

# AMC



## Installation and Service Manual

Wall-hung gas condensing boilers

AMC 15  
AMC 25  
AMC 35  
AMC 25/28 MI  
Diematic Evolution

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# 1 Safety

## 1.1 General safety instructions

---

**Danger**

If you smell gas:

1. Do not use naked flames, do not smoke and do not operate electrical contacts or switches (doorbell, lighting, motor, lift etc).
2. Shut off the gas supply.
3. Open the windows.
4. Trace possible leaks and seal them off immediately.
5. If the leak is upstream of the gas meter, notify the gas company.

**Danger**

If you smell flue gases:

1. Switch the boiler off.
2. Open the windows.
3. Trace possible leaks and seal them off immediately.

**Caution**

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

## 1.2 Recommendations

---

**Warning**

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

**Warning**

If the mains lead is damaged, it must be replaced by the original manufacturer, the manufacturer's dealer or another suitably skilled person to prevent hazardous situations from arising.

**Warning**

Always disconnect the mains supply and close the main gas tap when working on the boiler.

**Warning**

Check the entire system for leaks after maintenance and servicing work.

**Caution**

- Make sure the boiler can be reached at all times.
- The boiler must be installed in a frost-free area.
- If the power cord is permanently connected, you must always install a main bipolar switch with an opening gap of at least 3 mm (EN 60335-1).
- Drain the boiler and central heating system if you are not going to use your home for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The boiler protection only protects the boiler, not the system.
- Check the water pressure in the system regularly. If the water pressure is lower than 0.8 bar, the system must be topped up (recommended water pressure between 1.5 and 2 bar).

**Important**

Keep this document near to the boiler.

**Important**

Only remove the casing for maintenance and repair operations. Refit all panels when maintenance work and servicing are complete.

**Important**

Instruction and warning labels must never be removed or covered and must be clearly legible throughout the entire service life of the boiler. Damaged or illegible instructions and warning stickers must be replaced immediately.

**Important**

Modifications to the boiler require the written approval of **De Dietrich**.

## 1.3 Liabilities

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### 1.3.1 Manufacturer's liability

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

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

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

### **1.3.2 Installer's liability**

---

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

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

### **1.3.3 User's liability**

---

To guarantee optimum operation of the system, you must abide by the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on a qualified professional to carry out installation and initial commissioning.
- Get your installer to explain your installation to you.
- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the instruction manuals in good condition close to the appliance.

## 2 About this manual

### 2.1 General

---

This manual is intended for the installer of a AMC boiler.



**Important**

The manual is also available on our internet site.

### 2.2 Additional documentation

---

The following documentation is available in addition to this manual:

- User manual

### 2.3 Symbols used

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#### 2.3.1 Symbols used in the manual

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This manual uses various symbols to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation.



**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.



**See**

Reference to other manuals or pages in this manual.

## 3 Technical specifications

### 3.1 Homologations

#### 3.1.1 Certifications

Tab.1 Certifications

CE identification number	<b>PIN 0063CR3604</b>
Class NOx <sup>(1)</sup>	<b>6</b>
Type of connection	B <sub>23</sub> , B <sub>23P</sub> , B <sub>33</sub> C <sub>13(X)</sub> , C <sub>33(X)</sub> , C <sub>43P</sub> , C <sub>53(X)</sub> , C <sub>63(X)</sub> , C <sub>93(X)</sub> , C <sub>(10)3(X)</sub> , C <sub>(12)3(X)</sub>
(1) EN 15502-1	

#### 3.1.2 Unit categories

Tab.2 Unit categories

Country	Category	Gas type	Connection pressure (mbar)
Ireland	II <sub>2H3B/P</sub>	G20 (H gas) G30/G31 (butane/propane)	20 30

#### 3.1.3 Directives

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

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

#### 3.1.4 Factory test

Before leaving the factory, each boiler is optimally set and tested for:

- Electrical safety.
- Adjustment of (O<sub>2</sub>).
- Domestic hot water function (For combi-boilers only).
- Water tightness.
- Gas tightness.
- Parameter setting.

## 3.2 Technical data

Tab.3 General

AMC			15	25	25/28 MI	35
Nominal output (Pn) for central heating operation (80 °C/60 °C)	min-max  <sup>(1)</sup>	kW	3.0 - 14.9 14.9	5.0 - 24.8 24.8	5.0 - 24.8 19.9	7.0 - 34.5 34.5
Nominal output (Pn) for central heating operation (50/30 °C)	min-max  <sup>(1)</sup>	kW	3.4 - 15.8 15.8	5.6 - 25.5 25.5	5.6 - 25.5 20.5	7.9 - 35.6 35.6
Nominal output (Pn) for DHW operation	min-max  <sup>(1)</sup>	kW	- -	- -	5.0 - 27.8 27.8	- -
Nominal input (Qnh) central heating operation (Hi)	min-max  <sup>(1)</sup>	kW	3.1 - 15.0 15.0	5.2 - 25.0 25.0	5.2 - 25.0 20.1	7.3 - 34.8 34.8
Nominal input (Qnh) for central heating operation (Hi) Propane	min-max		5.2 - 15.0	5.9 - 25.0	5.9 - 25.0	7.3 - 34.8

AMC			15	25	25/28 MI	35
Nominal input (Qnh) central heating operation (Hs)	min-max  <sup>(1)</sup>	kW	3.4 - 16.7 16.7	5.8 - 27.8 27.8	5.8 - 27.8 22.3	8.1 - 38.7 38.7
Nominal input (Qnh) for central heating operation (Hs) Propane	min-max  <sup>(1)</sup>		5.8 - 16.7	6.5 - 27.8	6.5 - 27.8	8.1 - 38.7
Nominal input (Qnw) for DHW operation (Hi)	min-max  <sup>(1)</sup>	kW	- -	- -	5.2 - 28.0 28.0	- -
Nominal input (Qnw) for DHW operation (Hi) Propane	min-max	kW	- -	- -	5.9 - 28.0	- -
Nominal input (Qnw) for DHW operation (Hs)	min-max  <sup>(1)</sup>	kW	- -	- -	5.8 - 31.1 31.1	- -
Nominal input (Qnw) for DHW operation (Hs) Propane	min-max	kW	- -	- -	6.5 - 31.1	- -
Full load central heating efficiency (Hi) (80/60 °C) (92/42/EEC)		%	99.3	99.2	99.2	99.1
Full load central heating efficiency (Hi) (50°C/30°C) (EN15502)		%	105.3	102.0	102.0	102.2
Part load central heating efficiency (Hi) (return temperature 60°C)		%	94.9	96.1	96.1	96.3
Part load central heating efficiency (Hi) (92/42/EEC) (return temperature 30°C)		%	110.2	110.1	110.1	110.6
Full load central heating efficiency (Hs) (80/60°C) (92/42/EEC)		%	89.4	89.3	89.3	89.2
Full load central heating efficiency (Hs) (50°C/30°C) (EN15502)		%	94.8	91.9	91.9	92.0
Part load central heating efficiency (Hs) (return temperature 60°C)		%	85.5	86.5	86.5	86.7
Part load central heating efficiency (Hs) (92/42/EEC) (return temperature 30°C)		%	99.2	99.1	99.1	99.6
(1) Factory setting						

Tab.4 Details of gas and flue gas

AMC			15	25	25/28 MI	35
Gas inlet pressure G20 (H gas)	min-max	mbar	17 - 25	17 - 25	17 - 25	17 - 25
Gas consumption G20 (H gas)	min-max	m <sup>3</sup> /h	0.33 - 1.59	0.55 - 2.65	0.55 - 2.96	0.77 - 3.68
NOx annual emissions G20 (H gas) EN15502	O <sub>2</sub> = 0%	ppm	17	16	16	27
NOx annual emissions G20 (H gas) EN15502	H <sub>I</sub>	mg/kWh	30	28	28	45
NOx annual emissions G20 (H gas) EN15502	H <sub>s</sub>	mg/kWh	27	25	25	41
Flue gas quantity	min-max	kg/h g/s	5.5 - 25.3 1.5 - 7.0	9.2 - 42.1 2.6 - 11.7	9.2 - 47.1 2.6 - 13.1	12.7 - 57.4 3.5 - 15.9
Flue gas temperature	min-max	°C	30 - 59	30 - 74	30 - 81	32 - 79
Maximum counter pressure		Pa	80	120	130	140

Tab.5 Central heating circuit data

AMC			15	25	25/28 MI	35
Water content		l	1.7	1.7	1.7	2.3
Water operating pressure	min	bar	0.8	0.8	0.8	0.8
Water operating pressure (PMS)	max	bar	3.0	3.0	3.0	3.0
Water temperature	max	°C	110.0	110.0	110.0	110.0
Operating temperature	max	°C	90.0	90.0	90.0	90.0

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Central heating total dynamic head ( $\Delta T = 20K$ )		mbar	585	355	355	231
Casing-related losses	$\Delta T 30^{\circ}C$	W	78	78	78	54
	$\Delta T 50^{\circ}C$		136	136	136	121

Tab.6 DHW circuit data

AMC				25/28 MI
Specific hot water flow rate D ( $60^{\circ}C$ )				l/min
Specific hot water flow rate D ( $40^{\circ}C$ )				l/min
Pressure difference on tap water side				mbar
Flow rate threshold <sup>(1)</sup>		max		l/min
Water content				l
Operating pressure (P <sub>mw</sub> )				bar
Minimum flow				l/min
Score				stars

(1) Minimum amount of water that comes out of the tap to make the boiler start.

Tab.7 Electrical data

AMC			15	25	25/28 MI	35
Supply voltage		V~	230	230	230	230
Power consumption – full load	max  <sup>(1)</sup>	W	67	77	84	93
			67	77	68	93
Power consumption – part load	max	W	27	26	26	27
Power consumption – standby	max	W	4	4	4	4
Electrical protection index <sup>(2)</sup>		IP	IPX5D	IPX5D	IPX5D	IPX5D
Fuses	CU-GH <sup>(3)</sup>	A	2.5	2.5	2.5	2.5

(1) Factory setting.  
(2) Splashproof; under certain conditions, the boiler may be installed in damp areas, such as bathrooms.  
(3) The fuse is located on the CU-GH08 control unit

Tab.8 Other data

AMC			15	25	25/28 MI	35
Minimum mounting weight <sup>(1)</sup>		kg	36	36	38	31
						31
Total weight (empty)		kg	38	38	40	33
						33
Average acoustic level at a distance of one metre from the boiler (L <sub>PA</sub> )	Central heating operation DHW operation	dB(A)	37	43	40	45
			-	-	44	-

(1) Without front panel.

Tab.9 Technical parameters

AMC			15	25	25/28 MI	35
Condensing boiler			Yes	Yes	Yes	Yes
Low-temperature boiler <sup>(1)</sup>			No	No	No	No
B1 boiler			No	No	No	No
Cogeneration space heater			No	No	No	No
Combination heater			No	No	Yes	No
<b>Rated heat output</b>	<i>Prated</i>	kW	15	25	25	35

AMC			15	25	25/28 MI	35
Useful heat output at nominal heat output and high temperature operation <sup>(2)</sup>	$P_4$	kW	14.9	24.8	24.8	34.5
Useful heat output at 30% of rated heat output and low temperature regime <sup>(1)</sup>	$P_1$	kW	5.0	8.3	8.3	11.6
<b>Seasonal space heating energy efficiency</b>	$\eta_s$	%	94	94	94	95
Useful efficiency at rated heat output and high temperature regime <sup>(2)</sup>	$\eta_4$	%	89.5	89.4	89.4	89.3
Useful efficiency at 30% of rated heat output and low temperature regime <sup>(1)</sup>	$\eta_1$	%	99.3	99.2	99.2	99.6
<b>Auxiliary electricity consumption</b>						
Full load	$el_{max}$	kW	0.027	0.037	0.037	0.050
Part load	$el_{min}$	kW	0.018	0.017	0.017	0.018
Standby mode	$P_{SB}$	kW	0.004	0.004	0.004	0.004
<b>Other items</b>						
Standby heat loss	$P_{stby}$	kW	0.078	0.078	0.078	0.054
Ignition burner power consumption	$P_{ign}$	kW	-	-	-	-
Annual energy consumption	$Q_{HE}$	GJ	46	76	76	105
Sound power level, indoors	$L_{WA}$	dB(A)	45	51	51	53
Emissions of nitrogen oxides	$NO_x$	mg/kWh	27	25	25	41
<b>Domestic hot water parameters</b>						
<b>Declared load profile</b>						
Daily electricity consumption	$Q_{elec}$	kWh	-	-	0.169	-
Annual electricity consumption	$AEC$	kWh	-	-	37	-
<b>Water heating energy efficiency</b>	$\eta_{wh}$	%	-	-	82.4	-
Daily fuel consumption	$Q_{fuel}$	kWh	-	-	22.045	-
Annual fuel consumption	$AFC$	GJ	-	-	17	-
(1) Low temperature means 30°C for condensing boilers, 37°C for low temperature boilers and 50°C (at heater inlet) for other heating appliances.						
(2) High temperature operation means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.						

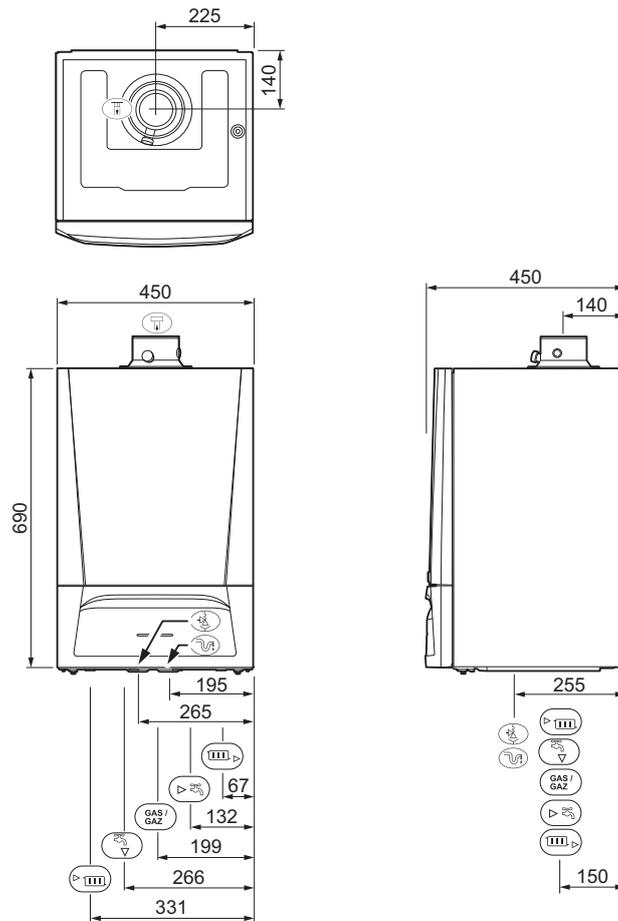


**See**

See the back of this manual for contact information.

### 3.3 Dimensions and connections

Fig.1 Dimensions



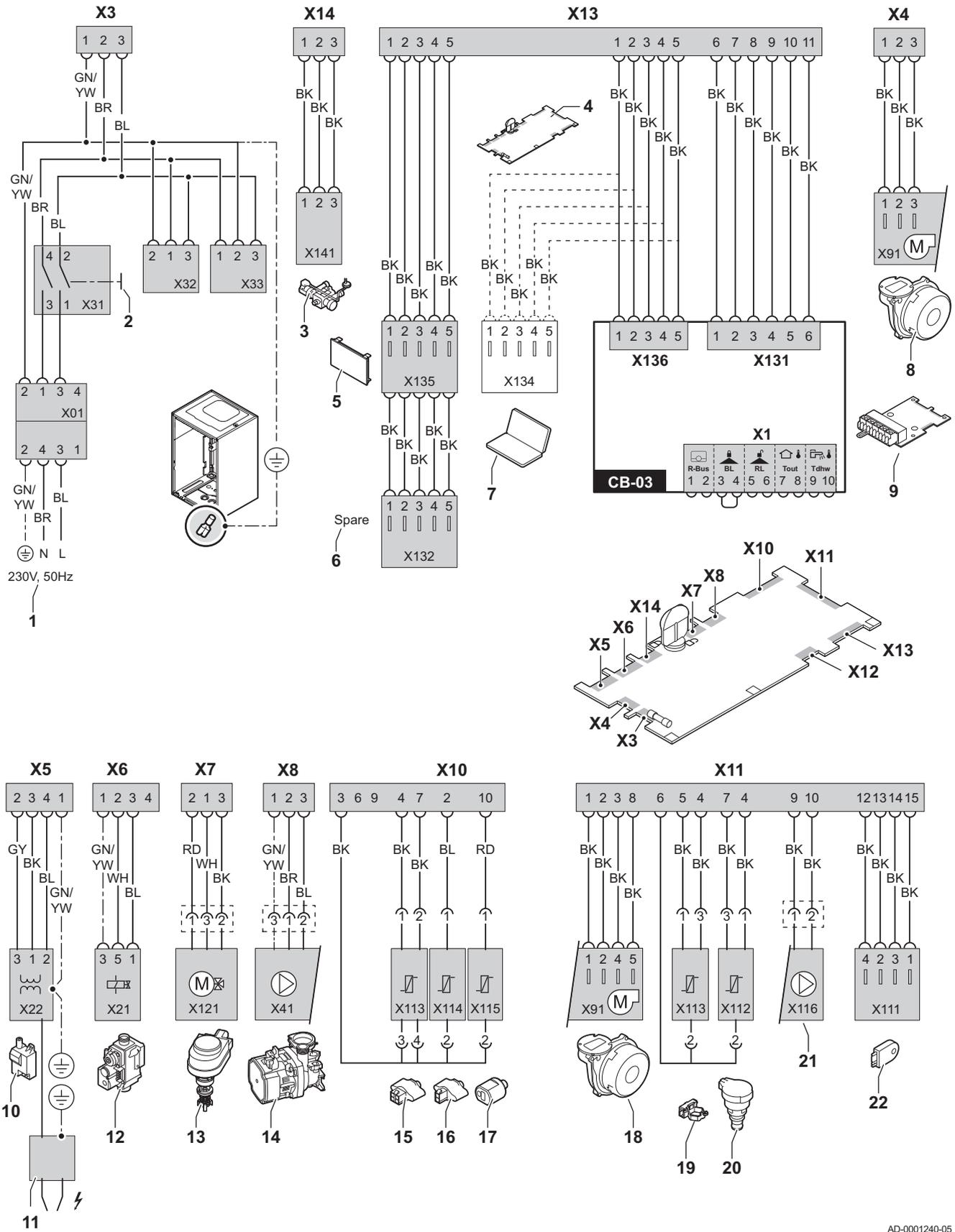
AD-0001436-02

Tab.10 Connections

	AMC	15	25	25/28 MI	35
	Connecting the flue gas outlet	Ø 60 mm	Ø 60 mm	Ø 60 mm	Ø 60 mm
	Connecting the air supply	Ø 100 mm	Ø 100 mm	Ø 100 mm	Ø 100 mm
	Hose of safety valve	Ø 25 mm	Ø 25 mm	Ø 25 mm	Ø 25 mm
	Condensation outlet	Ø 25 mm	Ø 25 mm	Ø 25 mm	Ø 25 mm
	Heating circuit flow (primary circuit)	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "
	Domestic hot water outlet	-	-	G $\frac{1}{2}$ "	-
	Heating circuit flow (secondary circuit)	G $\frac{1}{2}$ "	G $\frac{1}{2}$ "	-	G $\frac{1}{2}$ "
	Gas connection	G $\frac{1}{2}$ "	G $\frac{1}{2}$ "	G $\frac{1}{2}$ "	G $\frac{1}{2}$ "
	Domestic cold water inlet	-	-	G $\frac{1}{2}$ "	-
	Heating circuit return (secondary circuit)	G $\frac{1}{2}$ "	G $\frac{1}{2}$ "	-	G $\frac{1}{2}$ "
	Heating return (primary circuit)	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "	G $\frac{3}{4}$ "

### 3.4 Electrical diagram

Fig.2 Electrical diagram



AD-0001240-05

- 1 Power supply (P)
- 2 On/off switch (S)
- 3 Automatic refill device

- 4 Control unit (CU-GH08)
- 5 Display (DIS)
- 6 Spare CAN-Bus connection

<b>7</b>	Service connection	<b>19</b>	Flow sensor (FS)
<b>8</b>	Fan supply	<b>20</b>	Pressure sensor (PS)
<b>9</b>	CB-03 PCB	<b>21</b>	PWM pump
<b>10</b>	Ignition transformer (IT)	<b>22</b>	Storage information (CSU)
<b>11</b>	Ionisation/ignition electrode (E)	<b>BK</b>	Black
<b>12</b>	Gas combination block (GB)	<b>BL</b>	Blue
<b>13</b>	Three-way valve (3WV)	<b>BR</b>	Brown
<b>14</b>	Circulation pump (CH)	<b>GN/YW</b>	Green/Yellow
<b>15</b>	Flow sensor (FTS)	<b>GY</b>	Grey
<b>16</b>	Return sensor (TR)	<b>RD</b>	Red
<b>17</b>	Tap water temperature sensor (TDHW)	<b>WH</b>	White
<b>18</b>	Fan control (PWM)		

## 4 Description of the product

The AMC boiler is delivered with a combination of the control panel, control unit and extension PCB. The contents of this manual are based on the following software and navigation information:

Tab.11 Software and navigation information

	Name visible in display	Software version
Boiler AMC	CU-GH08	1.4
Control panel Diematic Evolution	MK3	1.29
PCB SCB-10	SCB-10	0.5

### 4.1 General description

The AMC boiler is a wall-mounted gas boiler with the following characteristics:

- High-efficiency heating
- Low polluting emissions
- Automatic refill device
- High-quality electronic control panel
- Easier installation and connection thanks to the mounting frame delivered with the appliance.

The following boiler types are available:

Type	Mode
AMC 15 AMC 25 AMC 35	Heating only (option of producing domestic hot water using a separate hot water appliance).
AMC 25/28 MI	Heating and production of domestic hot water.

### 4.2 Operating principle

#### 4.2.1 Automatic refill device

The boiler has an automatic refill device located under the boiler.

The automatic refill device will refill the central heating system whenever the water pressure is lower than the set minimum. Refilling can be automatic or semi-automatic. On the semi-automatic setting, refilling will only start after confirmation by the user. The automatic refill device can also be used to fill an empty system.

If refilling takes too long or occurs too often (e.g. because the system leaks), a warning code will appear on the display and refilling will stop.

#### 4.2.2 Circulation pump

The energy-efficient, modulating circulation pump is controlled by the control unit based on  $\Delta T$ . The graphs show the total dynamic head at various outputs.



#### Important

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

Fig.3 AMC 15 - 25 - 25/28 MI

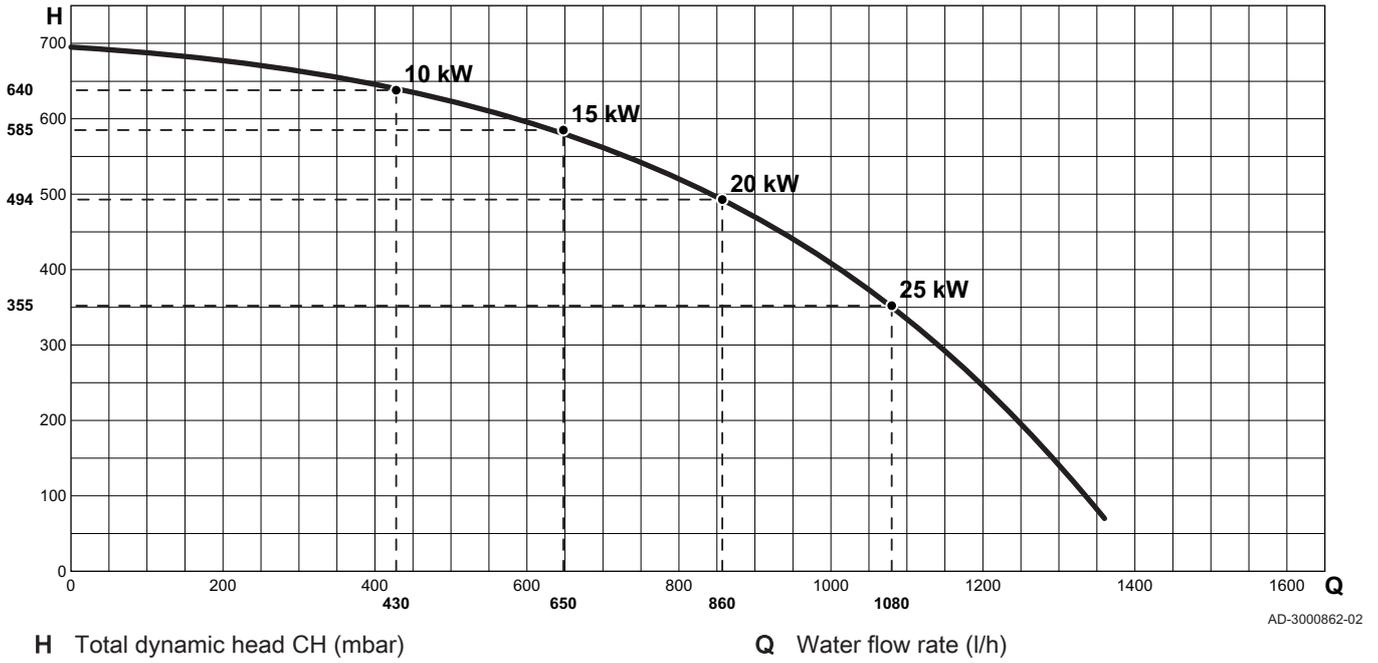
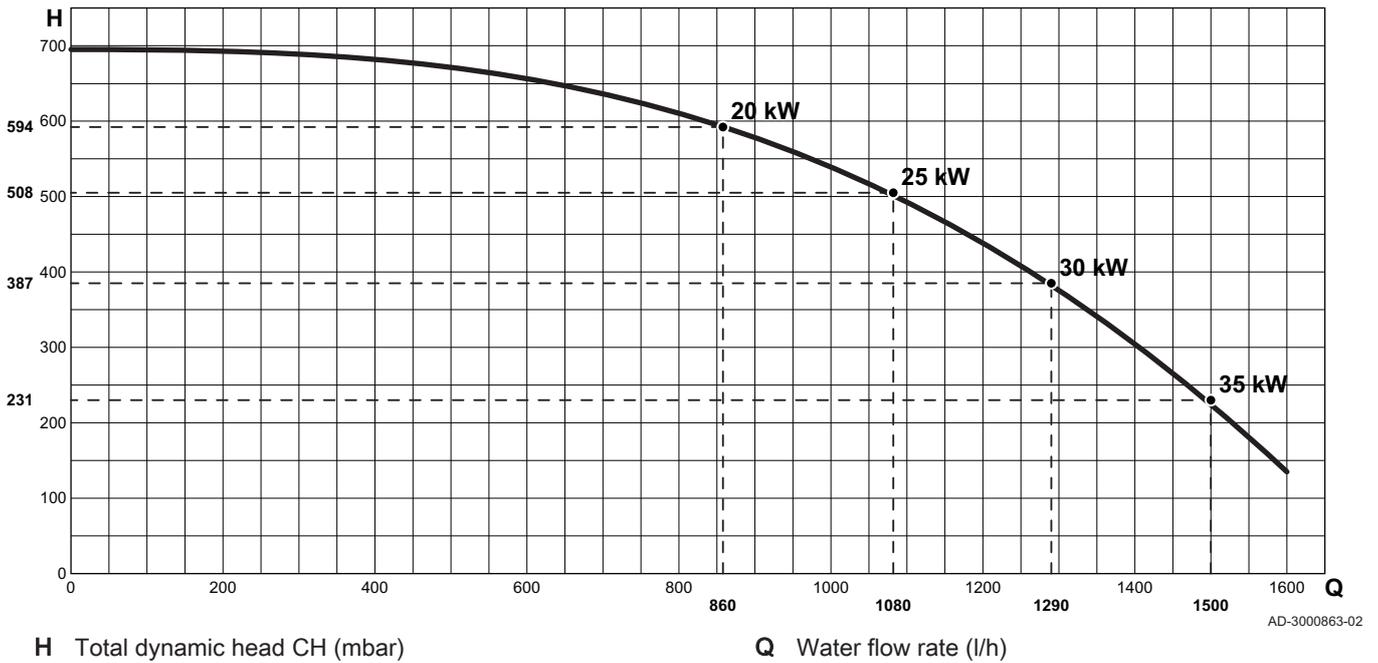


Fig.4 AMC 35

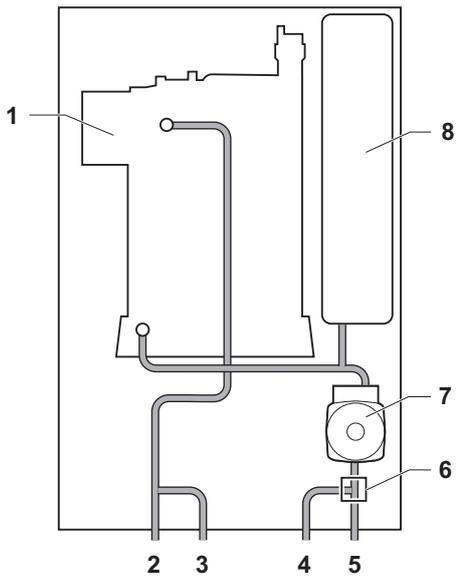


### 4.2.3 Water flow

The modulating control of the boiler limits the maximum temperature difference between the flow and return and the maximum rise velocity of the flow temperature. In addition, a heat exchanger temperature sensor is mounted to monitor the minimum water flow. As a result, the boiler is virtually unaffected by low water flow.

#### 4.2.4 Skeleton diagram

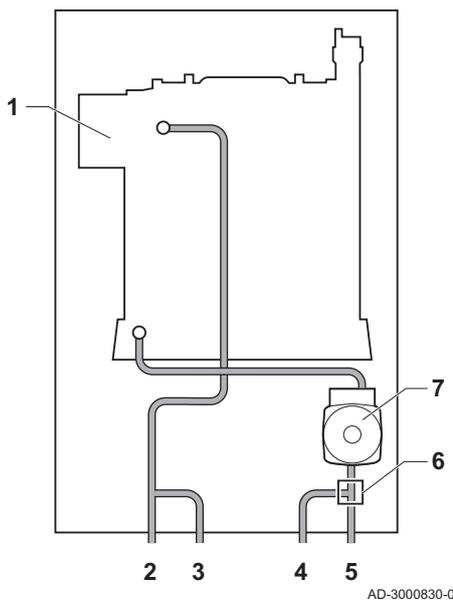
Fig.5 AMC 15 - 25



AD-0000428-01

- 1 Heat exchanger (CH)
- 2 Heating circuit flow (primary circuit)
- 3 Heating circuit flow (secondary circuit)
- 4 Heating return (secondary circuit)
- 5 Heating return (primary circuit)
- 6 Three-way valve
- 7 Circulation pump (CH)
- 8 Expansion vessel

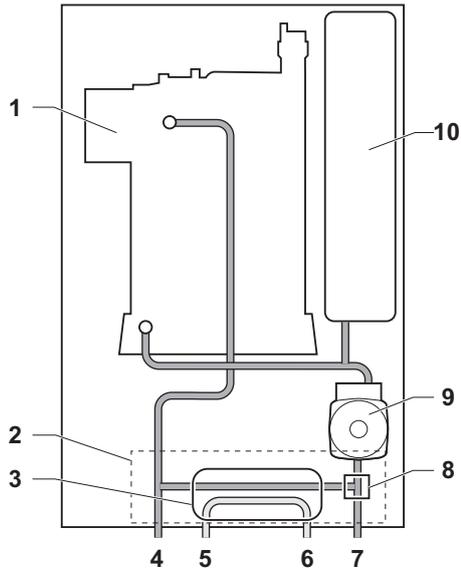
Fig.6 AMC 35



AD-3000830-01

- 1 Heat exchanger (CH)
- 2 Heating circuit flow (primary circuit)
- 3 Heating circuit flow (secondary circuit)
- 4 Heating return (secondary circuit)
- 5 Heating return (primary circuit)
- 6 Three-way valve
- 7 Circulation pump (CH)

Fig.7 AMC 25/28 MI

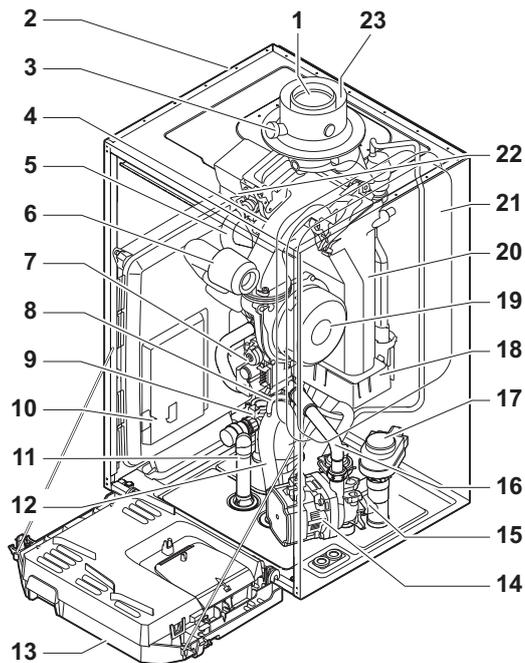


AD-0000419-01

- 1 Heat exchanger (CH)
- 2 Hydroblock
- 3 Plate heat exchanger (DHW)
- 4 Central heating circuit flow
- 5 Domestic hot water outlet
- 6 Domestic cold water inlet
- 7 Central heating circuit return
- 8 Three-way valve
- 9 Circulation pump (CH)
- 10 Expansion vessel

### 4.3 Main components

Fig.8 AMC 15 - 25

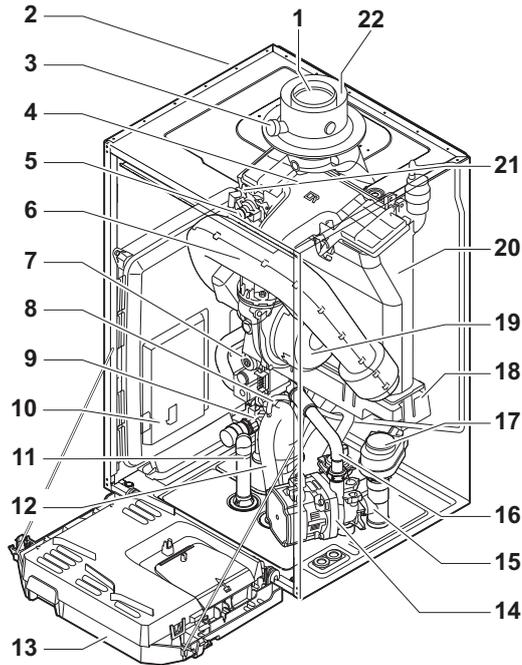


AD-0001371-02

- 1 Flue gas outlet
- 2 Casing/air box
- 3 Flue gas measuring point
- 4 Mixing tube
- 5 Hydraulic flow pipe
- 6 Air intake silencer
- 7 Combined gas valve unit
- 8 Automatic air vent hose
- 9 Hydroblock, flow side
- 10 Housing for PCBs
- 11 Safety valve hose
- 12 Siphon
- 13 Instrument box
- 14 Circulation pump
- 15 Hydroblock, return side
- 16 Return pipe
- 17 Three-way valve
- 18 Condensate collector
- 19 Fan
- 20 Heat exchanger (CH)
- 21 Expansion vessel
- 22 Ionisation/ignition electrode
- 23 Air supply

## 4 Description of the product

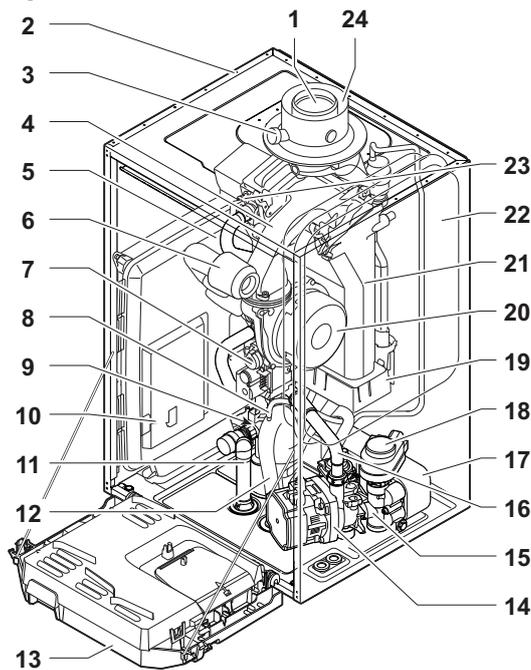
Fig.9 AMC 35



AD-0001372-02

- 1 Flue gas outlet
- 2 Casing/air box
- 3 Flue gas measuring point
- 4 Mixing tube
- 5 Hydraulic flow pipe
- 6 Air intake silencer
- 7 Combined gas valve unit
- 8 Automatic air vent hose
- 9 Hydroblock, flow side
- 10 Housing for PCBs
- 11 Safety valve hose
- 12 Siphon
- 13 Instrument box
- 14 Circulation pump
- 15 Hydroblock, return side
- 16 Return pipe
- 17 Three-way valve
- 18 Condensate collector
- 19 Fan
- 20 Heat exchanger (CH)
- 21 Ionisation/ignition electrode
- 22 Air supply

Fig.10 AMC 25/28 MI



AD-0001373-03

- 1 Flue gas outlet
- 2 Casing/air box
- 3 Flue gas measuring point
- 4 Mixing tube
- 5 Hydraulic flow pipe
- 6 Air intake silencer
- 7 Combined gas valve unit
- 8 Automatic air vent hose
- 9 Hydroblock, flow side
- 10 Housing for PCBs
- 11 Safety valve hose
- 12 Siphon
- 13 Instrument box
- 14 Circulation pump
- 15 Hydroblock, return side
- 16 Return pipe
- 17 Plate heat exchanger (DHW)
- 18 Three-way valve
- 19 Condensate collector
- 20 Fan
- 21 Heat exchanger (CH)
- 22 Expansion vessel
- 23 Ionisation/ignition electrode
- 24 Air supply

### 4.4 Control panel

The AMC boiler is supplied with a Diematic Evolution control panel.



