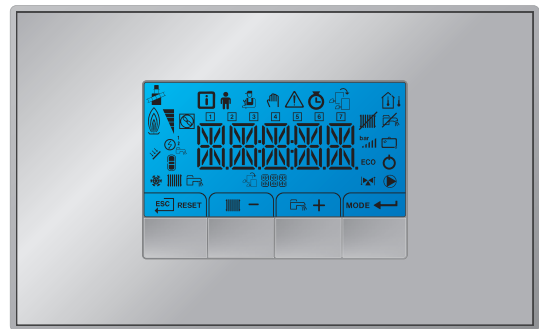


EVODENS PRO



Installation and User Manual

High-efficiency wall-hung gas boiler

AMC Pro 45 - 65 - 90 - 115

Inicontrol 2

Dear Customer,

Thank you very much for buying this appliance.

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

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

1 Safety

1.1 General safety instructions

1.1.1 For the installer

**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.

1.1.2 For the end user



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. Evacuate the property.
5. Contact a qualified installer.



Danger

If you smell flue gases:

1. Switch the boiler off.
2. Open the windows.
3. Evacuate the property.
4. Contact a qualified installer.



Warning

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



Warning

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators can rise to over 60°C.



Warning

Be careful when using the domestic hot water. Depending on the boiler settings, the temperature of domestic hot water can rise to over 65°C.



Warning

The use of the boiler and the installation by you as the end-user must be limited to the operations described in this manual. All other actions may only be undertaken by a qualified fitter/engineer.



Warning

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

**Caution**

Ensure that the boiler is regularly serviced. Contact a qualified installer or arrange a maintenance contract for the servicing of the boiler.

**Caution**

Only genuine spare parts may be used.

**Important**

Regularly check for the presence of water and pressure in the heating installation.

1.2 Recommendations

**Danger**

This appliance can be used by children aged eight and above and people with a physical, sensory or mental disability, or with a lack of experience and knowledge, provided they are supervised and instructed in how to use the appliance in a safe manner and understand the associated dangers. Children must not be allowed to play with the appliance. Cleaning and user maintenance should not be carried out by children without adult supervision.

**Warning**

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

**Warning**

The installation and maintenance of the boiler must be undertaken by a qualified installer in accordance with the information in the supplied manual, doing otherwise may result in dangerous situations and/or bodily injury.

**Warning**

Removal and disposal 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.



Danger

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



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

1.3.1 Manufacturer's liability

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

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

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

1.3.2 Installer's liability

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

- Read and follow the instructions given in the manuals provided with the 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 Additional documentation

The following documentation is available in addition to this manual:

- Service manual
- Water quality instructions

2.2 Symbols used in the manual

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

**Danger**

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

**Danger of electric shock**

Risk of electric shock 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 Description of the product

3.1 General description

The AMC Pro boiler is a high-efficiency wall-hung gas boiler with the following properties:

- High-efficiency heating.
- Limited emissions of polluting substances.
- Ideal choice for cascade configurations.

All AMC Pro boiler models are supplied without a pump, but with the required pump connection cables.

Take the boiler resistance and system resistance into account when selecting a pump.



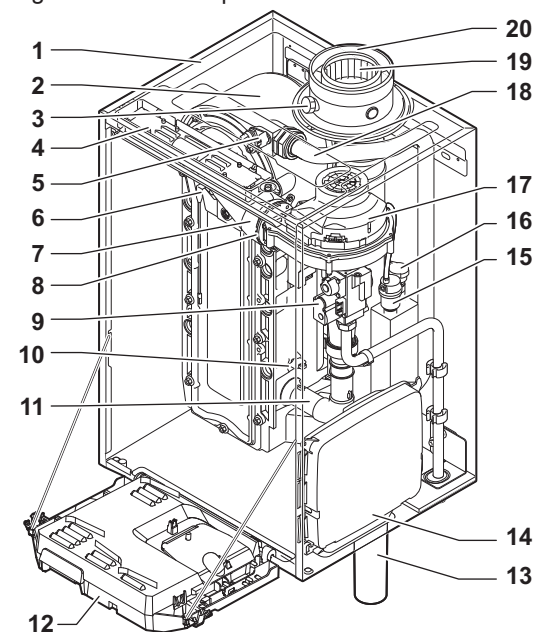
Caution

The pump may have a maximum input of 200 W. Use an auxiliary relay for a pump with greater power.

If possible, install the pump directly under the boiler on the return connection.

