5 - 20 °C	DHW 1 CIRCB 1	6 °C 6 °C
CP070 CP071	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 - 30 °C	DHW 1 CIRCB 1	16 °C 16 °C
CP210 CP211	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 - 90 °C	DHW 1 CIRCB 1	15 °C 15 °C

Code	Display text	Description	Adjustment range	Submenu	Default setting
CP220 CP221	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 - 90 °C	DHW 1 CIRCB 1	15 °C 15 °C
CP230 CP231	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	DHW 1 CIRCB 1	0.7 0.7
CP240 CP241	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	DHW 1 CIRCB 1	3 3
CP250 CP251	CalSondeAmb-Zone	Calibration of Zone Room Unit	-5 - 5 °C	DHW 1 CIRCB 1	0 °C 0 °C
CP340 CP341	TypeReduced-NightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	DHW 1 CIRCB 1	Continue heat demand Continue heat demand
CP370 CP371	Holiday ZoneDHWtemp	Holiday Domestic Hot Water Temperature Setpoint of zone	10 - 80 °C	DHW 1 CIRCB 1	65 °C 10 °C
CP380 CP381	Antileg ZoneDHWtemp	Antilegionellosis Domestic Hot Water Temperature Setpoint of zone	40 - 80 °C	DHW 1 CIRCB 1	70 °C 70 °C
CP390 CP391	Start Antileg	Start time of the function Antilegionellosis	0 - 143 HoursMinutes	DHW 1 CIRCB 1	18 Hours- Minutes 18 Hours- Minutes
CP400 CP401	Zone Dhw anti-leg.	Duration of the function Antilegionellosis	1 - 600 Min	DHW 1 CIRCB 1	60 Min 60 Min
CP420 CP421	ZoneDhwHysteresis	Trip differential for DHW production	1 - 60 °C	DHW 1 CIRCB 1	6 °C 1 °C
CP430 CP431	Optimise DHW Zone	Used to force DHW tank loading according to the primary temperature	0 - 1	DHW 1 CIRCB 1	0 0
CP440 CP441	Release DHW zone	Prevents the cooling of the Tank at the start	0 - 1	DHW 1 CIRCB 1	0 0
CP460 CP461	DHW Zone Priority	Choice of DHW Priority 0:TOTAL 1:RELATIVE 2:NONE	0 = Total 1 = Relative 2 = None	DHW 1 CIRCB 1	Total Total
CP470 CP471	Zone screed drying	Setting of the screed drying program of the zone	0 - 30 Days	DHW 1 CIRCB 1	0 Days 0 Days
CP480 CP481	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone	20 - 50 °C	DHW 1 CIRCB 1	20 °C 20 °C
CP490 CP491	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone	20 - 50 °C	DHW 1 CIRCB 1	20 °C 20 °C
CP500 CP501	Tflow Sensor Enable	Enable/Disable Flow temperature sensor of the zone	0 = Off 1 = On	DHW 1 CIRCB 1	Off Off
CP560 CP561	ZoneConfigDHWAntileg	Configuration of the Domestic Hot Water Antilegionella Protection of the zone	0 = Disabled 1 = Weekly 2 = Daily 3 = External	DHW 1 CIRCB 1	Weekly Disabled
CP600 CP601	ProcessHeat Spt zone	Heat demand setpoint during process heat of zone	20 - 100 °C	DHW 1 CIRCB 1	60 °C 60 °C
CP610 CP611	Hys PH on per zone	Hysteresis switched on for process heat per zone	1 - 15 °C	DHW 1 CIRCB 1	6 °C 6 °C
CP620 CP621	Hys PH off per zone	Hysteresis switched off for process heat per zone	1 - 15 °C	DHW 1 CIRCB 1	6 °C 6 °C

Code	Display text	Description	Adjustment range	Submenu	Default setting
CP630 CP631	StartdayAntileg zone	Startday of the function antilegionella of the zone	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	DHW 1 CIRCB 1	Saturday Saturday
CP640 CP641	OTH LogicLev contact	Opentherm Logic level contact of the zone	0 = Open 1 = Closed 2 = Off	DHW 1 CIRCB 1	Closed Closed
CP690 CP691	RevContactOTH cool	Reversed OpenTherm contact in cooling mode for heat demand per zone	0 = No 1 = Yes	DHW 1 CIRCB 1	No No
CP700 CP701	DHW Cal Offset zone	Offset for calorifier sensor per zone	0 - 30 °C	DHW 1 CIRCB 1	0 °C 0 °C
CP710 CP711	Zone IncTFlowStp DHW	Increase primary temperature setpoint for heating DHW calorifier of the zone	0 - 40 °C	DHW 1 CIRCB 1	15 °C 0 °C
CP720 CP721	Zone, IncFT ProcHeat	Increase Primary Temperature setpoint for process heat calorifier of the zone	0 - 40 °C	DHW 1 CIRCB 1	0 °C 0 °C
CP780 CP781	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room Temp. based 2 = Outdoor Temp. based 3 = Outdoor & room based	DHW 1 CIRCB 1	Automatic Automatic
EP018	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted 3 = Generator on 4 = Generator off 5 = Reserved 6 = Reserved 7 = Service request 8 = Generator on CH 9 = Generator on DHW 10 = CH pump on 11 = Locking or Blocking 12 = Cooling mode	Status information	No Action
EP019	Status relay func.	Status relay function	0 = No Action 1 = Alarm 2 = Alarm Inverted 3 = Generator on 4 = Generator off 5 = Reserved 6 = Reserved 7 = Service request 8 = Generator on CH 9 = Generator on DHW 10 = CH pump on 11 = Locking or Blocking 12 = Cooling mode	Status information	No Action
EP028	Function 10V-PWM	Selects the function of the 0-10 Volt output	0 = 0-10V 1 (Wilo) 1 = 0-10V 2 (Gr. GENI) 2 = PWM signal (Solar) 3 = 0-10V 1 limited 4 = 0-10V 2 limited 5 = PWM signal limited 6 = PWM signal (UPMXL)	0-10 volt or PWM out	0-10V 1 (Wilo)
EP029	Source 10V-PWM	Selects the source signal for the 0-10 Volt output	0 = PWM 1 = Requested power 2 = Actual power	0-10 volt or PWM out	PWM

Tab.56 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > SCB-02 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > Advanced
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.57 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	Default setting
CP290 CP291	ConfigZone-PumpOut	Configuration of Zone Pump Output	0 = Zone output 1 = CH mode 2 = DHW mode 3 = Cooling mode 4 = Error report 5 = Burning 6 = Service flag 7 = System error 8 = DHW looping 9 = Primary pump 10 = Buffer pump	DHW 1 CIRCB 1	Zone output Zone output
CP330 CP331	Opening Valve Time	The time needed by the valve to be fully opened	0 - 240 Sec	DHW 1 CIRCB 1	60 Sec 60 Sec
CP520 CP521	Zone Power set-point	Power setpoint per zone	0 - 100 %	DHW 1 CIRCB 1	100 % 100 %
CP680 CP681	ConfPairing RU Zone	Select the Bus channel of the room unit for this zone	0 - 255	DHW 1 CIRCB 1	0 0
CP730 CP731	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	DHW 1 CIRCB 1	Normal Normal
CP740 CP741	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	DHW 1 CIRCB 1	Normal Normal
CP770 CP771	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	DHW 1 CIRCB 1	Yes Yes

6.4 List of measured values

6.4.1 CU-GH13 control unit counters

Tab.58 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters > General
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.59 Counters at basic installer level

Code	Display text	Description	Range	Submenu
AC001	Hours on mains	Number of hours that the appliance has been on mains power	0 - 4294967295Hours	System Functionality
AC002	Service run hours	Number of hours that the appliance has been producing energy since last service	0 - 131070Hours	Gas fired appliance

Code	Display text	Description	Range	Submenu
AC003	Hours since service	Number of hours since the previous servicing of the appliance	0 - 131070Hours	Gas fired appliance
AC004	Starts since service	Number of heat generator starts since the previous servicing.	0 - 4294967295	Gas fired appliance
AC005	CH Energy Consumed	Energy consumed for central heating	0 - 4294967295kWh	Producer Generic Gas fired appliance
AC006	DHW energy consumed	Energy consumed for domestic hot water	0 - 4294967295kWh	Producer Generic Gas fired appliance
AC007	Cool Energy consumed	Energy consumed for cooling	0 - 4294967295kWh	Producer Generic
AC026	Pump running hours	Counter that shows the number of pump running hours	0 - 4294967295Hours	Gas fired appliance
AC027	Pump starts	Counter that shows the number of pump starts	0 - 4294967295	Gas fired appliance
DC004	DHW starts	Number of starts for domestic hot water	0 - 4294967295	Gas fired appliance
DC005	DHW run hours	Total number of hours that the appliance has been producing energy for domestic hot water	0 - 4294967295Hours	Gas fired appliance
PC003	Heat gen run hrs	Total Number of hours that the appliance has been producing energy for central heating and DHW	0 - 65534Hours	Gas fired appliance

Tab.60 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters > General
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.61 Counters at installer level

Code	Display text	Description	Range	Submenu
DC001	DhwTotalPower Cons	Total power consumption used by Domestic Hot Water	0 - 4294967295kW	Gas fired appliance
GC007	Failed starts	Number of failed starts	0 - 65534	Gas fired appliance
PC002	Total starts	Total number of heat generator starts. For heating and domestic hot water	0 - 65534	Gas fired appliance
PC004	Burner flame loss	Number of burner flame loss	0 - 65534	Gas fired appliance

Tab.62 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters > Advanced
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.63 Counters at advanced installer level

Code	Display text	Description	Range	Submenu
PC001	ChCtrTotalPower-Cons.	Total power consumption used by Central Heating	0 - 4294967295kW	Gas fired appliance

6.4.2 SCB-01 expansion PCB counters

Tab.64 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > SCB-01 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters > General
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.65 Counters at basic installer level

Code	Display text	Description	Range	Submenu
AC001	Hours on mains	Number of hours that the appliance has been on mains power	0 - 4294967295Hours	System Functionality

6.4.3 CU-GH13 control unit signals

Tab.66 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Signals > General
(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.	

Tab.67 Signals at basic installer level

Code	Display text	Description	Range	Submenu
AM010	Pump speed	The current pump speed	0 - 100%	Gas fired appliance
AM012	Status Appliance	Current main status of the appliance.	 See Status and sub-status, page 54	Status information System Functionality
AM014	Sub status Appliance	Current sub status of the appliance.	 See Status and sub-status, page 54	Status information System Functionality
AM015	Pump running?	Is the pump running?	0 = Inactive 1 = Active	Gas fired appliance
AM016	System Flow Temp	Flow temperature of appliance.	-327.68 - 327.67°C	Zone manager Producer Generic Gas fired appliance Prod. manager bridge
AM017	T heat exchanger	The temperature of heat exchanger	-25 - 150°C	Gas fired appliance
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-327.68 - 327.67°C	Zone manager Gas fired appliance

Code	Display text	Description	Range	Submenu
AM019	Water pressure	Water pressure of the primary circuit.	0 - 10bar	Gas fired appliance
AM027	Outside temperature	Instantaneous outside temperature	-70 - 70°C	Outdoor temperature Gas fired appliance
AM028	0to10Vinput	Value of the 0 to 10 Volt input. Meaning is dependant on the current input function setting.	0 - 25V	0-10 volt input
AM040	Control temperature	Temperature used for hot water control algorithms.	-327.68 - 327.67°C	Gas fired appliance
AM046	Internet T.Outside	Outside temperature received from an internet source	-70 - 70°C	Outdoor temperature
AM091	SeasonMode	Seasonal mode active (summer / winter)	0 = Winter 1 = Frost protection 2 = Summer neutral band 3 = Summer	Outdoor temperature
AM101	Internal setpoint	Internal system flow temperature setpoint	0 - 120°C	Gas fired appliance
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 - 50°C	CIRCA
CM120	ZoneCurrentMode	Zone Current Mode	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary	CIRCA
CM130	ZoneCurrent activity	Current activity of the zone	0 = Off 1 = Reduced 2 = Comfort 3 = Anti legionella	CIRCA
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	5 - 30°C	CIRCA
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 - 70°C	CIRCA

Tab.68 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Signals > General
(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.	

Tab.69 Signals at installer level

Code	Display text	Description	Range	Submenu
AM006	Release input	Current status of the release input	0 = Open 1 = Closed 2 = Off	Gas fired appliance
AM036	Flue gas temperature	Temperature of the exhaust gas leaving the appliance	0 - 250°C	Gas fired appliance
AM044	Nr sensors supported	Number of sensors supported by the device	0 - 255	Gas fired appliance
AM045	Water P available	Water pressure sensor present?	0 = No 1 = Yes	Gas fired appliance
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 - 150°C	CIRCA
CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 = No 1 = Yes	CIRCA
CM150	ZoneState Heatdemand	State of On Off heat demand per zone	0 = No 1 = Yes	CIRCA

Code	Display text	Description	Range	Submenu
CM160	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 = No 1 = Yes	CIRCA
CM200	ZoneCurrentHeat-Mode	Displaying current operating mode of the zone	0 = Standby 1 = Heating 2 = Cooling	CIRCA
GM001	Actual fan RPM	Actual fan RPM	0 - 8500Rpm	Gas fired appliance
GM002	Fan RPM setpoint	Actual fan RPM setpoint	0 - 8500Rpm	Gas fired appliance
GM008	Actual flame current	Actual flame current measured	0 - 25µA	Gas fired appliance
NM001	CascSystemTF	Cascade system flow temperature	-10 - 120°C	Producer Generic Producer<>Consumer
PM002	CH Setpoint	Central heating setpoint of the appliance	0 - 125°C	Gas fired appliance

Tab.70 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Signals > Advanced
(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.	

Tab.71 Signals at advanced installer level

Code	Display text	Description	Range	Submenu
AM001	DHW active	Is the appliance currently in domestic hot water production mode?	0 = Off 1 = On	Gas fired appliance
AM011	Service required?	Is service currently required?	0 = No 1 = Yes	Gas fired appliance
AM022	On / Off heat demand	On / Off heat demand	0 = Off 1 = On	Gas fired appliance
AM024	Actual rel. Power	Actual relative power of the appliance	0 - 100%	Gas fired appliance
AM033	Next Service Ind.	Next service indication	0 = None 1 = A 2 = B 3 = C 4 = Custom	Gas fired appliance
AM043	Pwr dwn reset needed	A power down reset is needed	0 = No 1 = Yes	Gas fired appliance
AP078	Out sensor detected	Outside sensor detected in the application	0 = No 1 = Yes	Outdoor temperature
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 = No 1 = Yes	CIRCA
CM280	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	0 - 100°C	CIRCA
GM006	GPS status	Gas Pressure Switch status	0 = Open 1 = Closed 2 = Off	Gas fired appliance
GM013	Blocking Input	Blocking input status	0 = Open 1 = Closed 2 = Off	Gas fired appliance

Code	Display text	Description	Range	Submenu
GM015	Vps Switch	Valve Proving System switch open / closed	0 = Open 1 = Closed 2 = Off	Gas fired appliance
PM003	ChTflowAverage	Actual average flow temperature	-25 - 125°C	Gas fired appliance

6.4.4 SCB-01 expansion PCB signals

Tab.72 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > Installation Setup > SCB-01 > Submenu ⁽¹⁾ > Parameters, counters, signals > Signals > General
(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.	