For more information, see  
Control panel description, page 77

### 4.5 Standard delivery

The delivery includes:

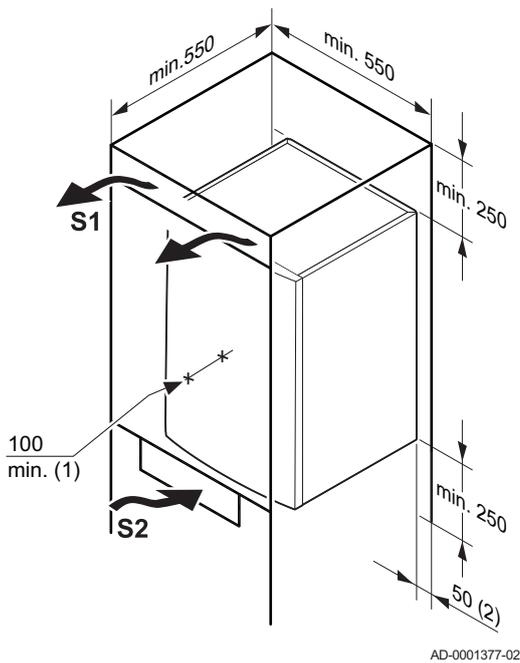
- The boiler, fitted with a three-core cable
- Mounting frame with automatic refill device
- Connection kit including cable glands and clamping rings

- Condensate drain hose for siphon and safety valve
- Condensates collector
- Seal plates for sealing off the lines for the secondary heating circuit if it is not being used
- Documentation
- Mounting template
- Sticker: This central heating unit is set for ...

This manual only deals with the standard scope of supply. For the installation or mounting of any accessories supplied with the boiler, please refer to the mounting instructions delivered with the accessories in question.



Fig.13 Space for ventilation



### 5.2.3 Ventilation

- (1) Distance between the front of the boiler and the internal wall of the casing.
- (2) Space on either side of the boiler.

If the boiler is installed in a closed casing, observe the minimum dimensions indicated. Also allow for openings to prevent the following hazards:

- Accumulation of gas
- Heating of the casing

Minimum cross section of the openings:  $S1 + S2 = 150 \text{ cm}^2$

## 6 Installation

### 6.1 General



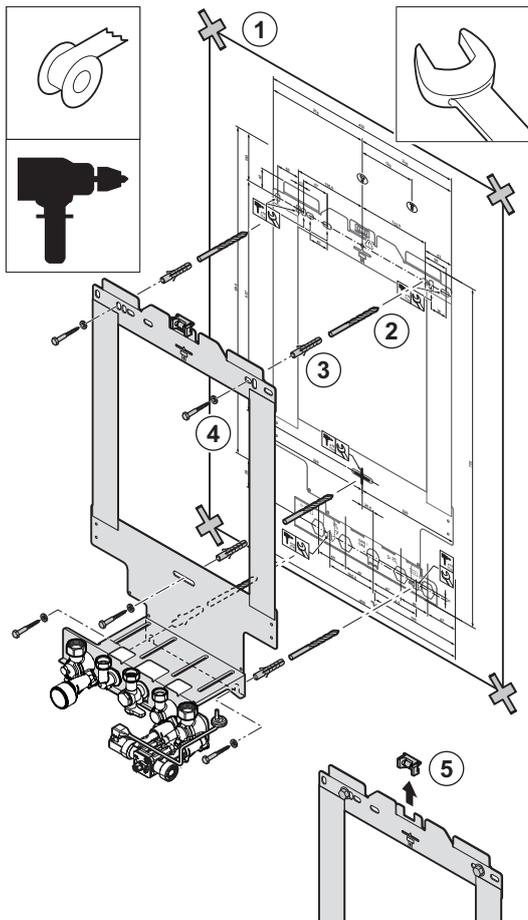
#### Warning

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

### 6.2 Preparation

#### 6.2.1 Installing the mounting frame

Fig.14 Installing the mounting frame



AD-0001379-02

The boiler is supplied with a mounting template.

Proceed as follows to hang the mounting frame:

1. Attach the mounting template of the boiler to the wall using adhesive tape.



#### Warning

- Use a level on the mounting frame to check whether the mounting template is perfectly horizontal.
- Protect the boiler against building dust and cover the flue gas outlet and air supply connection points. Only remove this cover to assemble the relevant connections.

2. Drill 3 holes of  $\text{\O} 10$  mm.

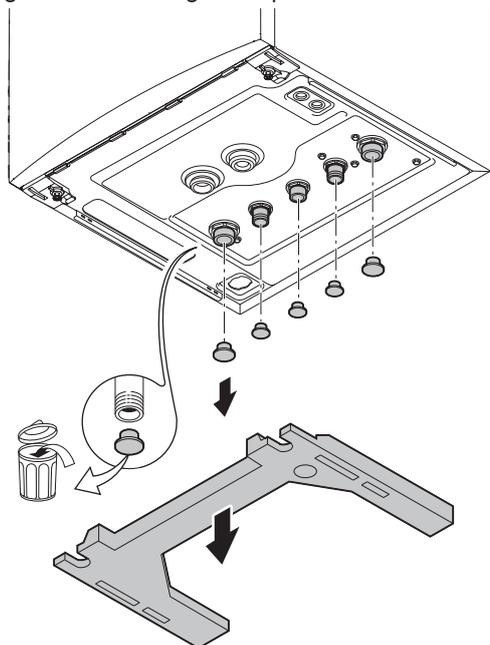


#### Important

The extra holes are intended for use in the event that one of the two fastening holes is not suitable for correct fastening of the plug.

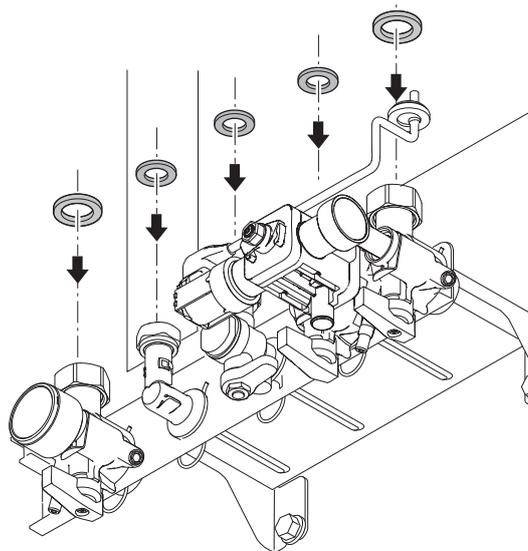
3. Fit the  $\text{\O} 10$  mm plugs.
4. Attach the mounting frame to the wall with the  $\text{\O} 8$  mm screws supplied
5. Remove the level from the mounting frame.

Fig.15 Removing boiler protection



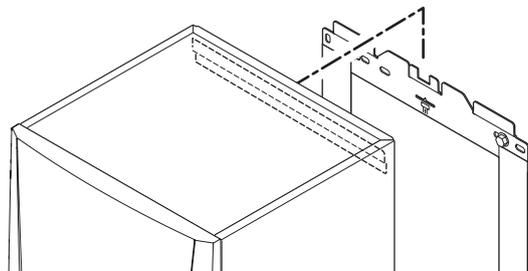
AD-0001380-02

Fig.16 Fitting gaskets



AD-0001381-02

Fig.17 Fitting the boiler



AD-3001203-01

## 6.2.2 Positioning the boiler

1. Remove the black protective strip on the underside of the boiler.
2. Remove the dust caps from all of the hydraulic inlets and outlets on the boiler.



### Caution

The valve of the filling loop must be closed.

3. Fit a fibre gasket to each joint on the valve plate.

4. Position the boiler above the mounting frame. Gently lower the boiler.
5. Tighten the valve nuts on the boiler.

### 6.3 Hydraulic connections

#### 6.3.1 Rinsing the system

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

Before a new boiler can be connected to an existing or new system, the entire system must be thoroughly cleaned and flushed. This step is absolutely crucial. The flushing helps to remove residue from the installation process (weld slag, fixing products etc.) and accumulations of dirt (silt, mud etc.)

**i Important**  
Flush the system with a volume of water equivalent to at least three times the volume of the system. Flush the DHW pipes with a volume of water equivalent to at least 20 times the volume of the pipes.

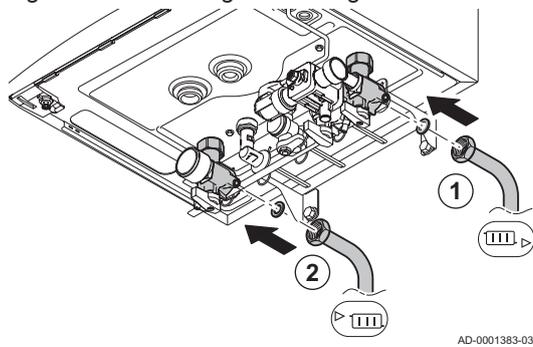
#### 6.3.2 Water flow

The boiler's modulating control system limits the maximum difference in temperature between the heating flow and return, and the maximum speed at which the flow temperature increases. In this way, the boiler does not require a minimum water flow rate.

**i Important**  
In the case of a combi boiler in an installation in which the flow can be fully disconnected from the return (e.g. by using thermostatic valves), a bypass pipe should be fitted or the expansion vessel placed on the central heating flow pipe.

#### 6.3.3 Connection of the heating circuit

Fig.18 Connecting the heating circuit



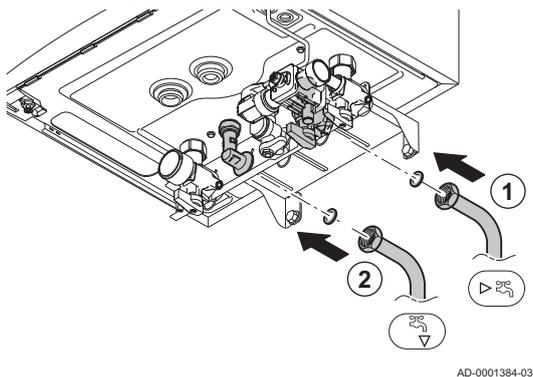
1. Fit the inlet pipe for CH water to the CH return connection .
2. Fit the outlet pipe for CH water to the CH flow connection .

**! Caution**

- Carry out any welding work required at a safe distance from the boiler or before the boiler is fitted.
- If using synthetic pipes, follow the manufacturer's (connection) instructions.

#### 6.3.4 Connection of the water circuit for domestic use

Fig.19 Connecting water circuit for domestic use



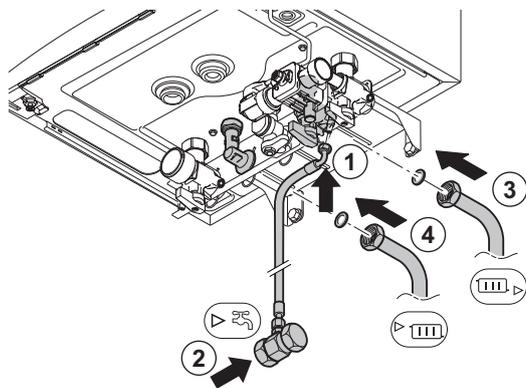
1. Connect the cold water inlet pipe to the domestic cold water connection .
2. Connect the domestic hot water outlet pipe to the domestic hot water connection .

**Caution**

- If using synthetic pipes, follow the manufacturer's (connection) instructions.
- Carry out any welding work required at a safe distance from the boiler or before the boiler is fitted.

### 6.3.5 Connecting the secondary heating circuit

Fig.20 Connecting the secondary heating circuit



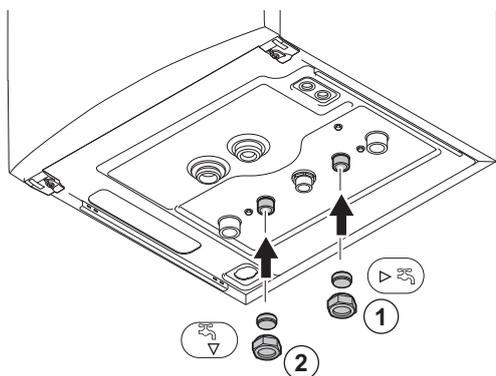
AD-0001385-04

**Caution**

- Carry out any welding work required at a safe distance from the boiler or before the boiler is fitted.
- If using synthetic pipes, follow the manufacturer's (connection) instructions.

### 6.3.6 Disconnecting the secondary heating circuit

Fig.21 Disconnecting the secondary heating circuit



AD-0001207-03

These connections must be closed off if the secondary heating circuit is not connected (solo use of the boiler). To do this, proceed as follows:

**Important**

The blanking plates needed are supplied with the boiler.

1. Remove the secondary heating circuit valves from the mounting frame.
2. Place a blanking plate in the fitting (G $\frac{1}{2}$ "") and install this on the CH return connection.
3. Place a blanking plate in the fitting (G $\frac{1}{2}$ "") and install this on the CH flow connection.

### 6.3.7 Connecting the expansion vessel

The boiler is fitted as standard with an 12 litre expansion vessel.

If the water volume is greater than 150 litres or the static height of the system exceeds 5 metres, an additional expansion vessel must be fitted. Refer to the table below to determine the expansion vessel required for the system.

Validity terms of the table:

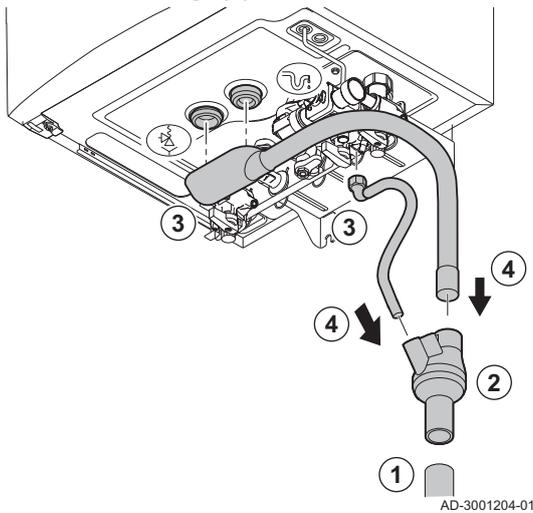
- 3-bar safety valve
- Average water temperature: 70°C  
Flow temperature: 80°C  
Return temperature: 60°C
- The filling pressure in the system is lower than or equal to the inflation pressure in the expansion vessel.

Tab.12 Volume of the expansion vessel (litres)

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

(1) Standard configuration.

Fig.22 Connecting the condensate discharge pipe



### 6.3.8 Connecting the condensate drain pipe

1. Fit a plastic drain pipe of Ø 32 mm or larger, terminating in the drain.



**Important**

Fit a watertrap or siphon in the drain pipe.

2. Insert the condensate collector into the drain pipe.
3. Attach the boiler siphon and safety valve drain hose to the condensate discharge pipe connection and the safety valve.
4. Slide the hose into the drain pipe.



**Caution**

- Never seal the condensate drain.
- The drain pipe must slope down at least 30 mm per metre, the maximum horizontal length is 5 metres.
- Condensed water must not be discharged into a gutter.

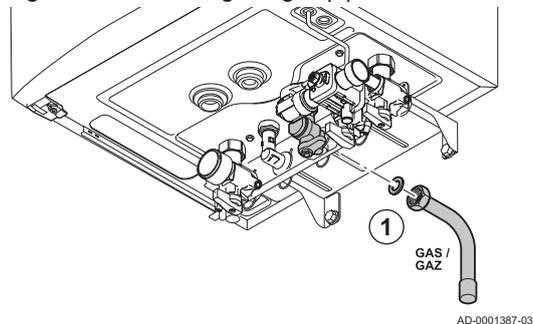


**For more information, see**

Filling the siphon, page 66

## 6.4 Gas connection

Fig.23 Connecting the gas pipe



**Warning**

- Before starting work on the gas pipes, turn off the main gas tap.
- Before installing, check that the gas meter has sufficient capacity. Take into account the consumption of all appliances.
- Notify the local energy company if the gas meter has insufficient capacity.

1. Fit the gas supply pipe to the gas connection <sup>GAS/</sup>GAZ.
2. Fit the gas pipe to the gas tap.



**Caution**

- Always perform welding work at a sufficient distance from the boiler.
- Remove dirt and dust from the gas pipe.



**Important**

We recommend installing a gas filter to prevent clogging of the gas valve unit.

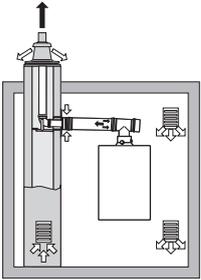
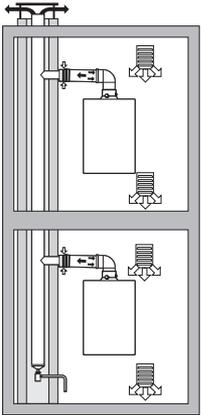
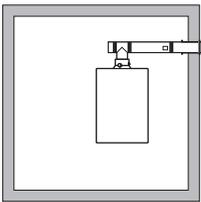
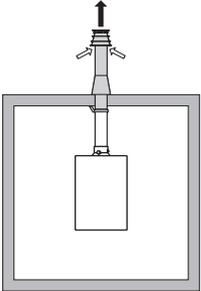
## 6.5 Air supply/flue gas outlet connections

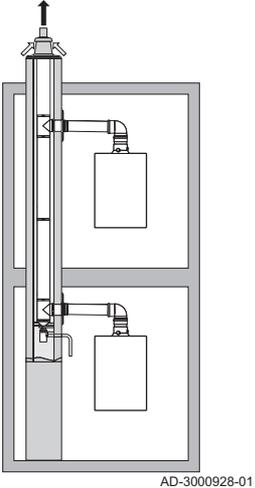
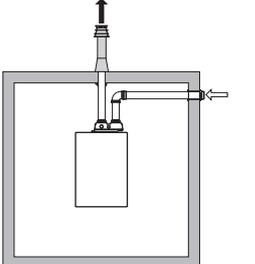
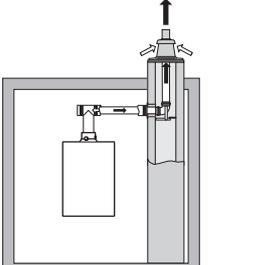
### 6.5.1 Classification

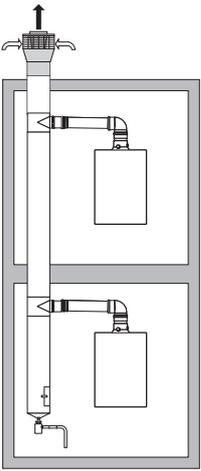
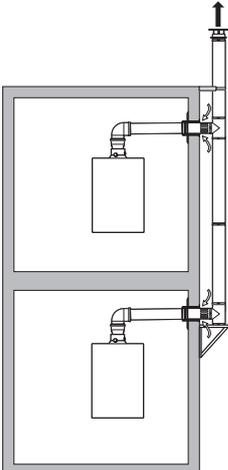
#### **i** Important

- The installer is responsible ensuring that the right type of flue gas outlet system is used and that the diameter and length are correct.
- Always use connection materials and roof terminal supplied by the same manufacturer. Consult the manufacturer for compatibility details.

Tab.13 Types of flue gas connections

Type	Principle	Description	Permitted manufacturers <sup>(1)</sup>
B <sub>23</sub> B <sub>23P</sub>	 <p>AD-3000924-01</p>	<p>Room-ventilated version</p> <ul style="list-style-type: none"> <li>• Without down-draught diverter.</li> <li>• Flue gas discharge via the roof.</li> <li>• Air from the installation area.</li> </ul>	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>
B <sub>33</sub>	 <p>AD-3000925-01</p>	<p>Room-ventilated version</p> <ul style="list-style-type: none"> <li>• Without down-draught diverter.</li> <li>• Joint flue gas discharge via the roof, with guaranteed natural draft. (at all times underpressure in the joint discharge duct)</li> <li>• Flue gas discharge rinsed with air, air from the installation area (special construction).</li> </ul>	<p>Connection material:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>
C <sub>13(X)</sub>	 <p>AD-3000926-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> <li>• Discharge in the outside wall.</li> <li>• Inlet opening for the air supply is in the same pressure zone as the discharge (e.g. a combined outside wall feed-through).</li> <li>• Parallel not permitted</li> </ul>	<p>Outside wall terminal and connection material:</p> <ul style="list-style-type: none"> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> </ul>
C <sub>33(X)</sub>	 <p>AD-3000927-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> <li>• Flue gas discharge via the roof.</li> <li>• Inlet opening for the air supply is in the same pressure zone as the discharge (e.g. a concentric roof feed-through).</li> </ul>	<p>Roof terminal and connection material</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>

Type	Principle	Description	Permitted manufacturers <sup>(1)</sup>
<p>C<sub>43</sub>P (2)</p>	 <p style="text-align: right; font-size: small;">AD-3000928-01</p>	<p>Combined air supply and flue gas outlet system (CLV) with overpressure.</p> <ul style="list-style-type: none"> <li>• Concentric (preferably).</li> <li>• Parallel (if concentric is not possible).</li> <li>• Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).</li> <li>• The channel must be designed for a nominal flue gas temperature of 25°C</li> <li>• Place a condensation drain, equipped with a siphon, at the bottom of the channel.</li> <li>• Maximum permissible recirculation of 10%.</li> <li>• The common outlet should be appropriate for a pressure of at least 200 Pa.</li> <li>• The roof feed-through must be designed for this configuration and must cause a draught in the channel.</li> <li>• A draught diverter is not permitted.</li> </ul> <p><b>i Important</b></p> <ul style="list-style-type: none"> <li>• The fan speed must be adapted for this configuration.</li> <li>• Contact us for more information.</li> </ul>	<p>Connecting material to the common channel:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>
<p>C<sub>53</sub>(X)</p>	 <p style="text-align: right; font-size: small;">AD-3000929-02</p>	<p>Connection in different pressure zones</p> <ul style="list-style-type: none"> <li>• Closed unit.</li> <li>• Separate air supply duct.</li> <li>• Separate flue gas discharge duct.</li> <li>• Discharging into various pressure areas.</li> <li>• The air supply and the flue gas outlet must not be placed on opposite walls.</li> </ul>	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>
<p>C<sub>63</sub>(X)</p>		<p>This type of unit is supplied by the manufacturer without a supply and discharge system.</p>	<p>When selecting the material, please note the following:</p> <ul style="list-style-type: none"> <li>• Condensed water must flow back to the appliance</li> <li>• The material must be resistant to the flue gas temperature of this appliance.</li> <li>• Maximum permissible recirculation of 10%.</li> <li>• The air supply and the flue gas outlet must not be placed on opposite walls.</li> <li>• Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).</li> </ul>
<p>C<sub>93</sub>(X) (3)</p>	 <p style="text-align: right; font-size: small;">AD-3000931-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> <li>• Air supply and flue gas discharge duct in shaft or ducted:             <ul style="list-style-type: none"> <li>- Concentric.</li> <li>- Air supply from existing duct.</li> <li>- Flue gas discharge via the roof.</li> <li>- Inlet opening for the air supply is in the same pressure zone as the discharge.</li> </ul> </li> </ul>	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>

Type	Principle	Description	Permitted manufacturers <sup>(1)</sup>
C <sub>(10)3(X)</sub>	 <p style="text-align: right; font-size: small;">AD-3000959-01</p>	<p>Combined air supply and flue gas outlet system (CLV) with overpressure</p> <ul style="list-style-type: none"> <li>• Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).</li> <li>• The channel must be designed for a nominal flue gas temperature of 25°C</li> <li>• Place a condensation drain, equipped with a siphon, at the bottom of the channel.</li> <li>• Maximum permissible recirculation of 10%.</li> <li>• The common outlet should be appropriate for a pressure of at least 200 Pa.</li> <li>• The roof feed-through must be designed for this configuration and must cause a draught in the channel.</li> <li>• A draught diverter is not permitted.</li> </ul> <p><b>i Important</b></p> <ul style="list-style-type: none"> <li>• The fan speed must be adapted for this configuration.</li> <li>• Contact us for more information.</li> </ul>	<p>Connecting material to the common channel:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>
C <sub>(12)3(X)</sub>	 <p style="text-align: right; font-size: small;">AD-3000930-01</p>	<p>Common flue gas outlet and individual air supply (half CLV)</p> <ul style="list-style-type: none"> <li>• Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).</li> <li>• The channel must be designed for a nominal flue gas temperature of 25°C</li> <li>• Place a condensation drain, equipped with a siphon, at the bottom of the channel.</li> <li>• Maximum permissible recirculation of 10%.</li> <li>• The common outlet should be appropriate for a pressure of at least 200 Pa.</li> <li>• The roof feed-through must be designed for this configuration and must cause a draught in the channel.</li> <li>• A draught diverter is not permitted.</li> </ul> <p><b>i Important</b></p> <ul style="list-style-type: none"> <li>• The fan speed must be adapted for this configuration.</li> <li>• Contact us for more information.</li> </ul>	<p>Connecting material to the common channel:</p> <ul style="list-style-type: none"> <li>• Centrotherm</li> <li>• Cox Geelen</li> <li>• Muelink &amp; Grol</li> <li>• Natalini</li> <li>• Poujoulat</li> <li>• Skoberne</li> <li>• Ubbink</li> </ul>

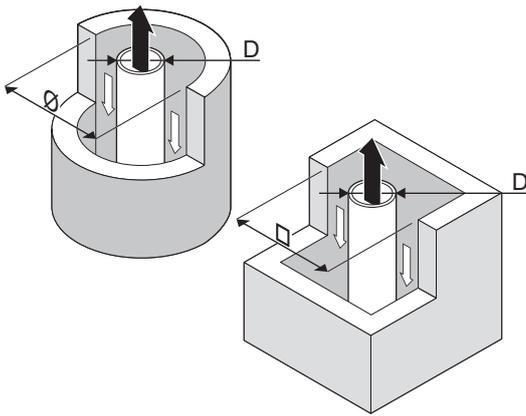
(1) The material must also satisfy the material property requirements from the relevant chapter.  
(2) EN 15502-2-1: 0.5 mbar suction due to depression  
(3) See table for shaft or duct requirements

### 6.5.2 Requirements for shaft for C<sub>93</sub>

Tab.14 Minimum dimensions of shaft or duct

Version (D)	Without air supply		With air supply	
	Ø duct	□ duct	Ø duct	□ duct
Rigid 60 mm	110 mm	110 x 110 mm	120 mm	110 x 110 mm
Rigid 80 mm	130 mm	130 x 130 mm	140 mm	130 x 130 mm
Concentric 60/100 mm	120 mm	120 x 120 mm	120 mm	120 x 120 mm
Concentric 80/125 mm	145 mm	145 x 145 mm	145 mm	145 x 145 mm

Fig.24 Minimum dimensions of shaft or duct



AD-3000330-02



**Important**

The shaft must comply with the air density requirements of the local regulations.



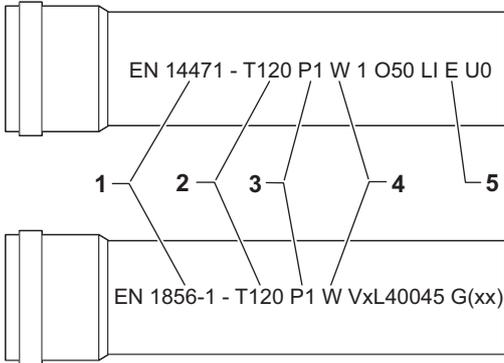
**Important**

- Always clean shafts thoroughly when using lining pipes and/or an air supply connection.
- It must be possible to inspect the lining duct.

**6.5.3 Material**

Use the string on the flue gas outlet material to check whether it is suitable for use on this appliance.

Fig.25 Sample string



AD-3001120-01

- 1 EN 14471 of EN 1856-1:** The material is CE approved according to this standard. For plastic this is EN 14471, For aluminium and stainless steel this is EN 1856-1.
- 2 T120:** The material has temperature class T120. A higher number is also allowed, but not lower.
- 3 P1:** The material falls into pressure class P1. H1 is also allowed.
- 4 W:** The material is suitable for draining condensation water (W='wet'). D is not allowed (D='dry').
- 5 E:** The material falls into fire resistance class E. Class A to D are also allowed, F is not allowed. Only applicable to plastic.



**Warning**

- The coupling and connection methods may vary depending on the manufacturer. It is not permitted to combine pipes, coupling and connection methods from different manufacturers. This also applies to roof feed-throughs and common channels.
- The materials used must comply with the prevailing regulations and standards.

Tab.15 Overview of material properties

Version	Flue gas outlet		Air supply	
	Material	Material properties	Material	Material properties
Single-wall, rigid	<ul style="list-style-type: none"> <li>• Plastic<sup>(1)</sup></li> <li>• Stainless steel<sup>(2)</sup></li> <li>• Thick-walled, aluminium<sup>(2)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• With CE marking</li> <li>• Temperature class T120 or higher</li> <li>• Condensate class W (wet)</li> <li>• Pressure class P1 or H1</li> <li>• Fire resistance class E or better<sup>(3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Plastic</li> <li>• Stainless steel</li> <li>• Aluminium</li> </ul>	<ul style="list-style-type: none"> <li>• With CE marking</li> <li>• Pressure class P1 or H1</li> <li>• Fire resistance class E or better<sup>(3)</sup></li> </ul>
<p>(1) according to EN 14471                      (2) according to EN 1856                      (3) according to EN 13501-1</p>				

### 6.5.4 Dimensions of flue gas outlet pipe



#### Warning

The pipes connected to the flue gas adapter must satisfy the following dimension requirements.

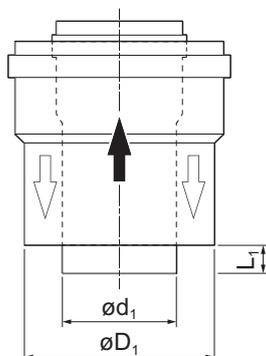
- $d_1$  External dimensions of flue gas outlet pipe
- $D_1$  External dimensions of air supply pipe
- $L_1$  Length difference between flue gas outlet pipe and air supply pipe

Tab.16 Dimensions of pipe

	$d_1$ (min-max)	$D_1$ (min-max)	$L_1^{(1)}$ (min-max)
60/100 mm	59.3 - 60.3 mm	99 - 100.5 mm	0 - 15 mm
80/125 mm	79.3 - 80.3 mm	124 - 125.5 mm	0 - 15 mm

(1) Shorten the inner pipe if the length difference is too great.

Fig.26 Dimensions of concentric connection



AD-3000962-01

### 6.5.5 Length of the air and flue gas pipes

The maximum length of the flue gas outlet and air supply channel vary depending on the appliance type; consult the relevant chapter for the correct lengths.



#### Important

- When using bends, the maximum chimney length ( $L$ ) must be shortened according to the reduction table.
- For adaptation to another diameter use approved transitions

#### ■ Room-ventilated model (B<sub>23</sub>, B<sub>23P</sub>, B<sub>33</sub>)

- $L$  Length of the outlet duct, including roof feed-through
- Connecting the flue gas outlet
- Connecting the air supply

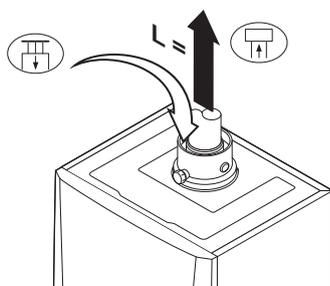
With a room-ventilated version, the air supply opening stays open; only the flue gas outlet opening is connected. This will ensure that the boiler obtains the necessary combustion air directly from the installation area. Use adapters when using air supply and flue gas outlet pipes with any other diameter.



#### Caution

- The air supply opening must stay open.
- The installation area must be equipped with the necessary air supply openings. These openings must not be obstructed or shut off.

Fig.27 Room-ventilated version



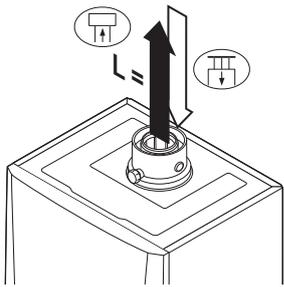
AD-0001356-01

Tab.17 Maximum chimney length ( $L$ )

Diameter	60 mm	70 mm	80 mm	90 mm <sup>(1)</sup>
AMC 15	33 m	40 m	40 m <sup>(1)</sup>	40 m <sup>(1)</sup>
AMC 25	19 m	35 m	40 m <sup>(1)</sup>	40 m <sup>(1)</sup>
AMC 25/28 MI	16 m	30 m	40 m <sup>(1)</sup>	40 m <sup>(1)</sup>
AMC 35	13 m	25 m	40 m	40 m <sup>(1)</sup>

(1) While maintaining maximum length, additional 5 times 90° or 10 times 45° bends can be used.

Fig.28 Room-sealed version



AD-0001357-01

■ Room-sealed model (C<sub>13(x)</sub>, C<sub>33(x)</sub>, C<sub>63(x)</sub>, C<sub>93(x)</sub>)

- L Total length of the flue gas outlet and air supply duct
-  Connecting the flue gas outlet
-  Connecting the air supply

With a room-sealed version, both the flue gas outlet and the air supply openings are connected (concentrically). Refer to the table to determine the maximum pipe length of the flue gas outlet pipes in the room-sealed version.

Tab.18 Maximum chimney length (L)

Diameter	60/100 mm	80/125 mm <sup>(1)</sup>
AMC 15	20 m	20 m <sup>(1)</sup>
AMC 25	13 m	20 m <sup>(1)</sup>
AMC 25/28 MI	11 m	20 m <sup>(1)</sup>
AMC 35	9 m	20 m <sup>(1)</sup>

(1) Retaining the maximum length, it is possible to use an extra 5 x 90° or 10 x 45° elbows.

■ Connection in different pressure areas (C<sub>53(x)</sub>)

- L Total length of the flue gas outlet and air supply duct
-  Connecting the flue gas outlet
-  Connecting the air supply



**Important**

An 80/80 mm flue gas adapter (accessory) must be fitted for this connection.

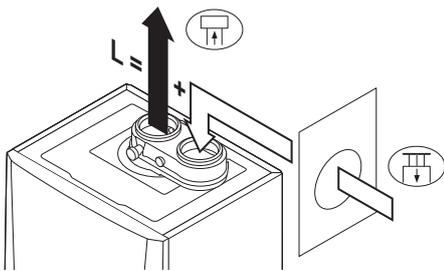
A combustion air supply and flue gas outlet are possible in different pressure areas and semi-CLV systems, The maximum permitted height difference between the combustion air supply and the flue gas outlet is 36 m.



**Important**

Contact us for more information on usage in coastal areas.

Fig.29 Different pressure zones



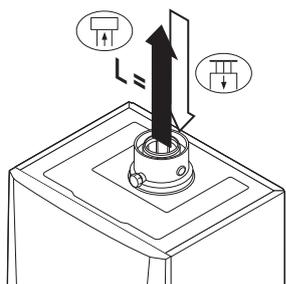
AD-0001212-01

Tab.19 Maximum chimney length (L)

Diameter	60 mm	70 mm	80 mm	90 mm <sup>(1)</sup>
AMC 15	19 m	40 m	40 m <sup>(1)</sup>	40 m <sup>(1)</sup>
AMC 25	12 m	25 m	40 m <sup>(1)</sup>	40 m <sup>(1)</sup>
AMC 25/28 MI	10 m	22 m	40 m	40 m <sup>(1)</sup>
AMC 35	7 m	14 m	37 m	40 m

(1) Retaining the maximum length, it is possible to use an extra 5 x 90° or 10 x 45° elbows.