3.2 Main components

Fig.1 Main components

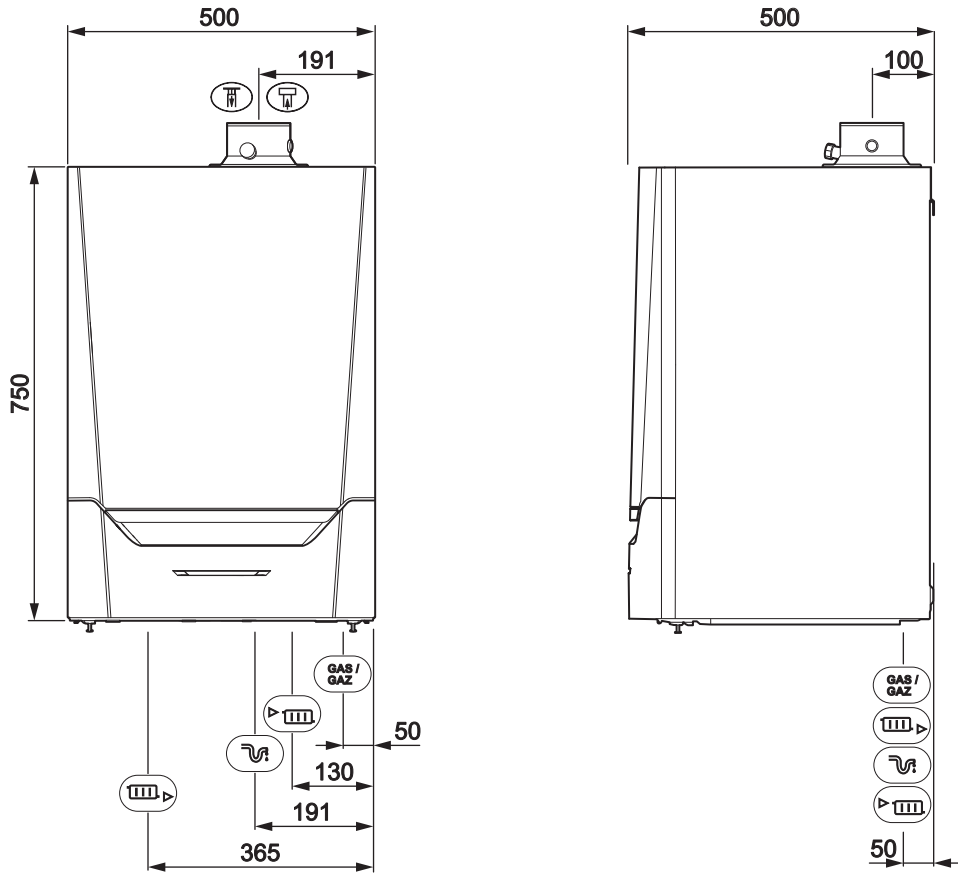


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- | | | | |
|----|-------------------------------|---------|---|
| 1 | Casing/air box | 14 | Expansion box for the control PCBs
(= accessory) |
| 2 | Heat exchanger (CH) | 15 | Automatic air vent |
| 3 | Interior light | 16 | Hydraulic pressure sensor |
| 4 | Type plate | 17 | Fan |
| 5 | Flow sensor | 18 | Supply line |
| 6 | Ionisation/ignition electrode | 19 | Flue gas measuring point |
| 7 | Mixing tube | 20 | Flue gas discharge pipe |
| 8 | Non-return valve | 21 | Air supply |
| 9 | Combined gas valve unit | ▶ (III) | Heating circuit flow |
| 10 | Return sensor | (III) ▶ | Heating circuit return |
| 11 | Air intake silencer | | |
| 12 | Instrument box | | |
| 13 | Siphon | | |

3.3 Dimensions and connections

Fig.2 Dimensions



AD-4100113-02

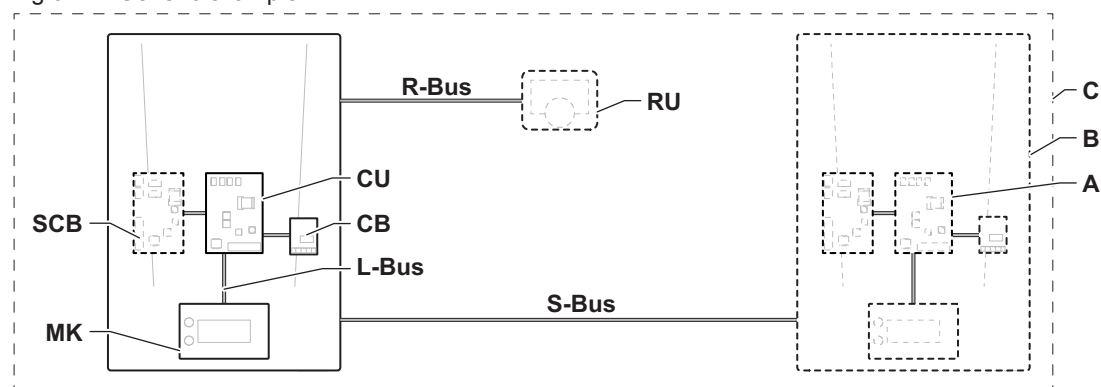
Tab.1 Connections

Symbol	Connection	AMC Pro 45	AMC Pro 65	AMC Pro 90	AMC Pro 115
	Flue gas outlet	Ø 80 mm	Ø 100 mm	Ø 100 mm	Ø 100 mm
	Air supply	Ø 125 mm	Ø 150 mm	Ø 150 mm	Ø 150 mm
	Siphon	25 mm	25 mm	25 mm	25 mm
	CH flow	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread
	CH return	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread
	Gas	¾" male thread	¾" male thread	¾" male thread	¾" male thread

3.4 Introduction to the controls platform

The AMC Pro boiler is equipped with the controls platform. This is a modular system, and offers compatibility and connectivity between all products that make use of the same platform.