Tab.73 Signals at basic installer level

Code	Display text	Description	Range	Submenu
AM012	Status Appliance	Current main status of the appliance.	 See Status and sub-status, page 54	System Functionality
AM014	Sub status Appliance	Current sub status of the appliance.	 See Status and sub-status, page 54	System Functionality

6.4.5 Status and sub-status

Tab.74 AM012 - Status

Code	Display text	Explanation
0	Standby	The appliance is in standby mode.
1	Heat Demand	A heat demand is active.
2	Generator start	The appliance starts.
3	Generator CH	The appliance is active for central heating.
4	Generator DHW	The appliance is active for domestic hot water.
5	Generator stop	The appliance has stopped.
6	Pump Post Run	The pump is active after the appliance stopped.
8	Controlled Stop	The appliance does not start because the starting conditions are not met.
9	Blocking Mode	A blocking mode is active.
10	Locking Mode	A locking mode is active.
11	Load test min	Low load test mode for central heating is active.
12	Load test CH max	Full load test mode for central heating is active.
13	Load test DHW max	Full load test mode for domestic hot water is active.
15	Manual Heat Demand	Manual heat demand for central heating is active.
16	Frost Protection	Frost protection mode is active.
19	Reset In Progress	The appliance resets.
21	Halted	The appliance has stopped. It must be reset manually.
23	Factory test	The factory test mode is active.
200	Device Mode	The service tool interface controls the functions of the appliance.
254	Unknown	The actual state of the appliance is undefined.

Tab.75 AM014 - Sub status

Code	Display text	Explanation
0	Standby	The appliance waits for a process or an action.
1	AntiCycling	The appliance waits to restart, because there were too many consecutive heat demands (anti-short cycle).
4	WaitingForStartCond.	The appliance waits for the temperature to meet the start conditions.
10	CloseExtGasValve	An external gas valve is opened, when this option is connected to the appliance. An external option board must be connected to drive the valve.
12	CloseFlueGasValve	The flue gas valve opens.
13	FanToPrePurge	The fan runs faster to pre-purge.
14	WaitForReleaseSignal	The appliance waits for the release input to close.
15	BurnerOnCommandToSu	A burner start command is sent to the safety core.
17	Prelgnition	Ignition starts before the gas valve opens.
18	Ignition	Ignition is active.
19	FlameCheck	The flame detection is active after the ignition.
20	Interpurge	The fan runs to purge the heat exchanger after a failed ignition.
30	Normal Int.Setpoint	The appliance operates to reach the desired value.
31	Limited Int.Setpoint	The appliance operates to reach the reduced internal desired value.
32	NormalPowerControl	The appliance operates on the desired power level.
33	GradLevel1PowerCtrl	The modulation is stopped due to a faster heat exchanger temperature change than gradient level 1.
34	GradLevel2PowerCtrl	The modulation is set to low load due to a faster heat exchanger temperature change than gradient level 2.
35	GradLevel3PowerCtrl	The appliance is in blocking mode due to a faster heat exchanger temperature change than gradient level 3.
36	ProtectFlamePwrCtrl	The burner power is increased due to a low ionisation signal.
37	StabilizationTime	The appliance is in stabilisation time. Temperatures should stabilise and temperature protections are switched off.
38	ColdStart	The appliance runs at start load to prevent cold start noise.
39	ChResume	The appliance resumes central heating after a domestic hot water interruption.
40	SuRemoveBurner	Burner demand is removed from safety core.
41	FanToPostPurge	The fan runs to purge the heat exchanger after the appliance stopped.
44	StopFan	The fan has stopped.
45	LimitedPwrOnTflueGas	The power of the appliance is decreased to lower the flue gas temperature.
48	Reduced Set Point	The desired flow temperature is reduced to protect the heat exchanger.
60	PumpPostRunning	The pump is active after the appliance stopped in order to bring the remaining heat into the system.
61	OpenPump	The pump has stopped.
63	SetAntiCycleTimer	
105	Calibration	The electronic combustion process calibrates the combustion.
200	Initialising Done	Initialisation is finished.
201	Initialising Csu	The CSU is initialising.
202	Init. Identifiers	The identifiers are initialising.
203	Init.BL.Parameter	The blocking parameters are initialising.
204	Init. Safety Unit	The safety unit is initialising.
205	Init. Blocking	The blocking is initialising.
254	StateUnknown	The sub state is undefined.
255	SuOutOfResetsWait1Hr	The safety unit is blocking due to too many resets. Wait for 60 minutes or turn the power off and on again.

7 Maintenance

7.1 Maintenance regulations

i Important
The boiler must be maintained by a qualified installer in accordance with local and national regulations.

i Important
An annual inspection is mandatory.

- Perform the standard checking and maintenance procedures once a year.
- Perform the specific maintenance procedures if necessary.

i Important
Adjust the frequency of inspection and service to the conditions of use. This applies especially if the boiler is:

- In constant use (for specific processes).
- Used with a low supply temperature.
- Used with a high ΔT .

⚠ Caution

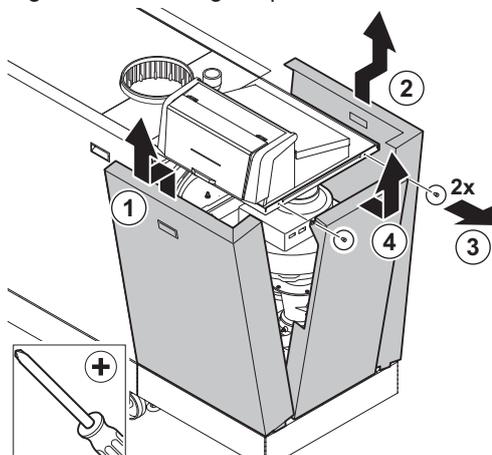
- Replace defective or worn parts with original spare parts. Not doing so will void warranty.
- During inspection and maintenance work, always replace all gaskets on the parts removed.
- Check whether all gaskets have been positioned properly (absolutely flat in the appropriate groove means they are gas, air and water tight).
- During the inspection and maintenance work, water (drops, splashes) must never come into contact with the electrical parts.

⚠ Warning
Always wear safety goggles and a dust mask during cleaning work (involving compressed air).

⚡ Danger of electric shock
Ensure that the boiler is switched off.

7.2 Opening the boiler

Fig.52 Removing the panels



AD-3001407-02

1. Remove the panels in the given order.

7.3 Standard inspection and maintenance operations

For a service, always perform the following standard inspection and maintenance operations.

7.3.1 Preparation

Carry out the following steps before commencing inspection and maintenance activities:

1. Set the boiler to full load until the return temperature is around 65°C, to dry the heat exchanger on the flue gas side.
2. Check the water pressure.
The minimum water pressure is 0.8 bar. The recommended water pressure is between 1.5 bar and 2.0 bar.
 - 2.1. If necessary, top up the central heating system.
3. Check the ionisation current at full load and at low load.
The value is stable after 1 minute.
 - 3.1. If the value is lower than 3 µA, clean or replace the ionisation and ignition electrode.
4. Check the condition and tightness of the flue gas outlet and air supply system.
5. Check the combustion by measuring the O₂/CO₂ percentage in the flue gasses.



Important

- This appliance is suitable for category I_{2H} containing up to 20% Hydrogen gas (H₂). Due to variations in the H₂ percentage, the O₂/CO₂ percentage can vary over time. (For example: a percentage of 20% H₂ in the gas can lead to an increase of 1,5% of O₂ in the flue gasses)
- A significant adjustment of the gas valve may be needed. Adjustment can be done using the standard O₂/CO₂ values of the gas used.



See also

Chimney sweep menu, page 13

■ Performing the full load test

1. Select the tile [👤].
⇒ The **Change load test mode** menu appears.
2. Select the test **Medium power**.

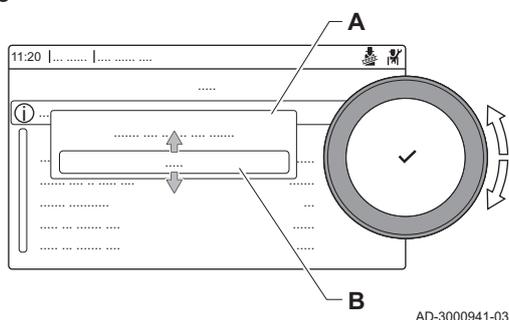
A Change load test mode

B Medium power

⇒ The full load test starts. The selected load test mode is shown in the menu and the icon 👤 appears in the top right of the screen.

3. Check the load test settings and adjust if necessary.
⇒ Only the parameters shown in bold can be changed.

Fig.53 Full load test



■ Checking/setting values for O₂/CO₂ at full load

1. Set the boiler to full load.
2. Measure the percentage of O₂/CO₂ in the flue gasses.
3. Compare the measured value with the checking values in the table.

Tab.76 Checking/setting values for O₂/CO₂ at full load for G20 (H gas)

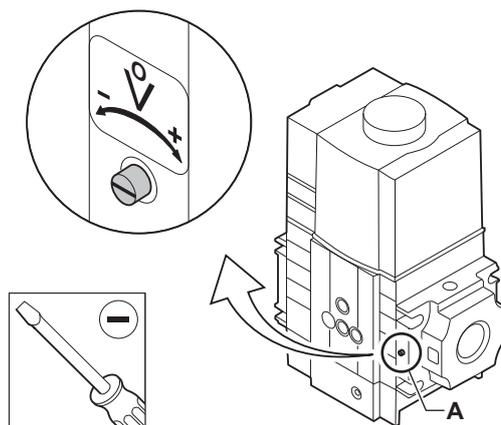
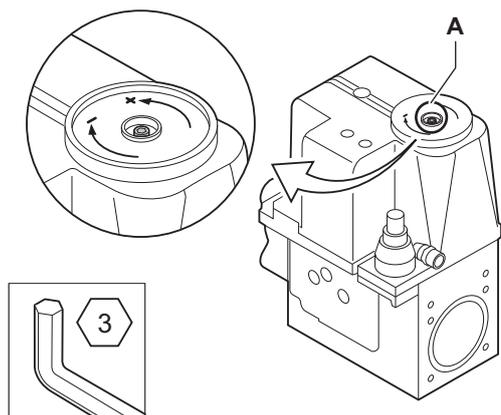
Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 320 Ace 285	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 320 Ace 355	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 320 Ace 430	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 320 Ace 500	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 320 Ace 575	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 320 Ace 650	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 570	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 710	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 860	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 1000	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 1150	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
Gas 620 Ace 1300	4.3 – 4.8 ⁽¹⁾	9.0 ⁽²⁾ – 9.3
(1) Nominal value (2) Nominal value		

Tab.77 Checking/setting values for O₂/CO₂ at full load for BREEAM with G20 (H gas)

Values at full load for BREEAM with G20 (H gas)	O ₂ (%) ⁽¹⁾⁽²⁾	CO ₂ (%) ⁽³⁾⁽⁴⁾
Gas 320 Ace 285	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 320 Ace 355	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 320 Ace 430	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 320 Ace 500	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 320 Ace 575	6.1 – 6.6 ⁽¹⁾	8.0 ⁽³⁾ – 8.3
Gas 320 Ace 650	6.1 – 6.6 ⁽¹⁾	8.0 ⁽³⁾ – 8.3
Gas 620 Ace 570	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 620 Ace 710	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 620 Ace 860	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 620 Ace 1000	6.0 – 6.5 ⁽¹⁾	8.1 ⁽³⁾ – 8.4
Gas 620 Ace 1150	6.1 – 6.6 ⁽¹⁾	8.0 ⁽³⁾ – 8.3
Gas 620 Ace 1300	6.1 – 6.6 ⁽¹⁾	8.0 ⁽³⁾ – 8.3
(1) Nominal value (2) These values are only applicable when the fan speeds have been set for BREEAM. (3) Nominal value (4) These values are only applicable when the fan speeds have been set for BREEAM.		

4. If the measured value is outside of the values given in the table, correct the gas/air ratio.

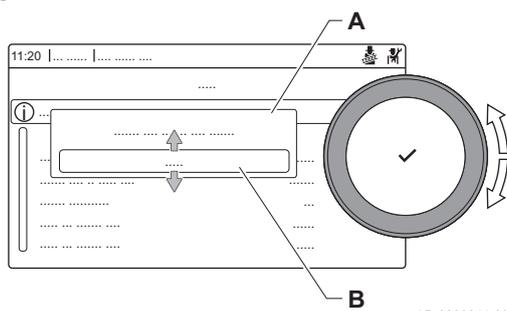
Fig.54 Adjusting screw A



AD-0000492-01

- Use the adjustment screw **A** to set the percentage of O_2/CO_2 for the gas type being used to the nominal value. Increasing the gas flow, will decrease O_2 and increase CO_2 . The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas control valve. The 5- to 9-section boilers are supplied with a different gas control valve from the 10-section boiler. See drawing for the position of adjusting screw **A** for full load.
- Check the flame through the inspection glass. The flame must not blow off.

Fig.55 Low load test



AD-3000941-03

■ Performing the low load test

- If the full load test is still running, press the ✓ button to change the load test mode.
- If the full load test was finished, select the tile [👤] to restart the chimney sweep menu.

A Change load test mode

B Low power

- Select the **Low power** test in the menu **Change load test mode**.
⇒ The low load test starts. The selected load test mode is shown in the menu and the icon 👤 appears in the top right of the screen.
- Check the load test settings and adjust if necessary.
⇒ Only the parameters shown in bold can be changed.
- End the low load test by pressing the ⏪ button.
⇒ The message **Running load test(s) stopped!** is displayed.

■ Checking/setting values for O_2/CO_2 at low load

- Set the boiler to low load.
- Measure the percentage of O_2/CO_2 in the flue gases.
- Compare the measured value with the checking values in the table.