Fig.30 Room-sealed version



AD-0001357-01

### ■ CLV overpressure system (C<sub>43P</sub>, C<sub>(10)3(X)</sub>, C<sub>(12)3(X)</sub> concentric)

- L Total length of the flue gas outlet and air supply duct
-  Connecting the flue gas outlet
-  Connecting the air supply

For a concentric version of C<sub>(12)3(X)</sub> it is allowed to add 2 m extra to the length of the flue gas discharge.

Tab.20 Maximum chimney length (L)

Diameter	60/100 mm	80/125 mm <sup>(1)</sup>
AMC 15	17 m	20 m <sup>(1)</sup>
AMC 25	11 m	20 m <sup>(1)</sup>
AMC 25/28 MI	9 m	20 m <sup>(1)</sup>
AMC 35	6 m	20 m

(1) Retaining the maximum length, it is possible to use an extra 5 x 90° or 10 x 45° elbows.

### ■ Half CLV overpressure system ( C<sub>(12)3(X)</sub> parallel)

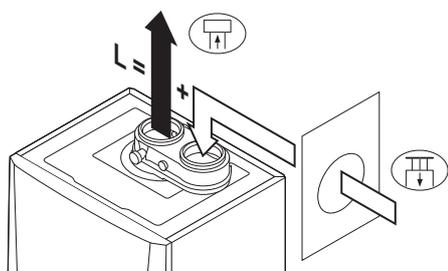
- L Total length of the air supply duct and flue gas outlet duct to the common part
-  Connecting the flue gas outlet
-  Connecting the air supply



#### Important

The maximum permitted height difference between the combustion air supply and the flue gas outlet is 36 m.

Fig.31 Different pressure zones



AD-0001212-01

Tab.21 Maximum chimney length (L)

Diameter	60/100 mm	80/125 mm <sup>(1)</sup>
AMC 15	22 m	40 m <sup>(1)</sup>
AMC 25	12 m	40 m <sup>(1)</sup>
AMC 25/28 MI	12 m	40 m <sup>(1)</sup>
AMC 35	7 m	40 m

(1) Retaining the maximum length, it is possible to use an extra 5 x 90° or 10 x 45° elbows.

### ■ Reduction table

Tab.22 Pipe reduction for each element used (parallel)

Diameter	60 mm	70 mm	80 mm	90 mm	100 mm	110 mm	130 mm
45° bend	0.9 m	1.1 m	1.2 m	1.3 m	1.4 m	1.5 m	1.6 m
90° bend	3.1 m	3.5 m	4.0 m	4.5 m	4.9 m	5.4 m	6.2 m

Tab.23 Pipe reduction for each element used (concentric)

Diameter	60/100 mm	80/125 mm	100/150 mm
45° bend	1.0 m	1.0 m	1.0 m
90° bend	2.0 m	2.0 m	2.0 m

### 6.5.6 Additional guidelines

#### ■ Installation

- For installing the flue gas outlet and air supply materials, refer to the instructions of the manufacturer of the relevant material. After installation, check at least all flue gas outlet and air supply parts for tightness.



#### Warning

If the flue gas outlet and air supply materials are not installed in accordance with the instructions (e.g. not leak-proof, not correctly bracketed), this can result in dangerous situations and/or physical injury.

- Make sure that the flue gas outlet pipe towards the boiler has a sufficient gradient (at least 50 mm per metre) and that there is a sufficient condensate collector and discharge (at least 1 m before the outlet of the boiler). The bends used must be larger than 90° to guarantee the gradient and a good seal on the lip rings.

#### ■ Condensation

- Direct connection of the flue gas outlet to structural ducts is not permitted because of condensation.
- If condensate from a plastic or stainless steel pipe section can flow back to an aluminium part in the flue gas outlet, this condensate must be discharged via a collector before it reaches the aluminium.

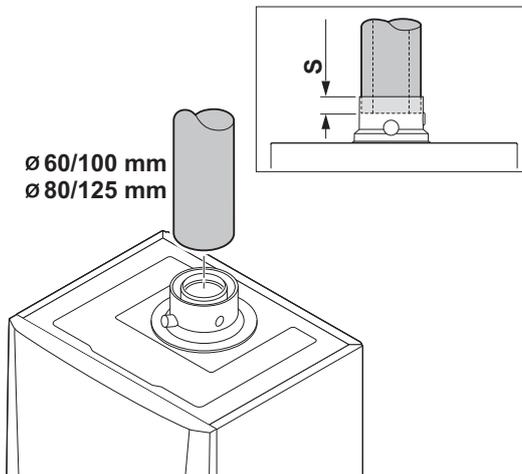


#### Important

Contact us for more information.

### 6.5.7 Connecting the flue gas outlet and air supply

Fig.32 Connecting the flue gas outlet and air supply



AD-0001216-01

**S** Insertion depth 30 mm

#### Mounting

1. Connect the flue gas outlet pipe and the air supply pipe to the boiler.
2. Fit the subsequent flue gas outlet pipes and air supply pipes in accordance with the manufacturer's instructions.

**Caution**

- The pipes must not be resting on the boiler.
- Fit the horizontal parts sloping down towards the boiler, with a gradient of 50 mm per metre.

## 6.6 Electrical connections

### 6.6.1 Recommendations

**Warning**

- Electrical connections must always be made with the power supply disconnected and only by qualified installers.
- The boiler is completely pre-wired. Never change the internal connections of the control panel.
- Make sure you establish an earth connection before connecting the electricity.

Establish the electrical connections in accordance with:

- The instructions of the current standards.
- The instructions of the wiring diagrams supplied with the boiler.
- The recommendations in this manual.
- Separate the sensor cables from the 230 V cables.

**Caution**

- Outside the central heating boiler: Use 2 cables spaced at least 10 cm apart.

### 6.6.2 Control unit

The table gives important connection values for the control unit.

Supply voltage	230 VAC/50Hz
Main fuse value F1 (230 VAC)	2.5 AT

**Danger of electric shock**

The following components of the boiler are connected to a 230 V power supply:

- Electrical connection of the circulation pump
- Electrical connection to gas valve unit 230 VAC or 230 RAC.
- Fan
- Electrical connection of the three-way valve
- The majority of components in the control unit
- Ignition transformer
- Connection of supply cable
- Automatic refill device (accessory)

The boiler has a three-wire mains lead (lead length 1.5 m) and is suitable for a 230 VAC/50 Hz power supply with a phase/neutral/earth system. The boiler is not phase sensitive. The power supply cable is connected to the **X01** connector in the instrument box. A spare fuse can be found in the casing of the control unit. There is a service port for a PC/laptop next to the control panel on the boiler.

**Caution**

- Always order a replacement mains lead from De Dietrich. The power supply cable should only be replaced by De Dietrich, or by an installer certified by De Dietrich.
- The boiler switch must be easily accessible at all times.

**Important**

All external connections can be made to the **CB-03** (low-voltage) PCB.

The boiler has several control, protection and regulation connection options. The standard PCB can be extended with optional PCBs.

### 6.6.3 Connecting a PC/laptop and diagnostic tools

There is a service port for a PC/laptop/smart phone/tablet next to the control panel on the boiler. Using the **Recom** PC/Smart Service app, you can enter, change and read out various boiler settings.

The service port is behind the flap on the front of the boiler.

### 6.6.4 Access to the connectors

The instrument box contains a standard **CB-03** PCB with an **X1** connector. Various thermostats and regulators can be connected to the standard PCB. The various connection options on the standard PCB are detailed in the following sections.

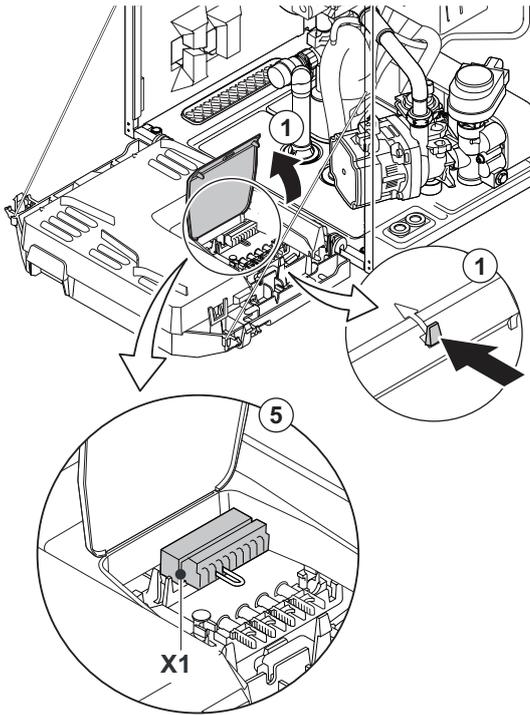
#### Access to the connectors:

1. Open the instrument box by undoing the clip fastener at the side.
2. Guide the cables from the regulator or the thermostat through the round grommet(s) on the right-hand side of the boiler bottom plate.
3. Guide the relevant connection cable(s) through the instrument box via the grommet(s) provided.
4. Undo the pull relief clip(s) and feed the cable(s) underneath.
5. Connect the cables to the appropriate terminals on the connector.
6. Press the pull relief clips firmly into place
7. Close the instrument box.



**For more information, see**  
Opening boiler, page 104

Fig.33 Access to the connectors



AD-0001217-04

### 6.6.5 Connection options for the standard PCB

#### ■ Connecting the modulating thermostat

The boiler is fitted with an **R-bus** connection as standard. It is possible without further modification to connect a modulating thermostat such as the **De Dietrich Smart TC°** thermostat or an **OpenTherm** modulating thermostat. The boiler is also suitable for **OpenTherm Smart Power**.

#### **Tm** Modulating thermostat

1. In the case of a room thermostat: install the thermostat in a reference room.
2. Connect the two-wire cable from the modulating thermostat (**Tm**) to the **R-Bus** terminals of the connector. It does not matter which wire is connected to which cable clamp.



#### **Important**

If the tap water temperature can be set on the thermostat, the boiler will supply this temperature (with the value set in the boiler as a maximum).

#### ■ Connecting the on/off thermostat

The boiler is suitable for connection to a 2-wire on/off ambient thermostat.

Fig.34 Connecting the modulating thermostat



AD-3000968-01

Fig.35 Connecting the on/off thermostat

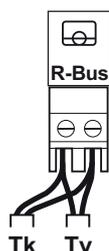


AD-3000969-01

**Tk** On/off thermostat

1. Fit the thermostat in a reference room (generally the living room).
2. Connect the two-wire cable of the thermostat (**Tk**) to the **R-Bus** terminals of the connector. It does not matter which wire is connected to which cable clamp.

Fig.36 Connection of frost thermostat



AD-3000970-01

**Tk** On/off thermostat**Tv** Frost thermostat

1. Place a frost thermostat (**Tv**) in a frost-sensitive room (e.g. a garage).
2. Connect the frost thermostat (**Tv**) parallel to the on/off thermostat (**Tk**) on the **R-Bus** terminals for the connector.

**Warning**

If a De Dietrich Smart TC° or **OpenTherm** thermostat is used, a frost thermostat cannot be connected in parallel to the **R-Bus** terminals. In that case, implement frost protection of the central heating system in combination with an outside sensor.

### ■ Frost protection combined with outside sensor

The central heating system can also be protected against frost in combination with an outside sensor. The radiator valve in the frost-sensitive room must be open.

**Important**

For boilers with an SCB-10 PCB, the outdoor sensor is connected to the SCB-10 PCB.

The frost protection works as follows with an outside sensor:

- If the outside temperature is lower than  $-10^{\circ}\text{C}$ : heat demand from the boiler and the pump starts working.
- If the outside temperature is higher than  $-10^{\circ}\text{C}$ : no heat demand from the boiler.

**Important**

The outside temperature before the start of frost protection can be changed with parameter **AP080**.

### ■ Connecting an outside sensor

An outside sensor can be connected to the **Tout** connector. In the case of an on/off thermostat, the boiler will control the temperature with the set point from the internal heating curve.

**See**

Adjusting the heating curve, page 81

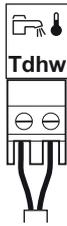
**Important**

For boilers with an SCB-10 PCB, the outdoor sensor is connected to the SCB-10 PCB.

**Important**

An **OpenTherm** controller can also use this outside sensor. In that case, the desired internal heating curve must be set on the controller.

Fig.37 Connecting the calorifier sensor/thermostat



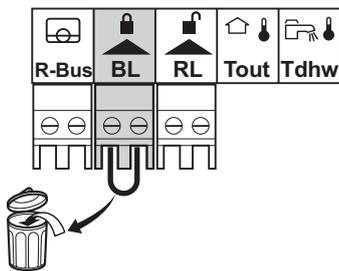
AD-3000971-01

### ■ Connecting the calorifier sensor/thermostat

A calorifier sensor or thermostat can be connected to the **Tdhw** terminals of the connector.

1. Connect the plug from the calorifier sensor or calorifier thermostat to the **Tdhw** connector.

Fig.38 Blocking input



AD-0001234-02

### ■ Blocking input

The boiler has a blocking input (Normally Closed contact). This input relates to the **BL** terminals of the connector.

If this contact is opened, the boiler will be blocked or locked out.

Change the function of the input with parameter setting **AP001**.



#### Important

First remove the bridge if this input is used.



#### Warning

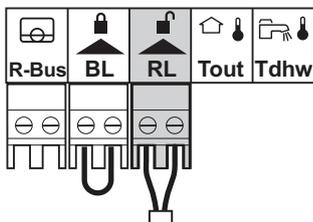
Only suitable for potential-free contacts.



#### For more information, see

CU-GH08 control unit settings, page 85

Fig.39 Release input



AD-0001235-02

### ■ Release input

The boiler has a release input (Normally Open contact). This input relates to the **RL** terminals of the connector.

If this contact is closed when there is a heat demand, the boiler will be blocked after a waiting time.

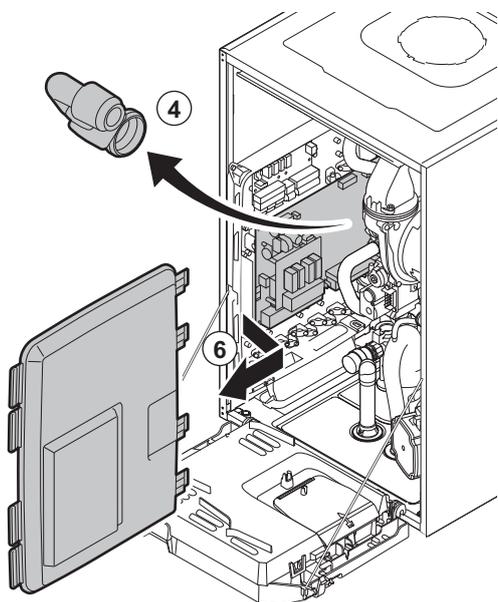
Change the waiting time of the input with parameter setting **AP008**.

**Warning**

Only suitable for potential-free contacts.

**6.6.6 Access to the PCB housing**

Fig.40 Access to the PCB



AD-0001388-04

1. Unscrew the two screws located under the front panel by a quarter turn.
2. Remove the front panel.
3. Tilt the instrument box forwards by opening the clips on the sides.
4. Remove the air intake silencer.
5. Unclip the 4 clips on the left side of the PCB housing cover.
6. Swing the cover to the right and pull it forward to remove the cover from the boiler.
7. Connect the cables to the appropriate terminals on PCB **SCB-10**.
8. Position the upper hinges of the cover in the right position of the PCB housing.
9. Press all hinges of the cover into place.
10. Close the 4 clips on the left side of the cover.
11. Fit the air intake silencer.
12. Reassemble the front panel in the reverse order.

**For more information, see**

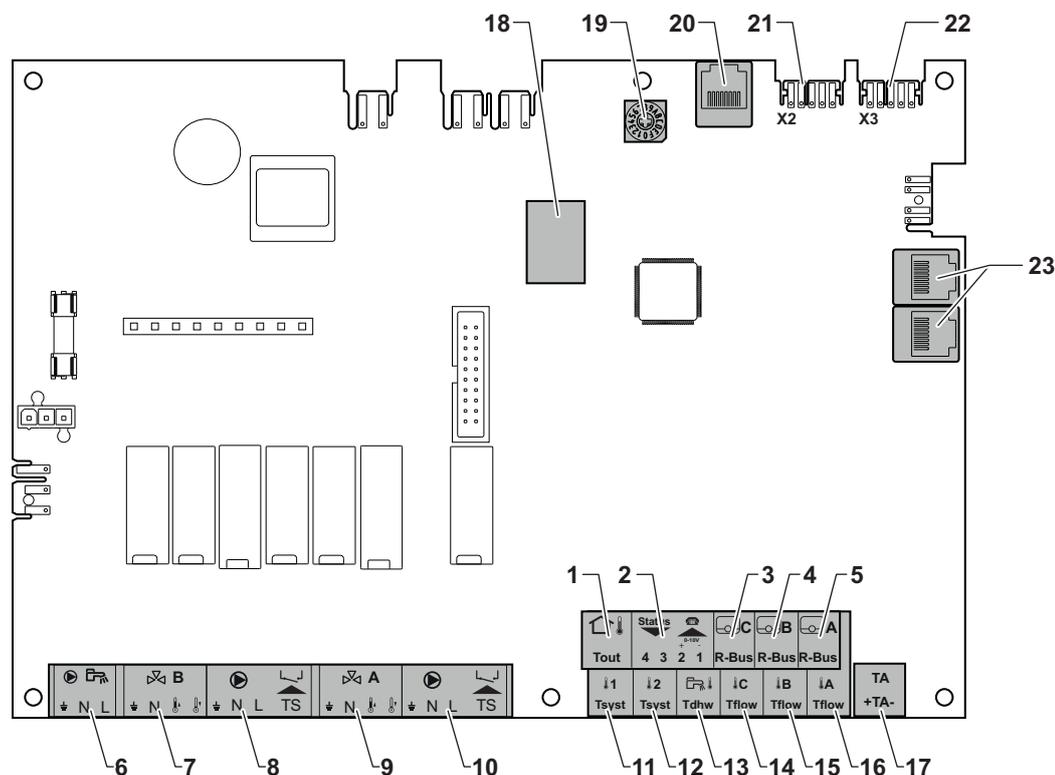
Opening boiler, page 104

**6.6.7 Description of the SCB-10 PCB**

Different heating zones can be connected to the SCB-10 PCB. Two zones are designated for heating and one for domestic hot water.

The connections for the sensors or pumps of each zone are on the PCB.

Fig.41 SCB-10 PCB



- 1 Outdoor temperature sensor
- 2 Programmable and 0-10 V input

- 3 Room temperature sensor - circuit C
- 4 Room temperature sensor - circuit B

AD-3001210-01

- |   |   |
|---|---|
| 5 Room temperature sensor - circuit A     | 15 Flow sensor - circuit B  |
| 6 Domestic hot water tank pump            | 16 Flow sensor - circuit A  |
| 7 3-way valve - circuit B                 | 17 Impressed current anode  |
| 8 Pump and safety thermostat - circuit B  | 18 Connectors Mod-BUS   |
| 9 Three-way valve - circuit A             | 19 Coding wheel, selects the generator number in the cascade in Mod-Bus |
| 10 Pump and safety thermostat - circuit A | 20 S-BUS connector  |
| 11 System sensor 1                        | 21 END connector for L-BUS connection                                   |
| 12 System sensor 2                        | 22 L-BUS connection to control unit (CU-XXXX)                           |
| 13 Domestic hot water sensor              | 23 S-BUS cable connector  |
| 14 Flow sensor - circuit C                |   |

Tab.24 Compatibility of connections

	Circuit A	Circuit B	Circuit C (with AD249 option)	AUX circuit (with AD249 option)	Domestic hot water circuit
Convection fan	Yes	Yes	Yes	No	No
Underfloor heating	Yes	Yes	Yes	No	No
Radiator	Yes	Yes	Yes	No	No
365 day radiator	Yes	Yes	Yes	No	No
Continuous heating	Yes	Yes	Yes	No	No
Timer programme	Yes	Yes	Yes	Yes	Yes
Swimming pool	Yes	Yes	Yes	No	No
Domestic hot water production	Yes	Yes	Yes	Yes	Yes
Domestic hot water production, electric only	Yes	Yes	Yes	No	No
Stratified tank (2 sensors)	No	No	No	No	Yes
Deactivation	Yes	Yes	Yes	Yes	Yes

**Caution**

Connect the TAS (Titan Active System) anode of the calorifier tank to the connector TA. If the calorifier tank does not have a TAS anode, connect the simulation anode (= accessory)

The SCB-10 PCB has the following features;

- control of 2 (mixing) zones fitted on connector X15
- control of a third (mixing) zone via an PCB (= accessory) fitted on connector X8
- control of one domestic hot water (DHW) zone
- cascade layout (add sensor on sensor system 1 or 2)

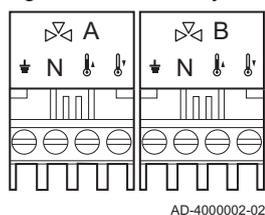
**Important**

- If the boiler is fitted with the SCB-10 board, then this is automatically recognised by the automatic control unit of the boiler.
- On removing this board, the boiler will show an error code. To prevent this error, carry out an auto-detect immediately after removing this board.

**For more information, see**

Carrying out an auto-detect for the CAN matrix, page 99

Fig.42 Three-way valve



### ■ Connecting a three-way valve

Connecting a three-way valve (230 VAC) per zone (group).

The three-way valve is connected as follows:

- = earth
- N = neutral
- = open
- = closed

### ■ Connecting the pump with a protection thermostat

Connecting a pump with a protection thermostat, e.g. for underfloor heating. The maximum pump power consumption is 300 VA.

Connect the pump and the protection thermostat as follows:

- = earth
- N = neutral
- L = phase
- = protection thermostat (remove bridge)

Fig.43 Pump with protection thermostat

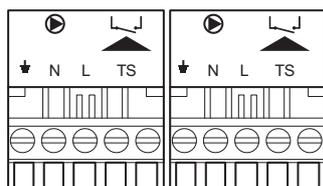
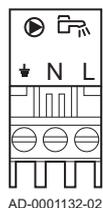


Fig.44 DHW pump



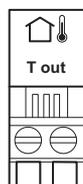
### ■ Connecting a domestic hot water (DHW) pump

Connecting a domestic hot water (DHW) pump. The maximum power consumption is 300 VA.

Connect the pump as follows:

- = earth
- N = neutral
- L = phase

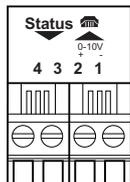
Fig.45 Outside sensor



### ■ Connecting an outside sensor

An outside sensor can be connected to the **S out** terminals of the connector. In the case of an on/off thermostat, the boiler will control the temperature with the set point from the internal heating curve.

Fig.46 Telephone connector



AD-4000004-02

■ Connecting a telephone connector

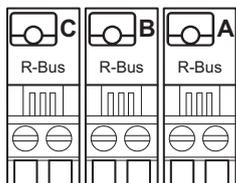
The telephone connector can be used to connect a remote control, a 0–10 V analogue input or as a status output.

The 0–10 V signal controls the boiler flow temperature in a linear way. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

Connect the telephone connector as follows:

- 1 + 2 = 0–10 V / status input
- 3 + 4 = status output

Fig.47 External room thermostats



AD-4000003-02

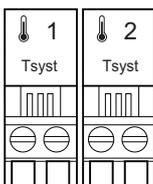
■ Connecting external room thermostats

Connecting external room thermostats per group (zone).

The contacts work with an on/off thermostat, a room thermostat, an **OpenTherm** controller or an **OpenTherm Smart Power** controller.

- RU.A = room thermostat
- RU.B = room thermostat
- RU.C = room thermostat

Fig.48 System sensors



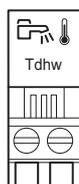
AD-4000008-02

■ Connecting system sensors

Connecting system sensors for circuits (zones).

- S.SYST.1 = system sensor (NTC 10k Ohm/25°C)
- S.SYST.2 = system sensor (NTC 10k Ohm/25°C)

Fig.49 DHW sensor

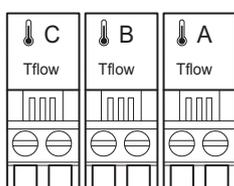


AD-4000009-02

### ■ Connecting the domestic hot water (DHW) sensor

Connecting the domestic hot water (DHW) sensor (NTC 10k Ohm/25°C).

Fig.50 Contact temperature sensors



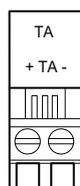
AD-4000007-02

### ■ Connecting contact temperature sensors

Connecting contact temperature sensors for system flow, DHW temperatures or zones (groups).

- S.DEP.A = temperature sensor (NTC 10k Ohm/25°C)
- S.DEP.B = temperature sensor (NTC 10k Ohm/25°C)
- S.DEP.C = temperature sensor (NTC 10k Ohm/25°C)

Fig.51 Anode connection for calorifier tank



AD-4000005-02

### ■ Connecting the calorifier tank anode

Connecting a TAS anode (Titan Active System) for a calorifier tank.

Connect the anode as follows:

- - = connection on the calorifier tank
- + = connection on the anode



#### Caution

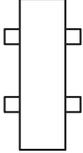
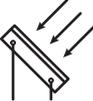
If the calorifier tank does not have a TAS anode, connect the simulation anode (= accessory)

## 6.7 Connection diagrams PCB SCB-10

### 6.7.1 Symbols used

Tab.25 Explanation of symbols in the hydraulics flow diagram

Symbol	Explanation
---	Return pipe
—	Flow pipe
	Motorised three-way valve
	Pump

Symbol	Explanation
	Domestic hot water
	Make contact
	Outside temperature sensor
	Sensor
	Safety thermostat
	Room thermostat
	Plate heat exchanger
	Low-loss header
	Instant boiler
	Primary heating circuit connection
	Secondary heating circuit connection Domestic hot water circuit connection
	Solar collector
	DHW storage tank
	Titanium anode – fitted in DHW storage tank
	Electrical heating element
	Shower
	Heating zone
	Underfloor heating

Symbol	Explanation
	Hot-air heater
	Swimming pool

### 6.7.2 Factory configuration of circuits

From the factory, the different circuits are configured as shown in the table. You can modify this configuration and adapt it to the needs of your installation.

Tab.26 Factory circuit configuration

Circuit	Circuit type
CIRCA	Direct heating circuit
CIRCB	Circuit with 3 way valve
CIRCC	Circuit with 3 way valve

### 6.7.3 Boiler settings with SCB-10 control

When the boiler is fitted with the SCB-10 control board the following boiler parameter(s) at installer level must be checked and adjusted, if necessary:

Tab.27 Installation Setup > CU-GH08 > CIRCA > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convectur 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	0

Tab.28 Installation Setup > CU-GH08 > Gas fired appliance > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	0

Tab.29 Installation Setup > CU-GH08 > Tank DHW > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	0

For the hydraulic connections as shown, where some parameters must be adjusted, the parameter settings are arranged in three levels:

- 1. End user level

- 2. Installer level
- 3. Advanced installer level

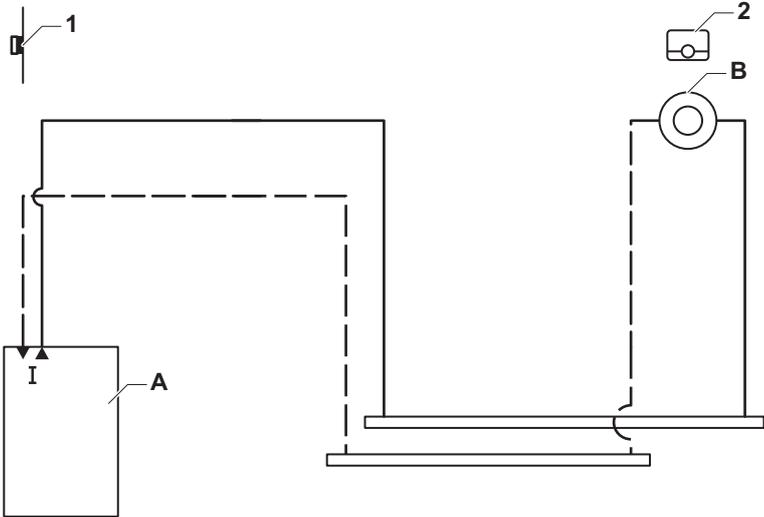


**Important**

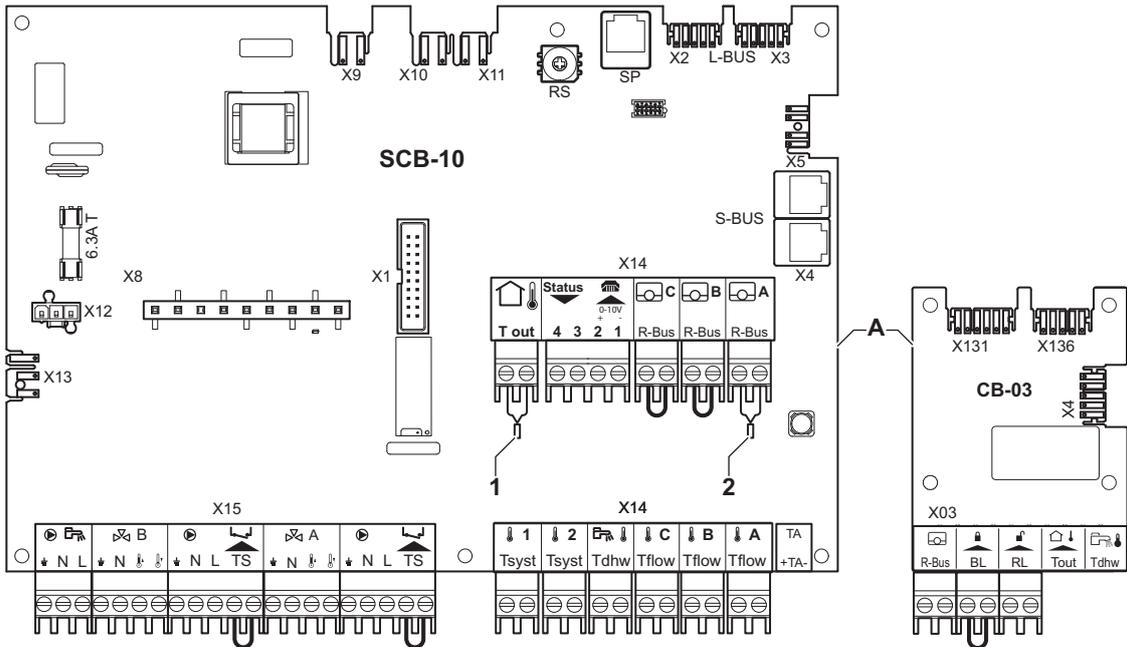
- The 'Read' column shows the read only parameters on the given level.
- The 'Write' column shows the parameters which can be changed on the given level.

6.7.4 Connection direct zone

Fig.52 1 boiler + 1 direct zone



AD-3001068-01



AD-3001079-02



**Caution**

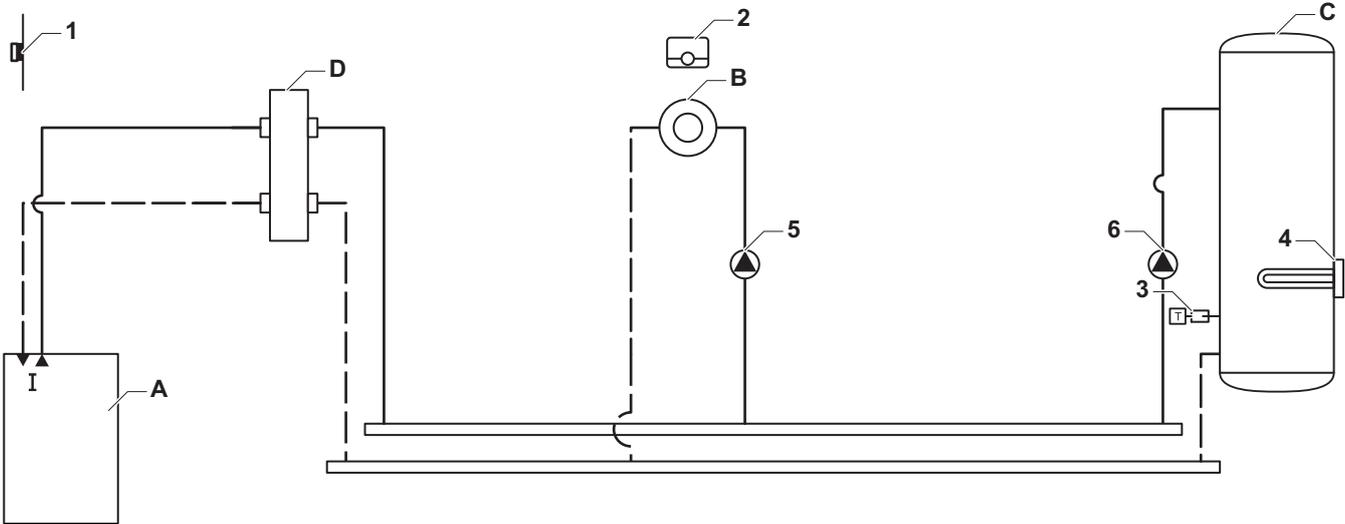
- If the tank is fitted with a Titan Active System® corrosion protection anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with a corrosion protection anode, put the simulation connector in place (delivered with the DHW sensor (accessory))

**Important**

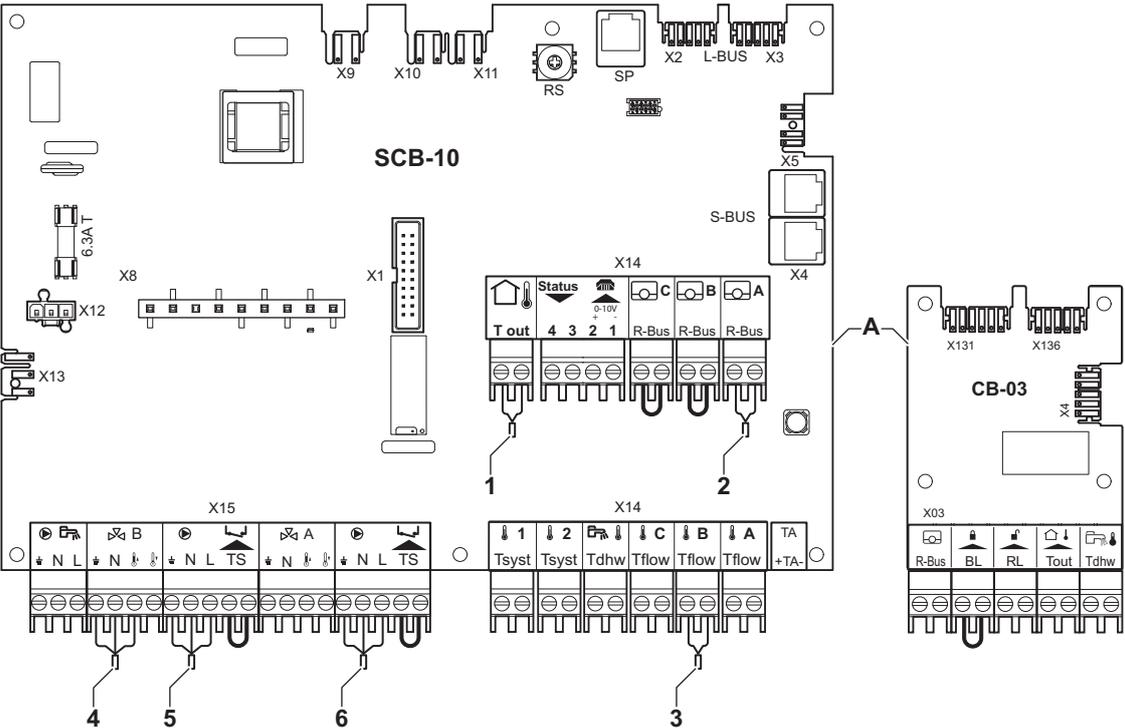
All the factory settings of the boiler and SCB-10 are adequate for this connection.