Fig.3 Generic example



AD-3001366-01

Tab.2 Components in the example

Item	Description	Function
CU	Control Unit: Control unit	The control unit handles all basic functionality of the appliance.
CB	Connection Board: Connection PCB	The connection PCB is used to provide easy access to all connectors of the control unit.
SCB	Smart Control Board: Expansion PCB (optional)	An expansion PCB can be fitted to an appliance to provide extra functionality, like an internal calorifier or multiple zones.
MK	Control panel: Control panel and display	The control panel is the user interface to the appliance.
RU	Room Unit: Room unit (e.g. a thermostat)	A room unit is used to measure the temperature in a reference room.
L-Bus	Local Bus: Connection between devices	The local bus provides communication between devices.
S-Bus	System Bus: Connection between appliances	The system bus provides communication between appliances.
R-Bus	Room unit Bus: Connection to a room unit	The room unit bus provides communication to a room unit.
A	Device	A device is a PCB, display or a room unit.
B	Appliance	An appliance is a set of devices connected via the same L-Bus
C	System	A system is a set of appliances connected via the same S-Bus

Tab.3 Specific devices available in the AMC Pro boiler

Name visible in display	Software version	Description	Function
CU-GH08	01.07	Control unit CU-GH08	The CU-GH08 control unit handles all basic functionality of the AMC Pro boiler.
HMI	02.01	Control panel Inicontrol 2	The Inicontrol 2 is the user interface to the AMC Pro boiler.

4 Preparation of installation

4.1 Installation regulations



Warning

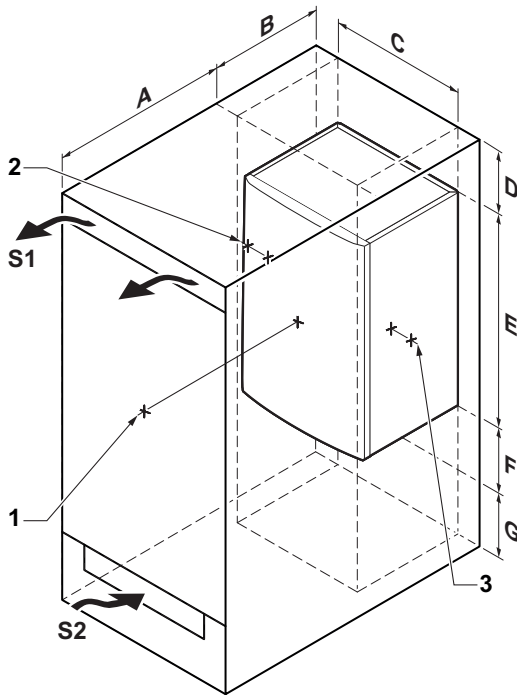
The boiler must be installed by a qualified installer in accordance with local and national regulations.

4.2 Choice of the location

When choosing the best installation location, consider:

- The regulations.
- The required installation space.
- The required space around the boiler for good access and to facilitate maintenance.
- The required space under the boiler for the installation and removal of the siphon.
- The permitted position of the flue gas outlet and/or air supply opening.
- The evenness of the surface.

Fig.4 Installation area



AD-3001371-01

- A \geq 1000 mm
- B 500 mm
- C 500 mm
- D \geq 400 mm
- E 750 mm
- F 350 mm (siphon)
- G \geq 250 mm

If the boiler is installed in a closed cupboard, the minimum distance between the boiler and the walls of the cupboard must be taken into account.

- 1 \geq 1000 mm (front)
- 2 \geq 15 mm (left-hand side)
- 3 \geq 15 mm (right-hand side)

Also allow for openings to prevent the following hazards:

- Accumulation of gas
- Heating of the casing

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



Danger

It is forbidden to store, even temporarily, combustible products and substances in the boiler or near the boiler.



Warning

- Fix the appliance to a solid wall capable of bearing the weight of the boiler when full of water and fully equipped.
- Do not place the appliance above a heat source or a cooking appliance.
- Do not locate the boiler in direct or indirect sunlight.



Caution

- The boiler must be installed in a frost-free area.
- An earthed electrical connection must be available close to the boiler.
- A connection to the drain must be present for the condensate drain close to the boiler.

4.3 Requirements for CH water connections

- When fitting service shut-off valves, position the filling and drain valve, the expansion vessel and the safety valve between the shut-off valve and the boiler.
- Carry out any welding work required at a safe distance from the boiler or before the boiler is fitted.
- For filling and tapping the boiler, install a filling and drain valve in the system, preferably in the return.
- Install an expansion vessel in the return pipe.

4.4 Requirements for condensate drain line

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

4.5 Requirements for gas connection

- 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.
- Remove dirt and dust from the gas pipe.
- Always perform welding work at a sufficient distance from the boiler.
- We recommend installing a gas filter to prevent clogging of the gas valve unit.
- Pipe diameters must be defined in accordance with ATG's (Association Technique de Gaz) B171 specifications.

4.6 Requirements for the electrical connections

- Establish the electrical connections in accordance with all local and national current regulations and standards.
- 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.
- Always connect the boiler to a well-earthed installation.
- The standard NF C 15,100.
- The standard CEI.
- The wiring must comply with the instructions in the electrical diagrams.
- Follow the recommendations in this manual.
- Separate the sensor cables from the 230 V cables
- Outside the boiler: Use 2 cables spaced at least 10 cm apart.

4.7 Requirements for the flue gas outlet system

4.7.1 Classification



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, roof terminal and/or outside wall terminal supplied by the same manufacturer. Consult the manufacturer for compatibility details.

Tab.4 Type of flue gas connection: B₂₃ - B_{23P}

Principle	Description	Permitted manufacturers ⁽¹⁾
	Room-ventilated version <ul style="list-style-type: none"> • Without down-draught diverter. • Flue gas discharge via the roof. • Air from the installation area. • The IP rating of the boiler is lowered to IP20. 	Connection material and roof terminal: <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
(1) The material must also satisfy the material property requirements from the relevant chapter.		