Tab.78 Checking/setting values for O_2/CO_2 at low load for G20 (H gas)

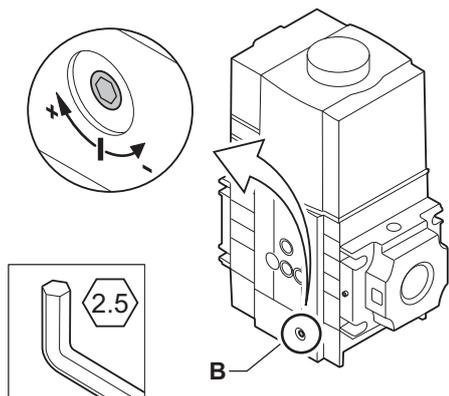
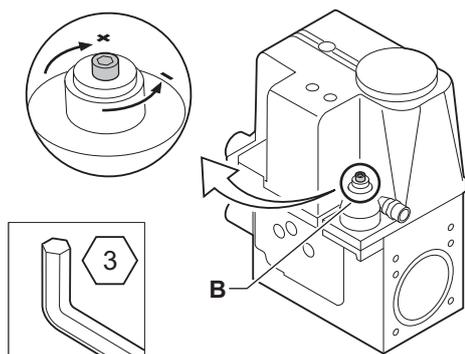
Values at low load for G20 (H gas)	O_2 (%) ⁽¹⁾	CO_2 (%) ⁽²⁾
Gas 320 Ace 285	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 320 Ace 355	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 320 Ace 430	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 320 Ace 500	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾

Values at low load for G20 (H gas)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 320 Ace 575	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 320 Ace 650	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 570	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 710	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 860	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 1000	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 1150	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
Gas 620 Ace 1300	4.8 ⁽¹⁾ – 5.4	8.7 – 9.0 ⁽²⁾
(1) Nominal value (2) Nominal value		

Tab.79 Checking/setting values for O₂/CO₂ at low load for BREEAM with G20 (H gas)

Values at low load for BREEAM with G20 (H gas)	O ₂ (%) ⁽¹⁾⁽²⁾	CO ₂ (%) ⁽³⁾⁽⁴⁾
Gas 320 Ace 285	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 320 Ace 355	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 320 Ace 430	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 320 Ace 500	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 320 Ace 575	6.6 ⁽¹⁾ – 7.2	7.7 – 8.0 ⁽³⁾
Gas 320 Ace 650	6.6 ⁽¹⁾ – 7.2	7.7 – 8.0 ⁽³⁾
Gas 620 Ace 570	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 620 Ace 710	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 620 Ace 860	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 620 Ace 1000	6.5 ⁽¹⁾ – 7.1	7.8 – 8.1 ⁽³⁾
Gas 620 Ace 1150	6.6 ⁽¹⁾ – 7.2	7.7 – 8.0 ⁽³⁾
Gas 620 Ace 1300	6.6 ⁽¹⁾ – 7.2	7.7 – 8.0 ⁽³⁾
(1) Nominal value (2) These values are only applicable when the fan speeds have been set for BREEAM. (3) Nominal value (4) These values are only applicable when the fan speeds have been set for BREEAM.		

4. If the measured value is outside of the values given in the table, correct the gas/air ratio.

Fig.56 Adjusting screw **B**

AD-0000493-01

5. Use the adjustment screw **B** to set the percentage of O_2/CO_2 for the gas type being used to the nominal value. Increasing the gas flow, will decrease O_2 and increase CO_2 . The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas control valve. The 5- to 9-section boilers are supplied with a different gas control valve from the 10-section boiler. See drawing for the position of adjusting screw **B** for low load.
6. Check the flame through the inspection glass. The flame must not blow off.
7. Repeat the full load test and the low load test as often as necessary until the correct values are obtained.
8. Set the boiler back to the normal operating status.

7.3.2 Checking the water quality

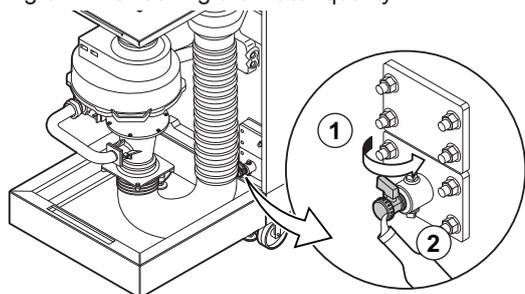
The requirements for the water quality can be found in our **Water quality instructions**.



Caution

Not fulfilling the water quality requirements can damage the boiler and will void the warranty.

Fig.57 Checking the water quality



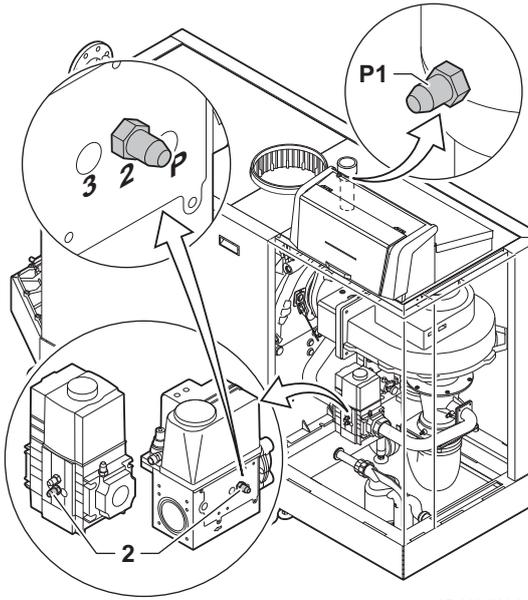
AD-3001567-01

1. Fill a clean bottle with some water from the boiler using the filling/drain valve.
2. Check the quality of this water sample or have it checked.

7.3.3 Checking the gas filter

The gas control valve on the boiler is fitted with a gas filter. Check the gas filter for dirt. Proceed as follows:

Fig.58 Gas control valve measuring points



AD-3001568-01

1. Set the boiler to full load.
2. Measure the gas inlet pressure via the measuring point **P1** on the gas pipe.
⇒ This gas inlet pressure should be at least 17 mbar.
3. Check the gas inlet pressure at measuring point **2** on the gas control valve.
4. Compare the measured values with the values in the table.

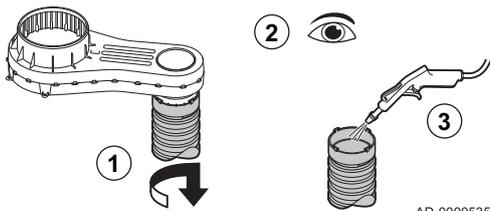
Tab.80 Minimum gas inlet pressure values at gas control valve measuring point 2

Gas 320 Ace	Gas 620 Ace	Minimum value (mbar)
285	570	14
355	710	13
430	860	10
500	1000	10
575	1150	10
650	1300	10

5. If the measured value is lower than the minimum value, clean or replace the gas filter.

7.3.4 Checking and cleaning the air supply hose

Fig.59 Cleaning the air supply hose

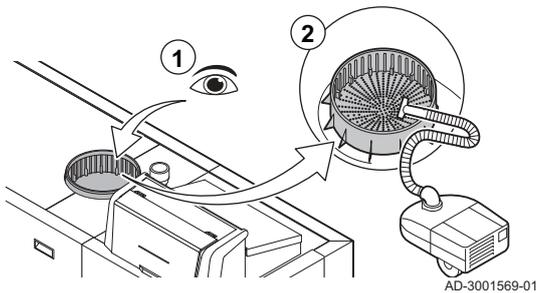


AD-0000535-01

1. Disconnect the hose on the air box side by loosening the bayonet fitting.
2. Check the hose for damage and pollution.
3. Remove the pollution from the hose with a cloth or soft brush.
4. Replace the hose if it is faulty and/or leaking.

7.3.5 Checking the air supply dirt trap

Fig.60 Dirt trap



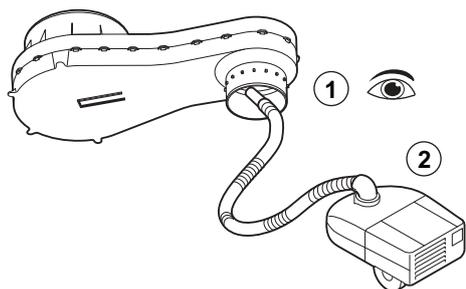
AD-3001569-01

If necessary, disconnect the air supply pipe or air inlet filter from the boiler to access the dirt trap.

1. Visually inspect the dirt trap on the air supply side for soiling.
2. Remove coarse soiling and clean the trap with a vacuum cleaner or a cloth.

7.3.6 Checking the air box

Fig.61 Air box



AD-000536-01

1. Check the air box for soiling.
2. Clean the dirty air box using a vacuum cleaner. Do this from the connection opening for the air supply hose.



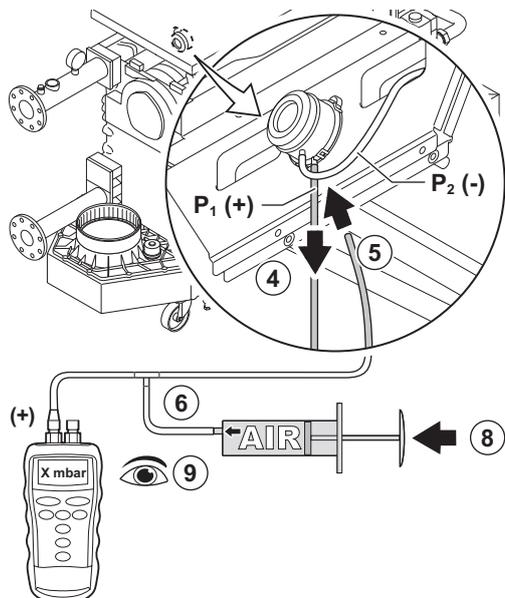
Important

If the air box is dirty, the following components must also be dismantled and blown clean:

- Non-return valve
- Venturi
- Fan

7.3.7 Checking the air pressure differential switch

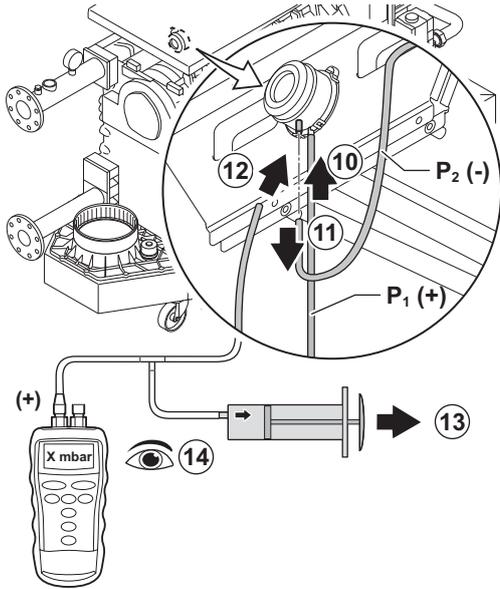
Fig.62 Positive (+) side of the air pressure differential switch



AD-3001570-01

1. Switch off the boiler.
2. Remove any dirt from all the connection points for hoses and the air pressure differential switch.
3. Check the condition and tightness of the hoses of the air pressure differential switch.
 - ⇒ Replace the hoses if necessary.
4. Disconnect the silicone hose from the + side (P1) of the air pressure differential switch.
5. Connect a hose to the + side of the air pressure differential switch.
6. Take a T piece and connect it as follows:
 - 6.1. Connect one end of the T piece to the hose from the + side of the air pressure differential switch.
 - 6.2. Connect one end of the T piece to a large plastic syringe.
 - 6.3. Connect the other end of the T piece to a pressure gauge.
7. Switch on the boiler.
8. Push the syringe in very slowly until error code **E.04.08** appears on the display.
9. Check the pressure indicated by the pressure gauge at that point. This is the switch pressure.
 - ⇒ A switch pressure between 5.5 and 6.5 mbar is good. A lower or higher switch pressure indicates a problem with the air pressure differential switch.

Fig.63 Negative (-) side of the air pressure differential switch



10. Remove the syringe hose from the + side of the air pressure differential switch and reconnect the original hose.
11. Disconnect the silicon hose from the - side (P2) of the air pressure differential switch.
12. Connect the - side of the air pressure differential switch the hose coming from the T piece.
13. Pull out the syringe very slowly until error code **E.04.08** appears on the display.
14. Check the pressure indicated by the pressure gauge at that point. This is the switch pressure.
 ⇒ A switch pressure between -5.5 and -6.5 mbar is good. A lower or higher switch pressure indicates a problem with the air pressure differential switch.

AD-3001571-01

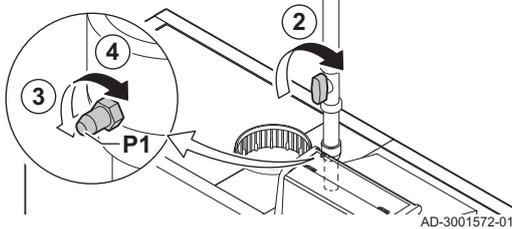
7.3.8 Checking the gas leakage monitoring (VPS)

Before starting, make sure that the VPS is set correctly. It must be set to 50% of the measured gas inlet pressure, with a maximum of 40 mbar.

The VPS check consists of two actions: checking the VPS for leaks and checking the switch value. Proceed as follows:

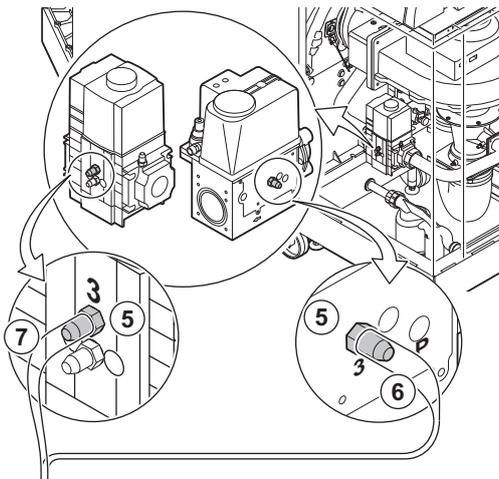
1. Switch off the boiler.
2. Close the boiler gas valve.
3. Remove the pressure from the gas pipe by unscrewing the screw in measuring point P1.
4. As soon as the gas pipe is pressure-free, re-tighten the screw.

Fig.64 Preparing the gas circuit



AD-3001572-01

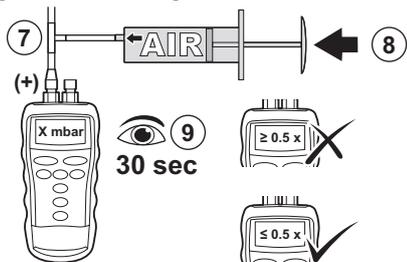
Fig.65 Connecting a hose



AD-3001573-01

5. Open the screw at measuring point 3 on the gas control valve.
6. Connect a hose to measuring point 3 of the gas valve.

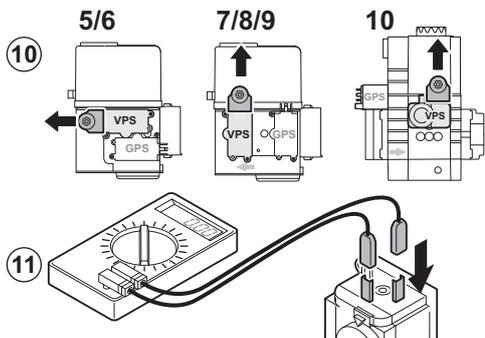
Fig.66 Checking the VPS for leaks



AD-3001574-01

7. Take a T piece and connect it as follows:
 - 7.1. Connect one end of the T piece to the hose from measuring point 3.
 - 7.2. Connect one end of the T piece to a large plastic syringe.
 - 7.3. Connect the other end of the T piece to a pressure gauge.
8. Push the syringe in very slowly until the pressure gauge indicates the minimum inlet gas pressure.
9. Check the measured pressure for about 30 seconds.
 - ⇒ If the pressure decreases by more than half, this indicates a gas leak: Replace the gas control valve or the VPS if necessary.

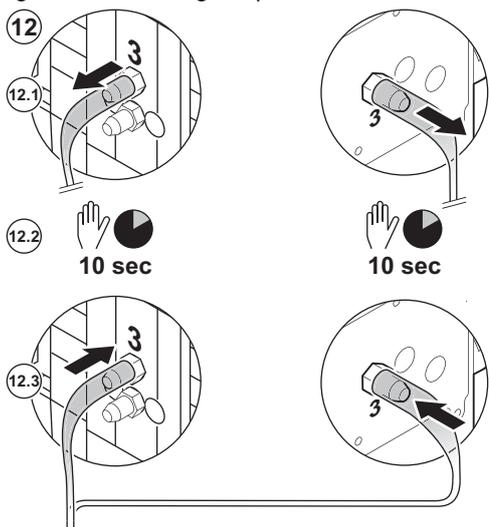
Fig.67 Connecting an ohmmeter



AD-3001575-01

10. To check the VPS switch value, remove the plug from the VPS.
11. Connect an ohmmeter to terminals 2 and 3 of the VPS.