**6.7.6 Connection 1 LLH + 1 direct zone + DHW zone with electrical heating element**

Fig.54 1 boiler + 1 LLH + 1 direct zone + DHW zone with electrical heating element



AD-3001070-01



A Boiler

B Direct zone - CircA1

AD-3001081-02

**C** Domestic hot water (DHW) zone - CircB1 (with electrical heating element)

**D** Low loss header



**Caution**

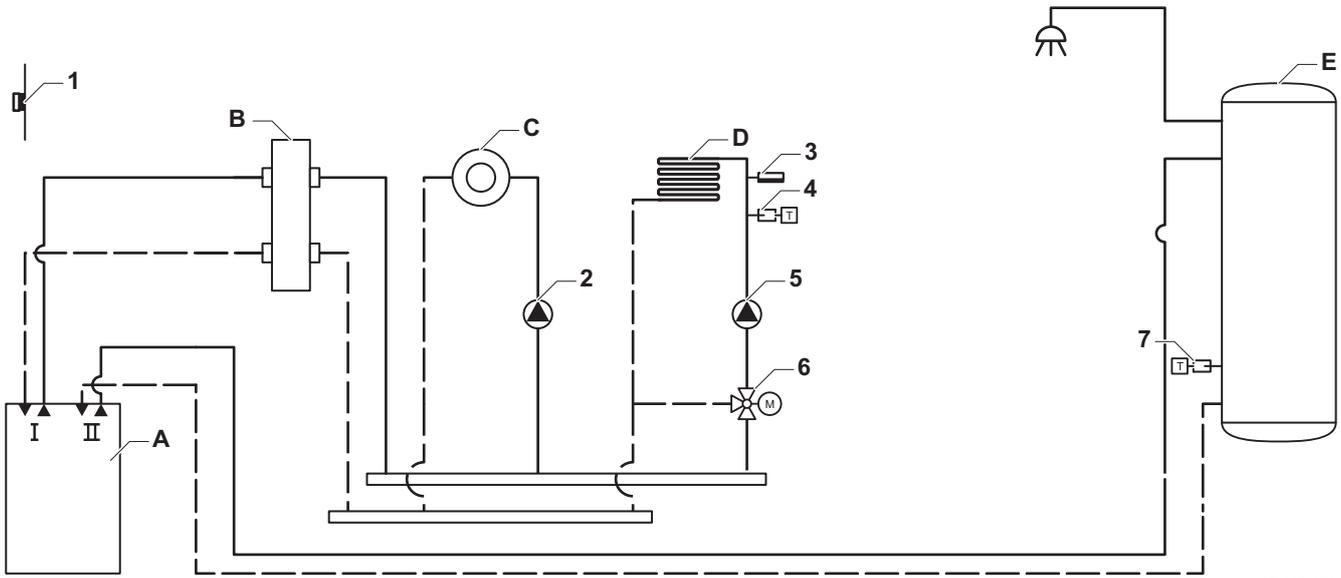
The electrical heating element must be connected to a separate relay and safety thermostat.

Tab.30 Installation Setup > SCB-10 > CIRCB 1 ( Electrical DHW tank ) > Parameters, counters, signals > Parameters

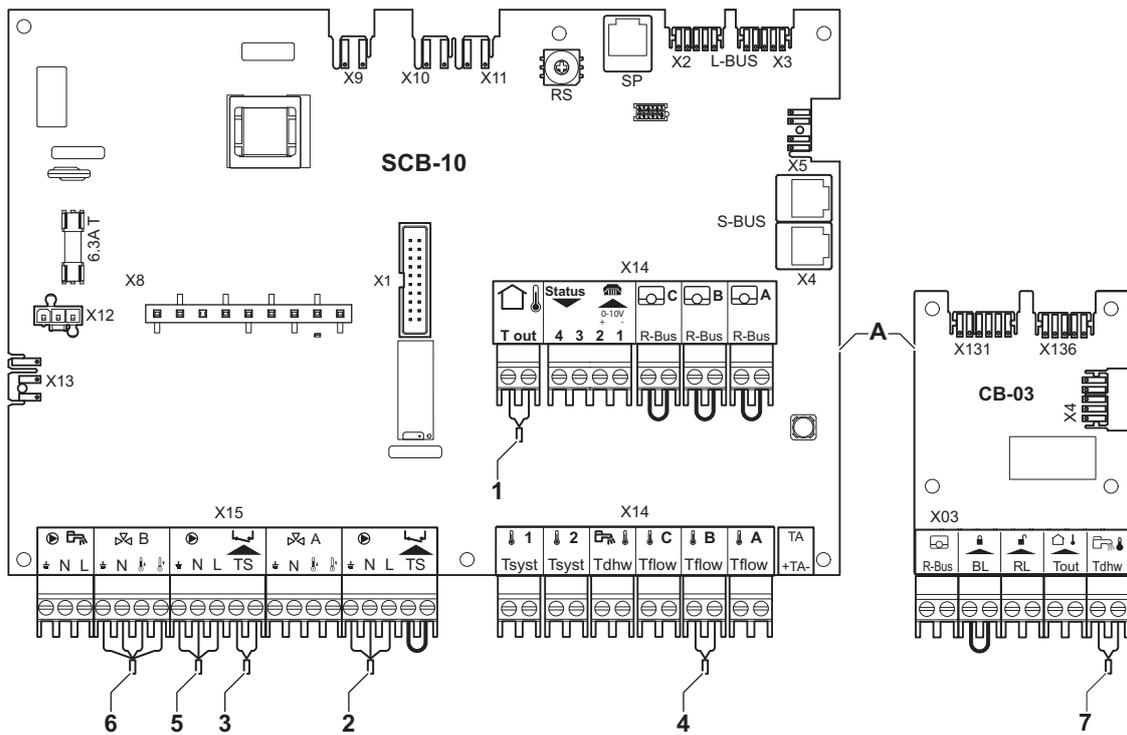
Code	Display text	Description	Range	Adjustment
CP001	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C – 100 °C	90
CP021	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convactor 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	7

### 6.7.7 Connection 1 LLH + 1 direct zone + mixing zone + DHW zone

Fig.55 1 boiler + 1 LLH + 1 direct zone + mixing zone + DHW zone



AD-3001072-01



AD-3001083-02

- A Boiler
- B Low loss header
- C Direct zone - CircA1
- D Mixing zone - CircB1 (underfloor heating)
- E DHW zone -1 sensor

**i Important**  
All the factory settings of the boiler and SCB-10 are adequate for this connection.

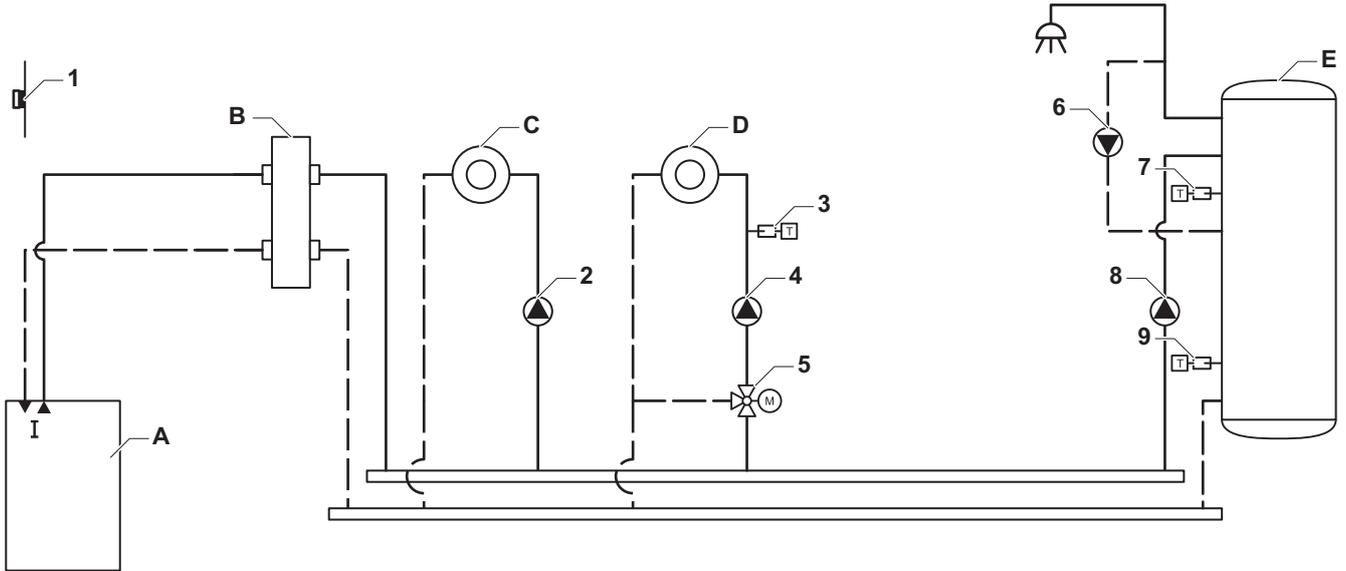


**Caution**

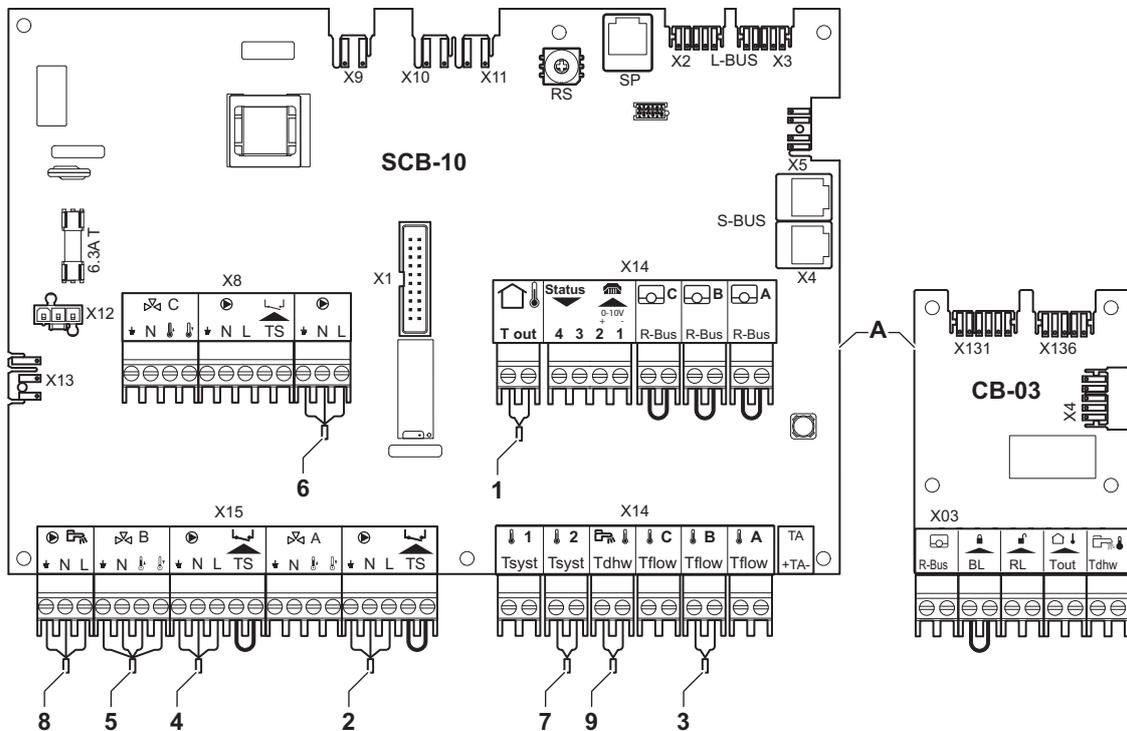
- If the tank is fitted with a Titan Active System® corrosion protection anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with a corrosion protection anode, put the simulation connector in place (delivered with the DHW sensor (accessory))

**6.7.8 Connection 1 LLH + 1 direct zone + mixing zone + DHW zone**

Fig.56 1 boiler + 1 LLH + 1 direct zone + mixing zone + DHW zone



AD-3001073-01



AD-3001084-02

- |   |  |
|---|--|
| <p><b>A</b> Boiler</p> <p><b>B</b> Low loss header</p> <p><b>C</b> Direct zone - CircA1</p> | <p><b>D</b> Mixing zone - CircB1</p> <p><b>E</b> DHW zone -DHW1 (layered calorifier - 2 sensors)</p> |
|---|--|

**Important**

For this configuration an additional PCB (accessory AD249) is placed on the SCB-10 PCB.

Tab.31 Installation Setup > SCB-10 > DHW 1 ( DHW layered tank ) > Parameters, counters, signals > Parameters

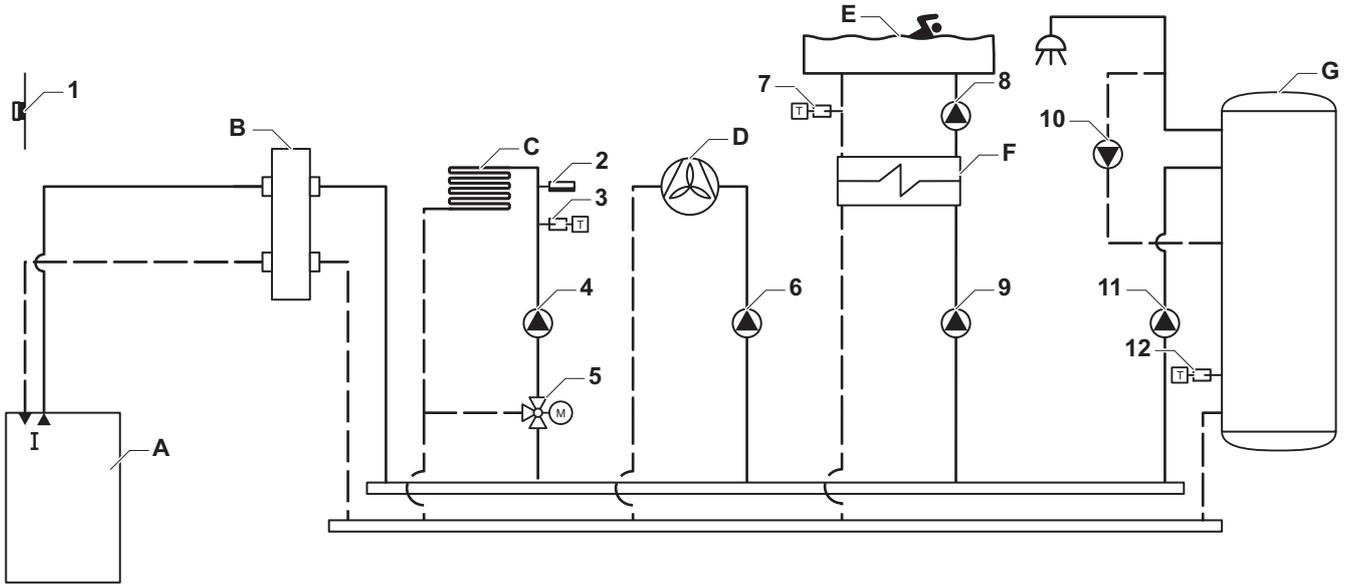
Code	Display text	Description	Range	Adjustment
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	10

Tab.32 Installation Setup > SCB-10 > AUX 1 ( Zone time program ) > Parameters, counters, signals > Parameters

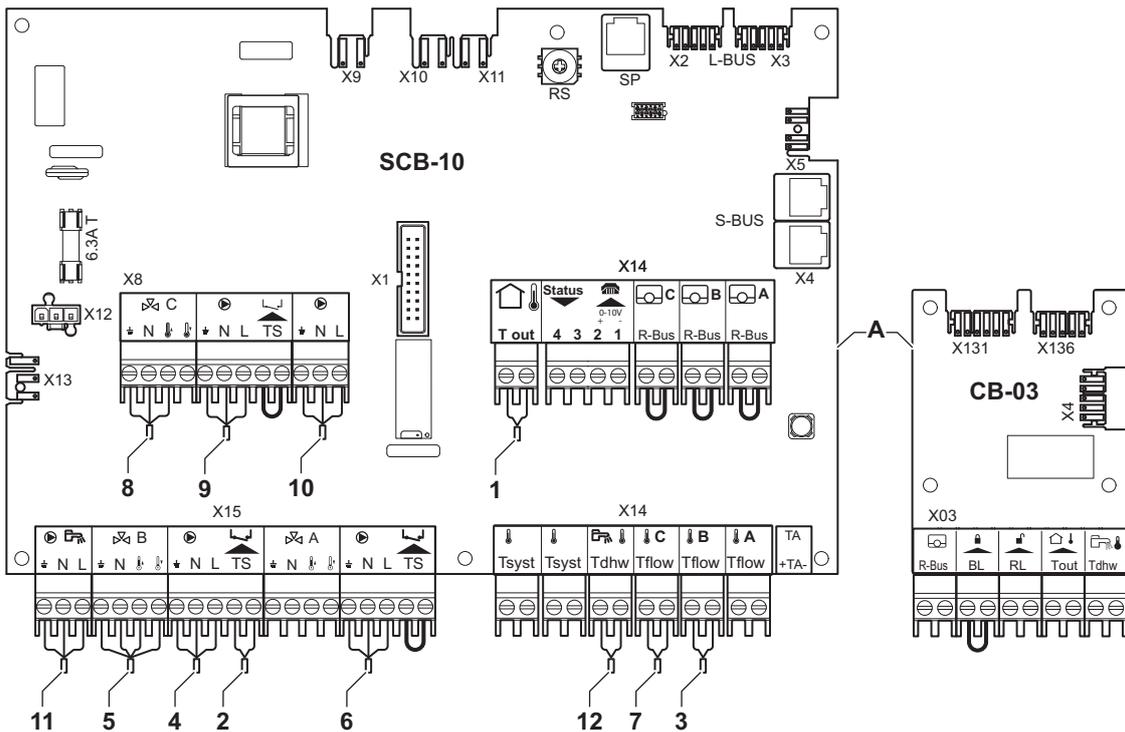
Code	Display text	Description	Range	Adjustment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

### 6.7.9 Connection 1 LLH + 1 mixing zone + 1 direct zone + swimming pool + DHW zone

Fig.57 1 boiler + 1 LLH + 1 mixing zone + 1 direct zone + swimming pool + DHW zone



AD-3001074-01



AD-3001085-02

- A Boiler
- B Low loss header
- C Mixing zone - CircB1 (underfloor heating)
- D Direct zone - CircA1
- E Swimming pool zone - CircC1
- F Plate heat exchanger
- G DHW zone - DHW1 (1 sensor)

**i Important**  
 For this configuration an additional PCB (accessory AD249) is placed on the SCB-10 PCB.

**Caution**

- If the tank is fitted with a Titan Active System® corrosion protection anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with a corrosion protection anode, put the simulation connector in place (delivered with the DHW sensor (accessory))

Tab.33 Installation Setup &gt; SCB-10 &gt; CIRCC 1 ( Swimming pool ) &gt; Parameters, counters, signals &gt; Parameters

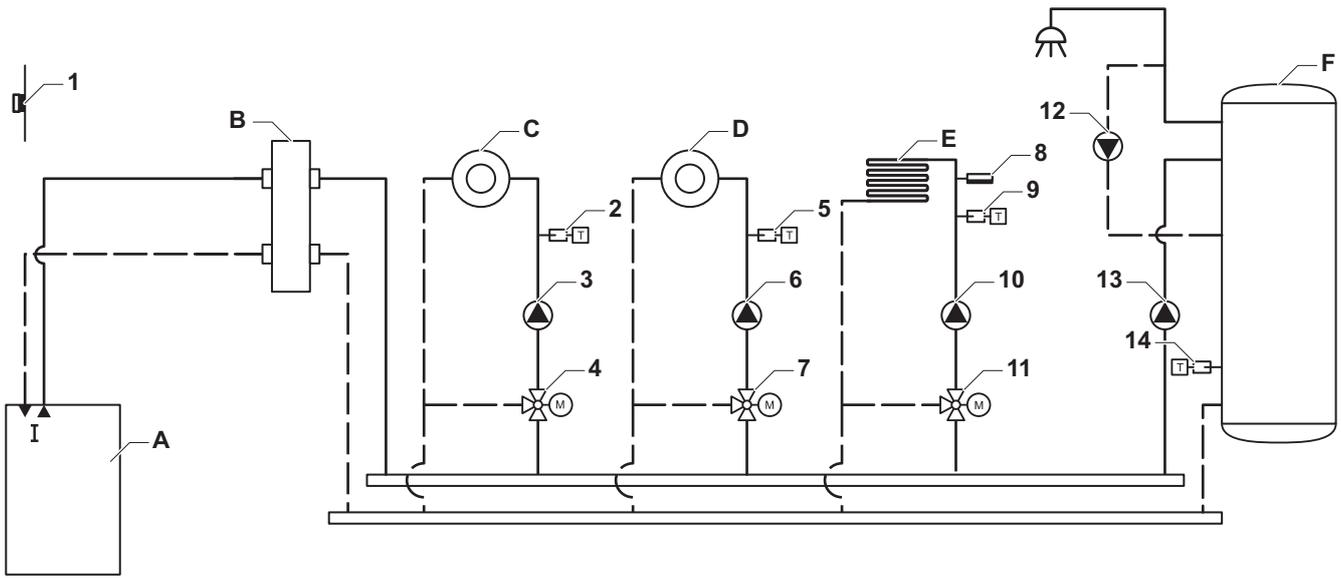
Code	Display text	Description	Range	Adjustment
CP023	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	3

Tab.34 Installation Setup &gt; SCB-10 &gt; AUX 1 ( Zone time program ) &gt; Parameters, counters, signals &gt; Parameters

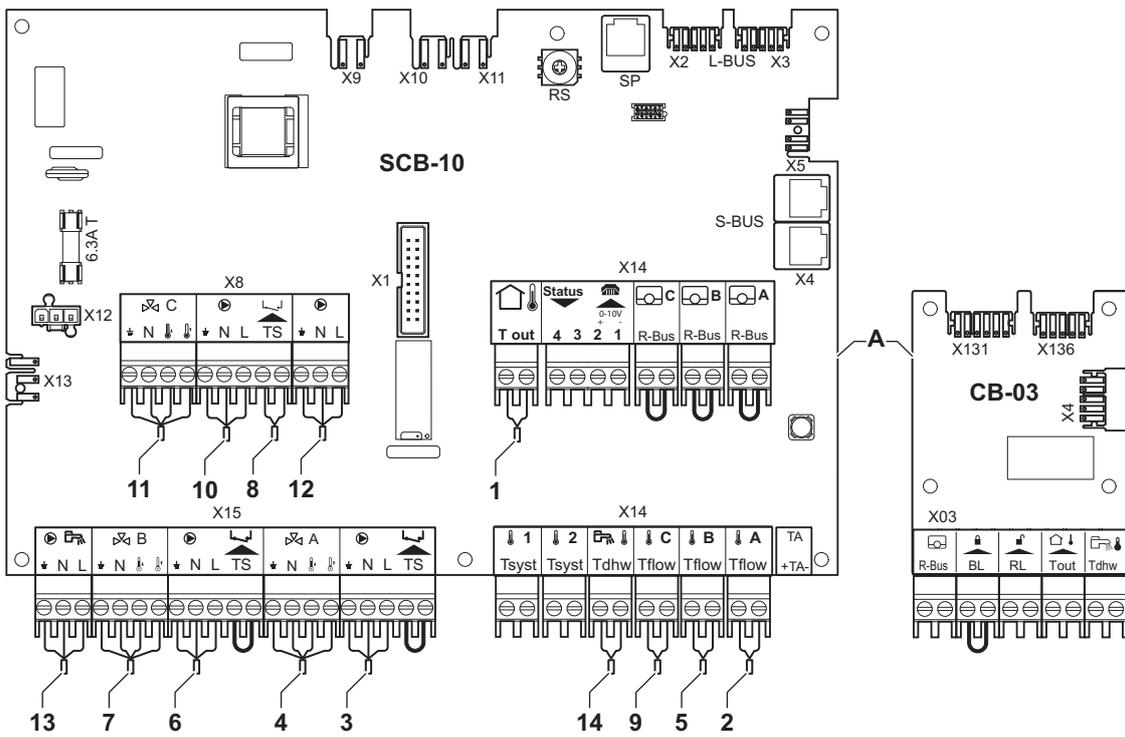
Code	Display text	Description	Range	Adjustment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

6.7.10 Connection 1 LLH + 3 mixing zones + DHW zone

Fig.58 1 boiler + 1 LLH + 3 mixing zones + DHW zone



AD-3001075-01



AD-3001086-02

- A Boiler
- B Low loss header
- C Mixing zone - CircA1
- D Mixing zone - CircB1
- E Mixing zone - CircC1 (underfloor heating)
- F DHW zone - DHW1 (1 sensor)



**Important**

For this configuration an additional PCB (accessory AD249) is placed on the SCB-10 PCB.

**Caution**

- If the tank is fitted with a Titan Active System® corrosion protection anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with a corrosion protection anode, put the simulation connector in place (delivered with the DHW sensor (accessory))

Tab.35 Installation Setup &gt; SCB-10 &gt; CIRCA 1 ( Mixed zone ) &gt; Parameters, counters, signals &gt; Parameters

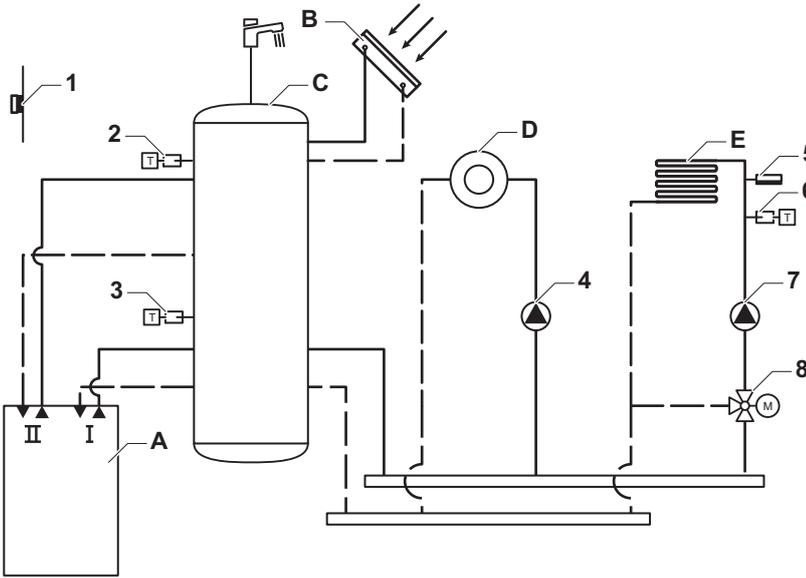
Code	Display text	Description	Range	Adjustment
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C – 100 °C	50
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 °C – 100 °C	40
CP020	Zone Function	Functionality of the zone	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 31 = DHW FWS EXT	2
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	0.7

Tab.36 Installation Setup &gt; SCB-10 &gt; AUX 1 ( Zone time program ) &gt; Parameters, counters, signals &gt; Parameters

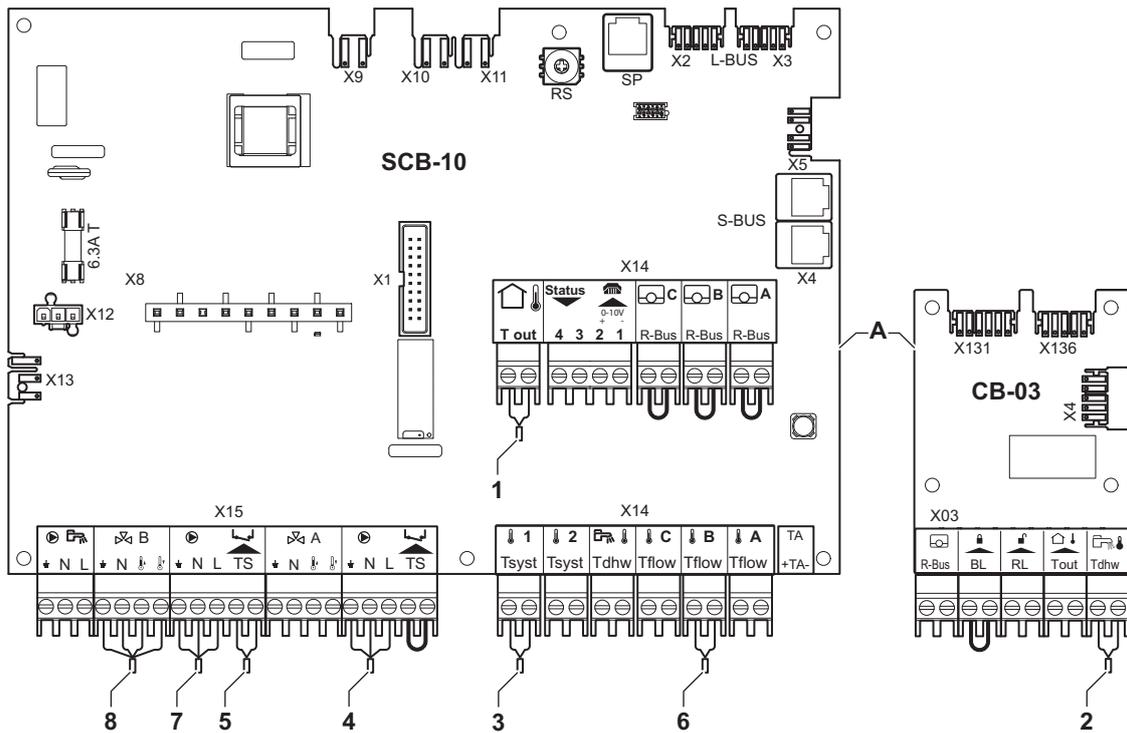
Code	Display text	Description	Range	Adjustment
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

### 6.7.11 Connection 1 combi-buffer + 1 direct zone + 1 mixing zone + solar collectors

Fig.59 1 boiler + 1 combi-buffer + 1 direct zone + 1 mixing zone + solar collectors



AD-3001076-01



AD-3001087-02

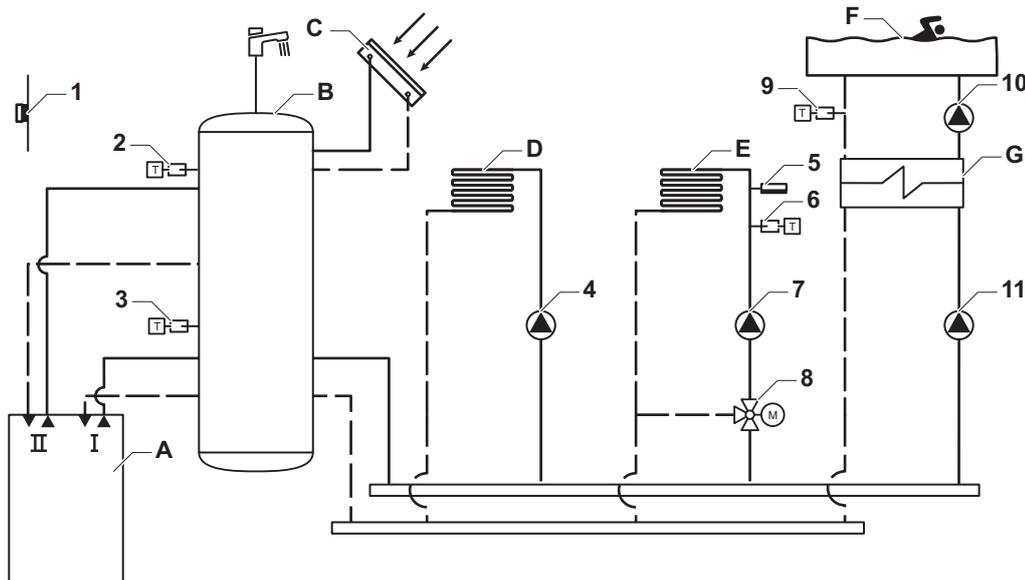
- A Boiler
- B Solar collectors
- C Combi-buffer tank with solar preheating
- D Direct zone - CircA1
- E Mixing zone - CircB1 (underfloor heating)

Tab.37 Installation Setup > SCB-10 > Pass.buff.tank 1sens > Parameters, counters, signals > Parameters

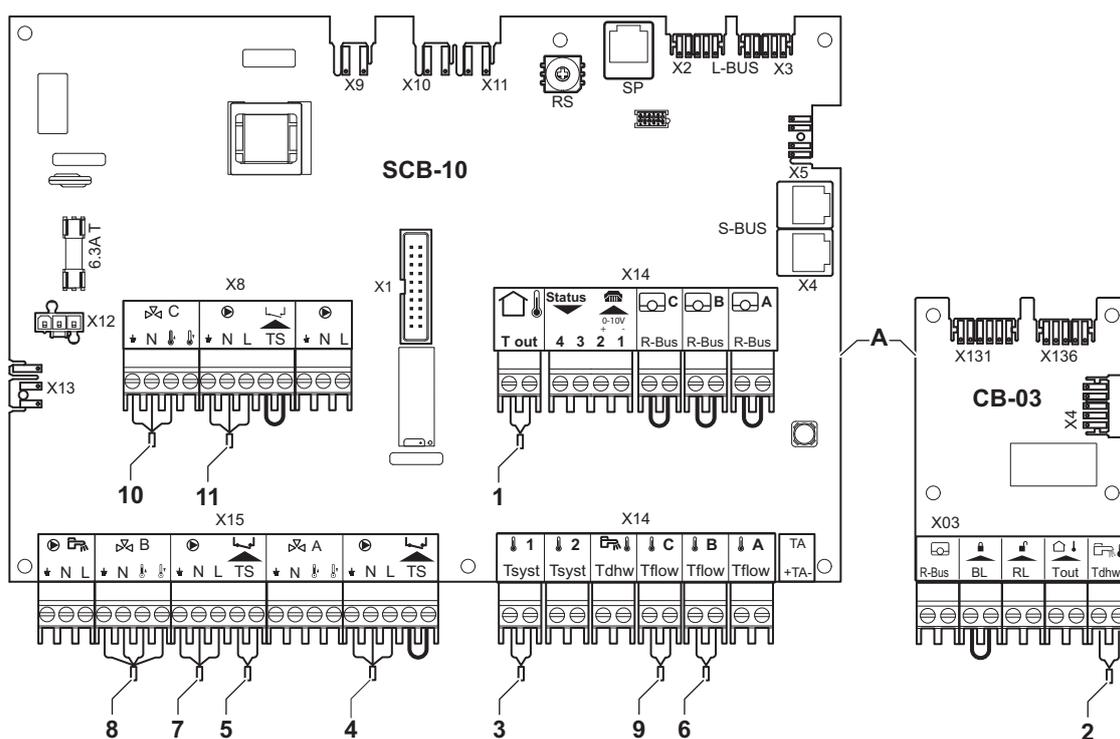
Code	Display text	Description	Range	Adjustment
BP001	Type Buffer Tank	Type of buffer tank	0 = Disabled 1 = One sensor 2 = Two sensors 3 = Three sensors	1

### 6.7.12 Connection 1 combi-buffer + 1 direct zone + 1 mixing zone + swimming pool + solar collectors

Fig.60 1 boiler + 1 combi-buffer + 1 direct zone + 1 mixing zone + swimming pool + solar collectors



AD-3001077-01



AD-3001088-02

- |  |   |
|--|---|
| <p><b>A</b> Boiler</p> <p><b>B</b> Combi-buffer tank with solar preheating</p> <p><b>C</b> Solar collectors</p> <p><b>D</b> Direct zone - CircA1</p> | <p><b>E</b> Mixing zone - CircB1 (underfloor heating)</p> <p><b>F</b> Direct zone - CircC1 (swimming pool)</p> <p><b>G</b> Plate heat exchanger</p> |
|--|---|



#### Important

For this configuration an additional PCB (accessory AD249) is placed on the SCB-10 PCB.