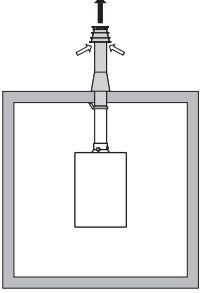
Tab.5 Type of flue gas connection: B₃₃

Principle	Description	Permitted manufacturers ⁽¹⁾
	Room-ventilated version <ul style="list-style-type: none"> • Without down-draught diverter. • Joint flue gas discharge via the roof, with guaranteed natural draft (at all times underpressure in the joint discharge duct). • Flue gas discharge rinsed with air, air from the installation area (special construction). • The IP rating of the boiler is lowered to IP20. 	Connection material: <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
(1) The material must also satisfy the material property requirements from the relevant chapter.		

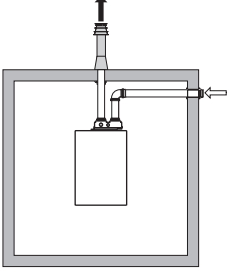
Tab.6 Type of flue gas connection: C_{13(x)}

Principle	Description	Permitted manufacturers ⁽¹⁾
	Room-sealed version <ul style="list-style-type: none"> • Discharge in the outside wall. • Air supply opening is in the same pressure zone as the discharge (e.g. a combined outside wall terminal). • Parallel wall terminal not permitted. 	Outside wall terminal and connection material: <ul style="list-style-type: none"> • Cox Geelen
(1) The material must also satisfy the material property requirements from the relevant chapter.		

Tab.7 Type of flue gas connection: C_{33(X)}

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000927-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> • Flue gas discharge via the roof. • Air supply opening is in the same pressure zone as the discharge (e.g. a concentric roof terminal). 	<p>Roof terminal and connection material</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

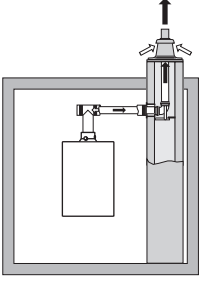
Tab.8 Type of flue gas connection: C₅₃

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000929-02</p>	<p>Connection in different pressure zones</p> <ul style="list-style-type: none"> • Closed unit. • Separate air supply duct. • Separate flue gas discharge duct. • Discharging into various pressure areas. • The air supply and the flue gas outlet must not be placed on opposite walls. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

Tab.9 Type of flue gas connection: C_{63(X)}

Principle	Description	Permitted manufacturers ⁽¹⁾
	<p>This type of unit is supplied by the manufacturer without an air supply system and flue gas system.</p>	<p>When selecting the material, please note the following:</p> <ul style="list-style-type: none"> • Condensed water must flow back to the boiler. • The material must be resistant to the flue gas temperature of this boiler. • Maximum permissible recirculation of 10%. • The air supply and the flue gas outlet must not be placed on opposite walls. • Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

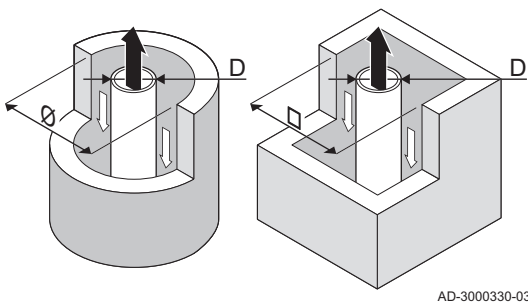
Tab.10 Type of flue gas connection: C_{93(X)}

Principle ⁽¹⁾	Description	Permitted manufacturers ⁽²⁾
 <p style="text-align: center;">AD-3000931-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> • Air supply and flue gas discharge duct in shaft or ducted: <ul style="list-style-type: none"> - Concentric. - Air supply from existing duct. - Flue gas discharge via the roof. - Inlet opening for the air supply is in the same pressure zone as the discharge. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<p>(1) See table for shaft or duct requirements. (2) The material must also satisfy the material property requirements from the relevant chapter.</p>		

Tab.11 Minimum dimensions of shaft or duct C_{93(X)}

Version (D)	Without air supply		With air supply	
Rigid 80 mm	Ø 130 mm	□ 130 x 130 mm	Ø 140 mm	□ 130 x 130 mm
Rigid 100 mm	Ø 160 mm	□ 160 x 160 mm	Ø 170 mm	□ 160 x 160 mm
Rigid 150 mm	Ø 200 mm	□ 200 x 200 mm	Ø 220 mm	□ 220 x 220 mm
Concentric 80/125 mm	Ø 145 mm	□ 145 x 145 mm	Ø 145 mm	□ 145 x 145 mm
Concentric 100/150 mm	Ø 170 mm	□ 170 x 170 mm	Ø 170 mm	□ 170 x 170 mm
Concentric 150/200 mm	Ø 270 mm	□ 270 x 270 mm	-	-

Fig.5 Minimum dimensions of shaft or duct C_{93(X)}



Important

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



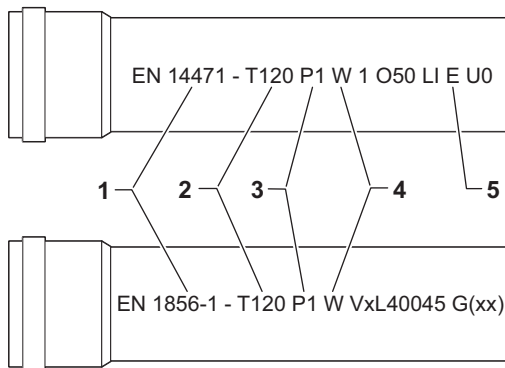
Important

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

4.7.2 Material

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

Fig.6 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.12 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"> • Plastic⁽¹⁾ • Stainless steel⁽²⁾ • Thick-walled, aluminium⁽²⁾ 	<ul style="list-style-type: none"> • With CE marking • Temperature class T120 or higher • Condensate class W (wet) • Pressure class P1 or H1 • Fire resistance class E or better⁽³⁾ 	<ul style="list-style-type: none"> • Plastic • Stainless steel • Aluminium 	<ul style="list-style-type: none"> • With CE marking • Pressure class P1 or H1 • Fire resistance class E or better⁽³⁾
(1) according to EN 14471 (2) according to EN 1856 (3) according to EN 13501-1				