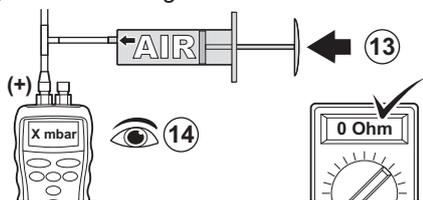
Fig.68 Releasing the pressure



AD-3001576-01

12. Release any pressure from the gas control valve:
 - 12.1. Remove the hose from measuring point 3 of the gas control valve.
 - 12.2. Wait 10 seconds.
 - 12.3. Reconnect the hose to measuring point 3.

Fig.69 Checking the switch value



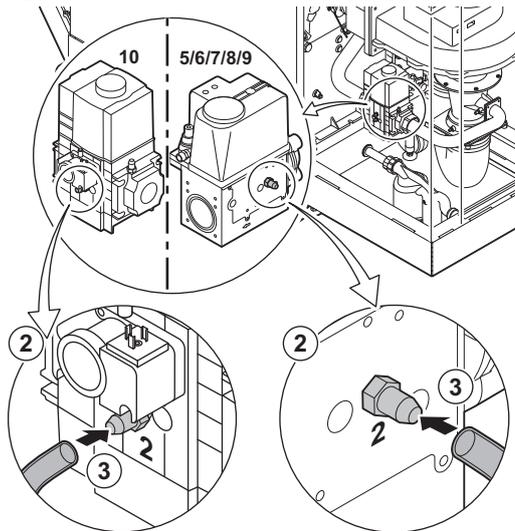
AD-3001577-01

13. Push the syringe in very slowly until the ohmmeter indicates 0 Ω.
14. Check the measured pressure at that point.
 - ⇒ If the measured pressure differs by more than 2 mbar from the value as set on the VPS, set the pressure switch to the actual measured value or replace the VPS.

7.3.9 Checking the minimum gas pressure switch (GPS)

1. Switch off the boiler.

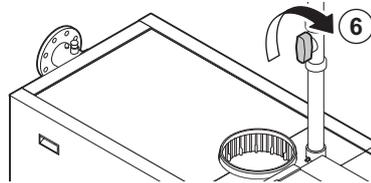
Fig.70 Connect the pressure gauge



AD-3001408-01

2. Open the screw in measuring point 2 of the gas control valve.
3. Connect a pressure gauge to measuring point 2 of the gas control valve.
4. Switch on the boiler.
5. Set the boiler to low load.

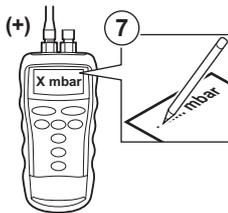
Fig.71 Close the gas valve



AD-3001409-01

6. Close the boiler gas valve very slowly until error code **H.01.09** appears on the display.

Fig.72 Check the value



AD-3001410-01

7. Compare the measured value with the minimum value in the table.
Tab.81 Minimum gas pressure switch value

Gas 320 Ace	Gas 620 Ace	Minimum value (mbar)
285	570	14
355	710	13
430	860	10
500	1000	10
575	1150	10
650	1300	10

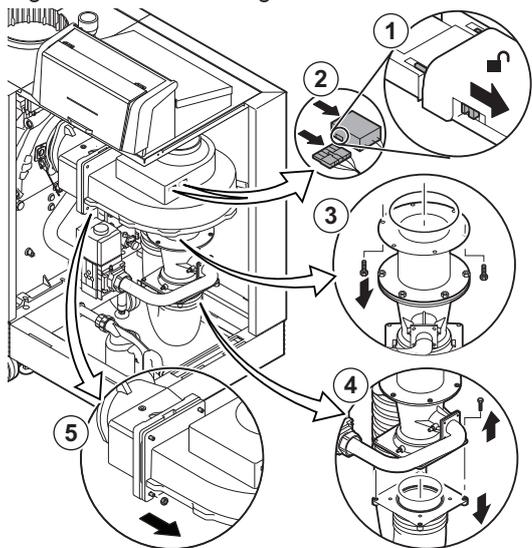
8. If the measured value is lower, set the gas pressure switch to the correct value or replace it.

7.4 Specific maintenance work

Perform the specific maintenance work if this proves to be necessary following the standard inspection and maintenance work. To conduct the specific maintenance work:

7.4.1 Cleaning the fan, non-return valve and venturi

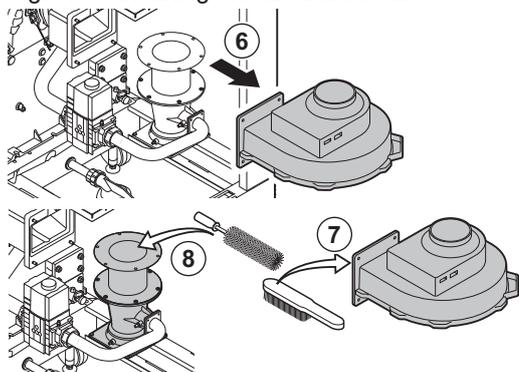
Fig.73 Disassembling the fan unit



AD-3001584-01

1. Push back the safety slides on both sides of the power plug to unlock it.
2. Remove the electrical connections from the fan.
3. Unscrew the bolts from the extension piece under the fan.
⇒ Support the gas control valve, using a block of wood for example.
4. Disconnect the air supply hose from the venturi.
5. Unscrew the nuts on the fan output.

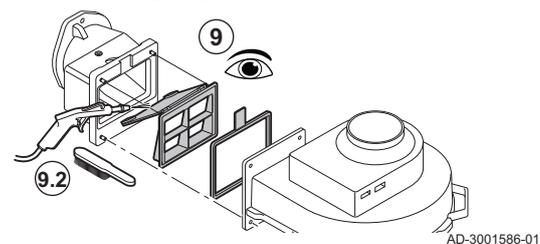
Fig.74 Cleaning the fan and venturi



AD-3001585-01

6. Disconnect the fan from the adaptor.
7. Clean the fan with a soft plastic brush.
8. Clean the venturi with a soft plastic brush.

Fig.75 Checking and cleaning the non-return valve



AD-3001586-01

9. Inspect the non-return valve.
 - 9.1. Replace the non-return valve if it is faulty or seriously damaged.
 - 9.2. Clean the non-return valve with a soft plastic brush or compressed air if it does not need to be replaced.
10. Reassemble the unit in reverse order.



Important

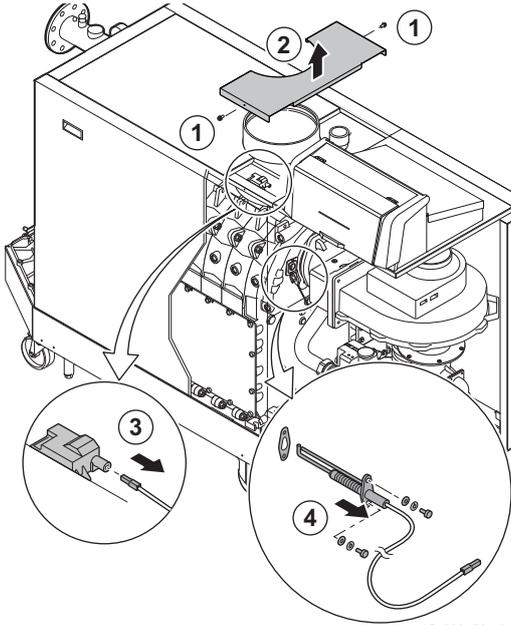
Reconnect the fan's electrical connection.

7.4.2 Replacing the ionisation/ignition electrode

The ionisation/ignition electrode must be replaced if:

- The ionisation current is $< 3 \mu\text{A}$.
- The electrode is damaged or worn.
- The specific maintenance activities are carried out.

Fig.76 Replacing the ionisation/ignition electrode



AD-3001581-01

1. Unscrew the two screws on the middle top casing.
2. Remove the middle top casing.
3. Remove the plug of the electrode from the ignition transformer.

i Important
The ignition cable is fixed to the electrode and may not be removed.

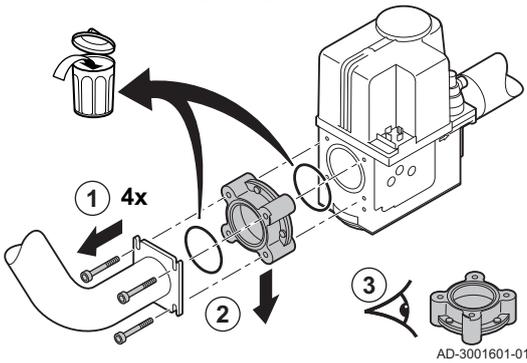
4. Unscrew the 2 screws on the electrode.
5. Remove the electrode.
6. Fit the new electrode.

! Caution
To prevent damage, do not fit the new electrode until the burner has been cleaned and refitted.

7. Reassemble the unit in reverse order.

7.4.3 Cleaning the gas filter - 5-9 sections boiler

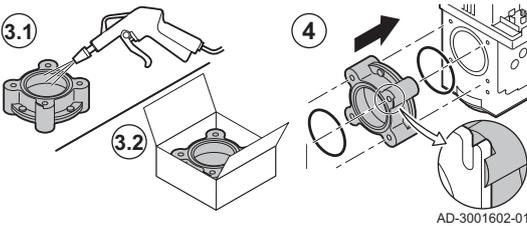
Fig.77 Removing the gas filter



AD-3001601-01

1. Remove the four screws from the gas pipe.
2. Remove the gas filter.

Fig.78 Cleaning and mounting the gas filter

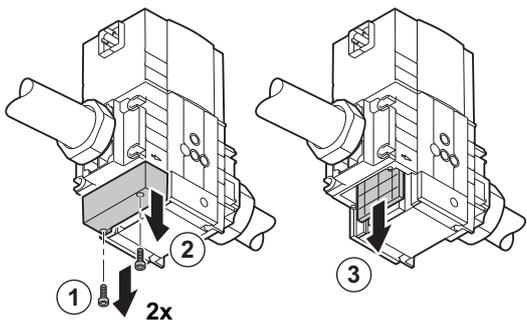


AD-3001602-01

3. Inspect the gas filter.
 - 3.1. Replace the gas filter if necessary.
 - 3.2. Clean the gas filter without the use of liquids (shake it or carefully blow it clean) if it does not need to be replaced.
4. Reassemble the unit in reverse order. Make sure the ridge on the gas filter is positioned as indicated.

7.4.4 Cleaning the gas filter - 10 sections boiler

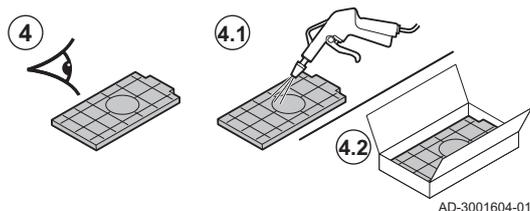
Fig.79 Removing the gas filter



AD-3001603-01

1. Remove the two screws from the gas filter cover.
2. Remove the cover.
3. Remove the gas filter.

Fig.80 Inspecting and cleaning the gas filter

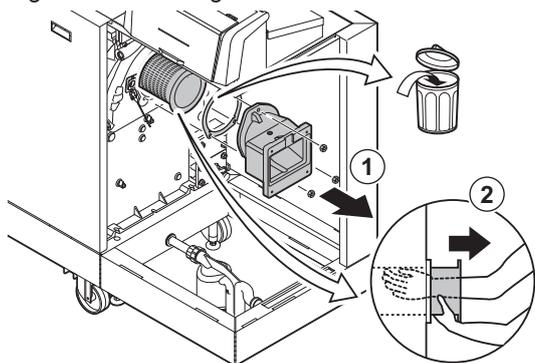


AD-3001604-01

4. Inspect the gas filter.
 - 4.1. Replace the gas filter if necessary.
 - 4.2. Clean the gas filter without the use of liquids (shake it or carefully blow it clean) if it does not need to be replaced.
5. Reassemble the unit in reverse order.

7.4.5 Cleaning the burner

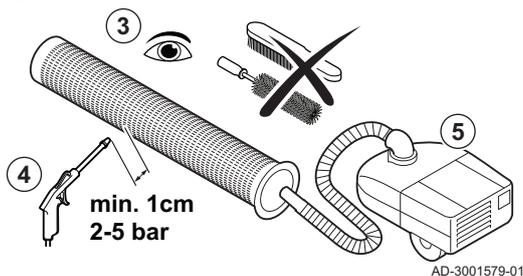
Fig.81 Removing the burner



AD-3001578-01

1. Unscrew the bolts from the adaptor and remove the adaptor.
2. Lift the burner out of the heat exchanger.

Fig.82 Checking and cleaning the burner



AD-3001579-01

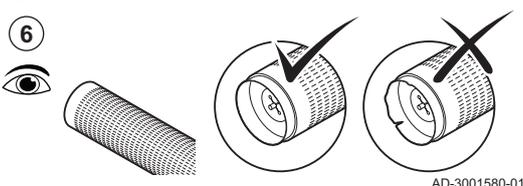
3. Check the burner.
4. Clean the outside of burner using compressed air with a pressure of 2 to 5 bar.

**Caution**

- Maintain a minimum distance of 1 cm from the surface of the burner.
- Never clean the burner's surface with a brush or similar item.

5. Clean the inside of the burner using a vacuum cleaner.

Fig.83 Checking the burner end cap



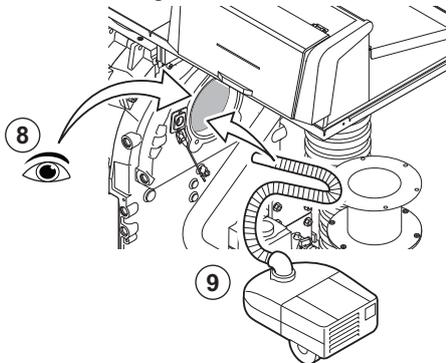
AD-3001580-01

6. Check the burner end cap.
 - ⇒ Replace the burner or end cap if faulty or seriously damaged.
7. Set the burner aside, making sure it can not be damaged.

**Caution**

- Do not refit the burner until the heat exchanger, condensate collector and siphon have been cleaned.

Fig.84 Cleaning the burner area

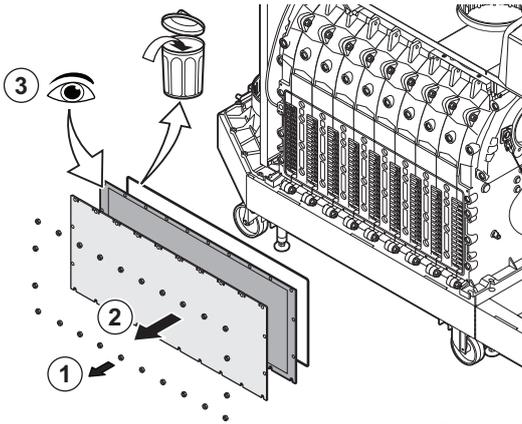


AD-3001587-01

8. Visually inspect the burner area.
9. Use a vacuum cleaner to remove any visible soiling from the burner area.

7.4.6 Cleaning the heat exchanger

Fig.85 Removing the inspection hatch



AD-3001582-01

1. Unscrew the nuts from the inspection hatch on the heat exchanger.
2. Carefully remove the inspection hatch, the insulation cloth and the silicon insulation cord from the heat exchanger.