Tab.38 Installation Setup &gt; SCB-10 &gt; Pass.buff.tank 1sens &gt; Parameters, counters, signals &gt; Parameters

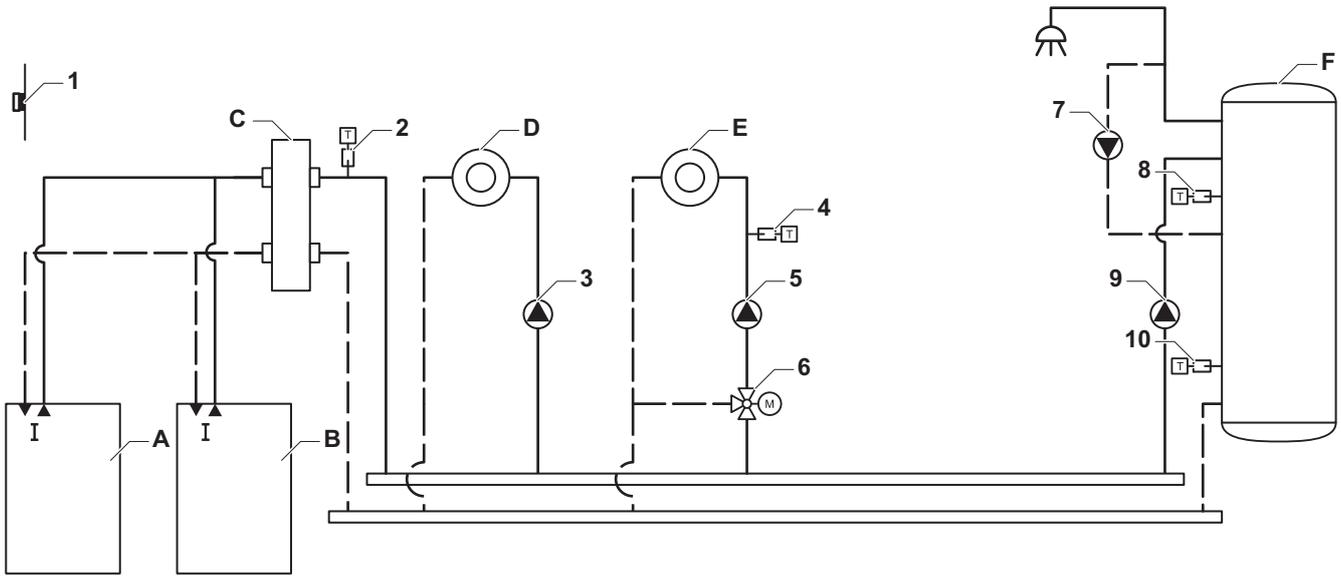
Code	Display text	Description	Range	Adjustment
BP001	Type Buffer Tank	Type of buffer tank	0 = Disabled 1 = One sensor 2 = Two sensors 3 = Three sensors	1

Tab.39 Installation Setup &gt; SCB-10 &gt; CIRCC ( Swimming pool ) &gt; Parameters, counters, signals &gt; Parameters

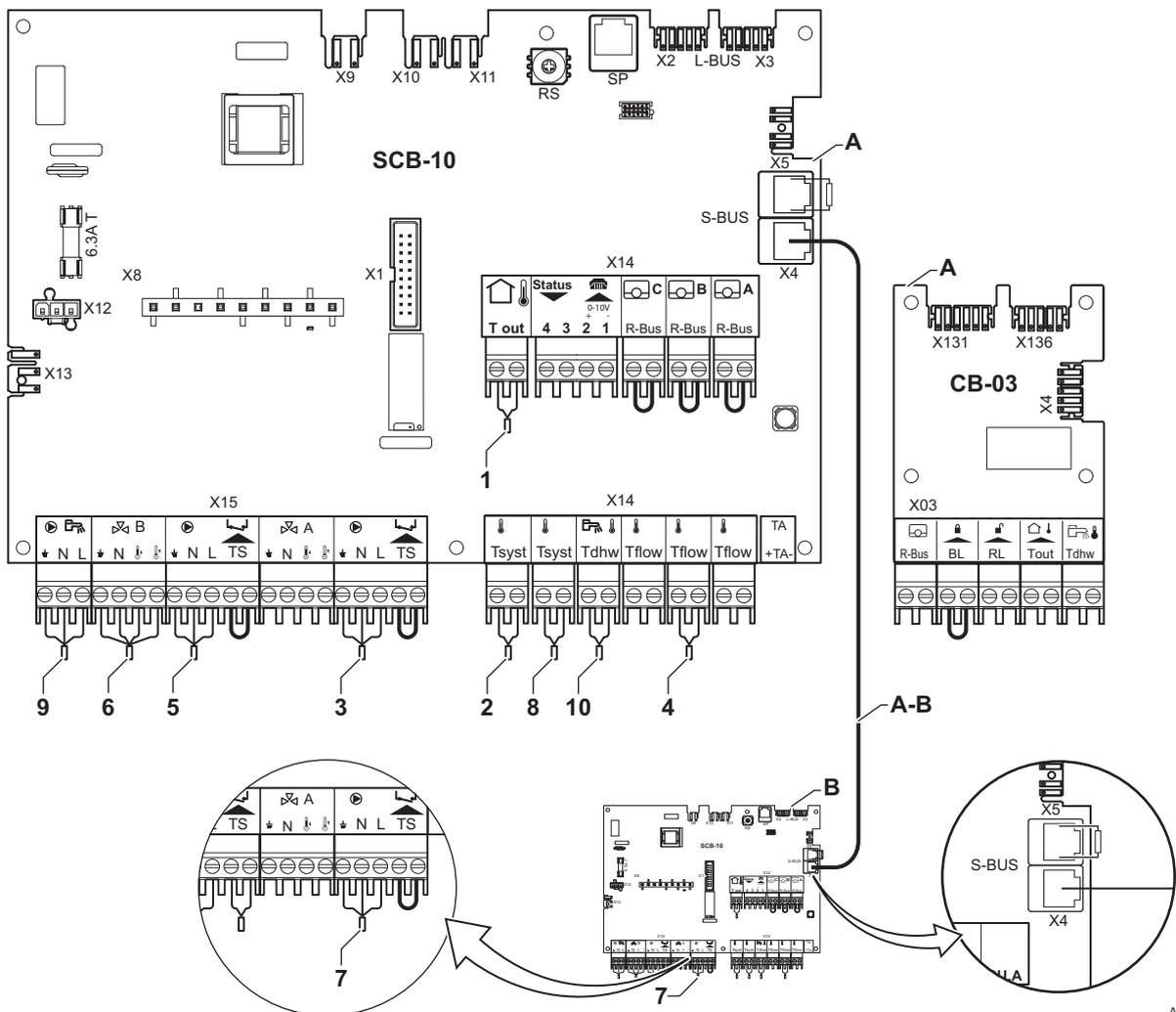
Code	Display text	Description	Range	Adjustment
CP023	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	3

**6.7.13 Connection 2 boilers (cascade) + LLH + 1 direct zone + 1 mixing zone + DHW zone**

Fig.61 2 boilers (cascade) + LLH + 1 direct zone + 1 mixing zone + DHW zone



AD-3001078-01



AD-3001089-02

- A** Boiler (master)
- B** Boiler (slave)
- C** Low loss header
- D** Direct zone - CircA1 (Boiler A)
- E** Mixing zone - CircB1 (Boiler B)
- F** DHW zone - CircA1 (Boiler A)

**A-B** S-BUS cable kit

Boiler A: resistor on SCB-10 connector X5, Cable on SCB-10 connector X4  
 Boiler B: resistor on SCB-10 connector X5, Cable on SCB-10 connector X4

**Caution**

- If the tank is fitted with a Titan Active System® corrosion protection anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with a corrosion protection anode, put the simulation connector in place (delivered with the DHW sensor (accessory))

Tab.40 Boiler A: Installation Setup &gt; SCB-10 &gt; Cascade management B &gt; Parameters, counters, signals &gt; Parameters

Code	Display text	Description	Range	Adjustment
AP083	Enable master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	1

Tab.41 Boiler A: Installation Setup &gt; SCB-10 &gt; DHW 1 ( DHW layered tank ) &gt; Parameters, counters, signals &gt; Parameters

Code	Display text	Description	Range	Adjustment
CP022	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 31 = DHW FWS EXT	10

Tab.42 Boiler B: Installation Setup &gt; CU-GH08 &gt; Gas fired appliance &gt; Parameters, counters, signals &gt; Parameters

Code	Display text	Description	Range	Adjustment
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	0

Tab.43 Boiler B: Installation Setup &gt; SCB-10 &gt; CIRCA 1 ( Zone time program ) &gt; Parameters, counters, signals &gt; Parameters

Code	Display text	Description	Range	Adjustment
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 31 = DHW FWS EXT	8

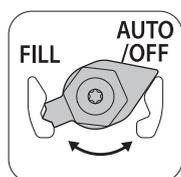
## 6.8 Filling the system

This chapter describes the filling of an empty CH system (< 0.3 bar) after installation of the boiler.

Refilling a CH system with too low water pressure is described in a separate chapter.

 **See**  
Refilling the system, page 111

Fig.62 Automatic refill device



AD-0001352-01

The central heating system can be refilled semi-automatically using the automatic refill device. This means that the boiler control panel indicates that the system needs to be refilled and requests confirmation from the user.

 **See**  
Filling the system with the automatic refill device, page 66

### 6.8.1 Water quality and water treatment

In many cases, the boiler and central heating system can be filled with normal tap water and water treatment will not be necessary.

The quality of the CH water must comply with certain limit values, which can be found in the **Water quality instructions**. The guidelines in these instructions must be followed at all times.

Fig.63 Filling the siphon



### 6.8.2 Filling the siphon



**Danger**

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

1. Remove the siphon.
2. Fill the siphon with water up to the mark.
3. Fit the siphon.



**Caution**

Fit the vent hose above the siphon.

4. Check whether the siphon is firmly fitted in the boiler.

### 6.8.3 Filling the system with the automatic refill device



**Caution**

Before filling, open the valves on every radiator in the central heating system.

The automatic refill device is placed under the boiler. This refill device can fill an empty central heating system semi-automatically to the set maximum water pressure. To do this, proceed as follows:

1. Switch on the boiler.



**Caution**

The automatic refill device is only active if the boiler is switched on.

2. Check and adjust the following boiler settings if necessary:
  - 2.1. The automatic refill device must be on AUTO.
  - 2.2. The valves on the mounting frame must be open.
  - 2.3. The automatic refill device is set for semi-automatic (manual) refilling. By configuring parameter **AP014**, you can also select automatic refilling or to switch off the refill device.



**See**

Refilling the system with the automatic refill device, page 111



**Important**

- Semi-automatic refilling means: The boiler control panel indicates that the system needs to be refilled and requests confirmation from the user.
- Automatic refilling means: The system is refilled as soon as the water pressure is too low.

3. A message to indicate that automatic filling is necessary will appear on the display:
  - 3.1. Press the button to confirm automatic filling.

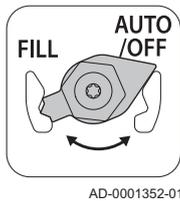


**Important**

Filling can only be interrupted if the water pressure is higher than the minimum water pressure.

4. A message will appear on the display when automatic filling is complete:
  - 4.1. Press the key to go back to the main display.
5. Check the water-side connections for tightness.
6. After filling the installation, switch the boiler on.

Fig.64 AUTO position



**Caution**

- After switching on the power and if there is adequate water pressure, the boiler always runs through an automatic venting program lasting approximately 3 minutes (air may escape via the automatic air vent during filling). If the water pressure is lower than the minimum water pressure, a warning symbol will appear. The central heating system will be refilled (semi-automatically), depending on the setting. The venting program will then be started.
- If filling is cancelled by the user, automatic filling will resume (after confirmation by the user) once the minimum water pressure (0.3 bar) has been reached.
- An error code will display if the water pressure does not rise sufficiently during filling: **E02.39**.
- An error code will be displayed if filling is taking too long: **E02.32**.

### ■ Additional information for the automatic refill device

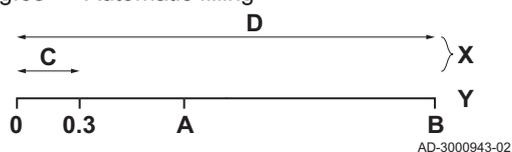
The parameters for the automatic refill device are set for the most common central heating systems. With these settings, most central heating systems will be filled and refilled correctly.

In other cases, such as a large central heating installation with long pipes, low supply water pressure or an acceptable rate of leakage in an (old) installation, the settings for the automatic refill device can be changed:

#### Automatic filling

- A AP006** : The minimum water pressure for activating the water pressure alarm
- B AP070** : The maximum permitted water pressure for the central heating system
- C AP023** : The maximum time required to fill an empty system to 0.3 bar
- D AP071** : The maximum time required to fill the system to the maximum water pressure (B)
- X** Time (min.)
- Y** Water pressure (bar)

Fig.65 Automatic filling

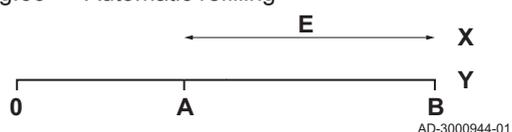
**Important**

- If filling the system to 0.3 bar takes too long, filling will stop and error code **E02.39** will be displayed.
- If filling the system takes too long and the minimum water pressure (A) has not yet been reached, filling will stop and error code **E02.32** will be displayed.
- If filling the system takes too long but the minimum water pressure (A) is reached, the boiler will stop filling but no error code will be displayed.

#### Automatic refilling

- A AP006** : The minimum water pressure for activating the water pressure alarm
- B AP070** : The maximum permitted water pressure for the central heating system
- E AP069** : The maximum time a refill event may last
- AP051** : The minimum permitted time between two refill events
- X** Time (min.)
- Y** Water pressure (bar)

Fig.66 Automatic refilling





**Important**

- If refilling takes too long and the water pressure is lower than the minimum water pressure **AP006** , warning **A02.33** will appear.
- The following warning is displayed if another refill event is required too soon: **A02.34** . Check that there is adequate difference between the maximum water pressure ( **AP070** ) and the minimum water pressure ( **AP006** ).



**For more information, see**

CU-GH08 control unit settings, page 85

## 7 Commissioning

### 7.1 Checklist before commissioning

#### 7.1.1 General

Follow the steps set out in the paragraphs below to put the boiler into operation.



**Warning**

Do not put the boiler into operation if the supplied gas is not in accordance with the approved gas types.

#### 7.1.2 Gas circuit



**Warning**

Ensure that the boiler is disconnected from the power supply.

1. Open the main gas tap.
2. Open the boiler gas tap.
3. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
4. Tilt the instrument box forwards by opening the clips on the sides.
5. Check the gas inlet pressure at the measuring point **C** on the gas valve unit.

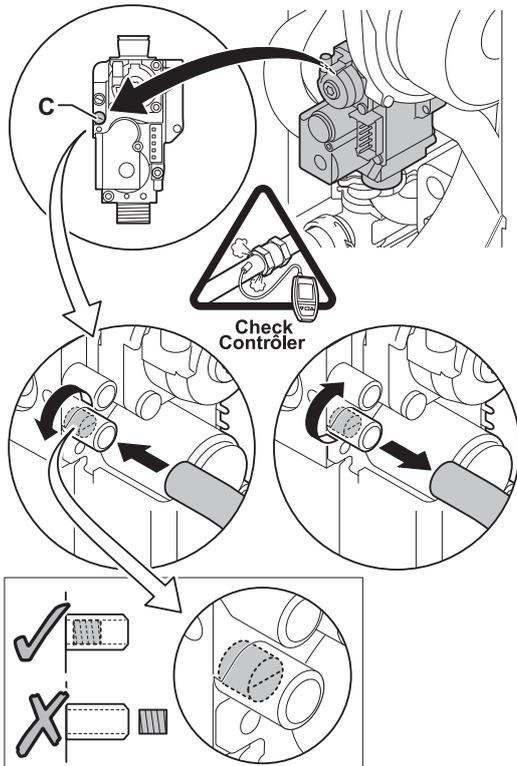


**Warning**

For authorised gas pressures, see Unit categories, page 9

6. Vent the gas supply pipe by unscrewing measuring point **C** on the gas valve unit.
7. Tighten the measuring point again when the pipe has been fully vented.
8. Check all connections for gas tightness. The maximum allowable test pressure is 60 mbar.

Fig.67 Gas valve unit measuring points



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#### 7.1.3 Hydraulic circuit

1. Check whether the automatic refill device, if present, is activated.  
⇒ The automatic refill device is activated when parameter **AP014** is set to semi-automatic refill (1) or automatic refill (2).
2. Check the water pressure in the central heating system shown on the boiler display. If necessary, top up the central heating system.
3. Check the siphon; it should be fully filled with clean water.
4. Check the water-side connections for tightness.



**For more information, see**

Refilling the system, page 111

#### 7.1.4 Connections for the air and flue gas pipes

1. Check the flue gas outlet and air supply connections for tightness.

### 7.1.5 Electrical connections

1. Check the electrical connections.

## 7.2 Commissioning procedure



#### Warning

- Initial commissioning must be done by a qualified professional.
- If adapting to another gas type i.e. propane, the gas valve unit must be adjusted before switching on the boiler.



#### Important

On first firing the boiler, a smell may be present for a short period.

1. Open the main gas tap.
2. Open the boiler gas tap.
3. Turn the boiler on
4. Turn on the boiler using the on/off switch.
5. A start menu will automatically appear on the control panel for the following settings:

Statement	Setting
Select country	Country where the boiler is installed
Select language	Choice of language
Enable Daylight Saving Time	On
Set Date and Time	Year/Month/Day

6. Set the components (thermostats, control) so that heat is demanded.
7. The start-up program will start and cannot be interrupted.
8. The boiler will also start an automatic venting cycle lasting around 3 minutes. This is repeated every time the supply voltage is cut.



#### Important

If a calorifier sensor is connected and the legionella protection function is activated, the boiler starts to heat the water in the DHW tank as soon as the venting programme has been completed.

The current operating condition of the boiler is shown on the display of the control panel.

If there is no information on the display:

- Check the mains supply voltage.
- Check the fuse on the control unit: (F1 = 2.5 AT)
- Check the connection of the mains lead to the connector in the control unit.

#### Error during start-up procedure:

In the event of a fault, a message with the corresponding code is displayed.

The meaning of the error codes can be found in the error table.



#### For more information, see

Error codes, page 113

## 7.3 Gas settings

### 7.3.1 Adjusting to a different gas type

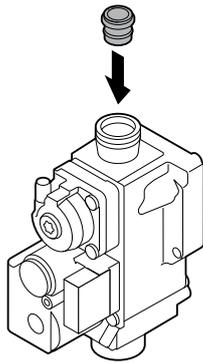


#### Warning

Only a qualified installer may carry out the following operations.

The factory setting of the boiler is for operation with the natural gas group G20 (H gas).

Fig.68 Installing gas diaphragm



AD-3000834-01

Before operating with a different type of gas, carry out the following steps:

1. Fit the gas diaphragm in the gas valve unit (if necessary, see table). If the boiler is modified, for G30/G31 (butane/propane) :

Tab.44 Gas diaphragm for G30/G31 (butane/propane)

Gas diaphragm for G30/G31 (butane/propane)	Ø (mm)
AMC 15	3.95
AMC 25	3.95
AMC 25/28 MI	3.95
AMC 35	-

2. Set the fan speed as indicated in the table (if necessary). The setting can be changed with a parameter setting.

Tab.45 Factory settings G20 (H-gas)

Code	Display text	Description	Adjustment range	15	25	25/28 MI	35
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm – 7000 Rpm	4500	5600	6200	6200
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm – 7000 Rpm	4500	5600	4600	6200
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm – 4000 Rpm	1800	1900	1900	1850
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm – 4000 Rpm	3700	3000	3000	4000

Tab.46 Adjustment for gas type G30/G31 (butane/propane)

Code	Display text	Description	Adjustment range	15	25	25/28 MI	35
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm – 7000 Rpm	4100	4900	5400	5400
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm – 7000 Rpm	4100	4900	3850	5400
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm – 4000 Rpm	2200	1900	1900	1850
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm – 4000 Rpm	3700	3000	3000	4000

3. Check the setting of the gas/air ratio at full and part load.



For more information, see  
CU-GH08 control unit settings, page 85

### 7.3.2 Fan speeds for overpressure applications

In the event of an overpressure application (e.g. CLV), the volume flow of the fan must be adjusted in accordance with the table below.

Tab.47 Adjustment for overpressure applications for gas type G20 (H gas)

Code	Display text	Description	Adjustment range	15	25	25/28 MI	35
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	2100	2150	2150	2250

Tab.48 Adjustment for overpressure applications for gas type G30/G31 (butane/propane)

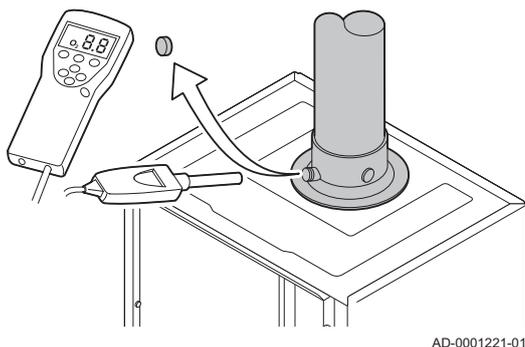
Code	Display text	Description	Adjustment range	15	25	25/28 MI	35
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	2200	2150	2150	2250



For more information, see  
CU-GH08 control unit settings, page 85

### 7.3.3 Checking/setting combustion

Fig.69 Flue gas measuring point



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1. Unscrew the cap from the flue gas measuring point.
2. Insert the probe for the flue gas analyser into the measurement opening.



#### Warning

During measurement, seal the opening around the sensor fully.



#### Important

The flue gas analyser must have a minimum accuracy of  $\pm 0.25\%$   $O_2$ .

3. Measure the percentage of  $O_2$  in the flue gases. Take measurements at full load and at part load, as described below.



#### Important

Measurements must be taken with the front casing off.

#### ■ Performing the full load test

1. Select the tile .
- ⇒ The **Change load test mode** menu appears.
2. Select the test **MaximumPowerCH**.

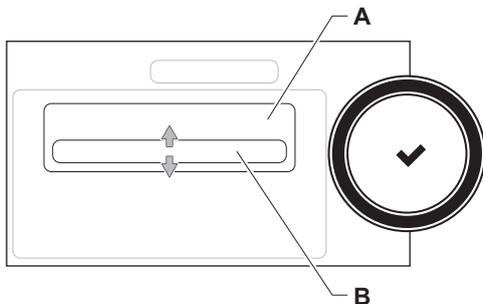
**A** Change load test mode

**B** MaximumPowerCH

⇒ 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.70 Full load test

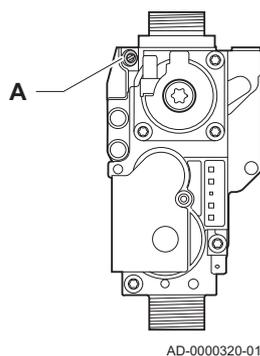


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#### ■ Checking and setting at full load

1. Measure the percentage of  $O_2$  in the flue gases.
2. Compare the measured value with the checking values in the table.

Fig.71 Position of adjusting screw A



AD-0000320-01

3. If the measured value is outside of the values given in the table, correct the gas/air ratio.
4. Using adjusting screw **A**, adjust the percentage of O<sub>2</sub> for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit.

**Caution**

The O<sub>2</sub> values at full load must be lower than the O<sub>2</sub> values at part load.

### - Checking/setting values O<sub>2</sub> at full load

Tab.49 Checking/setting values for O<sub>2</sub> at full load for G20 (H gas)

Values at full load for G20 (H gas)	O <sub>2</sub> (%) <sup>(1)</sup>
AMC 15	4.7 - 5.2 <sup>(1)</sup>
AMC 25	4.7 - 5.2 <sup>(1)</sup>
AMC 25/28 MI	4.7 - 5.2 <sup>(1)</sup>
AMC 35	4.3 - 4.8 <sup>(1)</sup>
(1) Nominal value	

Tab.50 Checking/setting values for O<sub>2</sub> at full load for G30/G31 (butane/propane)

Values at full load for G30/G31 (butane/propane)	O <sub>2</sub> (%) <sup>(1)</sup>
AMC 15	4.7 - 5.2 <sup>(1)</sup>
AMC 25	4.7 - 5.2 <sup>(1)</sup>
AMC 25/28 MI	4.7 - 5.2 <sup>(1)</sup>
AMC 35	4.7 - 5.2 <sup>(1)</sup>
(1) Nominal value	

**Caution**

The O<sub>2</sub> values at full load must be lower than the O<sub>2</sub> values at part load.

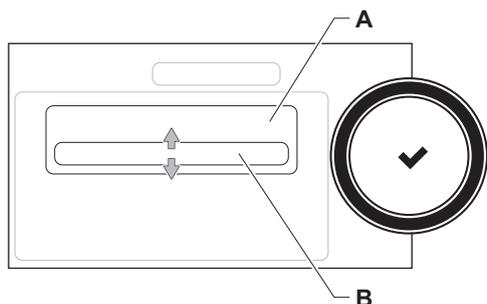
### ■ Performing the part load test

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 MinimumPower**

3. Select the **MinimumPower** test in the menu **Change load test mode**.  
⇒ The part 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 part load test by pressing the ⏪ button.  
⇒ The message **Running load test(s) stopped!** is displayed.

Fig.72 Part load test



AD-3000941-02

### ■ Checking and setting at part load

1. Measure the percentage of O<sub>2</sub> in the flue gases.
2. Compare the measured value with the checking values in the table.

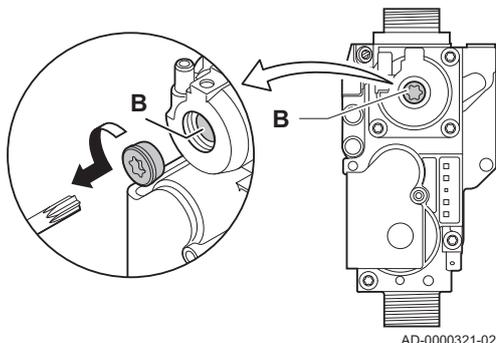


#### Caution

The O<sub>2</sub> values at part load must be higher than the O<sub>2</sub> values at full load.

3. If the measured value is outside of the values given in the table, correct the gas/air ratio.
4. Using adjusting screw B, adjust the percentage of O<sub>2</sub> for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit.
5. Set the boiler back to the normal operating status.

Fig.73 Position of adjusting screw B



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### - Checking/setting values for O<sub>2</sub> at part load

Tab.51 Checking/setting values for O<sub>2</sub> at part load for G20 (H gas)

Values at part load for G20 (H gas)	O <sub>2</sub> (%) <sup>(1)</sup>
AMC 15	5.9 <sup>(1)</sup> - 6.3
AMC 25	5.9 <sup>(1)</sup> - 6.3
AMC 25/28 MI	5.9 <sup>(1)</sup> - 6.3
AMC 35	5.5 <sup>(1)</sup> - 5.9
(1) Nominal value	

Tab.52 Checking/setting values for O<sub>2</sub> at part load for G30/G31 (butane/propane)

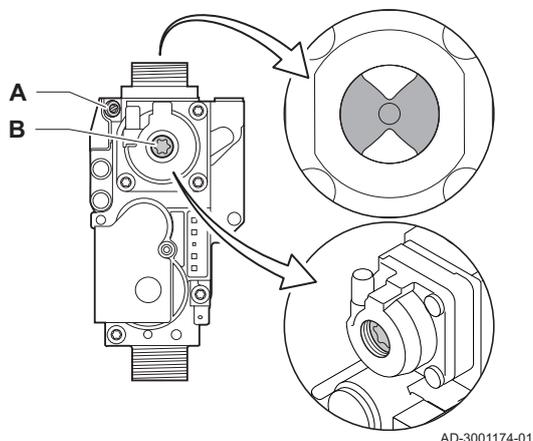
Values at part load for G30/G31 (butane/propane)	O <sub>2</sub> (%) <sup>(1)</sup>
AMC 15	5.8 <sup>(1)</sup> - 6.1
AMC 25	5.8 <sup>(1)</sup> - 6.1
AMC 25/28 MI	5.8 <sup>(1)</sup> - 6.1
AMC 35	5.8 <sup>(1)</sup> - 6.1
(1) Nominal value	

**Caution**

The O<sub>2</sub> values at part load must be higher than the O<sub>2</sub> values at full load.

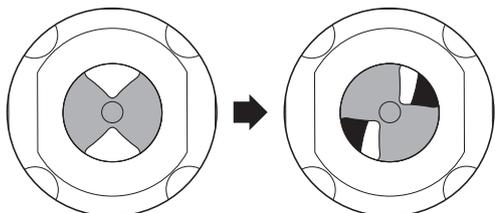
### 7.3.4 Basic setting for the gas/air ratio

Fig.74 Gas valve unit



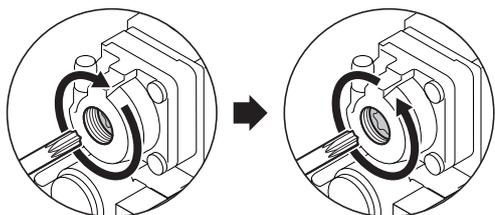
AD-3001174-01

Fig.75 Adjustment screw A



AD-3001175-01

Fig.76 Adjustment screw B



AD-3001176-01

If the gas/air ratio is out of adjustment, the gas valve unit has a basic setting. To do this, proceed as follows:

1. Switch off the boiler's electrical connection.
2. Close the gas valve on the boiler.
3. Remove the air inlet flue on the venturi.
4. Unscrew the top nut on the gas valve unit.
5. Disconnect the connector(s) located under the fan.
6. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
7. Remove the fan together with the mixing elbow unit.

8. Turn adjustment screw **A** on the gas valve unit to modify the position of the restrictor:
  - 8.1. Turn adjustment screw **A** until the restrictor is fully closed.
  - 8.2. Turn adjustment screw **A** anticlockwise. Refer to the table for the amount of rotations per appliance and gas type.

Tab.53 Adjustment screw A

Gas type	G20 (H gas)	G30/G31 (butane/propane)
AMC 15	6 rotations	4 rotations
AMC 25	9 rotations	6 rotations
AMC 25/28 MI	9 rotations	6 rotations
AMC 35	9 rotations	6 rotations

⇒ When the appliance does not start directly, turn the adjustment screw **A** one extra rotation anticlockwise.

9. Turn adjustment screw **B** on the gas valve unit to modify the position:
  - 9.1. Turn the adjustment screw **B** clockwise until it reaches the stop.
  - 9.2. Turn the adjustment screw **B** 2 ¼ rotations anticlockwise.
10. Fit all removed parts in the reverse order.
11. Check the gas settings.



**For more information, see**

Checking/setting combustion, page 72

## 7.4 Final instructions

1. Remove the measuring equipment.
2. Screw the cap on to the flue gas measuring point.
3. Seal the gas valve unit.
4. Put the front casing back.
5. Heat the central heating system up to approximately 70°C.
6. Switch the boiler off.
7. Vent the central heating system after approx. 10 minutes.
8. Turn on the boiler.
9. Check the water pressure. If necessary, top up the central heating system.

Fig.77 Example filled-in sticker

<b>Adjusted for / Réglée pour /</b> Ingesteld op / Eingestellt auf / Regolato per / Ajustado para / Ρυθμισμένο για / Nastawiony na / настроен для / Reglat pentru / настроен за / ayarlanmıştır / Nastavljjen za / beállitva/ Nastaveno pro / Asetettu kaasulle / Justert for/ indstillet til/ ل تطبخ :	<b>Parameters / Paramètres /</b> Parameter / Parametri / Parámetros / Παράμετροι / Parametry / Параметры / Parametrii / Параметри / Parametreler / Paraméterek / Parametrit / Parametere / Parametre / شامل عمل :
<input checked="" type="checkbox"/> Gas <u>G20</u> <u>20</u> mbar	<u>DP003 - 3300</u> <u>GP007 - 3300</u> <u>GP008 - 2150</u> <u>GP009 -</u>
<input checked="" type="checkbox"/> C <sub>(10)3(X)</sub> <input type="checkbox"/> C <sub>(12)3(X)</sub> <input type="checkbox"/> _____	

AD-3001124-01

10. Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
  - If adapted to another gas, fill in the gas type;
  - The gas supply pressure;
  - If set to overpressure application, fill in the type;
  - The parameters modified for the changes mentioned above.
11. Instruct the user in the operation of the system, boiler and controller.
12. Inform the user of the maintenance to be performed.
13. Hand over all manuals to the user.
14. Confirm the commissioning with a signature and a company stamp.
  - ⇒ The boiler is now ready for operation.

#### 7.4.1 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.

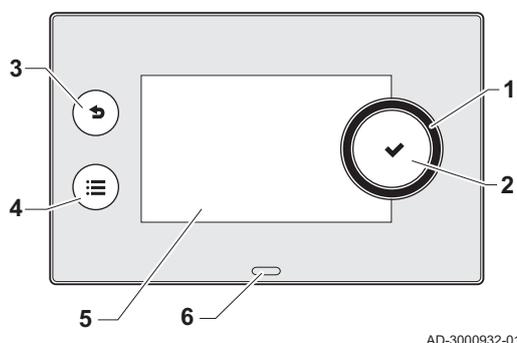
1. Press the  button.
2. Select **> Advanced Service Menu > Save as commissioning settings.**
3. Select **Confirm** to save the settings.

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

## 8 Operation

### 8.1 Control panel description

Fig.78 Components of the control panel



AD-3000932-01

#### 8.1.1 Description of the components

- 1 Rotary knob to select a tile, menu or setting
- 2 Button ✓ to confirm the selection
- 3 Back button ↶ to return to the previous level or previous menu
- 4 Menu button ≡ to return to the main menu
- 5 Display
- 6 LED for status indication:
  - continuous green = normal operation
  - flashing green = warning
  - continuous red = shutdown
  - flashing red = lockout

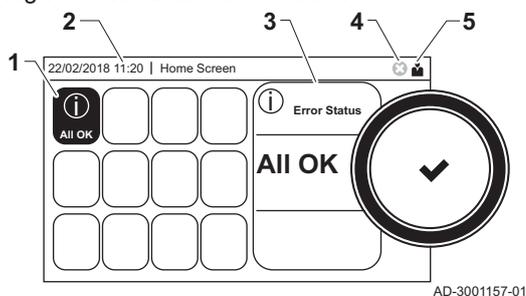
#### 8.1.2 Description of the home screen

This screen is shown automatically after start-up of the appliance. The control panel goes automatically in standby mode (black screen) if the screen is not touched 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 menu of your choice and press the button ✓ to confirm the selection.

Fig.79 Icons on home screen



AD-3001157-01

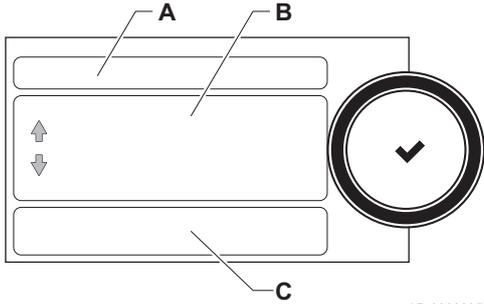
- 1 Tiles: the selected tile is highlighted
- 2 Date and time | Name of the screen (actual position in the menu)
- 3 Information about the selected tile
- 4 Error indicator (only visible if an error has been found)
- 5 Icon showing the navigation level:
  - 🏠: Chimney sweeper level
  - 👤: User level
  - 🛠️: Installer level

The installer level is protected by an access code. When this level is active, the status of the tile [🛠️] changes from **Off** into **On**.

#### 8.1.3 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.80 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.54 Available menus for the user

Description	Icon
System Settings	
Version Information	<b>i</b>

Tab.55 Available menus for the installer

Description	Icon
Installation Setup	
Commissioning Menu	
Advanced Service Menu	
Error History	
System Settings	
Version Information	<b>i</b>

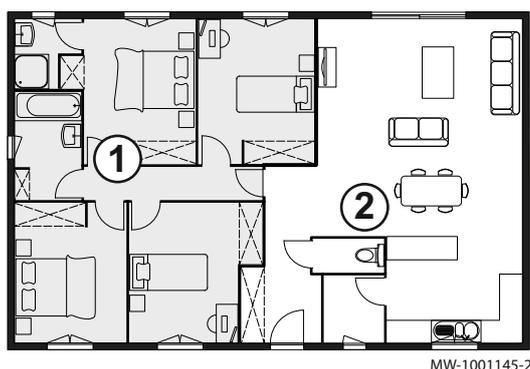
■ Meaning of the icons in the display

Tab.56 Icons

	User level	<b>i</b>	Information
	Installer level		Error display
	Chimney sweeper level		System settings
	Service		Water pressure
	Timer program		DHW 1
	Temporary overwrite of the timer program		DHW 2
	Holiday program		DHW boost on
	Manual		Gas boiler
	Energy-saving mode		Burner output level (1 to 5 bars, with each bar representing 20% output)
	Frost protection		Burner on
	Central heating on		Outside temperature sensor
	All zones (groups)		DHW tank
	Living room <sup>(1)</sup>		Solar calorifier
	Kitchen <sup>(1)</sup>		Cascade
	Bedroom <sup>(1)</sup>		Pump
	Study <sup>(1)</sup>		Three-way valve
	Cellar <sup>(1)</sup>		

(1) Adjustable icon for heating zone

Fig.81 Two zones



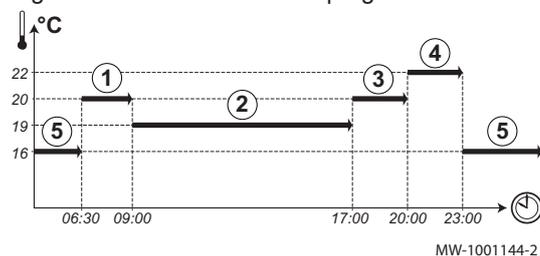
### 8.1.4 Definition of zone

Zone is the term given to the different hydraulic circuits CIRCA, CIRCB and so on. It designates several rooms of the house served by the same circuit.