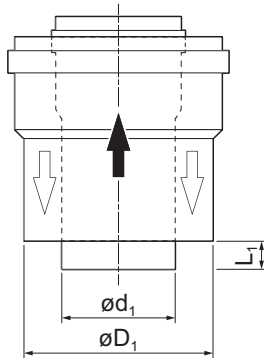
4.7.3 Dimensions of flue gas outlet pipe

**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

Fig.7 Dimensions of concentric connection



AD-3000962-01

Tab.13 Dimensions of pipe

	d_1 (min-max)	D_1 (min-max)	$L_1^{(1)}$ (min-max)
80/125 mm	79.3 - 80.3 mm	124 - 125.5 mm	0 - 15 mm
100/150 mm	99.3 - 100.3 mm	149 - 151 mm	0 - 15 mm
(1) Shorten the inner pipe if the length difference is too great.			

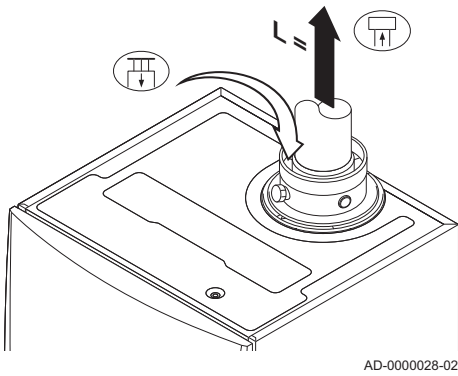
4.7.4 Length of the air and flue gas pipes

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

Fig.8 Room-ventilated version



■ Room-ventilated model (B₂₃, B_{23P}, B₃₃)

- L Length of the flue gas outlet channel to 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.

Caution

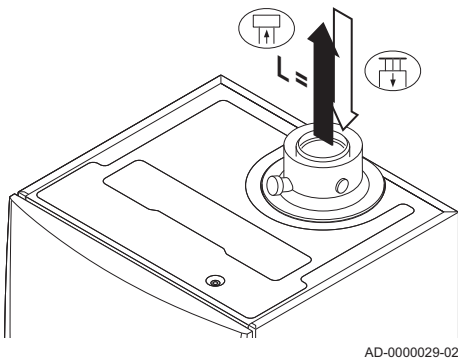
- The air supply opening must stay open.
- The installation area must be equipped with the necessary air supply openings. These openings must not be obstructed or shut off.

Tab.14 Maximum length (L)

Diameter ⁽¹⁾	80 mm	90 mm	100 mm	110 mm	130 mm
AMC Pro 45	39 m	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾
AMC Pro 65	11 m	17 m	26 m	40 m	40 m ⁽¹⁾
AMC Pro 90	10 m	16 m	24 m	40 m	40 m ⁽¹⁾
AMC Pro 115	8 m	13 m	19 m	38 m	40 m ⁽¹⁾

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

Fig.9 Room-sealed version (concentric)



■ Room-sealed model (C_{13(x)}, C_{33(x)}, C_{63(x)}, C_{93(x)})

- Connecting the flue gas outlet
- Connecting the air supply

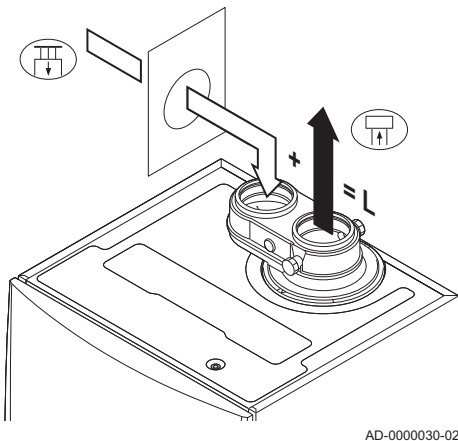
With a room-sealed version, both the flue gas outlet and the air supply openings are connected (concentrically).

Tab.15 Maximum chimney length (L)

Diameter ⁽¹⁾	80/125 mm	100/150 mm
AMC Pro 45	20 m	20 m ⁽¹⁾
AMC Pro 65	4 m	18 m
AMC Pro 90	4 m	17 m
AMC Pro 115	-	13 m

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

Fig.10 Different pressure areas



■ Connection in different pressure areas (C₅₃)

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

An 80/80 or 100/100 mm flue gas adapter (accessory) must be fitted for this connection.

Combustion air supply and flue gas discharge are possible in different pressure areas and semi-CLV systems, with the exception of the coastal area. The maximum permitted height difference between the combustion air supply and the flue gas outlet is 36 m.