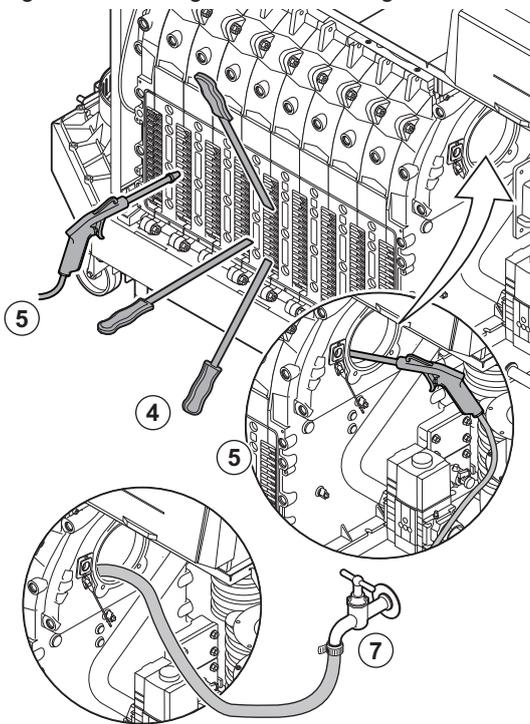


Caution

The insulation cloth may stick to the heat exchanger. Avoid damaging or tearing the insulation cloth.

3. Inspect the insulation cloth and replace if it is faulty or seriously damaged.

Fig.86 Cleaning the heat exchanger



AD-3001583-01

4. Clean the areas between the pins of the heat exchanger using the cleaning knife. Always work from the bottom to the top. Move the cleaning knife between the pins horizontally and diagonally.



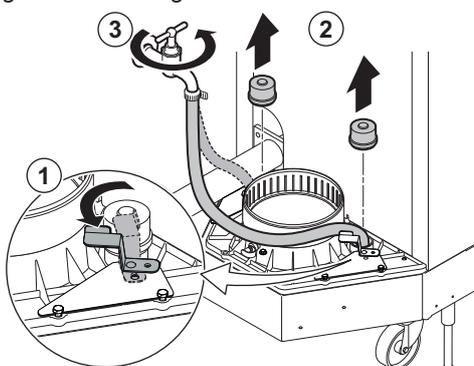
Caution

Always use the cleaning knife specially designed for this boiler. This knife is 560 mm long.

5. Use compressed air to blow the cleaned parts through in turn. Do this from the service side and from the burner area.
6. Fit the inspection hatch and the insulation cloth with a new silicon cord.
7. Use clean water to thoroughly rinse the heat exchanger from the burner area.

7.4.7 Cleaning the condensate collector

Fig.87 Cleaning the condensate collector

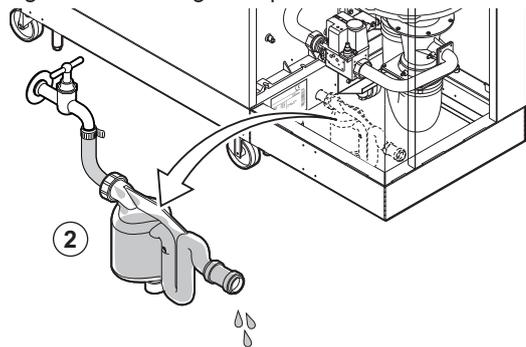


AD-3001607-02

1. Turn both clips counterclockwise to access the sealing caps.
2. Remove both sealing caps from the condensate collector.
3. Thoroughly rinse each side of the condensate collector for at least 5 minutes, with the largest possible water flow.
4. Refit both sealing caps on the condensate collector.
5. Turn both clips clockwise to secure the sealing caps.

7.4.8 Cleaning the siphon

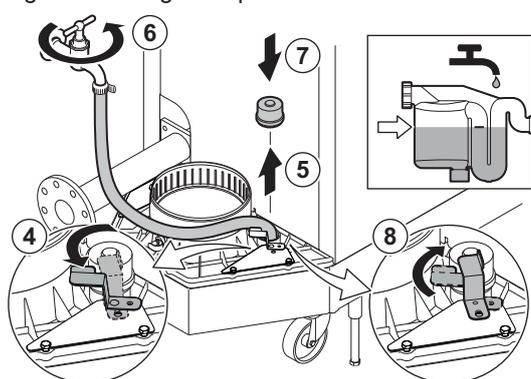
Fig.88 Cleaning the siphon



AD-3001605-01

1. Remove the siphon.
2. Clean the siphon with water.
3. Put the siphon back in place.
4. Turn the clip counterclockwise to access the sealing cap.
5. Remove the sealing cap from the condensate collector.

Fig.89 Filling the siphon



AD-3001606-02

6. Fill the siphon with water up to the mark via the condensate collector.



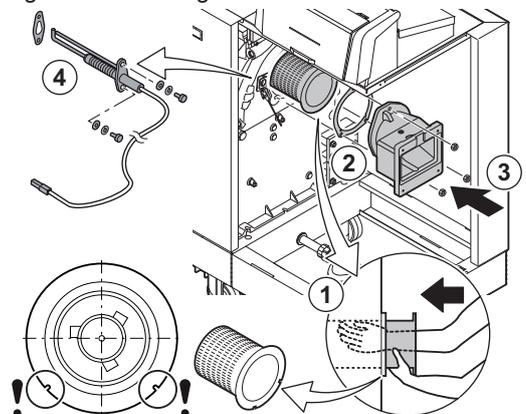
Danger

The siphon must always be sufficiently filled with water. This prevents flue gases from entering the room.

7. Refit the sealing cap on the condensate collector.
8. Turn the clip clockwise to secure the sealing cap.

7.4.9 Assembly after maintenance

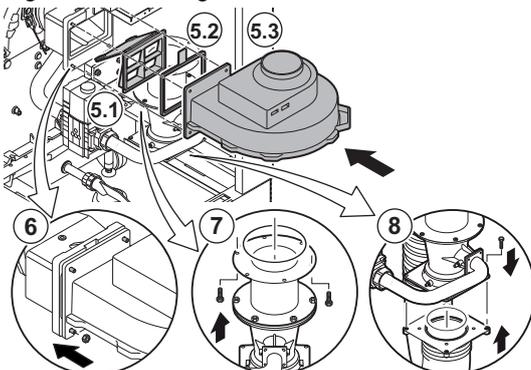
Fig.90 Mounting the burner



AD-3001588-01

1. Mount the burner.
⇒ The burner has two slots at the front. Position these over the two pins at the burner opening.
2. Place a new burner gasket.
3. Mount the adapter.
4. Mount the new ionisation/ignition electrode.

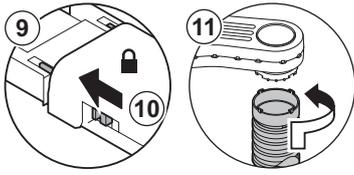
Fig.91 Mounting the fan



AD-3001589-01

5. Mount the fan assembly:
 - 5.1. Place the non-return valve.
 - 5.2. Place the new gasket.
 - 5.3. Mount the fan.
6. Tighten the nuts on the adapter.
7. Tighten the nuts on the venturi.
8. Mount the air supply hose to the venturi.

Fig.92 Fitting the electrical connections and air supply hose



AD-3001590-01

9. Connect the electrical connections to the fan.
10. Lock the fan power plug with the safety slides.
11. Mount the air supply hose to the air box.

7.5 Finalising work

1. Fit all removed parts in the reverse order, but do not close the casing yet.



Caution

During inspection and maintenance operations, always replace all gaskets on the parts removed.

2. Fill the siphon with water.
3. Put the siphon back in place.
4. Carefully open all system and supply valves which were closed to carry out the maintenance.
5. Fill the central heating system with water if necessary.
6. Vent the central heating system.
7. Top up with more water if necessary.
8. Check the tightness of the gas and water connections.
9. Put the boiler back into operation.
10. Carry out an auto-detect when a control board has been replaced or removed from the boiler.
11. Set the boiler to full load and carry out a gas leak detection and a thorough visual check.
12. Set the boiler to normal operation.
13. Close the casing.

8 Troubleshooting

8.1 Error codes

The Gas 320/620 Ace is fitted with an electronic regulation and control unit. The heart of the control is a **e-Smart** microprocessor, which controls and also protects. In the event of an error, a corresponding code is displayed.

Tab.82 Error codes are displayed at three different levels

Code	Type	Description
A .00.00 ⁽¹⁾	Warning	The controls continue to operate, but the cause of the warning must be investigated. A warning can change into a blocking or lock-out.
H .00.00 ⁽¹⁾	Blocking	The controls will stop normal operation, and will check with set intervals if the cause of the blocking still exists. ⁽²⁾ Normal operation will resume when the cause of the blocking has been rectified. A blocking can become a lock-out.
E .00.00 ⁽¹⁾	Lock out	The controls will stop normal operation. The cause of the lock-out must be rectified and the controls must be reset manually.

(1) The first letter indicates the type of error.

(2) For some blocking errors, this checking interval is ten minutes. In those cases, it may seem that the controls do not start automatically. Wait ten minutes before resetting.

The meaning of the code can be found in the various error code tables.

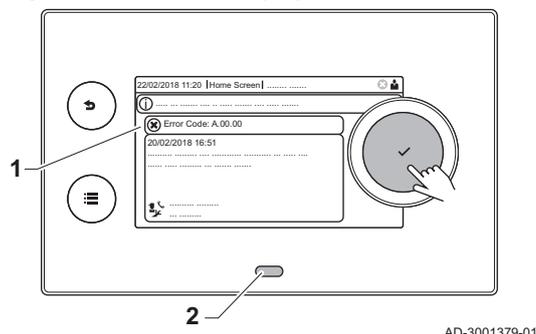


Important

The error code is needed to find the cause of the error quickly and correctly and for any support from Remeha.

8.1.1 Display of error codes

Fig.93 Error code display on HMI T-control



AD-3001379-01

When an error occurs in the installation, the control panel will show the following:

- 1 The display will show a corresponding code and message.
- 2 The status LED of the control panel will show:
 - Continuous green = Normal operation
 - Flashing green = Warning
 - Continuous red = Blocking
 - Flashing red = Lock out

When an error occurs, proceed as follows:

1. Press and hold the ✓ button to reset the appliance.
⇒ The appliance starts up again.
2. If the error code reappears, correct the problem by following the instructions in the error code tables.



Important

Only qualified professionals are authorised to work on the appliance and system.

⇒ The error code remains visible until the problem is solved.

3. Note the error code when the problem cannot be solved and contact your installer.

8.1.2 Warning

Tab.83 Warning codes

Code	Display text	Description	Solution
A.00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range	Zone flow temperature sensor open: <ul style="list-style-type: none"> • Sensor is not present. • Wrong Zone Function setting: check the setting of parameter CP02x. • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: make sure that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
A.00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range	Zone flow temperature sensor short-circuited: <ul style="list-style-type: none"> • Sensor is not present. • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
A.01.21	Dhw Temp GradLevel3	Maximum Dhw Temperature Gradient Level3 Exceeded	Temperature warning: <ul style="list-style-type: none"> • Check the flow.
A.02.06	Water Press Warning	Water Pressure Warning active	Water pressure warning: <ul style="list-style-type: none"> • Water pressure too low; check the water pressure
A.02.37	Uncritic device lost	Uncritical device has been disconnected	SCB not found: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Faulty SCB: Replace SCB
A.02.45	Full Can Conn Matrix	Full Can Connection Matrix	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
A.02.46	Full Can Device Adm	Full Can Device Administration	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect

Code	Display text	Description	Solution
A.02.49	Failed Init Node	Failed Initialising Node	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
A.02.55	Inval or miss SerNR	Invalid or missing device serial number	Contact your supplier.
A.03.17	Safety check	Periodically safety check ongoing	Safety check procedure active: <ul style="list-style-type: none"> • No action

8.1.3 Blocking

Tab.84 Blocking codes

Code	Display text	Description	Solution
H.00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range	Domestic hot water temperature sensor open: <ul style="list-style-type: none"> • Sensor is not present • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
H.00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range	Domestic hot water temperature sensor short-circuited: <ul style="list-style-type: none"> • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
H.00.36	T 2nd Return Open	Second return temperature sensor is either removed or measures a temperature below range	Second return temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
H.00.37	T 2nd Return Closed	Second return temperature sensor is either shorted or measures a temperature above range	Second return temperature sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
H.01.00	Comm Error	Communication Error occurred	Communication error with the security kernel: <ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH
H.01.06	Max Delta TH-TF	Maximum difference between heat exchanger temperature and flow temperature	Maximum difference between heat exchanger and flow temperature exceeded: <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves). - Check the water pressure. - Check the cleanliness of the heat exchanger. - Check that the installation has been de-aired. - Check water quality according to supplier's specifications. • Sensor error: <ul style="list-style-type: none"> - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.