Tab.57 Example of two zones

	Zone	Factory name
1	Zone 1	CIRCA
2	Zone 2	CIRCB

Fig.82 Activities of a timer program



### 8.1.5 Definition of activity

Activity is the term used when programming time slots in a timer program. The timer program sets the room temperature for different activities during the day. A temperature setpoint is associated with each activity. The last activity of the day is valid until the first activity of the next day.

Tab.58 Example of activities

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



For more information, see

Changing the name of an activity, page 80

## 8.2 Use of the control panel

### 8.2.1 Accessing the installer level

Some parameters that may affect the operation of the boiler are protected by an access code. Only the installer is allowed to modify these parameters.

1. Select the tile [🔑].
2. Enter code: 0012
  - ⇒ When the installer level is active, the status of the tile [🔑] changes from **Off** into **On**.
3. To leave the installer level, select the tile [🔑] > **Confirm**.

When the control panel is not used for 30 minutes, the installer level is left automatically.

### 8.2.2 Changing the display settings

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

Tab.59 Display settings

System Settings menu	Settings
Set Date and Time	Set the current date and time
Select Country and Language	Select your country and language

System Settings menu	Settings
Daylight Saving Time	Enable or disable daylight saving to save energy during summer
Installer Details	Enter 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

### 8.2.3 Changing the name and symbol of a zone

You can change the name and symbol of a zone.

1. Select the tile of the zone you want to change.  
⇒ The **Zone setup** menu opens
2. Select **Zone friendly Name**  
⇒ A keyboard with letters, numbers and symbols is shown.
3. Change the name of the zone (20 characters maximum):
  - 3.1. Press the rotary knob ✓ to repeat a letter, number or symbol.
  - 3.2. Select ← to delete a letter, number or symbol.
  - 3.3. Select ▢ to add a space.
4. Select the ✓ sign on the screen when the name is complete.
5. Press the rotary knob ✓ to confirm the selection.
6. Select **Icon display zone**.
7. Change the symbol of the zone.

### 8.2.4 Changing the name of an activity

You can change the names of the activities in the timer program.

1. Press the ≡ button.
2. Select **System Settings** ⚙.
3. Select **Set Heating Activity Names**.  
⇒ A list of 6 activities and their standard names is shown:

Activity 1	Sleep
Activity 2	Home
Activity 3	Away
Activity 4	Morning
Activity 5	Evening
Activity 6	Custom

4. Select an activity.  
⇒ A keyboard with letters, numbers and symbols is shown.
5. Change the name of the activity:
  - 5.1. Press the rotary knob ✓ to repeat a letter, number or symbol.
  - 5.2. Select ← to delete a letter, number or symbol.
  - 5.3. Select ▢ to add a space.
6. Select the ✓ sign on the screen when the name is complete.
7. Press the rotary knob ✓ to confirm the selection.



**For more information, see**  
Definition of activity, page 79

### 8.2.5 Setting the installer details

You can store your name and phone number in the control panel to be read by the user.

1. Press the ≡ button.
2. Select **System Settings** ⚙ > **Installer Details**.

3. Enter the following data:

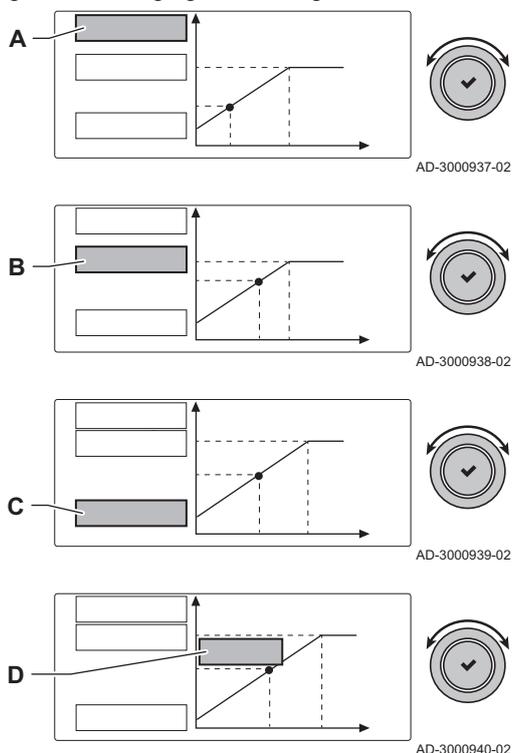
<b>Installer name</b>	Name of the installer
<b>Installer phone</b>	Phone number of the installer

### 8.2.6 Adjusting the heating curve

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

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.83 Changing the heating curve



A	<b>Slope:</b>	Slope of the heating curve: <ul style="list-style-type: none"> <li>• Floor heating circuit: slope between 0.4 and 0.7</li> <li>• Radiator circuit: slope at approximately 1.5</li> </ul>
B	<b>Max:</b>	Maximum temperature of the heating circuit
C	<b>Base:</b>	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.

### 8.2.7 Activating the automatic (re)filling unit

If the appliance has an automatic re(filling) unit, you have to activate the **Auto Filling** function and configure the corresponding parameters.

1. Select the tile .
2. Select **Settings**.
3. Set the **Auto Filling** parameter:

Option	Description
<b>Disabled</b>	The automatic (re)filling function is switched off
<b>Manual</b>	The installation will be topped up after confirmation by the user when the water pressure has dropped below the minimum water pressure
<b>Auto</b>	The installation will be topped up automatically when the water pressure has dropped below the minimum water pressure

4. Select **Parameters, counters, signals > Parameters**.

5. Check if the settings of the other parameters (for example the **Min. water pressure** and **Operational Pressure**) are suitable for the installation and change the settings, if necessary.

### 8.2.8 Activating the screed drying program

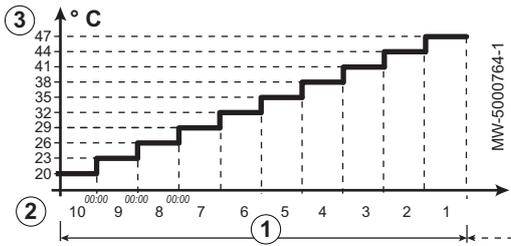
The screed drying program reduces the drying time of a freshly poured screed floor. Every day at midnight, the temperature setpoint is recalculated and the number of days is decremented.

1. Select the tile of the zone with the screed floor.
2. Select **Set Screed Drying**
3. Set the following parameters:

1	<b>Zone screed drying</b>	Number of days needed for drying
2	<b>ScreedStartTemp</b>	Start temperature of the screed drying program
3	<b>ScreedStopTemp</b>	End temperature of the screed drying program

⇒ The screed drying program will start and continue for the selected number of days.

Fig.84 Screed drying program



### 8.3 Start-up

Start the boiler up as follows:

1. Open the boiler gas tap.
2. Turn the boiler on
3. Turn on the boiler using the on/off switch.
4. The boiler will also start an automatic venting cycle lasting around 3 minutes.
5. Check the water pressure of the central heating system shown on the control panel display. If necessary, top up the central heating system.

The current operating condition of the boiler is shown by the status signal on the control panel.

### 8.4 Shutdown

If the central heating is not due to be used for a long period of time, it is recommended that the boiler be disconnected from the power supply.

1. Turn off the boiler using the on/off switch.
2. Shut off the gas supply.
3. Keep the area frost-free.

### 8.5 Frost protection



#### Caution

- Tap the boiler and central heating system if you are not going to use your home or the building for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The built-in boiler protection is only activated for the boiler and not for the system and radiators.
- Open the valves of all the radiators connected to the system.

Set the temperature control low, for example to 10°C.

If the temperature of the central heating water in the boiler drops too low, the built-in boiler protection system is activated. This system works as follows:

- If the water temperature is lower than 7°C, the pump switches on.
- If the water temperature is lower than 4°C, the boiler switches on.
- If the water temperature is higher than 10°C, the boiler shuts down and the pump continues to run for a short time.

To prevent the system and radiators freezing in frost-sensitive areas (e.g. a garage), a frost thermostat or, if feasible, an outside sensor can be connected to the boiler.

## 9 Settings

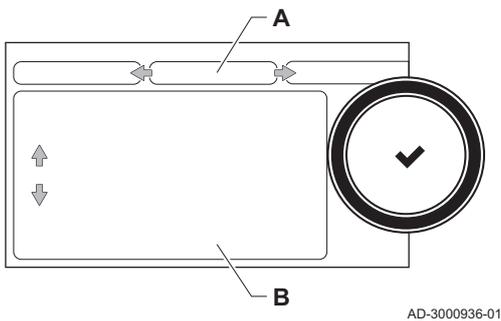
### 9.1 Setting the parameters

You can change the parameters and settings of the appliance and the connected control boards, sensors etc. to configure the installation.

1. Press the  button.
2. Select **> Installation Setup**.
3. Select the zone or device you want to configure.
4. Select **Parameters, counters, signals > Parameters** to change a parameter.
5. If available, select **Adv. Parameters** to change a parameter at the advanced installer level.

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

Fig.85 Parameters, counters, signals



AD-3000936-01

The boiler's control unit is set for the most common central heating systems. These settings will ensure that virtually every central heating system operates effectively. The user or the installer can optimise the parameters as required.



#### Caution

Changing the factory settings may adversely affect the operation of the boiler.

### 9.2 List of parameters

The parameters are arranged in three levels:

- 1 End user level
- 2 Installer level
- 3 Advanced installer level

The code of the parameters always contain two letters and three numbers. The letters stand for:

- AP** Appliance related parameters  
**CP** Zone related parameters  
**DP** Domestic hot water related parameters  
**GP** Gas fired heat engine related parameters  
**PP** Central heating related parameters



#### Important

All possible options are indicated in the adjustment range. The display of the boiler only shows the relevant settings for the appliance.

## 9.2.1 CU-GH08 control unit settings

### Important

- All tables show the factory setting for the parameters.
- The tables also list parameters that are only applicable if the boiler is combined with other equipment such as an outdoor sensor or automatic refill device.

Tab.60  On > ≡ > Installation Setup > CU-GH08 > CIRCA ( Direct zone ) > Parameters, counters, signals > Parameters

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
	Zone friendly Name	Friendly Name of the user zone		0	0	0	0	0
	ZoneStartTimeHoliday	Zone Start Time holiday Mode		-	-	-	-	-
	ZoneEndTimeHoliday	Zone End Time of holiday Mode		-	-	-	-	-
	ZoneEnd Change Mode	Zone End Time of change Mode		-	-	-	-	-
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	0 °C - 90 °C	80	80	80	80	80
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	0 °C - 90 °C	80	80	80	80	80
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct	1	1	1	1	1
CP060	RoomT. Holiday	Wished room zone temperature on holiday period	5 °C - 20 °C	6	6	6	6	6
CP070	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 °C - 30 °C	16	16	16	16	16
CP080	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	16	16	16	16	16
CP081	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	20	20	20	20	20
CP082	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	6	6	6	6	6
CP083	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	21	21	21	21	21
CP084	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	22	22	22	22	22
CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	20	20	20	20	20
CP130	T.OutdoorToZone	Assigning the outdoor sensor to zone ...	0 - 4	0	0	0	0	0
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 °C - 30 °C	20	20	20	20	20
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	15	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	15	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	1.5	1.5	1.5	1.5	1.5

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	3	3	3	3	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit	-5 °C - 5 °C	0	0	0	0	0
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary	1	1	1	1	1
CP340	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	0	0	0	0	0
CP470	Zone screed drying	Setting of the screed drying program of the zone	0 Days – 30 Days	0	0	0	0	0
CP480	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone	20 °C – 50 °C	20	20	20	20	20
CP490	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone	20 °C – 50 °C	20	20	20	20	20
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 °C – 30 °C	20	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	0	0	0	0	0
CP570	ZoneTimeProg Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	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	3	3	3	3	3
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	3	3	3	3	3
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	2	2	2	2	2
CP750	MaxZone Preheat time	Maximum zone preheat time	0 Min – 240 Min	90	90	90	90	90
CP770	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	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	0	0	0	0	0

Tab.61  On > ≡ > Installation Setup > CU-GH08 > DHW ( Internal DHW ) > Parameters, counters, signals > Parameters

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
DP060	DHW timeprog. select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	0	0	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint from the Domestic Hot Water tank	40 °C – 65 °C	60	60	60	55	60
DP080	DHW reduced setpoint	Reduced temperature setpoint from the Domestic Hot Water tank	7 °C – 50 °C	15	15	15	15	15
DP160	DHW AntiLeg Setpoint	Setpoint for DHW anti legionella	50 °C – 90 °C	65	65	65	65	65
DP170	Start time holiday	Start time of holiday Time stamp		-	-	-	-	-
DP180	End time holiday	End time of holiday Timestamp		-	-	-	-	-
DP190	End change mode	End change mode Time TimeStamp		-	-	-	-	-
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary					
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 °C – 60 °C	10	10	10	10	10

Tab.62  On > ≡ > Installation Setup > CU-GH08 > DHW ( Internal DHW ) > Parameters, counters, signals > Parameters

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm 7000 Rpm	3300	4500	5600	6200	6200
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	0	1	0	1	0
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 Sec – 99 Sec	10	10	10	10	10
DP070	DHW comfort setpoint	Comfort temperature setpoint from the Domestic Hot Water tank	40 °C – 65 °C	60	60	60	55	60

Tab.63  On > ≡ > Installation Setup > CU-GH08 > Outdoor sensor setup > Parameters, counters, signals > Parameters

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60 2 = QAC34	1	1	1	1	1
AP073	Summer Winter	Outdoor temperature: upper limit for heating	10 °C – 30 °C	22	22	22	22	22
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	0	0	0	0	0
AP079	Building Inertia	Inertia of the building used for heat up speed	0 – 15	3	3	3	3	3

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-60 °C - 25 °C	-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	0	0	0	0	0
AP108	OutsideSensorEnabled	Enable the function Outside Sensor	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	0	0	0	0	0

Tab.64 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Auto filling CH &gt; Parameters, counters, signals &gt; Parameters

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 bar – 6 bar	0.8	0.8	0.8	0.8	0.8
AP014	Auto Filling	Setting to enable or disable the automatic refill device. It can be set to auto, manual or off	0 = Disabled 1 = Manual 2 = Auto	1	1	1	1	1
AP023	Filling Inst Timeout	Maximum time the automatic filling procedure may last at installation	0 Min – 90 Min	10	10	10	10	10
AP051	Filling Interval	The minimum time that is allowed between two top-up fillings	0 Days – 65535 Days	90	90	90	90	90
AP069	Top up timeout	Maximum time the automatic topping up procedure may last	0 Min – 60 Min	2	2	2	2	2
AP070	Operational Pressure	The operational water pressure the device should be working on	0 bar – 2.5 bar	1.5	1.5	1.5	1.5	1.5
AP071	InstallMaxTimeOut	Maximum time that is needed to fill the complete installation	0 Sec – 3600 Sec	840	840	840	840	840

Tab.65 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Shower time function

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
DP357	ShowerZone T warning	Time before Shower Zone is warning	0 Min – 180 Min	0	0	0	0	0
DP367	ShowerZoneTime Action	Action when Shower Zone time has elapsed	0 = Off 1 = Warning 2 = Reduce DHW set point	0	0	0	0	0
DP377	DHWred Showerlimited	Reduced DHW setpoint during shower limitation of the zone	20 °C – 65 °C	40	40	40	40	40

Tab.66 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Gas fired appliance &gt; Parameters, counters, signals &gt; Parameters

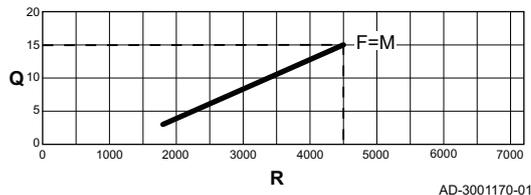
Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
AP001	BL input setting	Blocking input setting (1: Full blocking, 2: Partial blocking, 3: User reset locking)	1 = Full blocking 2 = Partial blocking 3 = User reset locking	1	1	1	1	1
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint 2 = TOutdoor Control	0	0	0	0	0
AP003	Flue Valve Wait Time	Wait time after burner command to open flue gas valve	0 Sec – 255 Sec	0	0	0	0	0
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 bar – 6 bar	0.8	0.8	0.8	0.8	0.8
AP008	Time release signal	The appliance will wait x sec (0=off) for the release contact to close in order to start the burner	0 Sec – 255 Sec	0	0	0	0	0
AP009	Service hours burner	Burning hours before raising a service notification	0 Hours – 51000 Hours	6000	6000	6000	6000	6000
AP010	Service notification	The type of service needed based on burn and powered hours	0 = None 1 = Custom notification 2 = ABC notification	0	0	0	0	0
AP011	Service hours mains	Hours powered to raise a service notification	0 Hours – 51000 Hours	35000	35000	35000	35000	35000
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	1	1	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	1	1	1	1	1
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	10 °C – 90 °C	40	40	40	40	40
AP063	CH Set Max System	Maximum flow temperature setpoint for burning at central heating	20 °C - 90 °C	90	90	90	90	90
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	0	0	0	0	0
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm – 7000 Rpm	3300	4500	5600	6200	6200
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 Sec – 99 Sec	10	10	10	10	10
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm – 7000 Rpm	3300	4500	5600	4600	6200
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm – 4000 Rpm	1800	1800	1850	1850	1850
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm – 4000 Rpm	3300	3700	3000	3000	4000
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	0	0	0	0	0
GP017	Max power	Maximum power percentage in kilo Watt	0 kW – 80 kW	24	24	32.3	32.3	40.3
GP021	Temp diff Modulating	Modulate back when delta temperature is large then this treshold	10 °C – 40 °C	25	25	25	25	25

Code	Text display	Description	Adjustment range	10	15	25	25/28 MI	35
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	1 – 255	36	36	36	36	36
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 kW – 80 kW	2.6	2.6	2.6	2.6	4.5
PP014	ChPumpDTReduction	Reduction of temperature delta modulating for pump modulation	0 °C – 40 °C	5	5	5	5	5
PP015	CH Pump postrun time	Central heating pump post run time	0 Min – 99 Min	1	1	1	1	1
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 % – 100 %	70	70	70	70	70
PP017	ChPumpSpeedMaxFactor	Maximum central heating at minimum load as percentage of max pump speed	0 % 100 %	30	30	30	30	30
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 % – 100 %	55	55	55	55	55
PP023	Start hysteresis CH	Hysteresis to start burner in heating mode	1 °C – 10 °C	10	10	10	10	10

### 9.3 Setting the maximum heat input for CH operation

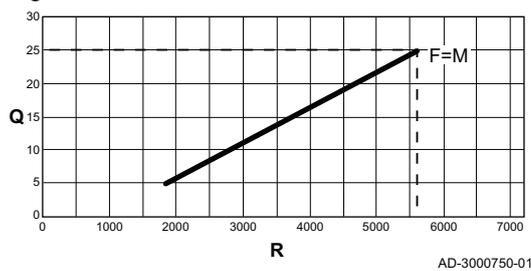
See the graphs for the relationship between load and speed for natural gas. The speed can be changed using parameter GP007.

Fig.86 AMC 15



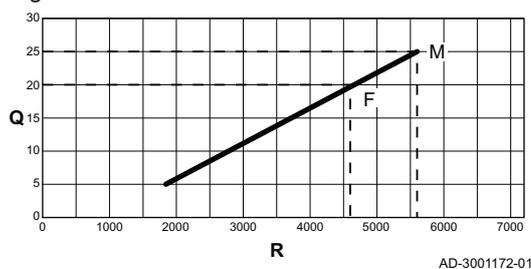
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.87 AMC 25



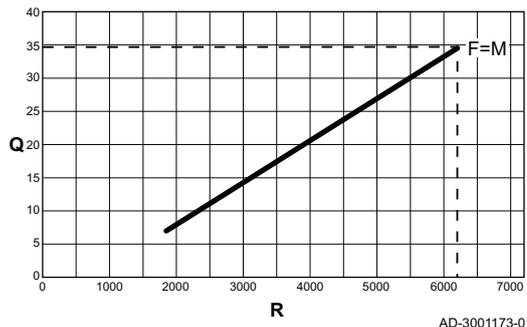
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.88 AMC 25/28 MI



- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.89 AMC 35



- M Maximum heat input
- F Factory setting
- Q Input (Hi) (kW)
- R Fan speed (rpm)

## 9.4 Settings SCB-10 print

### 9.4.1 Setting the 0-10 Volt input function of SCB-10

There are three options for the 0-10 Volt input control of the SCB-10 print:

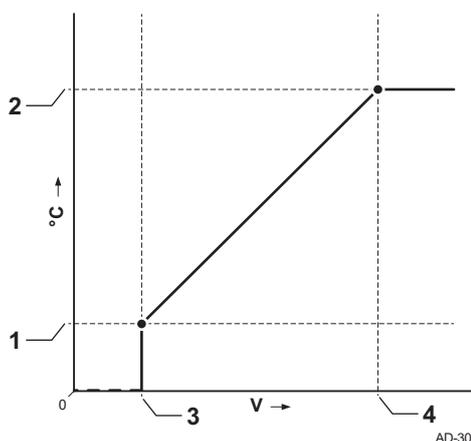
- disable the input function.
- the input is temperature based.
- the input is heat output based

Tab.67 ≡ button > Installation Setup > SCB-10 > 0-10 volt input > Parameters

Code	Display text	Description	Range
EP014	SCB func. 10V PWMIn	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature control 2 = Power control
EP030	Min Setp Temp 0-10V	Sets the minimum set point temperature for 0 - 10 volts for the Smart Control Board	0 °C - 100 °C
EP031	Max Setp Temp 0-10V	Sets the maximum set point temperature for 0 - 10 volts for the Smart Control Board	0.5 °C - 100 °C
EP032	Min Setp Power 0-10V	Sets the minimum set point power for 0 - 10 volts for the Smart Control Board	0 % - 100 %
EP033	Max Setp Power 0-10V	Sets the maximum set point power for 0 - 10 volts	5 % - 100 %
EP034	Min Setp Volt 0-10V	Sets the minimum set point voltage for 0 - 10 volts for the Smart Control Board	0 V - 10 V
EP035	Max Setp Volt 0-10V	Sets the maximum set point voltage for 0 - 10 volts	0 V - 10 V

### 9.4.2 Analogue temperature regulation (°C)

Fig.90 Temperature regulation



- 1 EP030
- 2 EP031
- 3 EP034
- 4 EP035

The 0–10 V signal controls the boiler supply temperature. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

Tab.68 Temperature regulation

Input signal (V)	Temperature °C	Description
0–1.5	0–15	Boiler off
1.5–1.8	15–18	Hysteresis
1.8–10	18–100	Desired temperature

### 9.4.3 Configuring a DHW tank with two sensors

When a domestic hot water tank with two sensors is connected to the boiler, the loading of the tank depends on the water temperature measured by the two sensors:

- Loading of the tank will start when the top sensor measures a temperature below (desired setpoint + CP700 – CP420).
- Loading of the tank will stop when the bottom sensor measures a temperature above (desired setpoint + CP700).

Tab.69 ≡ button > Installation Setup > SCB-10 > DHW tank > Parameters, counters, signals > Parameters

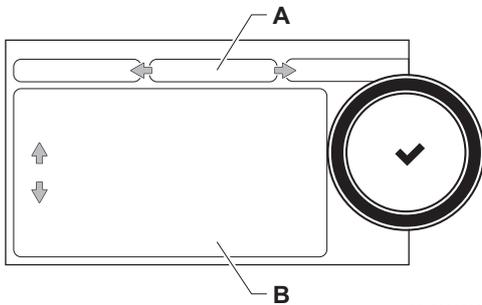
Code	Display text	Description	Range
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C – 100 °C
CP420	ZoneDhwHysterisis	Trip differential for DHW production	1 °C – 60 °C
CP700	DHW Cal Offset zone	Offset for calorifier sensor per zone	0 °C – 30 °C

## 9.5 Reading out measured values

The control unit continually registers various values from the boiler and the connected sensors. These values can be read on the control panel of the boiler.

1. Press the ≡ button.
2. Select > **Installation Setup**.
3. Select the zone or device you want to read out.
4. Select **Parameters, counters, signals > Counters** or **Signals** to read out a counter or signal.
5. If available, select **Adv. Counters** or **Adv. Signals** to read out counters or signals at the advanced installer level.

Fig.91 Parameters, counters, signals



AD-3000936-01

- A - **Parameters**
- **Counters**
- **Signals**
- **Adv. Parameters**
- **Adv. Counters**
- **Adv. Signals**

B List of settings or values

## 9.6 List of measured values

### 9.6.1 CU-GH08 control unit counters

Tab.70 🏠 On > ≡ > Installation Setup > CU-GH08 > Auto filling CH > Parameters, counters, signals > Counters

Code	Text display	Description	Range
AC016	Amount Autofillings	Filling counter, count the amount of automatic filling loops	0 - 65534

Tab.71 🏠 On > ≡ > Installation Setup > CU-GH08 > Gas fired appliance > Parameters, counters, signals > Counters

Code	Text display	Description	Range
AC002	Service Burning hrs	Number of hours that the appliance has been producing energy since last service	0 Hours - 131068 Hours
AC003	Hours Op. Service	Number of hours since the previous servicing of the appliance	0 Hours - 131068 Hours

Code	Text display	Description	Range
AC004	Burner Starts	Number of generator startings since the previous servicing.	0 - 4294967294
AC026	Pump running hours	Counter that shows the number of pump running hours	0 Hours - 65534 Hours
AC027	Pump starts	Counter that shows the number of pump starts	0 - 65534
DC002	DHW valve cycles	Numbers of Domestic Hot Water diverting valve cycles	0 - 4294967294
DC003	Hrs DHW 3wv	Number of hours during which the diverting valve is in DHW position	0 Hours - 65534 Hours
DC004	DHW burner starts	Number of burner starts for Domestic Hot Water	0 - 65534
DC005	DHW burning hours	Number of burning hours in Domestic Hot Water	0 Hours - 65534 Hours
GC007	Failed starts	Number of failed starts	0 - 65534
PC001	ChCtrTotalPowerCons.	Total power consumption used by Central Heating	0 kW - 4294967294 kW
PC002	Burner starts total	Total number of burner starts. For heating and domestic hot water	0 - 4294967294
PC003	Hrs Burning total	Total number of burning hours. For heating and domestic hot water	0 Hours - 65534 Hours
PC004	Burner flame loss	Number of burner flame loss	0 - 65534

### 9.6.2 CU-GH08 control unit signals

Tab.72  On > ≡ > Installation Setup > CU-GH08 > > DHW ( Internal DHW ) > Parameters, counters, signals > Signals

Code	Text display	Description	Range
DM029	DHW setpoint	Domestic Hot Water temperature setpoint	0 °C - 100 °C

Tab.73  On > ≡ > Installation Setup > CU-GH08 > DHW ( Internal DHW ) > Parameters, counters, signals > Signals

Code	Text display	Description	Range
	Anti legionella act.	Anti legionella is active	0 = Off 1 = On
AM001	DHW active	Is the appliance currently in domestic hot water production mode?	0 = Off 1 = On
AM010	Pump speed	The current pump speed	0 % - 100 %
AM016	System Flow Temp	Flow temperature of appliance.	-25 °C - 150 °C
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-25 °C - 150 °C
AM040	Control temperature	Temperature used for hot water control algorithms.	0 °C - 250 °C
DM002	DHWFlowSpeed	Actual DHW combi flow rate	0 l/min - 25 l/min
DM005	DhwSolarTankTemp	Domestic Hot Water solar tank temperature	-25 °C - 150 °C
DM008	DHW out temp	Temperature sensor for the tap temperature leaving the appliance	-25 °C - 150 °C

Tab.74 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Outdoor sensor setup &gt; Parameters, counters, signals &gt; Signals

Code	Text display	Description	Range
	Wireless T.Outside	Outside temperature measured by a wireless source	-50 °C - 60 °C
	Low average Out Temp	Low average of outside sensor temperature	-60 °C - 60 °C
	High average OutTemp	High average of outside sensor temperature	-60 °C - 60 °C
	Wired T.Outside	Outside temperature measured by a wired source	-50 °C - 60 °C
	Outside Sens. Source	Outside sensor connection used	1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None
AM027	Outside temperature	Instantaneous outside temperature	-60 °C - 60 °C
AM046	Internet T.Outside	Outside temperature received from an internet source	-70 °C - 70 °C
AM091	SeasonMode	Seasonal mode active (summer / winter)	0 = Winter 1 = Frost protection 3 = Summer
AP078	Out sensor detected	Outside sensor detected in the application	0 = No 1 = Yes

Tab.75 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Auto filling CH &gt; Parameters, counters, signals &gt; Signals

Code	Text display	Description	Range
	Auto filling active	Setting to enable or disable the autofilling feature	0 = Standby 1 = Filling Needed 2 = Filling Active 3 = Auto filling pending
AM019	Water pressure	Water pressure of the primary circuit.	0 bar - 4 bar

Tab.76 On &gt; ≡ &gt; Installation Setup &gt; CU-GH08 &gt; Gas fired appliance &gt; Parameters, counters, signals &gt; Signals

Code	Text display	Description	Range
	No of status items	Status bytes number of different items	0 - 255
	Frost protect active	Frost protect is active	0 = No 1 = Yes
	Comfort mode active	Comfort mode is active	0 = No 1 Yes
	DHW blocking active	Domestic hot water preparation blocking is active	0 = No 1 = Yes
	Anti legionella act.	Anti legionella is active	0 = Off 1 = On
	DHW active	Domestic hot water preparation is active	0 = No 1 = Yes
	DHW Enabled	Domestic hot water preparation is enabled	0 = No 1 = Yes
	CH Enabled	Central heating production is enabled	0 = No 1 = Yes
	CurrOrUpcomServNotif	Current or upcoming service notification	0 = None 1 = A 2 = B 3 = C 4 = Custom
	PowerActualU8	Actual relative power produced for PDO output	0 % - 100 %

Code	Text display	Description	Range
	ChimneyModeStatus	Status of the Chimney mode	0 = Off 1 = Low power 2 = Medium power 3 = High power 4 = Cooling
AM001	DHW active	Is the appliance currently in domestic hot water production mode?	0 = Off 1 = On
AM010	Pump speed	The current pump speed	0 % - 100 %
AM011	Service required?	Is service currently required?	0 = No 1 = Yes
AM015	Pump running?	Is the pump running?	0 = Inactive 1 = Active
AM016	System Flow Temp	Flow temperature of appliance.	-25 °C - 150 °C
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-25 °C - 150 °C
AM019	Water pressure	Water pressure of the primary circuit.	0 bar - 4 bar
AM022	On / Off heat demand	On / Off heat demand	0 = Off 1 = On
AM024	Actual rel. Power	Actual relative power of the appliance	0 % - 100 %
AM027	Outside temperature	Instantaneous outside temperature	-60 °C - 60 °C
AM033	Next Service Ind.	Next service indication	0 = None 1 = A 2 = B 3 = C 4 = Custom
AM036	Flue gas temperature	Temperature of the exhaust gas leaving the appliance	0 °C 250 °C
AM037	3 way valve	Status of the three way valve	0 = CH 1 = DHW
AM040	Control temperature	Temperature used for hot water control algorithms.	0 °C - 250 °C
AM043	Pwr dwn reset needed	A power down reset is needed	0 = No 1 = Yes
AM055	FlueGas temperature2	Temperature of the exhaust gas leaving the appliance	0 °C 250 °C
AM101	Internal setpoint	Internal system flow temperature setpoint	0 °C - 250 °C
BM000	Dhw Temperature	Dhw Temperature depending on loadtype this is TankTemperature or DhwOutTemperature	-25 °C - 150 °C
GM001	Actual fan RPM	Actual fan RPM	0 Rpm - 12000 Rpm
GM002	Fan RPM setpoint	Actual fan RPM setpoint	0 Rpm - 12000 Rpm
GM003	Flame detection	Flame detection	0 = Off 1 = On
GM004	Gas valve 1	Gas valve 1	0 = Open 1 = Closed 2 = Off
GM005	Gas valve 2	Gas valve 2	0 = Open 1 = Closed 2 = Off
GM006	GPS status	Gas Pressure Switch status	0 = Open 1 = Closed 2 = Off
GM007	Ignite	Appliance is igniting	0 = Off 1 = On
GM008	Actual flame current	Actual flame current measured	0 µA - 25 µA
GM010	Power available	Available power in % of maximum	0 % - 100 %

Code	Text display	Description	Range
GM011	Power setpoint	Power setpoint in % of maximum	0 % - 100 %
GM012	Release Input	Release signal for the CU	0 = No 1 = Yes
GM013	Blocking Input	Blocking input status	0 = Open 1 = Closed 2 = Off
GM025	STB status	High limit status (0 = open, 1 = closed)	0 = Open 1 = Closed 2 = Off
GM027	Flame Test Active	Flame test 1=active, 0=inactive	0 = Inactive 1 = Active
GM044	ControlledStopReason	Possible reason for Controlled Stop	0 = None 1 = CH Blocking 2 = DHW Blocking 3 = Wait for burner 4 = TFlow > absolute max 5 = TFlow > start temp. 6 = Theat exch. > Tstart 7 = Avg Tflow > Tstart 8 = TFlow > max setpoint 9 = T difference too big 10 = TFlow > stop temp. 11 = Avg Tflow > Tstop
PM002	CH Setpoint	External winning Central Heating setpoint	0 °C - 250 °C
PM003	ChTflowAverage	Actual average flow temperature	-25 °C - 150 °C

### 9.6.3 Status and sub-status

The status and sub-status are only shown if applicable.

Tab.77 Status numbers

Status	Description
0	Standby
1	Heat Demand
2	Burner Start
3	Burning CH
4	Burning DhW
5	Burner Stop
6	Pump Post Run
7	Cooling Active
8	Controlled Stop
9	Blocking Mode
10	Locking Mode
11	Load test min
12	Load test CH max
13	Load test DHW max
15	Manual Heat Demand
16	Frost Protection
17	DeAiration
18	Control unit Cooling
19	Reset In Progress
20	Auto Filling
21	Halted
22	Forced calibration
23	Factory test

Status	Description
200	Device Mode
254	Unknown

Tab.78 Sub-status numbers

Sub-status	Description
0	Standby
1	AntiCycling
2	CloseHydraulicValve
3	ClosePump
4	WaitingForStartCond.
10	CloseExtGasValve
11	StartToGlueGasValve
12	CloseFlueGasValve
13	FanToPrePurge
14	WaitForReleaseSignal
15	BurnerOnCommandToSu
16	VpsTest
17	PreIgnition
18	Ignition
19	FlameCheck
20	Interpurge
30	Normal Int.Setpoint
31	Limited Int.Setpoint
32	NormalPowerControl
33	GradLevel1PowerCtrl
34	GradLevel2PowerCtrl
35	GradLevel3PowerCtrl
36	ProtectFlamePwrCtrl
37	StabilizationTime
38	ColdStart
39	ChResume
40	SuRemoveBurner
41	FanToPostPurge
42	OpenExt&FlueGasValve
43	StopFanToFlueGVRpm
44	StopFan
45	LimitedPwrOnTflueGas
46	AutoFillingInstall.
47	AutoFillingTopUp
48	Reduced Set Point
60	PumpPostRunning
61	OpenPump
62	OpenHydraulicValve
63	SetAntiCycleTimer
65	HeatPumpRelieved
66	HPFlowOverTMaxBckpON
67	ExtCondStopHeatPump
68	HybridStopHeatPump
69	DefrostWithHP
70	DefrostWithBckp
71	DefrostWithHPAndBckp
72	PumpSource&BackupRun

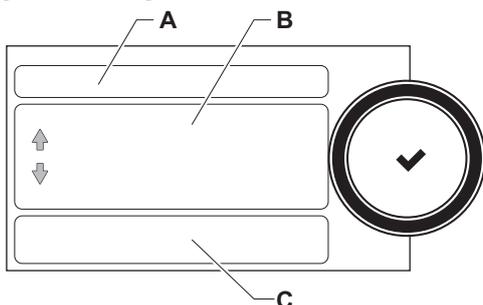
Sub-status	Description
73	HPFlowOverTMax
74	SourcePumpPostRun
75	HumiditySensorStopHP
76	WaterFlowStopHP
78	HumidityInt.Setpoint
79	HP&BackupRelieved
80	HPRelievedForCooling
81	OutsideTempStopHP
82	HeatPumpOffOverLimit
83	DeAirPumpOn&ValveCH
84	DeAirPumpOn&ValveDhw
85	DeAirPumpOff&ValveCH
86	DeAirPumpOff&ValvDhw
88	BLInputBackupLimited
89	HPLimited
90	Backup&HPLimited
91	BLInputLowTariff
92	PV-WithHP
93	PV-WithHP&Bckp
94	BLInputSmartGrid
95	WaitingForWaterpress
96	NoProducerAvailable
102	FreeCoolingPumpOff
103	FreeCoolingPumpON
104	SourcePumpPreRunning
105	Calibration
200	Initialising Done
201	Initialising Csu
202	Init. Identifiers
203	Init.BL.Parameter
204	Init. Safety Unit
205	Init. Blocking
254	StateUnknown
255	SuOutOfResetsWait1Hr

## 9.7 Resetting or restoring settings

### 9.7.1 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.

Fig.92 Configuration numbers



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

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

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### 9.7.2 Carrying out an auto-detect for the CAN matrix

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When a control board has been replaced or removed from the boiler, this function must be used to detect all devices connected to the CAN bus.