Tab.16 Maximum length (L)

Diameter ⁽¹⁾	80 mm	90 mm	100 mm	110 mm	130 mm
AMC Pro 45	29 m	40 m	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾
AMC Pro 65	5 m	10 m	16 m	34 m	40 m ⁽¹⁾
AMC Pro 90	-	-	17 m	37 m	40 m ⁽¹⁾
AMC Pro 115	-	-	14 m	31 m	40 m ⁽¹⁾

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

■ Reduction table

Tab.17 Pipe reduction for each element used (parallel)

Diameter	80 mm	100 mm
45° bend	1.2 m	1.4 m
90° bend	4.0 m	4.9 m

Tab.18 Pipe reduction for each element used (concentric)

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

4.7.5 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.
- Newly installed aluminium flue gas pipes with longer lengths can produce relatively larger quantities of corrosion products. Check and clean the siphon more often in this case.



Important

Contact us for more information.

4.8 Water quality and water treatment

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

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

4.9 Process heat application

In process heat applications (for example pasteurisation and drying and washing processes), the boiler is being used for industrial purposes and not for central heating. With process heat, the nominal flow (at ΔT 20°C) in the primary CH circuit must be guaranteed. The flow in the secondary circuit may vary.

To ensure that this is the case, a flow rate sensor can be fitted, which locks out the boiler if the flow falls below a specified level (due to a defective pump or valve, for example).



Important

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



For more information, see

Setting for process heat application, page 44

4.10 Increase default ΔT setting

In some cases, the default ΔT setting of the boiler will need to be increased, for example in systems with:

- underfloor heating
- air heating
- district heating
- a heat pump.



Important

Prevent the boiler from locking out and ensure a minimal water circulation by using a bypass or low-loss header.



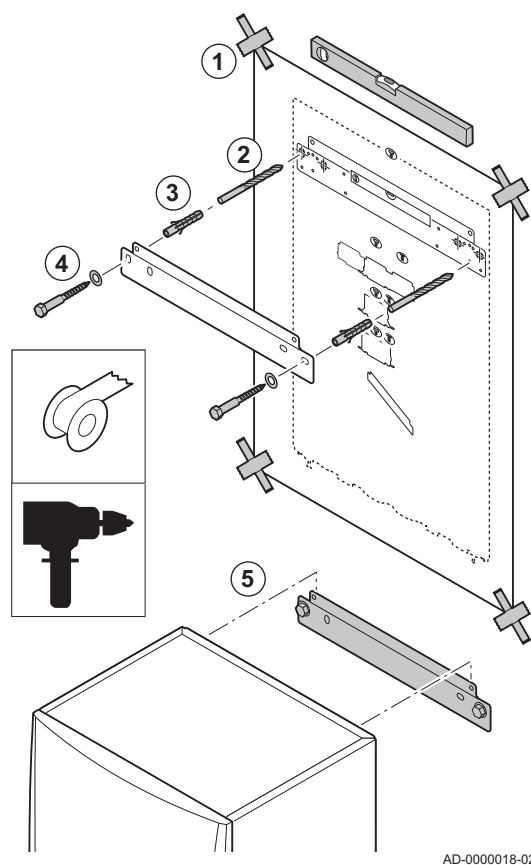
For more information, see

Changing the default ΔT setting, page 44

5 Installation

5.1 Positioning the boiler

Fig.11 Mounting the boiler



The fitting bracket on the back of the casing can be used to mount the boiler directly on the suspension bracket.

The boiler is supplied with a mounting template.

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



Warning

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

2. Drill 2 holes of \varnothing 10 mm.



Important

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

3. Fit the \varnothing 10 mm plugs.
4. Remove the mounting template.
5. Attach the suspension bracket to the wall with the \varnothing 10 mm bolts supplied.
6. Mount the boiler on the suspension bracket.