Code	Display text	Description	Solution
H.01.07	Max Delta TH-TR	Maximum difference between heat exchanger temperature and return temperature	<p>Maximum difference between heat exchanger and return temperature exceeded:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves). - Check the water pressure. - Check the cleanliness of the heat exchanger. - Check that the installation has been correctly vented to remove air. • Sensor error: <ul style="list-style-type: none"> - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.
H.01.08	CH Temp Grad. Level3	Maximum CH temperature gradient level3 exceeded	<p>Maximum heat exchanger temperature increase has been exceeded:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger - Check that the central heating system has been correctly vented to remove air • Sensor error: <ul style="list-style-type: none"> - Check that the sensors are operating correctly - Check that the sensor has been fitted properly
H.01.09	Gas Pressure Switch	Gas Pressure Switch	<p>Gas pressure too low:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Make sure that the gas valve is fully opened - Check the gas supply pressure - If a gas filter is present: Make sure that the filter is clean • Wrong setting on the gas pressure switch: <ul style="list-style-type: none"> - Make sure that the switch has been fitted properly - Replace the switch if necessary
H.01.13	Max THeat Ex	Heat Exchanger temperature has exceeded the maximum operating value	<p>Maximum heat exchanger temperature exceeded:</p> <ul style="list-style-type: none"> • Check the circulation (direction, pump, valves). • Check the water pressure. • Check that the sensors are operating correctly. • Check that the sensor has been fitted properly. • Check the cleanliness of the heat exchanger. • Check that the central heating system has been correctly vented to remove air.
H.01.14	Max Tflow	Flow temperature has exceeded the maximum operating value	<p>Flow temperature sensor above normal range:</p> <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger
H.01.15	Max Tflue Gas	Flue gas temperature has exceeded the maximum operating value	<p>Maximum flue gas temperature exceeded:</p> <ul style="list-style-type: none"> • Check the flue gas outlet system • Check the heat exchanger to ensure that the flue gas side is not clogged • Faulty sensor: replace the sensor

Code	Display text	Description	Solution
H.02.00	Reset In Progress	Reset In Progress	Reset procedure active: <ul style="list-style-type: none"> • No action
H.02.02	Wait Config Number	Waiting For Configuration Number	Configuration error or unknown configuration number: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.03	Conf Error	Configuration Error	Configuration error or unknown configuration number: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.04	Parameter Error	Parameter Error	Factory settings incorrect: <ul style="list-style-type: none"> • Parameters are not correct: <ul style="list-style-type: none"> - Restart the boiler - Reset CN1 and CN2 - Replace the CU-GH PCB
H.02.05	CSU CU mismatch	CSU does not match CU type	Configuration error: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.09	Partial block	Partial blocking of the device recognized	Blocking input active or frost protection active: <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.10	Full Block	Full blocking of the device recognized	Blocking input is active (without frost protection): <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.12	Release Signal	Release Signal input of the Control Unit from device external environment	Waiting time release signal has elapsed: <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty CSU: replace CSU.
H.02.18	OBD Error	Object Dictionary Error	<ul style="list-style-type: none"> • Reset CN1 and CN2  See The data plate for the CN1 and CN2 values.
H.02.36	Funct device lost	Functional device has been disconnected	Communication error with the SCB PCB: <ul style="list-style-type: none"> • Bad connection with BUS: check the wiring. • No PCB: reconnect PCB or retrieve from memory using auto-detect.
H.02.48	Funct Gr Conf Fault	Function Group Configuration Fault	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
H.02.50	Funct Gr Comm Err	Function Group Communication Error	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect.
H.02.62	Unsupported function	Zone B doesn't support the selected function	Zone B function setting is not correct or is not allowed on this circuit: <ul style="list-style-type: none"> • Check the setting of parameter CP021.
H.02.64	Unsupported function	Zone D doesn't support the selected function	Zone C function (DHW) setting is not correct or is not allowed on this circuit: <ul style="list-style-type: none"> • Check the setting of parameter CP022.
H.02.80	Missing Cascade Ctrl	Missing Cascade controller	Cascade controller not found: <ul style="list-style-type: none"> • Reconnect the cascade master • Carry out an auto-detect

Code	Display text	Description	Solution
H.03.00	Parameter Error	Safety parameters level 2, 3, 4 are not correct or missing	Parameter error: security kernel <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH
H.03.01	CU to GVC data error	No valid data from CU to GVC received	Communication error with the CU-GH: <ul style="list-style-type: none"> Restart the boiler
H.03.02	Flame loss detected	Measured ionisation current is below limit	No flame during operation: <ul style="list-style-type: none"> No ionisation current: <ul style="list-style-type: none"> Vent the gas supply to remove air Check that the gas valve is fully opened Check the gas supply pressure Check the operation and setting of the gas valve unit Check that the air supply inlet and flue gas outlet are not blocked Check that there is no recirculation of flue gases
H.03.05	Internal blocking	Gas Valve Control internal blocking occurred	Security kernel error: <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH

8.1.4 Locking

Tab.85 Locking codes

Code	Display text	Description	Solution
E.00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range	Zone flow temperature sensor open: <ul style="list-style-type: none"> Sensor is not present. Wrong Zone Function setting: check the setting of parameter CP02x. Bad connection: check the wiring and connectors. Incorrectly fitted sensor: make sure that the sensor has been correctly fitted. Faulty sensor: replace the sensor.
E.00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range	Zone flow temperature sensor short-circuited: <ul style="list-style-type: none"> Sensor is not present. Bad connection: check the wiring and connectors. Incorrectly fitted sensor: check that the sensor has been correctly fitted. Faulty sensor: replace the sensor.
E.00.04	TReturn Open	Return temperature sensor is either removed or measures a temperature below range	Return temperature sensor open: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor
E.00.05	TReturn Closed	Return temperature sensor is either shorted or measures a temperature above range	Return temperature sensor short-circuited: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.00.08	THeat Ex Open	Heat exchanger temperature sensor is either removed or measures a temperature below range	Heat exchanger temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.09	THeat Ex Closed	Heat exchanger temperature sensor is either shorted or measures a temperature above range	Heat exchanger temperature sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.20	TFlue Gas Open	Flue gas temperature sensor is either removed or measures a temperature below range	Open circuit in flue gas sensor: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.21	TFlue Gas Closed	Flue gas temperature sensor is either shorted or measures a temperature above range	Flue gas sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.40	WaterPressureOpen	Water pressure sensor is either removed or measures a temperature below range	Hydraulic pressure sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.41	WaterPressureClosed	Water pressure sensor is either shorted or measures a temperature above range	Hydraulic pressure sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence	Flame loss occurs 5 times: <ul style="list-style-type: none"> • Vent the gas supply to remove air • Check that the gas valve is fully opened • Check the gas supply pressure • Check the operation and setting of the gas valve unit • Check that the air supply inlet and flue gas outlet are not blocked • Check that there is no recirculation of flue gases
E.01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature	Flow and return reversed: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Water circulation in wrong direction: check the circulation (direction, pump, valves) • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Malfunctioning sensor: check the Ohmic value of the sensor • Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.02.04	Parameter Error	Parameter Error	Configuration error: <ul style="list-style-type: none"> • Reset CN1 and CN2  See The data plate for the CN1 and CN2 values.
E.02.13	Blocking Input	Blocking Input of the Control Unit from device external environment	Blocking input is active: <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters
E.02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Faulty CSU: Replace CSU
E.02.17	GVC CommTimeout	Gas Valve Control unit communication has exceeded feedback time	Communication error with the security kernel: <ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH
E.02.35	Safety device lost	Safety critical device has been disconnected	Communication fault <ul style="list-style-type: none"> • Carry out an auto-detect
E.02.47	Failed Conn Funct Gr	Failed Connecting Function Groups	Function group not found: <ul style="list-style-type: none"> • Carry out an auto-detect • Restart the boiler • Replace the CU-GH
E.02.48	Funct Gr Conf Fault	Function Group Configuration Fault	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect.
E.02.70	HRU test error	External heat recovery unit test failed	Heat recovery unit non-return valve check failed: <ul style="list-style-type: none"> • Check the external heat recovery unit non-return valve.
E.04.00	Parameter error	Safety parameters Level 5 are not correct or missing	Replace the CU-GH.
E.04.01	TFlow Closed	Flow temperature sensor is either shorted or measuring a temperature above range	Flow temperature sensor short circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.04.02	TFlow Open	Flow temperature sensor is either removed or measuring a temperature below range	Flow temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
E.04.03	Max Flow temp	Measured flow temperature above safety limit	No flow or insufficient flow: <ul style="list-style-type: none"> • Check the circulation (direction, pump, valves) • Check the water pressure • Check the cleanliness of the heat exchanger
E.04.04	TFlue Closed	Flue temperature sensor is either shorted or measuring a temperature above range	Flue gas temperature sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.04.05	TFlue Open	Flue temperature sensor is either removed or measuring a temperature below range	Flue gas temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected	Flow temperature sensor deviation: <ul style="list-style-type: none"> • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.08	Safety input	Safety input is open	Air pressure differential switch activated: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Pressure in flue gas duct is or was too high: <ul style="list-style-type: none"> - Non-return valve does not open - Siphon blocked or empty - Check that the air supply inlet and flue gas outlet are not blocked - Check the cleanliness of the heat exchanger
E.04.09	TFlue Sensor	Deviation in flue sensor 1 and flue sensor 2 detected	Flue gas temperature sensor deviation: <ul style="list-style-type: none"> • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.10	Unsuccessful start	5 Unsuccessful burners starts detected	Five failed burner starts: <ul style="list-style-type: none"> • No ignition spark: <ul style="list-style-type: none"> - Check the wiring between the CU-GH and the ignition transformer - Check the ionisation/ignition electrode - Check breakdown to earth - Check the condition of the burner cover - Check the earthing - Replace the CU-GH • Ignition spark but no flame: <ul style="list-style-type: none"> - Vent the gas pipes to remove air - Check that the air supply inlet and flue gas outlet are not blocked - Check that the gas valve is fully opened - Check the gas supply pressure - Check the operation and setting of the gas valve unit - Check the wiring on the gas valve unit - Replace the CU-GH • Flame present, but ionisation has failed or is inadequate: <ul style="list-style-type: none"> - Check that the gas valve is fully opened - Check the gas supply pressure - Check the ionisation/ignition electrode - Check the earthing - Check the wiring on the ionisation/ignition electrode.
E.04.11	VPS	VPS Gas Valve proving failed	Gas leakage control fault: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Gas leakage control VPS faulty: Replace the valve proving system (VPS) • Gas valve unit faulty: Replace the gas valve unit
E.04.12	False flame	False flame detected before burner start	False flame signal: <ul style="list-style-type: none"> • The burner remains very hot: Set the O₂ • Ionisation current measured but no flame should be present: check the ionisation/ignition electrode • Faulty gas valve: replace the gas valve • Faulty ignition transformer: replace the ignition transformer

Code	Display text	Description	Solution
E.04.13	Fan	Fan speed has exceeded normal operating range	Fan fault: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Fan operates when it should not be operating: check for excessive chimney draught • Faulty fan: replace the fan
E.04.15	FlueGas Pipe Blocked	The flue gas pipe is blocked	Flue gas outlet is blocked: <ul style="list-style-type: none"> • Check that the flue gas outlet is not blocked • Restart the boiler
E.04.17	GasValve Driver Err.	The driver for the gas valve is broken	Gas valve unit fault: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Faulty gas valve unit: Replace the gas valve unit
E.04.23	Internal Error	Gas Valve Control internal locking	<ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH
E.04.250	Internal error	Gas valve relay error detected	Internal error: <ul style="list-style-type: none"> • Replace the PCB.
E.04.254	Unknown	Unknown	Unknown error: <ul style="list-style-type: none"> • Replace the PCB.

8.2 Error history

The control panel has an error history that stores the last 32 errors. Specific details are stored for each error, for example:

- Status
- Sub-status
- Flow temperature
- Return temperature

These details and others can contribute to the error solution.

8.2.1 Reading out and clearing the error history

You can read out the errors on the control panel. The error history can also be cleared.

▶▶ ≡ > **Error History**

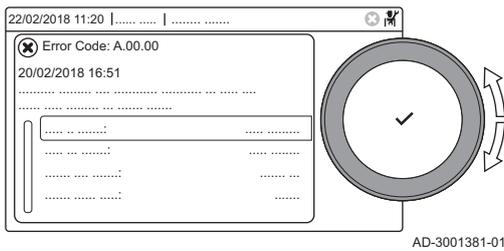


Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

1. Press the ≡ button.
 2. Select **Error History**.
 - Enable installer access if **Error History** is not available.
 - 2.1. Select **Enable installer access**.
 - 2.2. Use code **0012**.
- ⇒ A list up to 32 most recent errors is displayed with:
- The error code.
 - A short description.
 - The date.

Fig.94 Error details

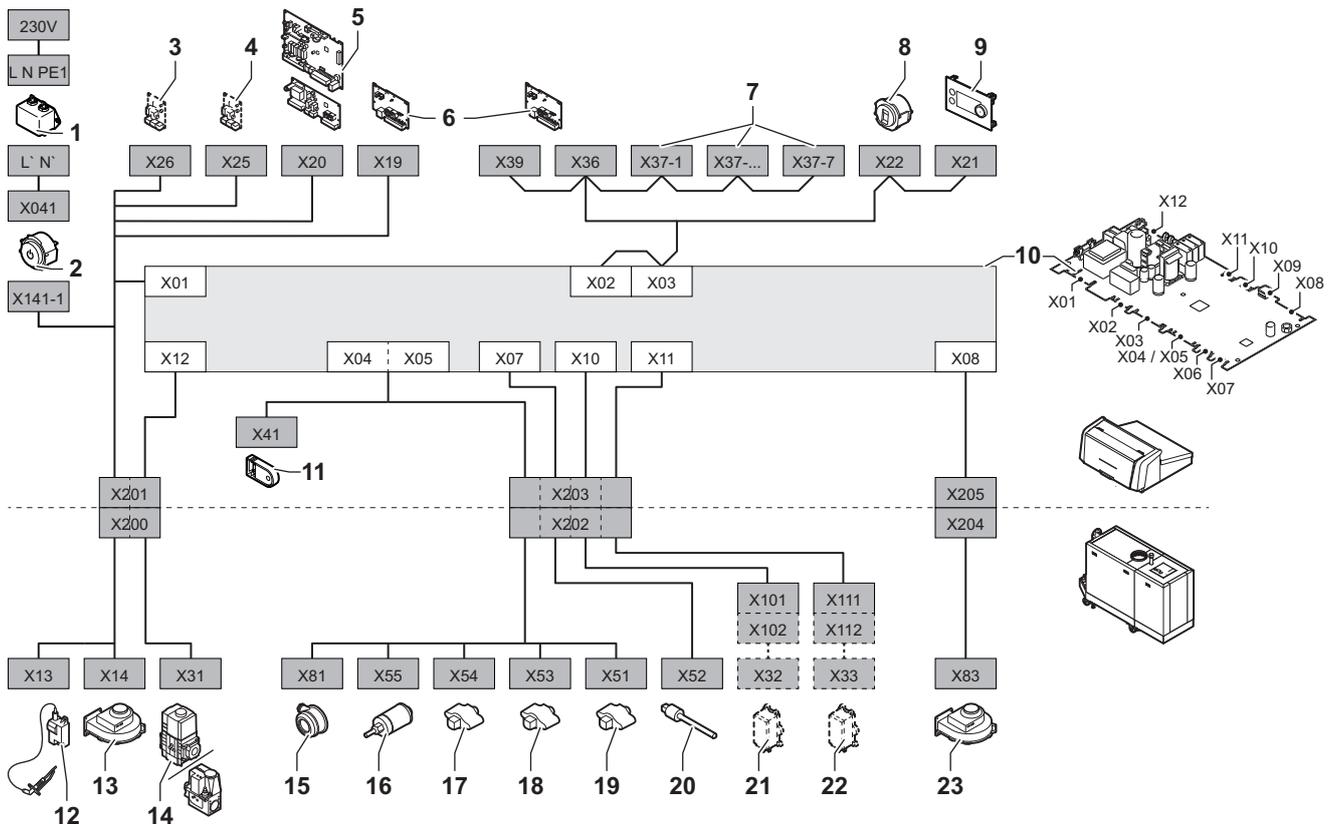


3. Select the error code you want to investigate.
⇒ The display shows an explanation of the error code and several details of the appliance when the error occurred.
4. To clear the error memory, press and hold the ✓ button.

9 Technical specifications

9.1 Electrical diagram

Fig.95 Electrical diagram



AD-3001548-03

- | | |
|---|--------------------------------------|
| 1 Line filter | 12 Ignition transformer power supply |
| 2 On / off switch | 13 Fan power supply |
| 3 SCB expansion board power supply | 14 Gas control valve |
| 4 SCB expansion board power supply | 15 Air pressure differential switch |
| 5 SCB zone expansion board power supply | 16 Water pressure sensor |
| 6 CB-01 connection board power supply (X19) and CAN connections (X36 and X39) | 17 Return temperature sensor |
| 7 SCB expansion board CAN connections (X37-1 - X37-7) | 18 Heat exchanger temperature sensor |
| 8 Service connector | 19 Flow temperature sensor |
| 9 Control panel (HMI) | 20 Flue gas temperature sensor |
| 10 Control unit CU-GH13 | 21 Valve proving system (VPS) |
| 11 Configuration storage unit (CSU) | 22 Gas pressure signal (GPS) |
| | 23 Fan PWM signal |

9.2 Bluetooth® wireless technology

Fig.96 Logo



AD-3001854-01

This product is equipped with Bluetooth wireless technology.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by BDR Thermea Group is under license. Other trademarks and trade names are those of their respective owners.