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

### 9.7.3 Restoring the commissioning settings

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

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

### 9.7.4 Resetting to factory settings

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You can reset the boiler to the default factory settings.

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

## 10 Maintenance

### 10.1 General

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



#### Caution

- Maintenance operations must be completed by a qualified installer.
- During inspection or maintenance work, always replace all gaskets of the disassembled parts.
- Replace defective or worn parts with original spare parts.
- An annual inspection is mandatory.

### 10.2 Standard inspection and maintenance operations

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



#### Danger of electric shock

Ensure that the boiler is disconnected from the power supply.



#### Caution

- 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 operations, water (drops, splashes) must never come into contact with the electrical parts.

#### 10.2.1 Checking the water pressure

1. Check the water pressure.



#### Important

The water pressure is shown on the display of the control panel.

⇒ The water pressure must be at least 0.8 bar

2. Refill the central heating system if the water pressure is lower than 0.8 bar.



#### Important

The recommended water pressure is between 1.5 bar and 2 bar.



#### For more information, see

Refilling the system, page 111

#### 10.2.2 Checking the expansion vessel

1. Check the expansion vessel and replace it if necessary.

#### 10.2.3 Checking the ionisation current

1. Check the ionisation current at full load and at low load.
  - ⇒ The value is stable after 1 minute.
2. Clean or replace the ionisation and ignition electrode if the value is lower than 3  $\mu$ A.

### 10.2.4 Checking the draw-off capacity

1. Check the draw-off capacity.
2. If the transfer capacity is noticeably low (temperature too low and/or flow rate less than 6.2 l/min), clean the plate heat exchanger (domestic hot water side) and the water filter cartridge.

### 10.2.5 Check the flue gas outlet/air supply connections

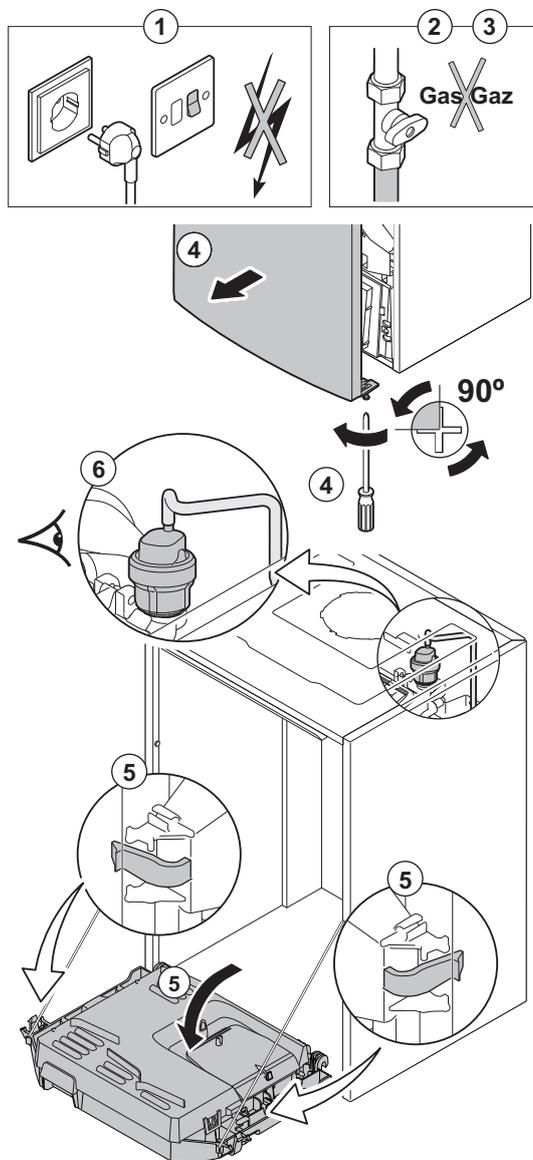
1. Check the flue gas outlet and air supply connections for condition and tightness.

### 10.2.6 Checking the combustion

Combustion is checked by measuring the O<sub>2</sub> percentage in the flue gas outlet duct.

### 10.2.7 Checking the automatic air vent

Fig.93 Checking the automatic air vent



AD-0001222-02

1. Switch off the boiler's electrical connection.
2. Close the gas tap under the boiler.
3. Close the main gas tap.
4. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
5. Press the clips on the sides of the instrument box inwards to unlock it, then tilt the instrument box forwards.
6. Check whether water is visible in the hose of the automatic air vent.
7. In the event of a leak, replace the air vent.

### 10.2.8 Checking the safety valve

1. Switch off the boiler's electrical connection.
2. Close the gas tap under the boiler.

3. Close the main gas tap.
4. Remove the combined collector for the siphon and safety valve located on the underside of the boiler.
5. Check whether there is any water in the discharge of the safety valve connection.
6. If any leaks are detected, replace the safety valve.

### 10.2.9 Cleaning the siphon

1. Switch off the boiler's electrical connection.
2. Close the gas tap under the boiler.
3. Close the main gas tap.
4. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
5. Press the clips on the sides of the instrument box inwards to unlock it, then tilt the instrument box forwards.
6. Remove the air vent hose above the siphon.
7. Remove the siphon from the boiler.
8. Clean the siphon.
9. Fill the siphon with water up to the mark.
10. Refit the siphon in the boiler.

Fig.94 Filling the siphon



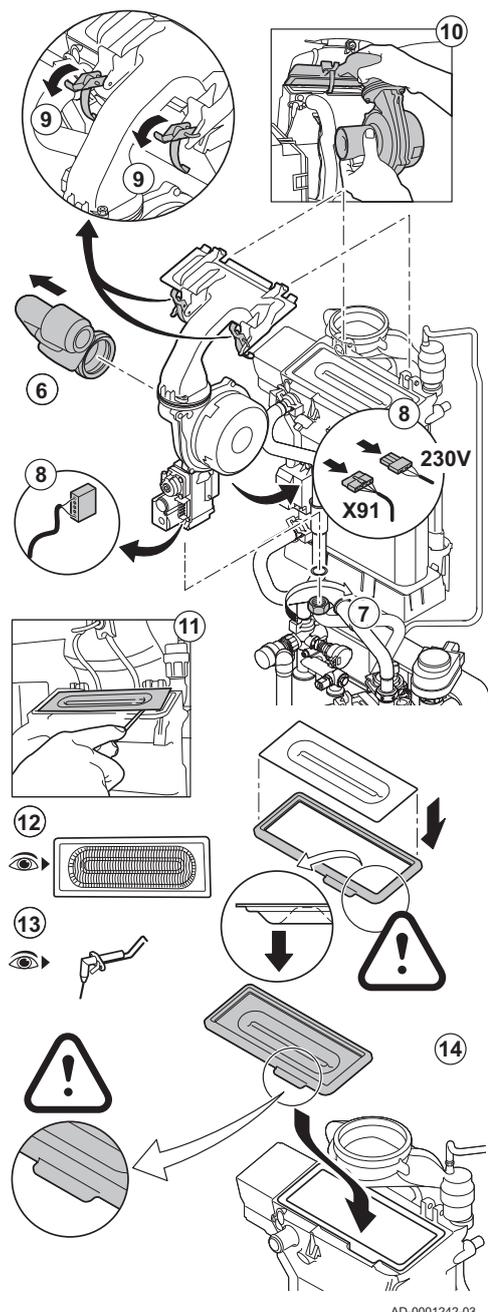
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#### **Danger**

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

Fig.95 Checking the burner



### 10.2.10 Checking the burner



#### Warning

- It is not necessary to clean the condensate collector. Never remove the condensate collector, as it cannot be refitted afterwards.
- The heat exchanger has a treated surface and therefore does not need to be cleaned. Cleaning with cleaning tools, chemicals, compressed air or water is not permitted.

1. Switch off the boiler's electrical connection.
2. Close the gas tap under the boiler.
3. Close the main gas tap.
4. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
5. Press the clips on the sides of the instrument box inwards to unlock it, then tilt the instrument box forwards.
6. Remove the air inlet flue on the venturi.
7. Unscrew the bottom nut on the gas valve unit.
8. Disconnect the connectors located under the gas valve unit and the fan.
9. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
10. Remove the fan together with the mixing elbow unit.
11. Lift the burner, along with the heat exchanger gasket.
12. Check the burner for contamination and that the burner deck is free from signs of cracking and/or damage. If not, replace the burner.
13. Check the ionisation/ignition electrode.
14. Reassemble the unit in reverse order.



#### Caution

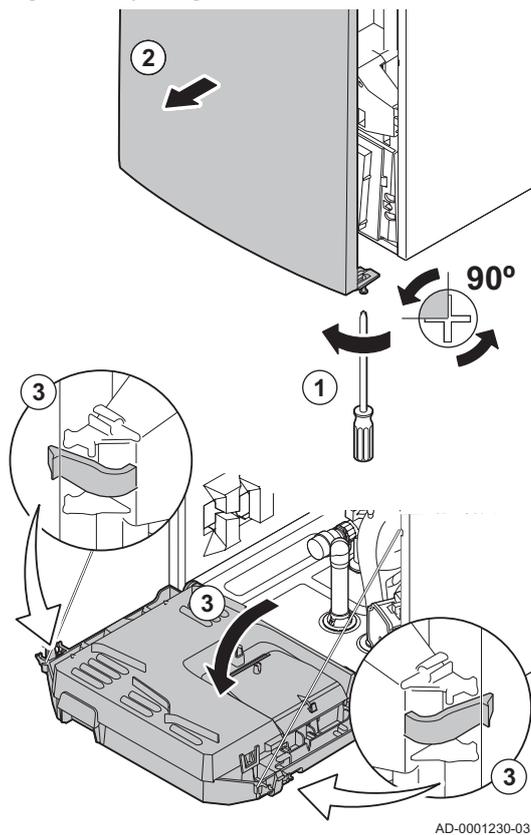
- Remember to replace the plugs on the fan correctly.
- Check that the gasket is correctly positioned between the mixing elbow and the heat exchanger. (Completely flat in the appropriate groove means it is leak proof).

15. Open the gas inlet valves and switch on the mains supply to the boiler.

### 10.3 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:

Fig.96 Opening boiler



### 10.3.1 Opening boiler

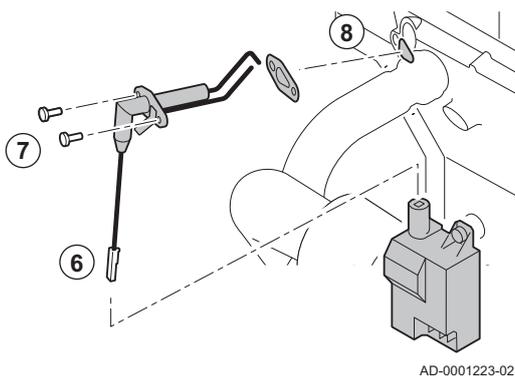


#### Danger of electric shock

Ensure that the boiler is disconnected from the power supply.

1. Remove the screw at the bottom of the front casing.
2. Remove the front panel.
3. Press the clips on the sides of the instrument box inwards to unlock it, then tilt the instrument box forwards.

Fig.97 Replacing the ionisation/ignition electrode



### 10.3.2 Replacing the ionisation/ignition electrode

The ionisation and ignition electrode must be replaced if:

- The ionisation current is  $< 3 \mu\text{A}$ .
- The electrode is damaged or worn.
- The electrode is included in the service kit.

1. Switch off the boiler's electrical connection.
2. Close the gas tap under the boiler.
3. Close the main gas tap.
4. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
5. Press the clips on the sides of the instrument box inwards to unlock it, then tilt the instrument box forwards.
6. Remove the plug of the electrode from the ignition transformer.



#### Important

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

7. Unscrew the 2 screws on the electrode and pull these forwards.
8. Remove the entire component.
9. Fit the new ionisation/ignition electrode and the accompanying gasket.
10. Reassemble the unit in reverse order.

### 10.3.3 Cleaning the plate heat exchanger

Depending on the quality of the cold water and the operating mode, limescale deposits can form in the plate heat exchanger. As a general rule, a periodic inspection, along with cleaning, if necessary, is sufficient.

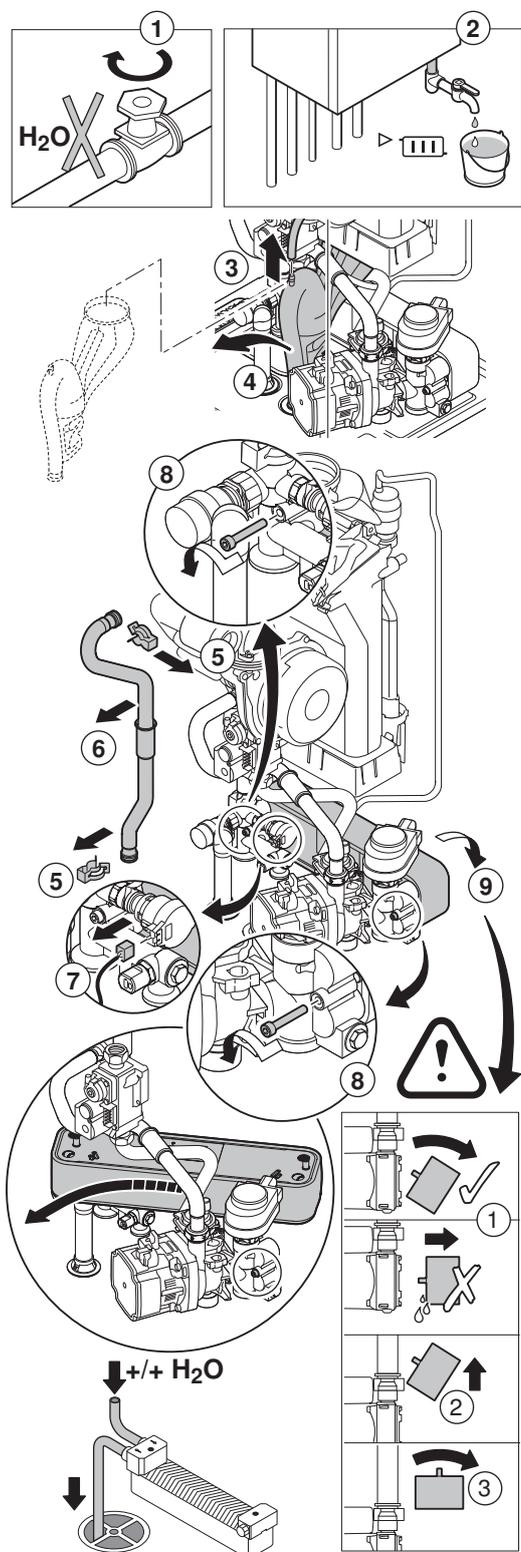
The following factors may affect the periodicity:

- Water hardness.
- Composition of the limescale.

- Number of boiler operating hours.
- Draw-off rate.
- Set tap water temperature.

If descaling of the plate heat exchanger is necessary, proceed as follows:

Fig.98 Cleaning of plate heat exchanger

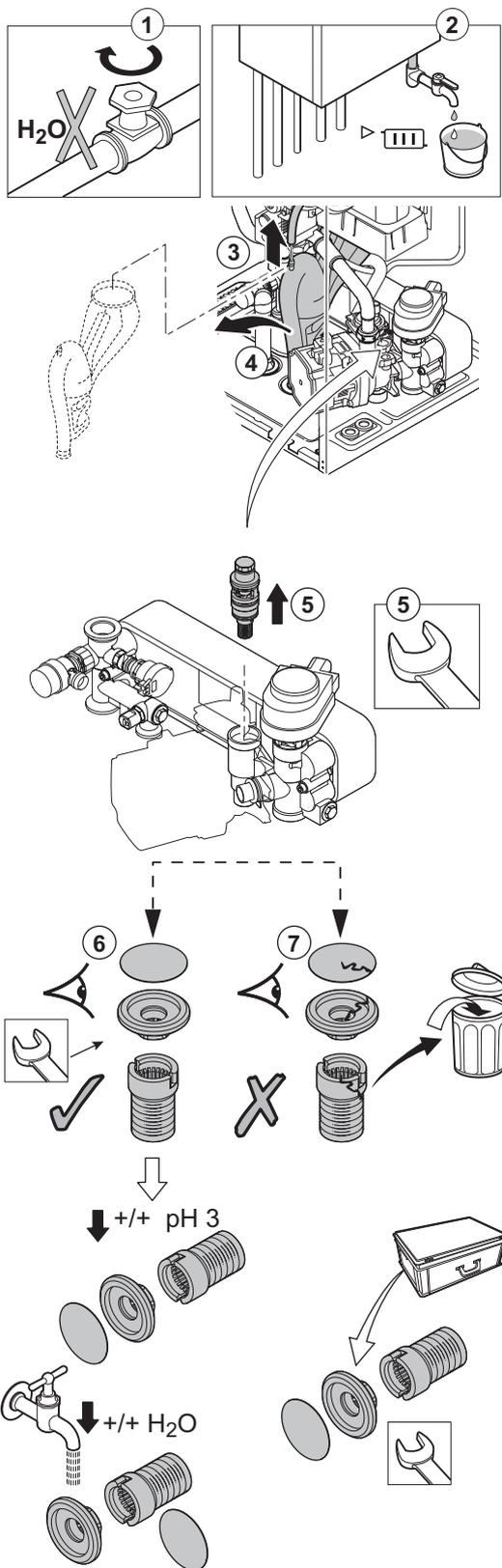


AD-0001243-04

1. Shut off the water supply.
2. Drain the boiler.
3. Remove the air vent hose above the siphon.
4. Remove the siphon.
5. Remove the safety clip holding the flow pipe in place on the left side of the hydroblock and the heat exchanger.
6. Remove the flow pipe.
7. Disconnect the connector from the tap water temperature sensor.
8. Unscrew the 2 hexagonal socket screws located to the right and left of the plate heat exchanger.
9. Turn the plate heat exchanger slightly and carefully remove it from the boiler.
10. Clean the plate heat exchanger with a descaling product (e.g. citric acid with a pH value of around 3).  
⇒ To this end, a specific cleaning appliance is available as an accessory.
11. After cleaning, rinse thoroughly under running water.
12. Reassemble all components.

### 10.3.4 Cleaning the water filter cartridge

Fig.99 Cleaning water filter cartridge



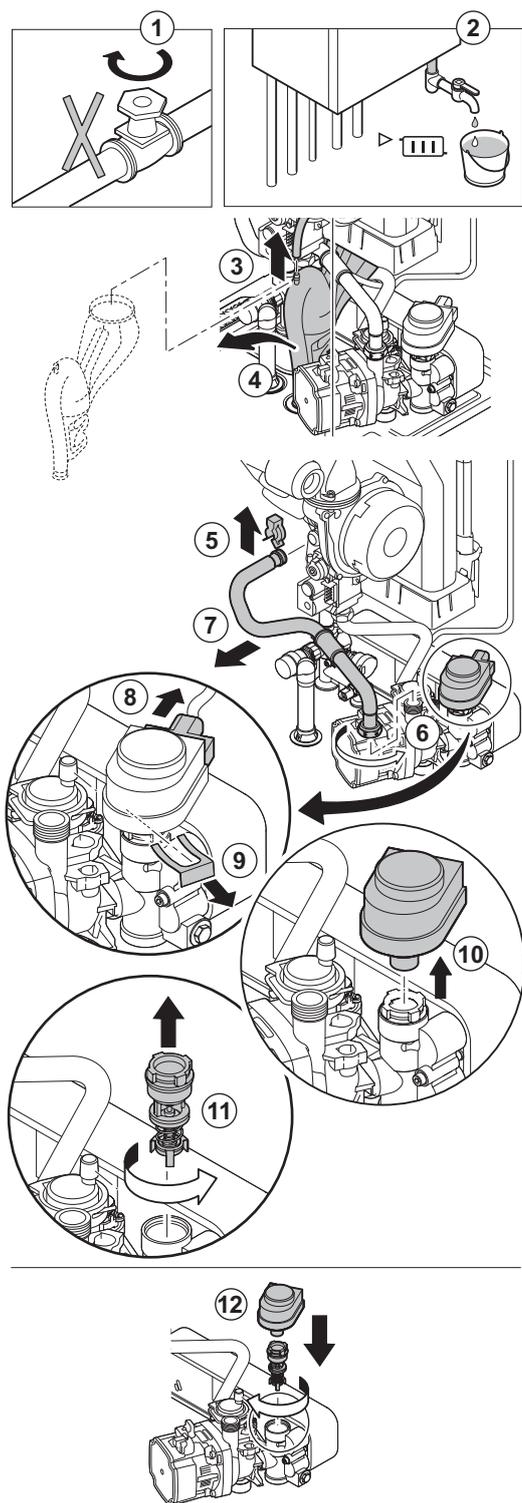
If cleaning or replacement of the water filter cartridge is necessary, proceed as follows:

1. Shut off the water supply.
2. Drain the boiler.
3. Remove the air vent hose above the siphon.
4. Remove the siphon.
5. Remove the water filter cartridge using an open-ended spanner. Unscrew the restrictor from the bottom of the cartridge.
6. Rinse the filters and the restrictor with tap water and, if necessary, clean them with a descaling product (e.g. citric acid with a pH of approximately 3). After cleaning, rinse thoroughly under running water.
7. Replace the water filter cartridge filters and restrictor if they are faulty or if they are included in the service kit.
8. Reassemble all components.

AD-0001244-03

### 10.3.5 Replacing the three-way valve

Fig.100 Replacing three-way valve

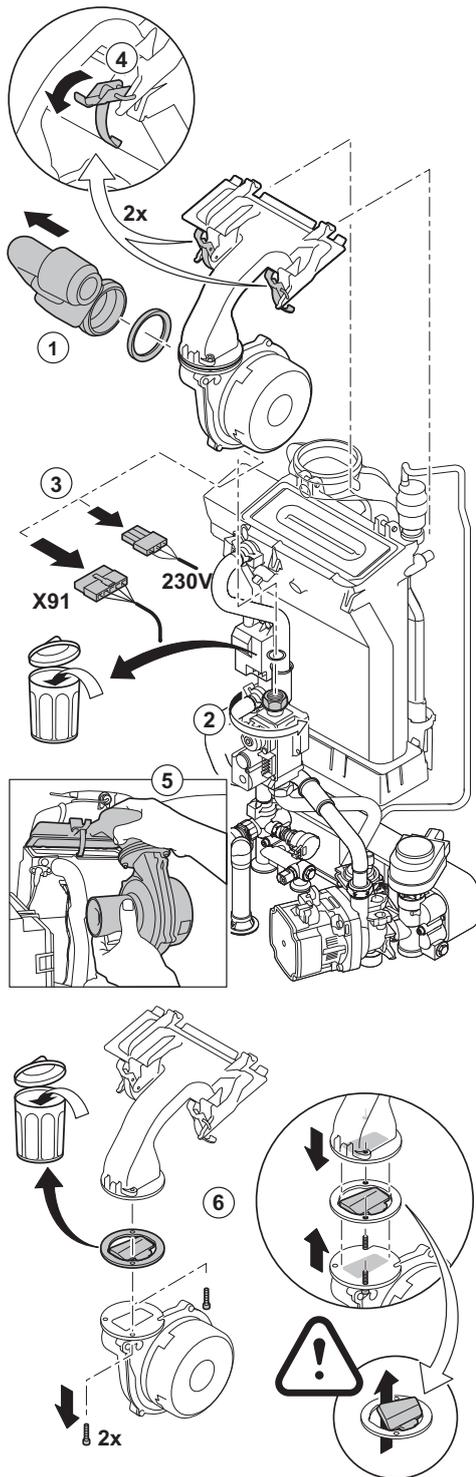


Replace the three-way valve if it is faulty. To do this, proceed as follows:

1. Shut off the water supply.
2. Drain the boiler.
3. Remove the air vent hose above the siphon.
4. Remove the siphon.
5. Remove the clip holding the return pipe to the heat exchanger.
6. Unscrew the gland holding the return hose in place on the right-hand section of the hydroblock.
7. Remove the return pipe.
8. Unplug the actuator.
9. Remove the clip holding the actuator in place.
10. Remove the actuator.
11. Unscrew the three-way valve from the hydroblock.
12. Reassemble in the reverse order.

AD-0001224-04

Fig.101 Replacing the non-return valve



AD-0001245-03

### 10.3.6 Replacing the non-return valve

Replace the non-return valve if it is defective or if the service kit includes one. To do this, proceed as follows:

1. Remove the air inlet flue on the venturi.
2. Loosen the gland on the gas valve unit.
3. Disconnect the 2 plugs located under the fan.
4. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
5. Remove the fan together with the mixing elbow unit.
6. Replace the non-return valve.
7. Reassemble the unit in reverse order.

### 10.3.7 Finalising work

1. Fit all removed parts in the reverse order.



#### Caution

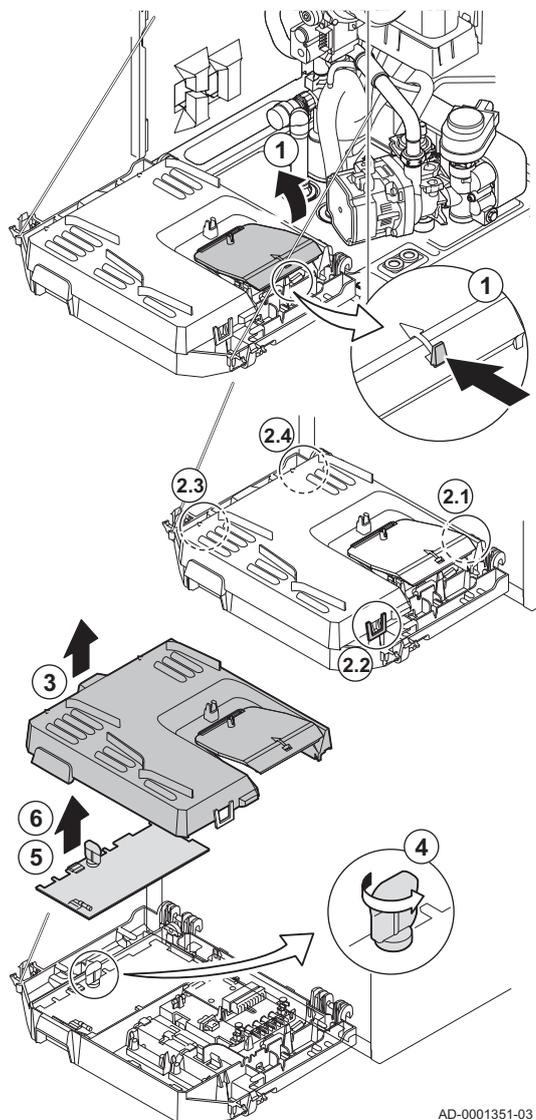
During inspection and maintenance operations, always replace all gaskets on the parts removed.

2. Fill the siphon with water.
3. Put the siphon back in place.
4. Carefully open the water tap.

5. Fill the installation with water.
6. Vent the installation.
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.

### 10.3.8 Replacing the control PCB

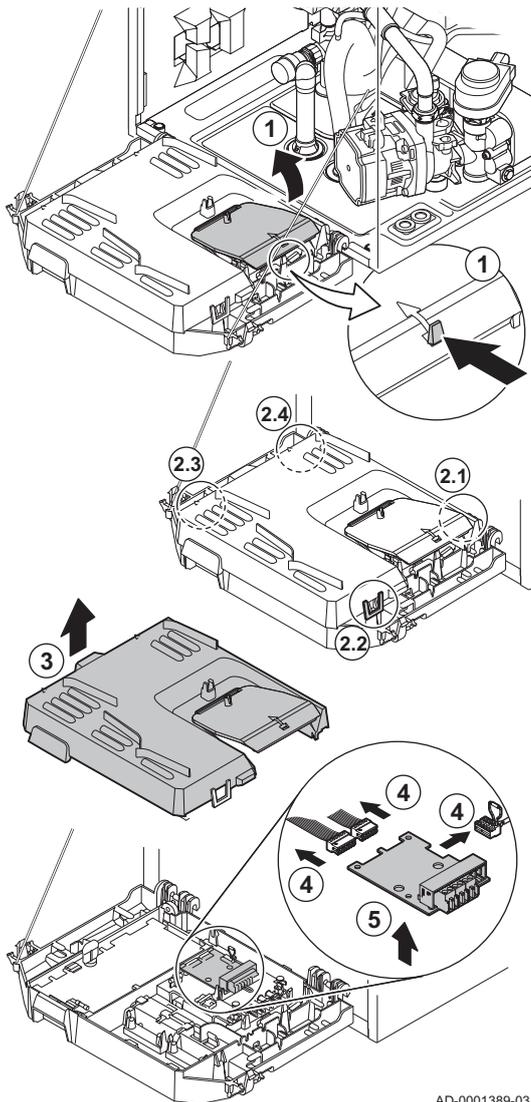
Fig.102 Access to the connectors



If a faulty control PCB in the instrument box needs to be replaced, proceed as follows:

1. Open the instrument box by pressing in the clip fastener at the side.
2. Open the jumpers at the side of the instrument box in the correct order. The order is indicated by the numbers of the instrument box.
3. Remove the top of the instrument box.
4. Turn the key on the **CU-GH08** PCB.
5. Remove all cables from the **CU-GH08** PCB.
6. Replace the **CU-GH08** PCB
7. Reassemble in the reverse order.

Fig.103 Access to the connectors



AD-0001389-03

### 10.3.9 Replacing the CB-03 PCB

If a faulty PCB in the instrument box needs to be replaced, proceed as follows:

1. Open the instrument box by pressing in the clip fastener at the side.
2. Open the jumpers at the side of the instrument box in the correct order. The order is indicated by the numbers of the instrument box.
3. Remove the top of the instrument box.
4. Remove all cables from the **CB-03** PCB.
5. Replace the **CB-03** PCB.
6. Reassemble in the reverse order.

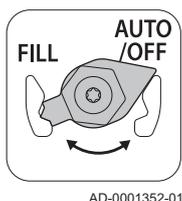
### 10.3.10 Updating the control panel firmware

You can update the firmware of the control panel when you have received an USB stick with a new firmware version.

1. Remove the Diematic Evolution control panel from the appliance.
2. Locate the USB port at the bottom of the control panel's PCB.
3. Place the USB stick with the new firmware on the USB port.
4. Press the  button.
5. Select System Settings  > **Firmware Update**.  
⇒ The message **Available Files:** appears on the screen.
6. Select the appropriate file.  
⇒ The firmware update starts.
7. Wait till the update is finished.  
⇒ The control panel is automatically restarted and the main display appears.
8. Do not switch off the power of the appliance for at least 5 minutes to ensure that the firmware update is stored correctly.

## 10.4 Refilling the system

Fig.104 Automatic refill device



The central heating system can be refilled (semi-)automatically using the automatic refill device.



### See

Refilling the system with the automatic refill device, page 111



### Important

- Semi-automatic (re)filling means: The boiler indicates that the system needs to be (re)filled and requests confirmation from the user.
- Automatic refilling means: The system is refilled as soon as the water pressure is too low.
- The installer can set the system to be refilled automatically or semi-automatically.

The automatic refill device can also be used to manually refill the central heating installation.

### 10.4.1 Refilling the system with the automatic refill device

The automatic refill device is placed under the boiler. This device can refill a central heating system automatically or semi-automatically (after confirmation by the user) if the water pressure has decreased to a value lower than the set minimum water pressure. The system is refilled to the set maximum operating pressure.

Fig.105 AUTO position



### Caution

The automatic refill device is only active if the boiler is switched on.



### Important

Refilling can only be interrupted if the water pressure is higher than 0.3 bar.



6. A message will appear on the display when automatic refilling is complete:

- 6.1. Press the  key to go back to the main display.



### Caution

- The warning code **A02.33** will be displayed if refilling is taking too long. The boiler will continue to operate normally.
- The warning code **A02.34** will be displayed if the boiler needs to be refilled too often. The boiler will continue to operate normally.
- The boiler can interrupt refilling temporarily for normal heating activities such as producing hot tap water.



### For more information, see

Additional information for the automatic refill device, page 67

### 10.4.2 Activating the automatic refill device (if fitted)

The automatic refill device can be used by the installer to fill the system to the desired water pressure during maintenance work. To do this, proceed as follows:

Fig.106 AUTO position



#### Caution

- The automatic refill device is only active if the boiler is switched on.
- The automatic refill device is only active in the AUTO position.

2. If the water pressure in the installation has dropped below the maximum water pressure but is still higher than the set minimum water pressure, the refilling system can be activated:

- 2.1. Go to  > **Start water filling**.
- 2.2. Press the  button to start the refill.

3. A message will appear on the display when automatic refilling is complete:

- 3.1. Press the  key to go back to the main display.



#### Caution

- The warning code **A02.33** will be displayed if refilling is taking too long. The boiler will continue to operate normally.
- The boiler can interrupt refilling temporarily for normal heating activities such as producing hot tap water.

### 10.4.3 Topping up the system (manually)



#### Caution

Before filling, open the valves on every radiator in the central heating system.

1. Check the water pressure on the boiler display.
2. Set the automatic refill device to FILL and refill the system.



#### Important

The recommended water pressure is between 1.5 bar and 2 bar.

Fig.107 FILL position

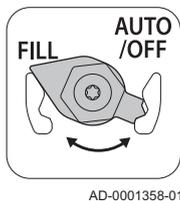
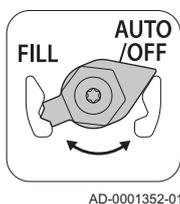


Fig.108 AUTO/OFF position



3. Set the automatic refill device to AUTO/OFF.
4. Check the water-side connections for tightness.

## 11 Troubleshooting

### 11.1 Error codes

When an error occurs in the installation, the control panel displays a message and a corresponding code. The status LED of the control panel will show a flashing and/or red signal.

Tab.79 Error codes

Error icon(⊗)	Code type	Error type	Description
Blue	Code Axx.xx	Warning	A warning is displayed if an error may occur. The boiler continues to operate but the cause of the warning must be investigated. A warning can change into a blocking or lock-out.
Yellow	CodeHxx.xx	Blocking	Blocking is occurs as a result of an error. The boiler starts up again automatically only when the cause of the blocking has been rectified. A blocking can change into a lock-out.
Red	CodeExx.xx	Locking	A lock-out occurs as a result of an error.

1. Select the error tile to view a description of the error.
2. Turn the boiler off an on again.
  - ⇒ The boiler starts up again only when the cause of the error has been rectified.
3. If the error code reappears, correct the problem by following the instructions in the error code tables.
  - ⇒ The error code remains visible until the problem is solved.
4. Note the error code when the problem cannot be solved.



#### Important

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

#### 11.1.1 Warning codes

If it is anticipated that a situation may develop into a fault, the boiler will first give a warning for some malfunctions. The warning code is shown on the display.



#### Important

The boiler continues to operate but the cause of the warning must be investigated. A warning can result in the boiler becoming blocked or locked out.