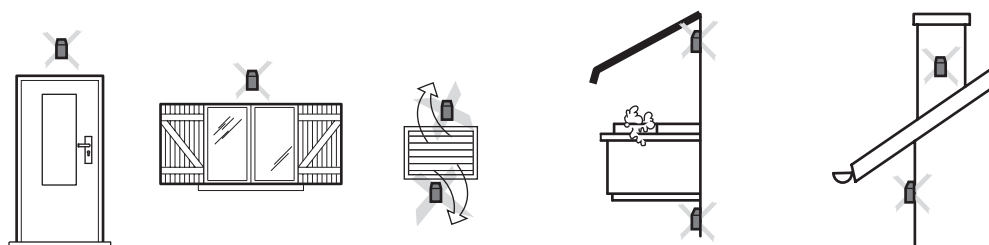
5.2 Mounting an outdoor sensor

5.2.1 Positions to be avoided

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

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

Fig.12

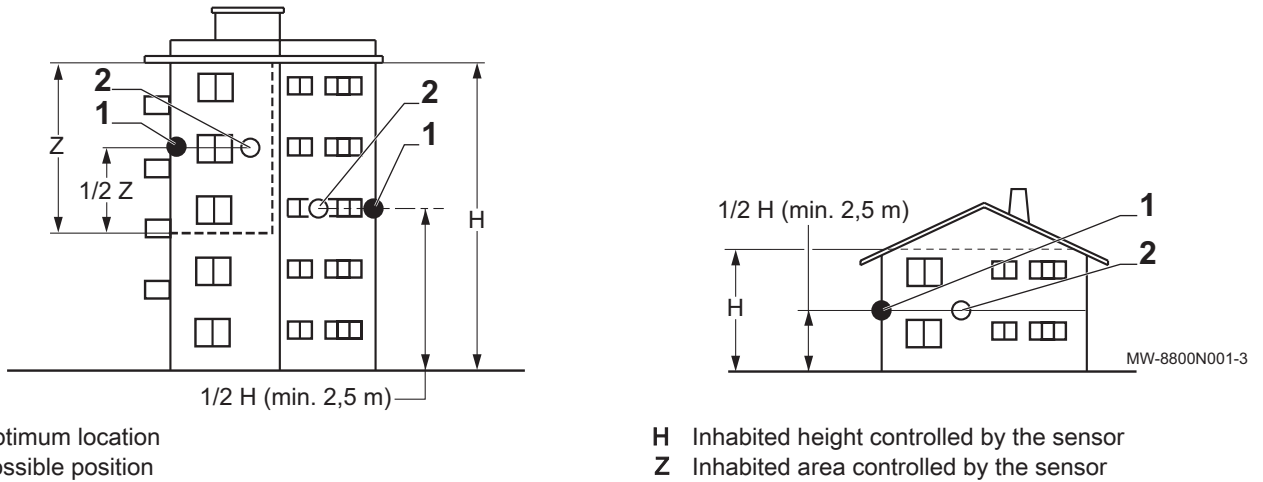


5.2.2 Recommended positions

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

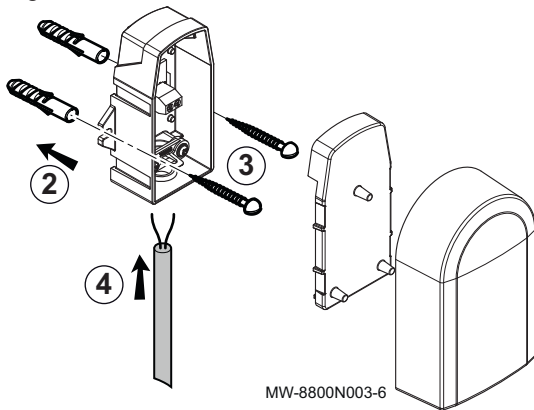
- On a façade of the area to be heated, on the north if possible.
- Half way up the wall of the area to be heated.
- Under the influence of changes in the weather.
- Protected from direct sunlight.
- Easy to access.

Fig.13



5.2.3 Fitting the outdoor sensor

Fig.14



1. Choose a recommended location for the outdoor sensor.
2. Put the 2 plugs in place, delivered with the sensor.
Plugs diameter 4 mm/drill diameter 6 mm
3. Secure the sensor using the screws provided (diameter 4 mm).
4. Connect the cable to the outdoor temperature sensor.

5.3 Rinsing the system

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

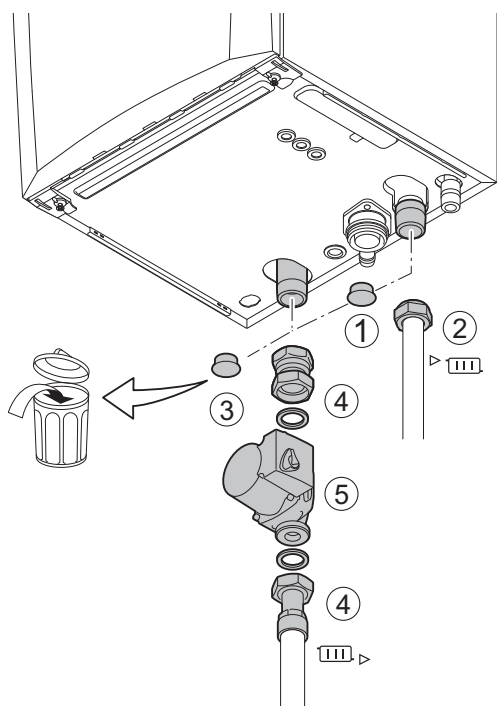
Before a new boiler can be connected to an existing or new system, the entire system must be thoroughly cleaned and flushed. This step is absolutely crucial. The flushing helps to remove residue from the installation process (weld slag, fixing products etc.) and accumulations of dirt (silt, mud etc.)

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 at least 20 times the volume of the pipes.

5.4 Connecting the heating circuit

Fig.15 Connecting the CH flow and CH return



AD-4100110-01

1. Remove the dust cap from the CH flow connection  at the bottom of the boiler.
2. Fit the outlet pipe for CH water to the CH flow connection.
3. Remove the dust cap from the CH return connection  at the bottom of the boiler.
4. Fit the inlet pipe for CH water to the CH return connection.
5. Install the pump in the CH return pipe.