10 Spare parts

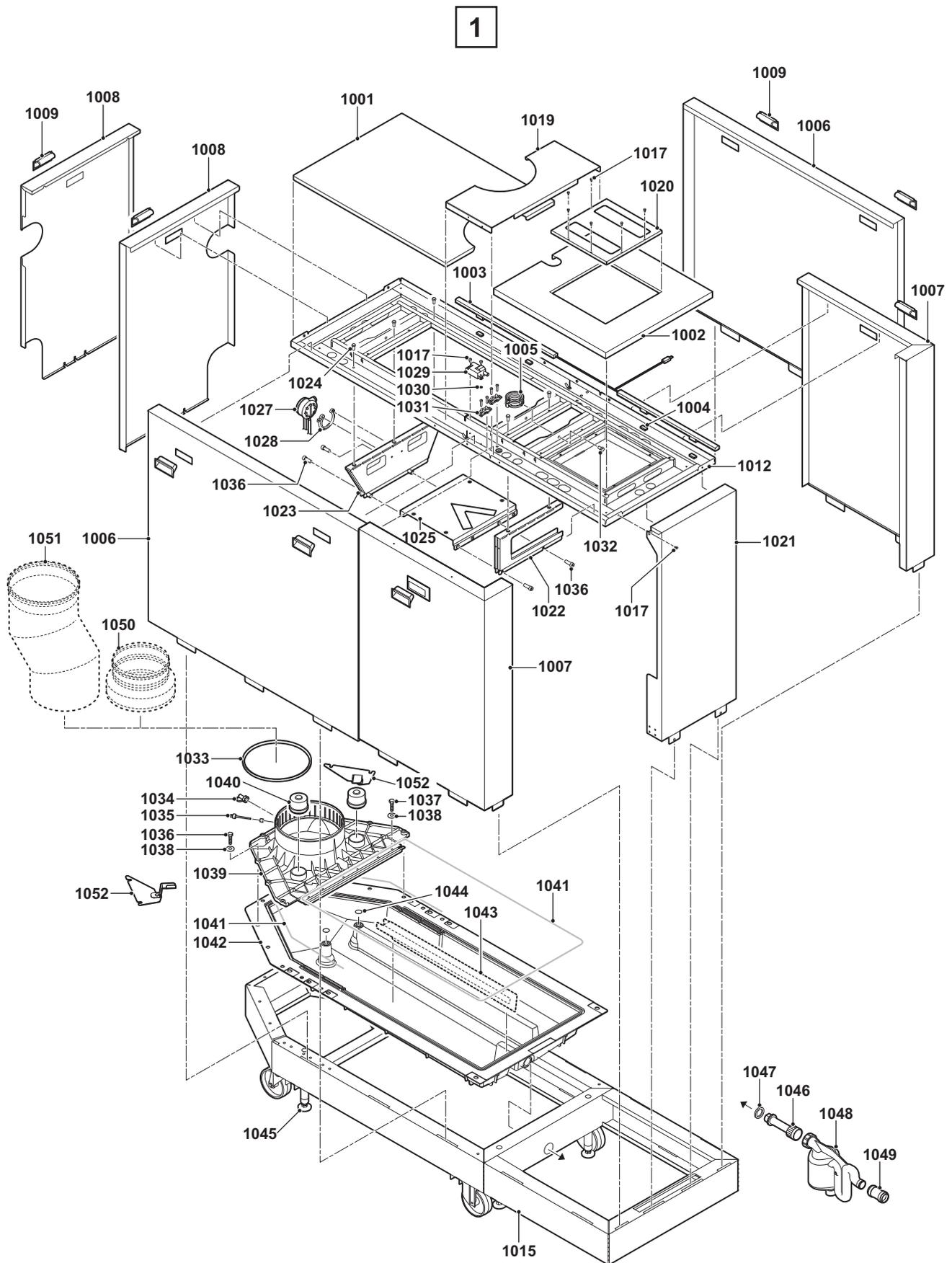
10.1 General

Only replace defective or worn boiler parts with original parts or recommended parts.

Send the part to be replaced to the Remeha Quality Control department if the relevant part is covered by the guarantee (see the General Terms of Sale and Delivery).