Tab.80 Control unit warning codes

Code	Text display	Description	Recommendation
A00.34	TOutside Missing	Outside temperature sensor was expected but not detected	Outside sensor not detected: <ul style="list-style-type: none"> <li>• Outside sensor is not connected: Connect the sensor</li> <li>• Outside sensor is not connected correctly: Connect the sensor correctly</li> </ul>
A00.42	WaterPressureMissing	Water pressure sensor was expected but not detected	Water pressure sensor not detected <ul style="list-style-type: none"> <li>• Water pressure sensor is not connected: connect the sensor</li> <li>• Water pressure sensor is not connected correctly: connect the sensor correctly</li> </ul>

Code	Text display	Description	Recommendation
A01.23	Poor Combustion	Poor combustion	No flame during operation: <ul style="list-style-type: none"> <li>• No ionisation current: <ul style="list-style-type: none"> <li>- Purge the gas supply to remove air.</li> <li>- Check whether the gas tap is properly open.</li> <li>- Checking the gas supply pressure.</li> <li>- Check the operation and setting of the gas valve unit.</li> <li>- Check that the air inlet and flue gas discharge flues are not blocked.</li> <li>- Check that there is no recirculation of flue gases.</li> </ul> </li> </ul>
A02.06	Water Press Warning	Water Pressure Warning active	Water pressure warning: <ul style="list-style-type: none"> <li>• Water pressure too low; check the water pressure</li> </ul>
A02.18	OBD Error	Object Dictionary Error	Configuration error: <ul style="list-style-type: none"> <li>• Reset <b>CN1</b> and <b>CN2</b>.</li> </ul>
A02.33	AF top comm err	Auto filling top communication has exceeded feedback time	The maximum time for refilling the system automatically has been exceeded: <ul style="list-style-type: none"> <li>• No or low water pressure in the supply line: check that the main water valve is fully open.</li> <li>• Water leakage from the boiler or system: check the system for leaks.</li> <li>• Check that the maximum time for refilling is suitable for the system: Check parameter <b>AP069</b></li> <li>• Check that the maximum water pressure for refilling is suitable for this system: Check parameter <b>AP070</b>. The pressure difference between the minimum (<b>AP006</b>) and maximum (<b>AP070</b>) water pressure must be large enough to prevent there being too short a time between two filling attempts.</li> <li>• The valve on the automatic refill device is broken: replace the device</li> </ul>
A02.34	AF min inter err	Auto filling minimum interval time has not been reached between two requests	The system must be refilled too quickly by the automatic refill device: <ul style="list-style-type: none"> <li>• Water leakage from the boiler or system: check the system for leaks.</li> <li>• Latest refill did not end above the minimum water pressure because it was interrupted by the user or because the water pressure in the supply line was (temporarily) too low.</li> </ul>
A02.36	Funct device lost	Functional device has been disconnected	SCB PCB not found: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Defective SCB PCB: replace SCB PCB</li> </ul>
A02.37	Uncritic device lost	Uncritical device has been disconnected	SCB PCB not found: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Defective SCB PCB: replace SCB PCB</li> </ul>
A02.45	Full Can Conn Matrix	Full Can Connection Matrix	SCB PCB not found: <ul style="list-style-type: none"> <li>• Carry out an auto-detect</li> </ul>
A02.46	Full Can Device Adm	Full Can Device Administration	SCB PCB not found: <ul style="list-style-type: none"> <li>• Carry out an auto-detect</li> </ul>
A02.48	Funct Gr Conf Fault	Function Group Configuration Fault	SCB PCB not found: <ul style="list-style-type: none"> <li>• Carry out an auto-detect</li> </ul>

Code	Text display	Description	Recommendation
A02.49	Failed Init Node	Failed Initialising Node	SCB PCB not found: <ul style="list-style-type: none"> <li>Carry out an auto-detect</li> </ul>
A02.55	Inval or miss SerNR	Invalid or missing device serial number	Contact your supplier.
A02.69	Fair mode active	Fair mode active	Contact your supplier.
A02.76	Memory full	The reserved space in memory for custom parameters value is full. No more user changed possible	Configuration error: <ul style="list-style-type: none"> <li>Reset <b>[N1]</b> and <b>[N2]</b> (see boiler data plate).</li> <li>Replace the CU-GH08 control unit.</li> </ul>
A08.02	Shower Time Elapsed	The time reserved for the shower has elapsed	Take a shorter shower or adjust parameter <b>DP357</b> .

### 11.1.2 Control unit blocking codes

Tab.81 CU-GH08 blocking codes

Code	Text display	Description	Recommendation
H00.81	RoomTempMissing	Room Temperature sensor was expected but not detected	Room temperature sensor not detected: <ul style="list-style-type: none"> <li>Room temperature sensor is not connected: Connect the sensor</li> <li>Room temperature sensor is not connected correctly: Connect the sensor correctly</li> </ul>
H01.00	Comm Error	Communication Error occurred	Communication error with the security kernel: <ul style="list-style-type: none"> <li>Restart boiler</li> </ul>
H01.05	Max Delta TF-TR	Maximum difference between flow temperature and return temperature	Maximum difference between the flow and return temperature exceeded: <ul style="list-style-type: none"> <li>No flow or insufficient flow: <ul style="list-style-type: none"> <li>Check the flow (direction, pump, valves)</li> <li>Check the water pressure</li> <li>Check the cleanliness of the heat exchanger</li> </ul> </li> <li>Sensor error: <ul style="list-style-type: none"> <li>Check that the sensors are operating correctly</li> <li>Check that the sensor has been fitted properly</li> </ul> </li> </ul>
H01.08	Delta T Max 3	Delta T Max 3	Maximum heat exchanger temperature increase has been exceeded: <ul style="list-style-type: none"> <li>No flow or insufficient flow: <ul style="list-style-type: none"> <li>Check the circulation (direction, pump, valves).</li> <li>Check the water pressure.</li> <li>Check the cleanliness of the heat exchanger.</li> <li>Check that the installation has been correctly vented to remove air.</li> </ul> </li> <li>Sensor error: <ul style="list-style-type: none"> <li>Check that the sensors are operating correctly.</li> <li>Check that the sensor has been fitted properly.</li> </ul> </li> </ul>
H01.09	Gas Pressure Switch	Gas Pressure Switch	Gas pressure too low: <ul style="list-style-type: none"> <li>No flow or insufficient flow: <ul style="list-style-type: none"> <li>Check that the gas valve is fully opened</li> <li>Check the gas supply pressure</li> </ul> </li> <li>Wrong setting on the GPS gas pressure switch: <ul style="list-style-type: none"> <li>Check whether the Gps switch is installed correctly</li> <li>Replace the Gps switch if necessary</li> </ul> </li> </ul>

Code	Text display	Description	Recommendation
H01.14	Max Tflow	Flow temperature has exceeded the maximum operating value	Flow temperature sensor above normal range (high-limit thermostat): <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• No flow or insufficient flow: <ul style="list-style-type: none"> <li>- Check the circulation (direction, pump, valves).</li> <li>- Check the water pressure.</li> <li>- Check the cleanliness of the heat exchanger.</li> </ul> </li> </ul>
H01.15	Max Tflue Gas	Flue gas temperature has exceeded the maximum operating value	-
H01.21	Dhw Temp GradLevel3	Maximum Dhw Temperature Gradient Level3 Exceeded	The flow temperature has risen too fast: <ul style="list-style-type: none"> <li>• Check the flow (direction, pump, valves)</li> <li>• Check that the heating pump is operating correctly</li> </ul>
H02.00	Reset In Progress	Reset In Progress	Reset procedure active: <ul style="list-style-type: none"> <li>• No action</li> </ul>
H02.02	Wait Config Number	Waiting For Configuration Number	Configuration error or unknown configuration number: <ul style="list-style-type: none"> <li>• Reset <b>CN1</b> and <b>CN2</b> (see boiler data plate).</li> </ul>
H02.03	Conf Error	Configuration Error	Configuration error or unknown configuration number: <ul style="list-style-type: none"> <li>• Reset <b>CN1</b> and <b>CN2</b> (see boiler data plate).</li> </ul>
H02.04	Parameter Error	Parameter Error	Factory settings incorrect: <ul style="list-style-type: none"> <li>• Parameters are not correct: <ul style="list-style-type: none"> <li>- Restart boiler</li> <li>- Reset <b>CN1</b> and <b>CN2</b></li> <li>- Replace the control unit</li> </ul> </li> </ul>
H02.05	CSU CU mismatch	CSU does not match CU type	Configuration error: <ul style="list-style-type: none"> <li>• Reset <b>CN1</b> and <b>CN2</b>.</li> </ul>
H02.09	Partial block	Partial blocking of the device recognized	Blocking input active or frost protection active: <ul style="list-style-type: none"> <li>• External cause: remove external cause.</li> <li>• Wrong parameter set: check the parameters.</li> <li>• Bad connection: check the connection.</li> </ul>
H02.10	Full Block	Full blocking of the device recognized	Blocking input is active (without frost protection): <ul style="list-style-type: none"> <li>• External cause: remove external cause.</li> <li>• Wrong parameter set: check the parameters.</li> <li>• Bad connection: check the connection.</li> </ul>
H02.12	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"> <li>• External cause: remove external cause.</li> <li>• Wrong parameter set: check the parameters.</li> <li>• Bad connection: check the connection.</li> </ul>
H02.31	AF needed	Device requires Auto filling of the water system due to low pressure	Refill the system using the automatic filling unit.
H02.38	No water hardness	No hardness of water	-
H02.70	HRU test error	External heat recovery unit test failed	Check the external heat recovery system.
H03.00	Parameter Error	Safety parameters level 2, 3, 4 are not correct or missing	Parameter error: security kernel <ul style="list-style-type: none"> <li>• Restart the boiler</li> <li>• Replace the CU-GH08 control panel</li> </ul>
H03.01	CU to GVC data error	No valid data from CU to GVC received	Communication error with the CU-GH PCB: <ul style="list-style-type: none"> <li>• Restart the boiler</li> </ul>

Code	Text display	Description	Recommendation
H03.02	Flame loss detected	Measured ionisation current is below limit	No flame during operation: <ul style="list-style-type: none"> <li>• No ionisation current: <ul style="list-style-type: none"> <li>- Purge the gas supply to remove air.</li> <li>- Check whether the gas tap is properly open.</li> <li>- Checking the gas supply pressure.</li> <li>- Check the operation and setting of the gas valve unit.</li> <li>- Check that the air inlet and flue gas discharge flues are not blocked.</li> <li>- Check that there is no recirculation of flue gases.</li> </ul> </li> </ul>
H03.05	Internal blocking	Gas Valve Control internal blocking occurred	Security kernel error: <ul style="list-style-type: none"> <li>• Restart the boiler</li> <li>• Replace the CU-GH08 control panel</li> </ul>
H03.17	Safety check	Periodically safety check ongoing	-

### 11.1.3 Control unit locking codes

Tab.82 CU-GH08 locking codes

Code	Text display	Description	Recommendation
E00.04	TReturn Open	Return temperature sensor is either removed or measures a temperature below range	Open circuit in return temperature sensor: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Incorrectly fitted sensor: check that the sensor has been correctly fitted.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E00.05	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"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E00.06	TReturn Missing	Return temperature sensor was expected but not detected	No connection to temperature return sensor: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor</li> </ul>
E00.07	dTReturn Too High	Return temperature difference is too large	Difference between the flow and return temperatures too great: <ul style="list-style-type: none"> <li>• No circulation: <ul style="list-style-type: none"> <li>- Vent the air from the CH system</li> <li>- Check the water pressure</li> <li>- If present: check the boiler type parameter setting</li> <li>- Check the circulation (direction, pump, valves)</li> <li>- Check that the heating pump is operating correctly</li> <li>- Check the cleanliness of the heat exchanger</li> </ul> </li> <li>• Sensor not connected or incorrectly connected: <ul style="list-style-type: none"> <li>- Check that the sensors are operating correctly</li> <li>- Check that the sensor has been fitted properly</li> </ul> </li> <li>• Faulty sensor: replace the sensor if necessary</li> </ul>
E00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range	Calorifier sensor open: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>

Code	Text display	Description	Recommendation
E00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range	Calorifier sensor short-circuited: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E00.44	TcombiDhwOutOpen	Domestic hot water outlet temperature sensor is either removed or measures a temperature below range	DHW temperature sensor open: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor</li> </ul>
E00.45	DHWoutSens short cct	Domestic hot water outlet temperature sensor is either shorted or measures a temperature above range	DHW temperature sensor short-circuited: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor</li> </ul>
E01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence	Flame loss occurs 5 times: <ul style="list-style-type: none"> <li>• Purge the gas supply to remove air.</li> <li>• Check whether the gas tap is properly open.</li> <li>• Check the gas supply pressure.</li> <li>• Check the operation and setting of the gas valve unit.</li> <li>• Check that the air inlet and flue gas discharge flues are not blocked.</li> <li>• Check that there is no recirculation of flue gases.</li> </ul>
E01.11	Fan Out Of Range	Fan speed has exceeded normal operating range	Fan fault: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty fan: replace the fan</li> <li>• Fan operates when it should not be operating: check for excessive chimney draught</li> </ul>
E01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature	Flow and return reversed: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Water circulation in wrong direction: check the circulation (direction, pump, valves).</li> <li>• Incorrectly fitted sensor: check that the sensor has been correctly fitted.</li> <li>• Malfunctioning sensor: check the Ohmic value of the sensor.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E01.24	Combustion Error	Several combustion errors occurs with 24 hours	Too many errors reset: <ul style="list-style-type: none"> <li>• Switch the appliance off and on.</li> </ul>
E02.13	Blocking Input	Blocking Input of the Control Unit from device external environment	Blocking input is active: <ul style="list-style-type: none"> <li>• External cause: remove external cause.</li> <li>• Wrong parameter set: check the parameters.</li> </ul>
E02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty CSU: replace CSU.</li> </ul>
E02.17	GVC CommTimeout	Gas Valve Control unit communication has exceeded feedback time	Communication error with the security kernel <ul style="list-style-type: none"> <li>• Restart boiler</li> <li>• Replace the CU-GH08 control panel</li> </ul>
E02.32	AF comm err	Auto filling installation communication has exceeded feedback time	Refilling the installation takes too long: <ul style="list-style-type: none"> <li>• Check the system for leaks.</li> <li>• Check the water pressure in the system.</li> <li>• Check that the inlet gas valve is fully open.</li> <li>• Check that the main water valve is fully open.</li> <li>• Check the operation of the pressure sensor.</li> <li>• Check the operation of the safety valve.</li> </ul>

Code	Text display	Description	Recommendation
E02.35	Safety device lost	Safety critical device has been disconnected	Check the PCB.
E02.39	AF low pressure rise	No sufficient rise of pressure after autofilling	The water pressure in the system has not risen sufficiently during the automatic filling procedure: <ul style="list-style-type: none"> <li>• Check the system for leaks.</li> <li>• Check the water pressure in the system.</li> <li>• Check that the inlet gas valve is fully open.</li> <li>• Check that the main water valve is fully open.</li> <li>• Check the operation of the pressure sensor.</li> <li>• Check the operation of the safety valve.</li> </ul>
E02.47	Failed Conn Funct Gr	Failed Connecting Function Groups	Function group not found: <ul style="list-style-type: none"> <li>• Carry out an auto-detect</li> </ul>
E02.78	Dhw Dcw swap	The domestic cold water and the domestic hot water connections are swapped	Check that the central heating pipes and DHW pipes have not been reversed.
E04.00	Parameter error	Safety parameters Level 5 are not correct or missing	Replace the control unit if it is defective.
E04.01	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"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Incorrectly fitted sensor: check that the sensor has been correctly fitted.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E04.02	TFlow Open	Flow temperature sensor is either removed or measuring a temperature below range	Flow temperature sensor open: <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>
E04.03	Max Flow temp	Measured flow temperature above safety limit	Maximum heat exchanger temperature increase has been exceeded: <ul style="list-style-type: none"> <li>• No flow or insufficient flow: <ul style="list-style-type: none"> <li>- Check the circulation (direction, pump, valves).</li> <li>- Check the water pressure.</li> <li>- Check the cleanliness of the heat exchanger.</li> <li>- Check that the installation has been correctly vented to remove air.</li> </ul> </li> <li>• Sensor error: <ul style="list-style-type: none"> <li>- Check that the sensors are operating correctly.</li> <li>- Check that the sensor has been fitted properly.</li> </ul> </li> </ul>
E04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected	Flow temperature sensor deviation: <ul style="list-style-type: none"> <li>• Bad connection: check the connection.</li> <li>• Faulty sensor: replace the sensor.</li> </ul>

Code	Text display	Description	Recommendation
E04.10	Unsuccessful start	5 Unsuccessful burners starts detected	<p>Five failed burner starts:</p> <ul style="list-style-type: none"> <li>• No ignition spark: <ul style="list-style-type: none"> <li>- Check the wiring between the CU-GH08 and the ignition transformer.</li> <li>- Check the ionisation/ignition electrode.</li> <li>- Check breakdown to earth.</li> <li>- Check the condition of the burner set.</li> <li>- Check the earthing.</li> <li>- SU electronic PCB faulty: replace the electronic PCB.</li> </ul> </li> <li>• Ignition spark but no flame: <ul style="list-style-type: none"> <li>- Vent the gas pipes to remove air.</li> <li>- Check that the air inlet and flue gas discharge flues are not blocked.</li> <li>- Check whether the gas tap is properly open.</li> <li>- Check the gas supply pressure.</li> <li>- Check the operation and setting of the gas valve unit.</li> <li>- Check the wiring on the gas valve unit.</li> <li>- Replace the CU-GH08 control panel</li> </ul> </li> <li>• Presence of the flame but insufficient ionization (&lt;3 µA): <ul style="list-style-type: none"> <li>- Check whether the gas tap is properly open.</li> <li>- Check the gas supply pressure.</li> <li>- Check the ionisation/ignition electrode.</li> <li>- Check the earthing.</li> <li>- Check the wiring on the ionization/ignition electrode.</li> </ul> </li> </ul>
E04.12	False flame	False flame detected before burner start	<p>False flame signal:</p> <ul style="list-style-type: none"> <li>• The burner remains very hot: Set the O<sub>2</sub></li> <li>• Ionisation current measured but no flame should be present: check the ionisation/ignition electrode.</li> <li>• Faulty gas valve: replace the gas valve.</li> <li>• Faulty ignition transformer: replace the ignition transformer.</li> </ul>
E04.13	Fan	Fan speed has exceeded normal operating range	<p>Fan fault:</p> <ul style="list-style-type: none"> <li>• Bad connection: check the wiring and connectors.</li> <li>• Fan operates when it should not be operating: check for excessive chimney draught.</li> <li>• Faulty fan: replace the fan.</li> </ul>
E04.17	GasValve Driver Err.	The driver for the gas valve is broken	Replace the control unit if it is defective.
E04.23	Internal Error	Gas Valve Control internal locking	Replace the control unit if it is defective.

## 11.2 Error memory

The control panel includes an error memory in which the last 32 errors are stored. Details of the error are stored with the error codes. Included are the status, sub-status, flow temperature, return temperature, fan rotation speed and the ionisation current.

### 11.2.1 Reading out and clearing the error memory

The error memory stores the details of the most recent errors.

1. Press the  button.
2. Select **Error History**.
  - ⇒ The list of the 32 most recent errors is displayed with the error code, a short description and the date.

3. Select the error code you want to investigate.
  - ⇒ The display shows an explanation of the error code and the status of the boiler when the error occurred.
4. To clear the error memory, press and hold the ✓ rotary knob.

## 12 Disposal

### 12.1 Disposal and recycling



#### Caution

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

Fig.109



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

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

## 13 Spare parts

### 13.1 General

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

Information about available parts can be found via the website for professionals.

Fig.110 <http://pieces.dedietrich-thermique.fr>



MW-3000456-01

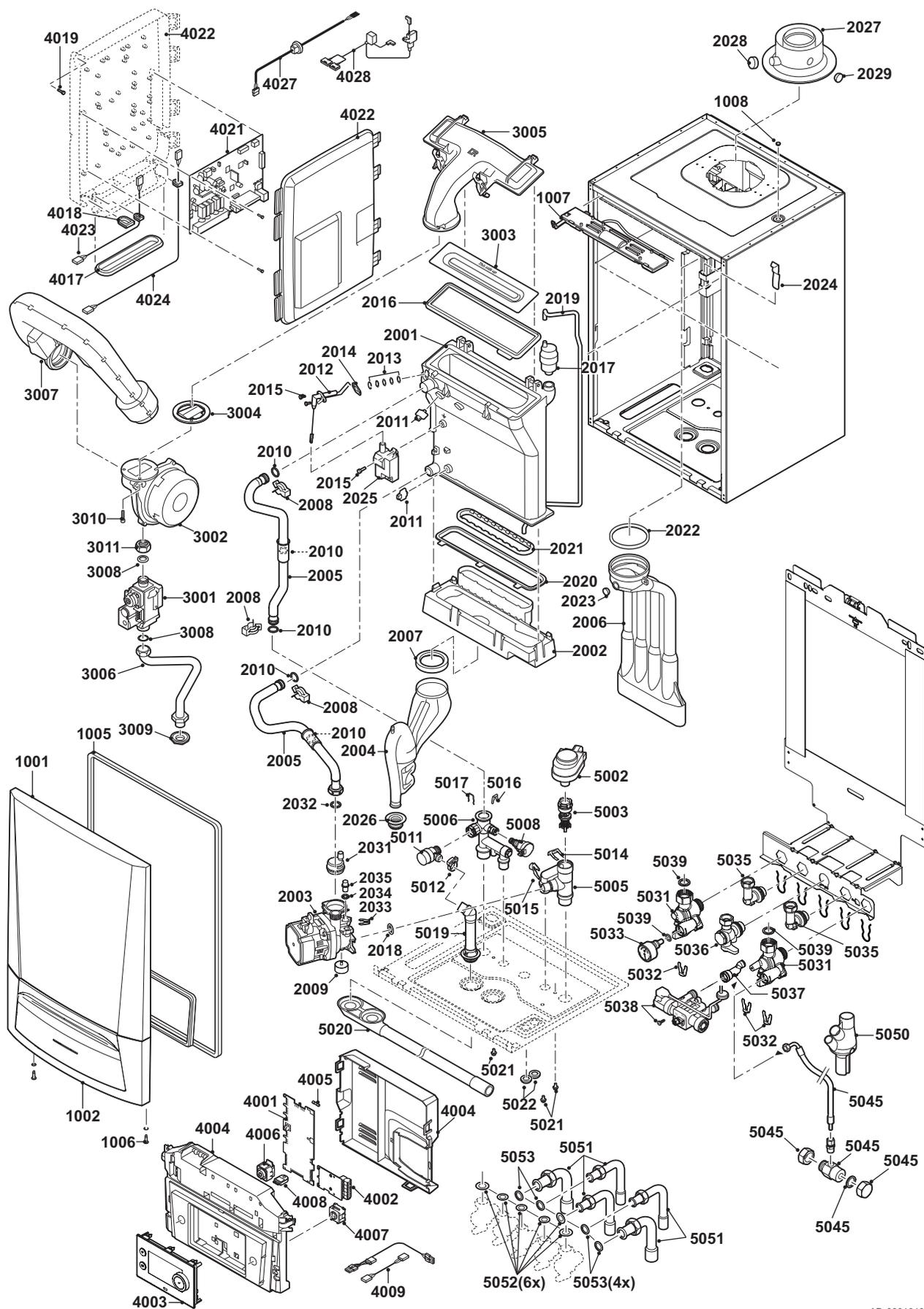


**Important**

When ordering a part, you must state the part number of the required part.

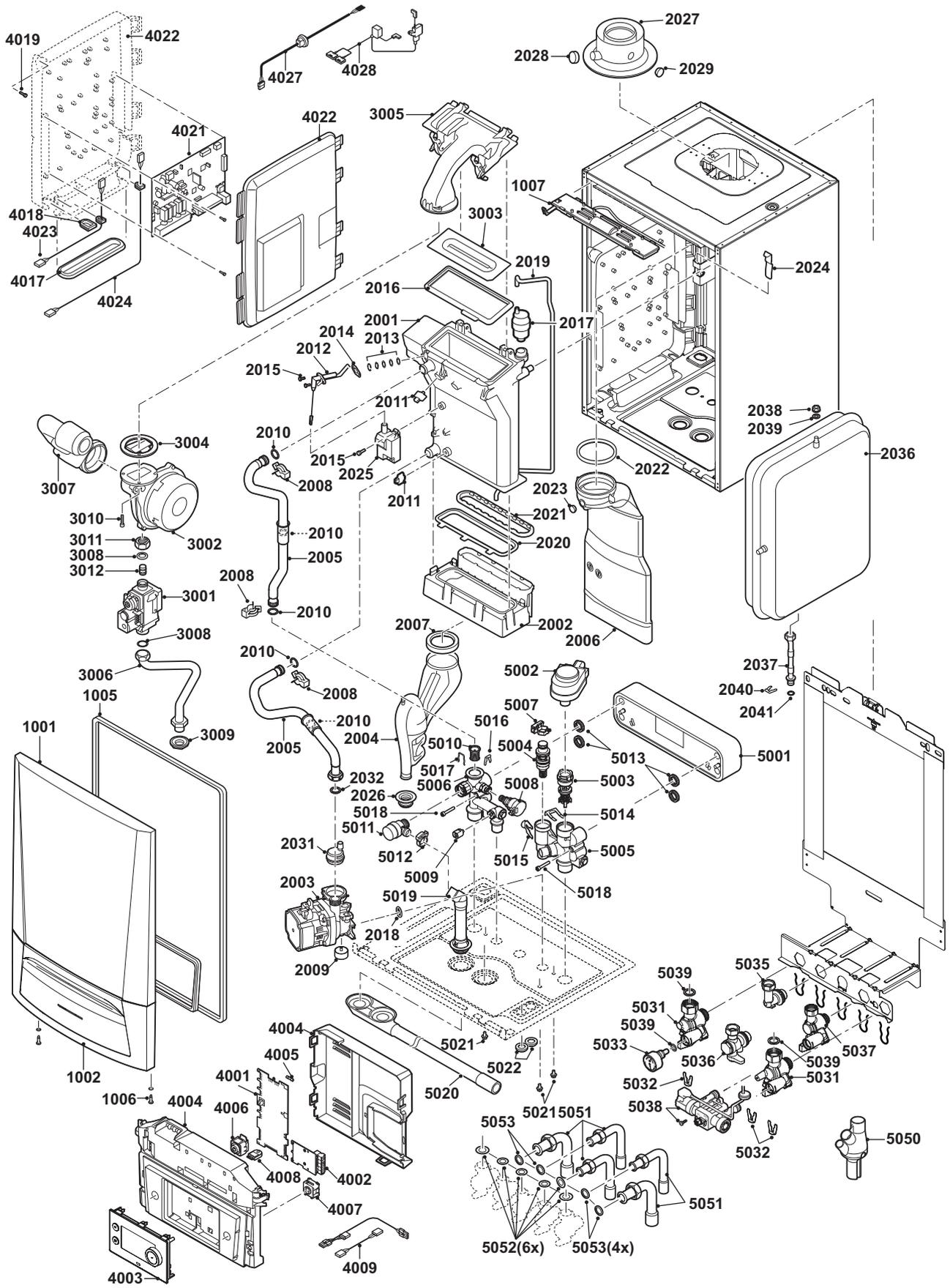


Fig.112 AMC 35



AD-0801319-01

Fig.113 AMC 25/28 MI



AD-0801375-01

### 13.3 Spare parts list

Tab.83 Casing

Markers	Code no.	Description	15	25	25/28 MI	35
1001	7665189	Magnets	x	x	x	x
1001	7703802	Casing Front Panel	x	x	x	x
1002	7700066	Cover Drop Down	x	x	x	x
1005	7665192	Seal Cover Frame / HMI	x	x	x	x
1006	S101403	Stud Quarter Retainer	x	x	x	x
1007	S101253	Boiler Light	x	x	x	x

Tab.84 Heat exchanger and burner

Markers	Code no.	Description	15	25	25/28 MI	35
2001	7689674	Heat Exchanger 28kW	x	x	x	
2001	7689714	Heat Exchanger 40 kW				x
2002	S100894	Condensate Collector 253 mm	x	x	x	
2002	S101181	Condensate Collector 338 mm				x
2003	7703779	Energy-efficient pump	x	x	x	x
2004	S100905	Siphon Assembly	x	x	x	x
2005	7665244	Piping Set Flow and Return	x	x	x	x
2006	S100854	Flue Gas Exhaust Pipe Ø 80 (28 kW)	x	x	x	
2006	S101199	Flue Gas Exhaust Pipe Ø 80 (40 kW)				x
2007	S100906	Sealing Ring Siphon	x	x	x	x
2008	S59586	Hairpin Spring 18 mm (10 Pcs.)	x	x	x	x
2009	7689676	Vibration Silencer	x	x	x	x
2010	7673034	O-ring 18x2.8 MOS2 (10x)	x	x	x	x
2011	7623837	Sensors Set Double NTC 10K (1x) and NTC 10K(2x)	x	x	x	x
2012	S100890	Electrode Ignition/Ionisation	x	x	x	x
2013	S59118	Glass Inspection Set	x	x	x	x
2014	S62105	Gasket For Electrode (10 Pcs.)	x	x	x	x
2015	S48950	Screw M4 x 10 (50 Pcs.)	x	x	x	x
2016	S100880	Gasket For Burner 212 x 84 mm	x	x	x	
2016	S101196	Gasket For Burner 40 kW				x
2017	7669770	Air Vent	x	x	x	x
2018	S58730	O-Ring 17 x 4 (10 Pcs.)	x	x	x	x
2019	S100891	Hose silicone 8 x 4 x 715 mm	x	x	x	x
2020	S100888	Gasket Heat Exchanger-Condensate Collector	x	x	x	
2020	S101179	Gasket Heat Exchanger-Condensate Collector				x
2021	S100892	Gasket Flue Gas Discharge-Condensate Col	x	x	x	x
2022	S100855	Sealing Ring Ø 80 (5 Pcs.)	x	x	x	x
2023	S100850	Cap Measure Point Flue Gas Pipe	x	x	x	x
2024	S100901	Fixing Strip Heat Exchanger	x	x	x	x
2025	S100838	Transformer Ignition Incl. Electrode	x	x	x	x
2026	7665193	Grommet Siphon	x	x	x	x
2027	S100765	Flue Gas Discharge Adapter 60/100	x	x	x	x
2028	S62232	Screw Cap Flue Gas Measure Point (5 Pcs.)	x	x	x	x
2029	S62233	Plug For Air Inlet Measure Point (5 Pcs.)	x	x	x	x
2031	S100197	Airvent Pump	x	x	x	x
2032	S56155	Gasket 23.8 x 17.2 x 2 mm	x	x	x	x
2033	S100814	Clip 10.3 (5 Pcs.)	x	x	x	x
2034	S62586	O-Ring Ø 9.19 x 2.62 (10 Pcs.)	x	x	x	x

Markers	Code no.	Description	15	25	25/28 MI	35
2035	S100242	Pump Plug	x	x		x
2036	S100925	Expansion Vessel	x	x	x	
2037	7702930	Pipe expansion vessel	x	x	x	
2038	S44483	Nut M8 (10 Pcs.)	x	x	x	
2039	S101007	Star Washer 8.2 (4 Pcs)	x	x	x	

Tab.85 Gas/air

Markers	Code no.	Description	15	25	25/28 MI	35
3001	S101507	Gas Combination Block with Throttle	x	x	x	x
3002	7665194	Fan Assembly 25-28 kW	x	x	x	
3002	7665247	Fan Assembly 35-40 kW				x
3002	7700058	Fan 10 kW	x	x		
3003	S100879	Burner 28 kW 198 mm	x	x	x	
3003	S101524	Burner 40 kW 284 mm				x
3004	S100881	Seal Ro. 83mm With Valve (28 kW)	x	x	x	
3004	S101198	Seal Ro. 83 mm With Valve (40 kW)				x
3005	S100882	Cover Gas/Air Chamber 220 x 84 mm	x	x	x	
3005	S101185	Cover Gas/Air Chamber 306 x 99 mm				x
3006	S100910	Gas supply Pipe	x	x	x	x
3007	S100911	Air Supply Damper	x	x	x	
3007	S101523	Air Supply Damper 40 kW				x
3009	S100806	Sanitary connecting Piece	x	x	x	x
3010	S100951	Screw 7985 M5 x 25 (10 Pcs.)	x	x	x	x
3011	S101010	Nut G3/4"	x	x	x	x
3012	S101542	Restriction Washer R 3.95 20-28 kW	x	x	x	

Tab.86 Electronic system

Markers	Code no.	Description	15	25	25/28 MI	35
4001	7665195	PCB CU-GH08	x	x	x	x
4002	7665228	PCB CB-03	x	x	x	x
4003	7704801	Display Print MK3	x	x	x	x
4004	7700060	Control Box Grey	x	x	x	x
4005	7701771	Fuse Glass 2.5 Amp (5 Pcs.)	x	x	x	x
4006	7700062	Switch On/Off	x	x	x	x
4007	7700064	Service connector	x	x	x	x
4008	7633327	Configuration Storage Unit CSU-01	x	x	x	x
4009	7665232	Cable Sensors	x	x	x	x
4009	7665234	Cable set (Controlbox intern)	x	x	x	x
4009	7689678	Pump cable (Energy-efficient Pump)	x	x	x	x
4009	S100842	Cable Three-Way-Valve	x	x	x	x
4017	S100869	Sealant Strip SCU	x	x	x	x
4018	S100862	Grommet 10 x 0 x 1.2 (5x)	x	x	x	x
4019	S14254	Screw 4.2 x 9.5 (20 Pcs.)	x	x	x	x
4021	7698588	PCB SCB-10 B (SW 1.0)	x	x	x	x
4022	S100860	Case SCU	x	x	x	x
4023	S100843	Cable SCU 230 V	x	x	x	x
4024	7690425	Cable Bus Interface	x	x	x	x

Markers	Code no.	Description	15	25	25/28 MI	35
4027	S100845	Cable power supply (L = 1500 mm)	x	x	x	x
4028	7665233	Cable (Valve / Fan)	x	x	x	x

Tab.87 Hydraulics

Markers	Code no.	Description	15	25	25/28 MI	35
5001	7665235	Plate Heat Exchanger 28 kW			x	
5002	7689679	Actuator Three-Way Valve	x	x	x	x
5003	7689680	Three-Way Valve	x	x	x	x
5004	7689681	Housing Cartridge + Sensor DHW			x	
5005	7700076	Hydro Block Right DS Flat	x	x	x	x
5005	7700078	Hydro Block Right C Flat 9L			x	
5006	7689711	Hydro Block Left Combi			x	
5006	7700077	Hydro Block Left	x	x	x	x
5007	7689700	Sensor DHW Flow			x	
5008	S100821	Pressure Sensor	x	x	x	x
5009	7665238	Sensor NTC			x	
5010	S100805	Filter System For Plate x Primary Flow			x	
5011	S100829	Safety Pressure Relief Valve With Pipe	x	x	x	x
5012	S100873	Clip For Hose (5 Pcs.)	x	x	x	x
5013	S100810	C-Ring 25.2 x 17mm (20 Pcs.)			x	
5014	S59135	Hairpin Spring 15.2 mm (10 Pcs.)	x	x	x	x
5015	S58731	Hairpin Spring Pump 18 mm (10 Pcs.)	x	x	x	x
5017	S100835	Hairpin Spring 16 mm (10 Pcs.)	x	x	x	x
5018	7689701	Screw CHC M5x30/22 8.8 ZN8			x	
5019	S100866	Hose Of Safety Valve	x	x	x	x
5020	S101002	Condensate Drain	x	x	x	x
5021	7689702	Screw DIN6921 M5x10	x	x	x	x
5022	S62727	Grommet 20 mm (15 Pcs)	x	x	x	x
5031	7684680	Service Set Taps Flat	x	x	x	x
5032	S101740	Set with clips, nuts and screws	x	x	x	x
5033	S101763	Temperature/Pressure Gauge	x	x	x	x
5035	7660283	Elbow mounting frame	x	x	x	
5035	7660285	Elbow mounting frame				x
5036	S100872	Gas Cock	x	x	x	x
5037	7684678	Tap disconnecteur			x	x
5037	7684679	Connection piece disconnecteur	x	x		x
5038	7673036	Automatic (re)fill unit	x	x	x	x
5039	7660289	Set O-Rings	x	x	x	x
5045	7700056	Set Additional Parts Disconnecteur	x	x		x
5050	S100238	Condensate Collector	x	x	x	x
5051	S100912	Pipe Set 16/18/22	x	x	x	
5051	S101001	Pipe Set 22/15 mm	x	x	x	x
5052	S56157	Gasket Ø 18.3 x 12.7 x2 mm (10 Pcs.)	x	x	x	x
0	7668122	Maintenance set A	x	x	x	
0	7668123	Maintenance set B	x	x	x	
0	7668124	Maintenance set C (C)			x	
0	7668125	Maintenance set C (S/DS)	x	x		
0	7668126	Maintenance set A				x
0	7668127	Maintenance set B				x
0	7668129	Maintenance set C (S/DS)				x

## 14 Appendix

### 14.1 EC declaration of conformity

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

The original declaration of conformity is available from the manufacturer.

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