10.2 Exploded views

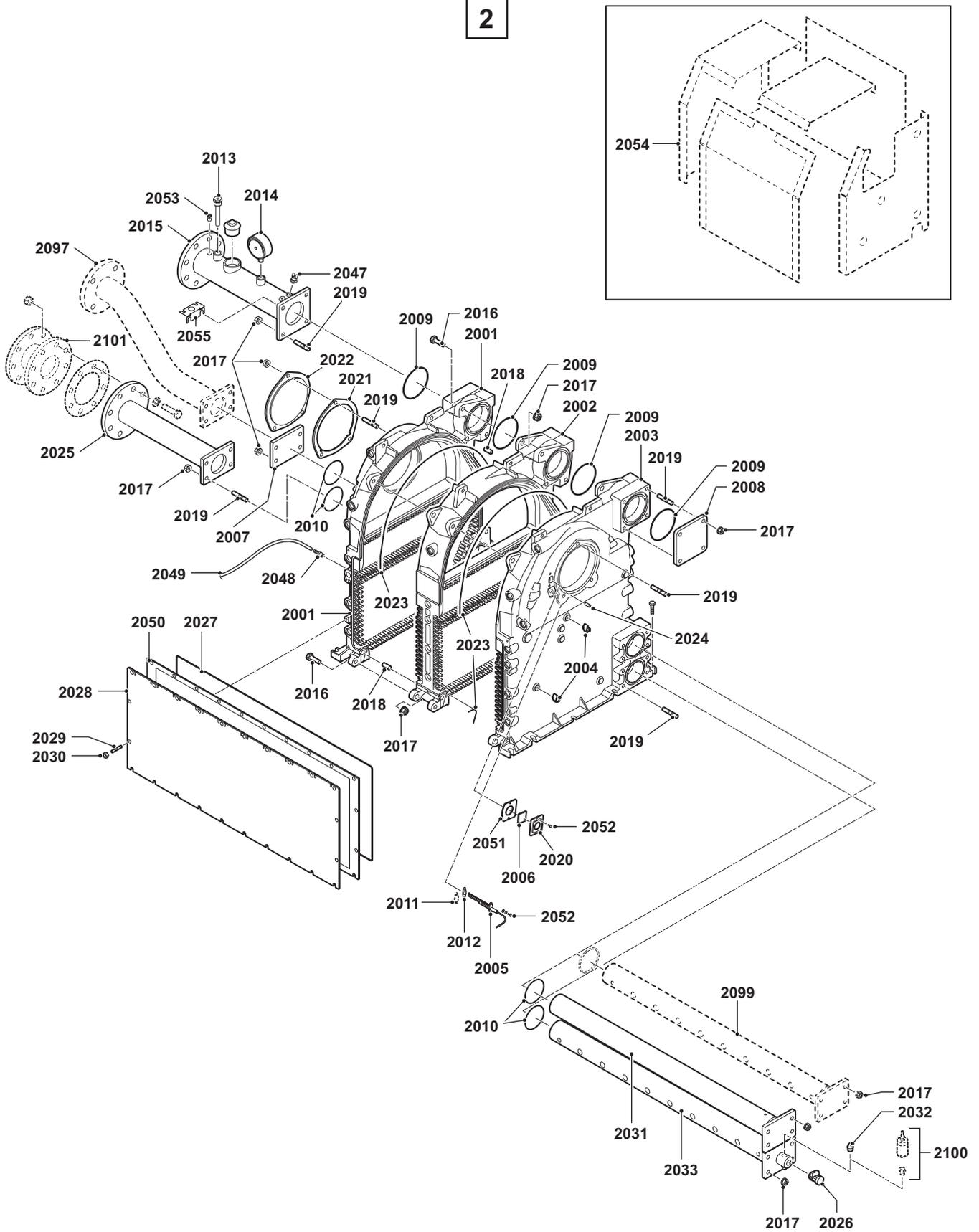
Fig.97 Gas 320/620 Ace - Casing



AD-480020-02

Fig.98 Gas 320/620 Ace - Heat exchanger and burner

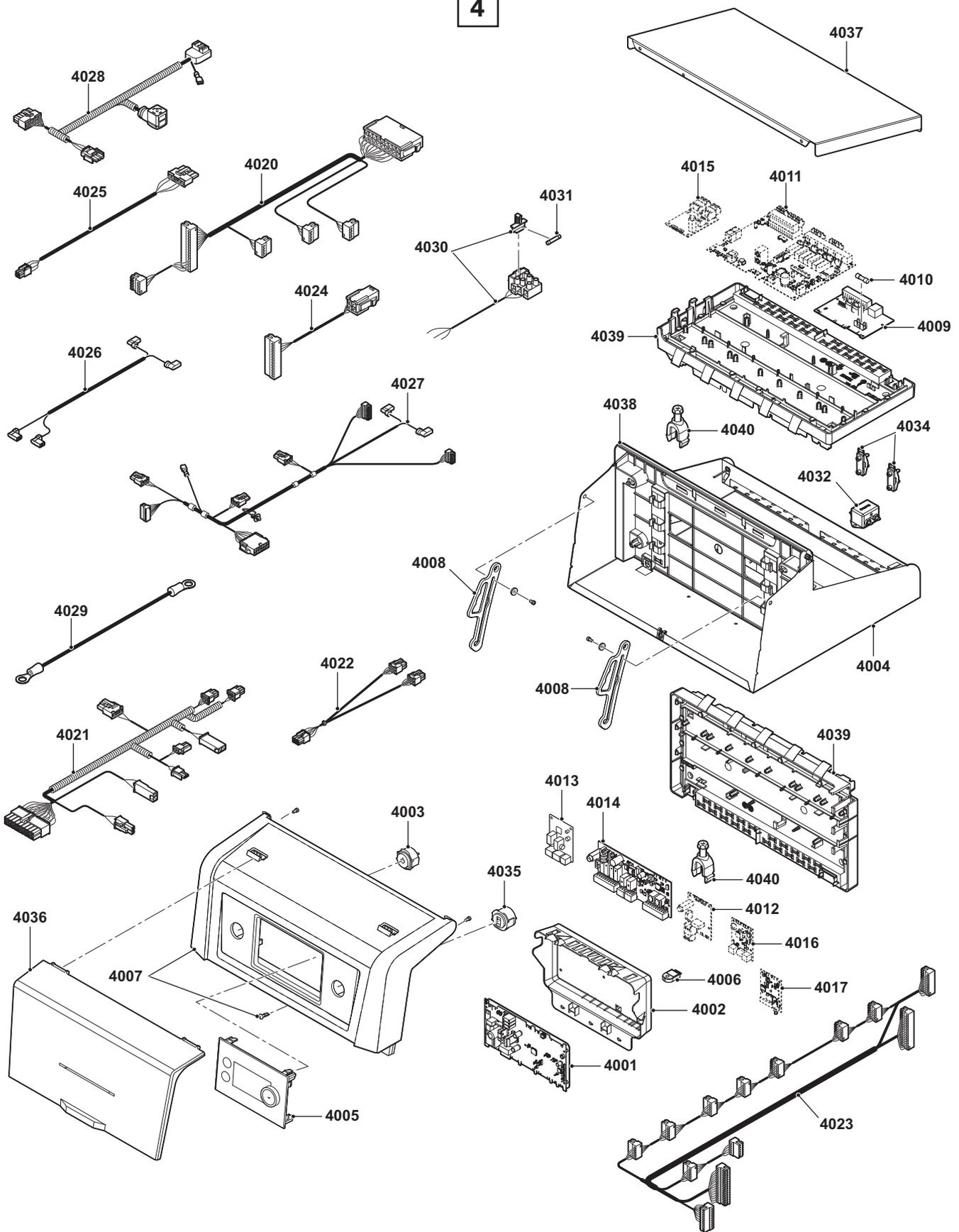
2



AD-4800021-01

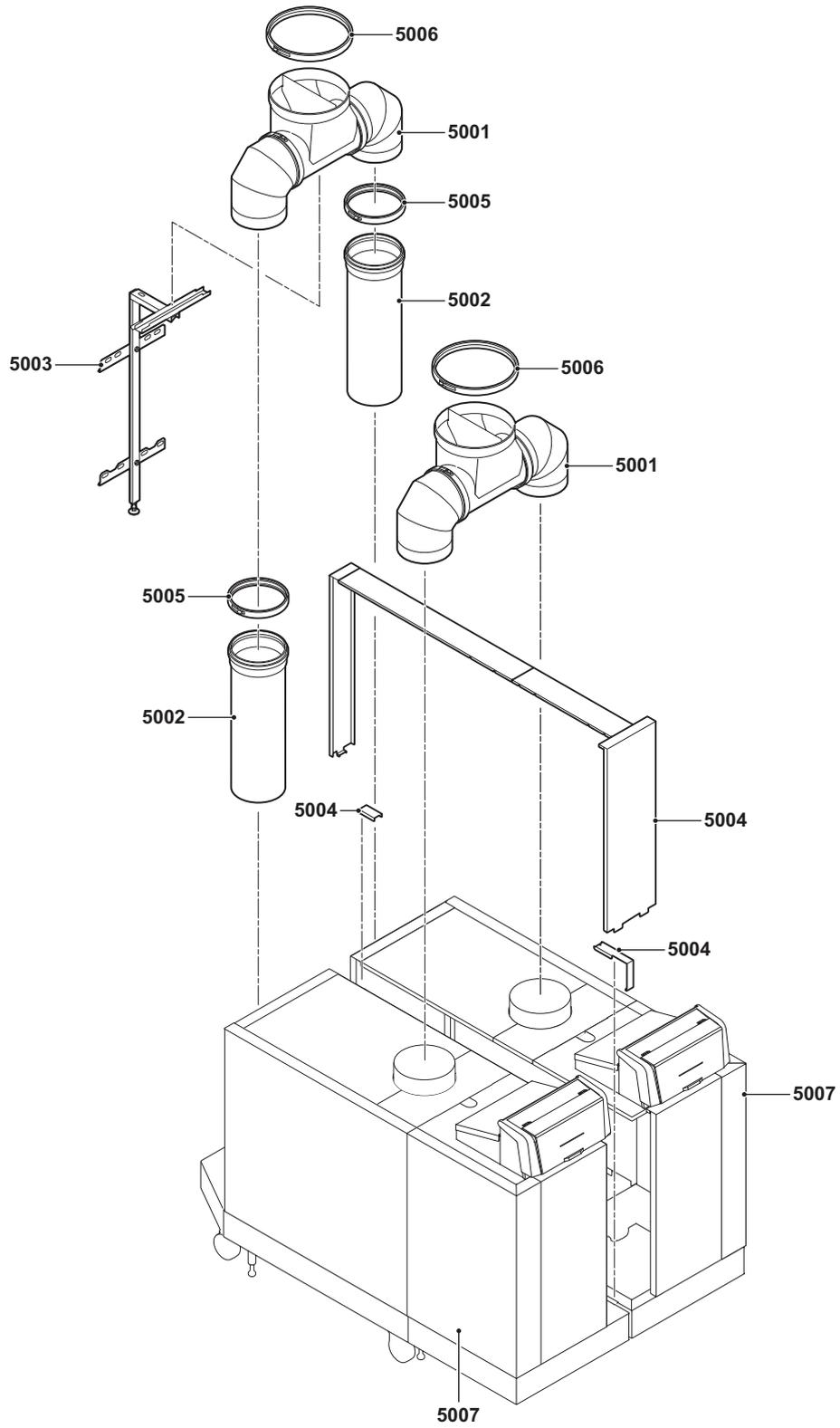
Fig.100 Gas 320/620 Ace - Control box

4



AD-4800018-01

Fig.101 Gas 620 Ace



10.3 Parts list

Tab.86 Gas 320/620 Ace - Casing

Item	Part number	Description
1001	S103092	Top cover 5-7 sections
1001	S103091	Top cover 8-10 sections
1002	S103095	Top cover front (outer part)
1003	7749834	LED lighting
1003	7665256	Magnets
1004	7766920	Clips for LED lighting
1005	S103242	Gas pipe bracket
1006	S103086	Side cover 5-7 sections (corner left side)
1006	S103084	Side cover 8-10 sections (corner left side)
1006	S103087	Side cover 5-7 sections (corner right side)
1006	S103085	Side cover 8-10 sections (corner right side)
1007	S103082	Side cover right
1007	S103083	Side cover left
1007	7741172	Side cover right
1007	7741201	Side cover left
1008	S103089	Back cover left
1008	S103090	Back cover right
1009	S100419	Cover handle
1012	S103152	Frame top 5-7 sections
1012	S103153	Frame top 8-10 sections
1015	S103144	Frame bottom 5-7 sections
1015	S103145	Frame bottom 8-10 sections
1017	S14254	Sheet metal screw 4.2 x 9.5 (20 pcs.)
1019	S103093	Top cover middle
1020	7741208	Top cover front
1021	S103088	Front cover
1022	S103154	Front frame support bracket
1023	S103155	Back frame support bracket
1024	S100570	Bolt M5 x 20 mm (10 pcs.)
1025	S103156	Air box bracket
1027	S103246	Pressure differential switch
1028	S103247	Pressure differential switch clip (5 pcs.)
1029	S103251	Ignition transformer
1030	S21473	Washer spring ring a4.3 (10 pcs.)
1031	S103315	Cable clamp (10 pcs.)
1032	S103248	Bolt M8 x 10 mm (5 pcs.)
1033	S103140	Flue gas outlet sealing ring \varnothing 250 mm (2 pcs.)
1034	S103244	Flue gas measuring point cap (2 pcs.)
1035	S59659	Tulle for flue gas pipe
1035	7740176	Flue gas temperature sensor
1036	S103250	Bolt M8 x 35 mm (10 pcs.)
1037	S103260	Bolt M8 x 20 mm (10 pcs.)
1038	S103249	Washer \varnothing 8.4 mm (10 pcs.)
1039	S103137	Flue gas discharge adapter 5+8 sections
1039	S103138	Flue gas discharge adapter 6+9 sections
1039	S103139	Flue gas discharge adapter 7+10 sections
1040	S103141	Sealing cap (2 pcs.)
1041	S101372	Sealing silicon \varnothing 10 mm (5 m)
1042	S103135	Condensate collector 5-7 sections

Item	Part number	Description
1042	S103136	Condensate collector 8-10 sections
1043	S103302	Condensate collector strip 6 sections
1044	S62713	O-ring ø 20 x 2.5 mm (10 pcs.)
1045	S103243	Levelling foot (2 pcs.)
1046	S103143	Syphon connection
1047	S103261	Sealing ring 45 x 34 x 3 mm (10 pcs.)
1048	S103142	Syphon assembly
1049	7741277	Sleeve for syphon
1050	S103179	Adapter 250 - 200 mm
1050	7600367	Clamp band and gasket ring ø 200 mm
1051	S103178	Flue gas adapter ø 250 mm
1051	7600368	Clamp band and gasket ring ø 250 mm
1052	7808003	Bracket

Tab.87 Gas 320/620 Ace - Heat exchanger and burner

Item	Part number	Description
2001	7741215	Section front
2002	7768023	Section middle (basic)
2002	7750343	Section middle (extended)
2003	7741214	Section end
2004	7623837	NTC sensor
2005	7774699	Ignition/ionisation electrode
2006	S45004	Inspection glass with gasket and screws
2007	S100430	Blanking flange return
2008	S100431	Blanking flange flow
2009	S103263	O-ring ø 107 x 5 mm (4 pcs.)
2010	S103264	O-ring ø 82 mm (8 pcs.)
2011	S103265	Cover plate
2012	S62105	Gasket for electrode (10 pcs.)
2013	S42649	Thermostat pocket ½"
2014	S103291	Pressure gauge 0-10 bar
2015	S103030	Flow pipe 5+8 sections
2015	S103031	Flow pipe 6+9 sections
2015	S103032	Flow pipe 7+10 sections
2016	7750414	Screw M12 x 40 mm (10pcs.)
2017	S103283	Flange nut M12 (10 pcs.)
2018	7750418	Dowel pin Ø12H8 x 20 mm (10pcs.)
2019	7750419	Stud M12 x 35 mm (10pcs.)
2020	S54822	Mounting frame for inspection glass
2021	S103266	Gasket for cover plate/burner (2 pcs.)
2022	S57785	Cover plate for burner hole
2023	S100643	Silicone sealant
2024	S103267	Dowel for burner (10 pcs.)
2025	S103033	Connection piece return 5+8 sections
2025	S103034	Connection piece return 6+9 sections
2025	S103035	Connection piece return 7+10 sections
2026	S103304	Filling and drain cock ½"
2027	S101368	Sealing silicon red ø 7 mm (5 m)
2028	S57720	Inspection hatch heat exchanger 5 sections
2028	S57721	Inspection hatch heat exchanger 6 sections
2028	S57722	Inspection hatch heat exchanger 7 sections
2028	S57723	Inspection hatch heat exchanger 8 sections

Item	Part number	Description
2028	S57724	Inspection hatch heat exchanger 9 sections
2028	S103148	Inspection hatch heat exchanger 10 sections
2029	S100549	Stud M8 x 20 mm (25 pcs.)
2030	S100556	Nut M8 (25 pcs.)
2031	S57738	2nd return water pipe blind 5 sections
2031	S57739	2nd return water pipe blind 6 sections
2031	S57740	2nd return water pipe blind 7 sections
2031	S57741	2nd return water pipe blind 8 sections
2031	S57742	2nd return water pipe blind 9 sections
2031	S103036	2nd return water pipe blind 10 sections
2032	S100532	Plug 3/8"
2033	S103269	Return water distribution pipe 5 sections
2033	S103270	Return water distribution pipe 6 sections
2033	S103271	Return water distribution pipe 7 sections
2033	S103272	Return water distribution pipe 8 sections
2033	S103273	Return water distribution pipe 9 sections
2033	S103038	Return water distribution pipe 10 sections
2047	7623837	NTC sensor
2048	S103188	Nipple incl. silicone tube 8x2
2049	S103274	Silicone tube 4/8 1300 mm
2050	S100668	Insulation inspection hatch heat exchanger 5 sections
2050	S100669	Insulation inspection hatch heat exchanger 6 sections
2050	S100670	Insulation inspection hatch heat exchanger 7 sections
2050	S100671	Insulation inspection hatch heat exchanger 8 sections
2050	S100672	Insulation inspection hatch heat exchanger 9 sections
2050	S103149	Insulation inspection hatch heat exchanger 10 sections
2051	S35458	Gasket for inspection glass (5 pcs.)
2052	S48950	Screw M4 x 10 mm (50 pcs.)
2053	S41601	Air bleed 1/8"
2054	S101806	Heat exchanger insulation 5 sections
2054	S101807	Heat exchanger insulation 6 sections
2054	S103307	Heat exchanger insulation 7 sections
2054	S103308	Heat exchanger insulation 8 sections
2054	S103309	Heat exchanger insulation 9 sections
2054	S103310	Heat exchanger insulation 10 sections
2055	7600397	Hose bracket
2097	S103039	2nd return pipe 5-8 sections
2097	S103040	2nd return pipe 6-9 sections
2097	S103041	2nd return pipe 7-10 sections
2099	S57743	2nd return distribution pipe 5 sections
2099	S57744	2nd return distribution pipe 6 sections
2099	S57745	2nd return distribution pipe 7 sections
2099	S57746	2nd return distribution pipe 8 sections
2099	S57747	2nd return distribution pipe 9 sections
2099	S103037	2nd return distribution pipe 10 sections
2100	7750082	Water pressure sensor
2101	S101775	Pump adapter

Tab.88 Gas 320/620 Ace - Gas / air

Item	Part number	Description
3001	S103275	Gas control valve 5 sections
3001	S103276	Gas control valve 6 sections

Item	Part number	Description
3001	S103277	Gas control valve 7-9 sections
3002	S57770	Fan 5-6 sections
3003	S103150	Fan 7-10 sections
3004	S100347	Burner 5 sections
3004	S103077	Burner 6 sections
3004	S100329	Burner 7 sections
3004	S100330	Burner 8 sections
3004	S100331	Burner 9 sections
3004	S103078	Burner 10 sections
3005	S57791	Venturi assembly 5 sections
3005	S57792	Venturi assembly 6 sections
3005	S57793	Venturi assembly 7-9 sections
3005	S103079	Venturi assembly 10 sections
3006	S103151	Gas control valve 10 sections
3007	S103073	Venturi - fan connecting piece 7-10 sections
3007	S103072	Venturi - fan connecting piece 5-6 sections
3009	S103071	Non return valve
3010	S103074	Gas filter HFVR
3015	S103075	Air box
3016	S44483	Nut M8 (10 pcs.)
3017	S103140	Flue gas outlet sealing ring \varnothing 250 mm (2 pcs.)
3018	S100570	Bolt M5 x 20 mm (10 pcs.)
3020	S103042	Gas supply pipe 5-9 sections (left)
3020	S103043	Gas supply pipe 5-9 sections (right)
3023	S103279	Pressure test nipple 1/8" (2 pcs.) incl. loctite
3025	S103280	Gasket \varnothing 56 x 42 x 2 (5 pcs.)
3026	S103047	Gas supply pipe 5+6 sections bottom (right)
3026	S103048	Gas supply pipe 7-9 sections bottom (left)
3026	S103049	Gas supply pipe 7-9 sections bottom (right)
3026	S103046	Gas supply pipe 5+6 sections bottom (left)
3027	S103281	Gasket for venturi (2 pcs.)
3031	S103266	Gasket for cover plate/burner (2 pcs.)
3033	S103283	Flange nut M12 (10 pcs.)
3035	S103070	Mixing adapter
3037	S103284	O-ring \varnothing 180 x 3,5 mm (5 pcs.)
3039	S103285	O-ring \varnothing 111 x 4 mm (2 pcs.)
3040	S46687	Flange nut M12 (10 pcs.)
3041	S103286	Mounting plate fan
3042	S59650	Gasket for fan
3044	S103288	Hose \varnothing 6 x 1 mm (0.6m)
3045	S103289	Coupling 90 degrees M5 x 6 mm (5 pcs.)
3046	S103076	Flexible hose complete
3047	S103044	Gas supply pipe 10 sections (left)
3047	S103045	Gas supply pipe 10 sections (right)
3048	S103051	Gas supply pipe 10 sections bottom (right)
3048	S103050	Gas supply pipe 10 sections bottom (left)
3049	S59141	Screw M5 x 18 mm (15 pcs.)
3049	S15524	Bolt M8 x 16 mm (10 pcs.)
3050	S100619	O-ring \varnothing 52.39 x 3.53 (5 pcs.)
3051	S103290	Adapter 2" x 1.1/2" (2 pcs.)
3052	S47170	Silicone hose \varnothing 4 mm i/d 8 mm (1 m)
3053	S103287	O-ring \varnothing 130 x 3.5 mm (2 pcs.)

Item	Part number	Description
3054	S103330	Gasket non return valve (5 pcs.)
3055	S103356	Pressure test nipple 1/8" (2 pcs.)
3056	S103357	Adapter 1/8" M5 (2 pcs.) incl. loctite
3057	S100490	Burner insulation repair set
3100	7745411	Valve proving system (VPS) 5-9 sections
3100	7745414	Gas pressure switch (GPS) 5-9 sections
3101	7745412	Valve proving system (VPS) 10 sections
3101	7745415	Gas pressure switch (GPS) 10 sections
3102	S103292	Gas filter 10 sections
3104	59212	Air inlet filter ø 325 mm

Tab.89 Gas 320/620 Ace - Control box

Item	Part number	Description
4002	7750339	Box for control unit CU-GH13
4003	7625392	Power switch black
4004	7749560	Control box base dark grey
4005	7801162	Control panel HMI T-control
4006	7633327	Configuration storage unit CSU-01
4007	7765778	Instrument panel front with HMI cover
4008	7656853	Controlbox slider (2 pcs.)
4009	7635885	Connection PCB CB-01
4010	S6778	Glass fuse 6.30 Amp Slow (10 pcs.)
4011	7774497	Expansion PCB SCB-10
4013	7635886	Expansion PCB SCB-01
4014	7734501	Expansion PCB SCB-02
4016	7721982	Expansion PCB GTW-08
4017	7733655	Expansion PCB GTW-30
4020	7741274	Cable harness sensors - control box side
4021	7741275	Cable harness sensors - boiler side
4022	7600363	Cable BUS split
4023	7741276	Cable harness 24V
4024	7750330	Cable harness PWM-fan - control box side
4025	7750332	Cable harness PWM-fan - boiler side
4026	7750333	Cable power supply 230 VAC
4027	7750334	Cable harness 230 VAC - control box side
4028	7750335	Cable harness 230 VAC - boiler side
4029	7750336	Ground cable
4030	7764001	Cable line filter
4031	7604728	Glass fuse 10 Amp Slow (5 pcs.)
4032	7765622	Line filter
4034	S103315	Cable clamp (10 pcs.)
4035	7625393	RJ-11 connector black
4036	7657321	HMI cover
4037	7749567	Control box cover dark grey
4038	7750123	Frame black
4039	7749571	Installer box
4040	7612543	Strain relief set

Tab.90 Gas 620 Ace

Item	Part number	Description
5001	S103128	Junction for air inlet or flue gas outlet
5002	S103119	Flue gas pipe \varnothing 250 mm l= 890 mm
5003	S103318	Flue gas pipe support
5004	S103311	Cover set 5-7 sections
5004	S103312	Cover set 8-10 sections
5005	7600368	Clamp band and gasket ring \varnothing 250 mm
5006	7600369	Clamp band + gasket ring \varnothing 350 mm
5007	7747098	Side cover with logo left
5007	7747099	Side cover with logo right

Tab.91 Gas 320/620 Ace - Other

Item	Part number	Description
-	S100316	Outdoor temperature sensor
-	S103294	Maintenance kit
-	S58823	Cleaning knife 560 mm

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