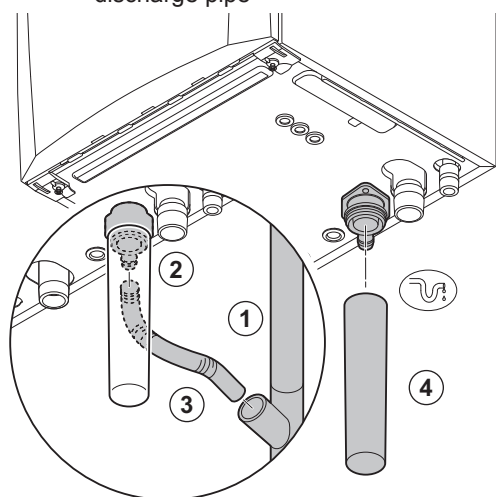
For more information, see

Connecting the PWM pump, page 30

Connecting the standard pump, page 29

5.5 Connecting the condensate discharge pipe

Fig.16 Connecting the condensate discharge pipe

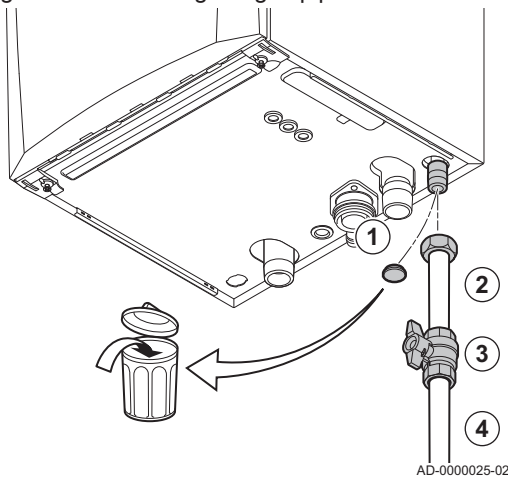


AD-0000024-02

1. Fit a plastic drain pipe of \varnothing 32 mm or larger, terminating in the drain.
2. Insert the flexible condensate drain hose into the pipe.
3. Fit a stench-trap or siphon in the drain pipe.
4. Fit the siphon.

5.6 Gas connection

Fig.17 Connecting the gas pipe



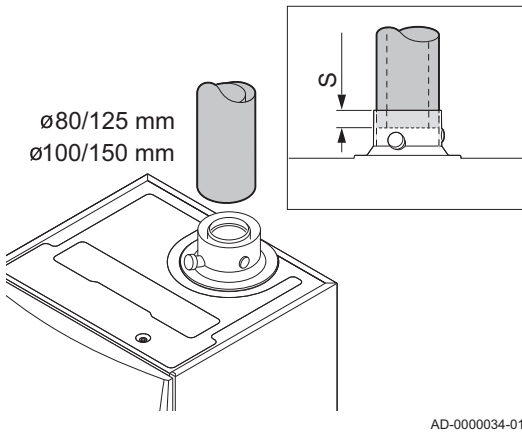
1. Remove the dust cap from the gas supply pipe ^{GAS/}_{GAZ} at the bottom of the boiler.
2. Fit the gas supply pipe.
3. Fit a gas tap in this pipe, directly underneath the boiler (within 1 metre).
4. Fit the gas pipe to the gas tap.

i Important
The gas tap must always be accessible

5.7 Air supply/flue gas outlet connections

5.7.1 Connecting the flue gas outlet and air supply

Fig.18 Connecting the flue gas outlet and air supply



S Insertion depth 25 mm

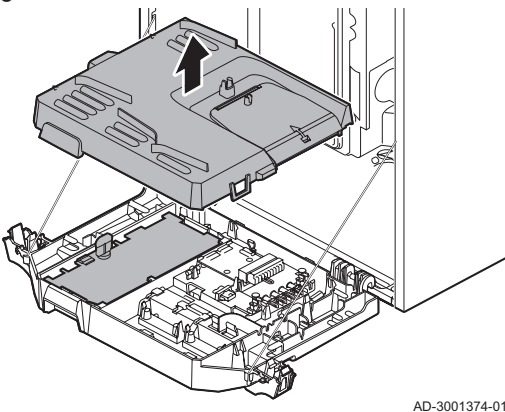
1. Connect the flue gas outlet pipe and the air supply pipe to the boiler.
2. Fit the subsequent flue gas outlet pipes and air supply pipes in accordance with the manufacturer's instructions.

! 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.

5.8 Electrical connections

5.8.1 Control unit

Fig.19 CU-GH08



The table gives important connection values for the control unit.

Tab.19 Connection values for control unit

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

**Danger of electric shock**

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

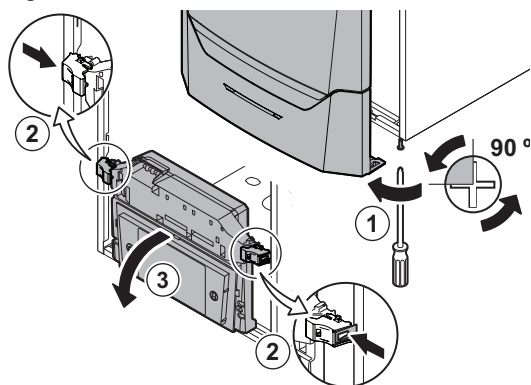
- Electrical connection to circulating pump.
- Electrical connection to gas combination block.
- Electrical connection to fan.
- Control unit.
- Ignition transformer.
- Power supply cable connection.

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 **X1** connector. A spare fuse can be found in the housing of the control unit.

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

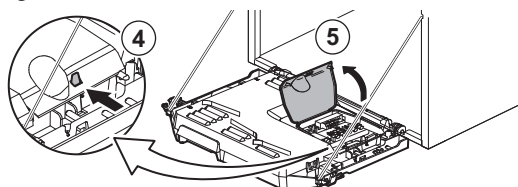
5.8.2 Access to the instrument box

Fig.20 Access to the instrument box



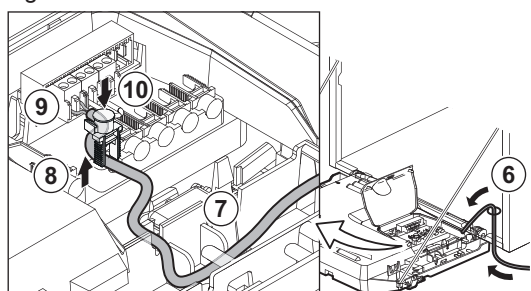
AD-3001411-01

Fig.21



AD-3001412-01

Fig.22



AD-3001414-01

The following is installed in the instrument box:

- the standard PCB **CB-03** with connector **X3**.

1. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
2. Press the clips on the sides of the instrument box inwards slightly.
3. Tilt the instrument box forwards.

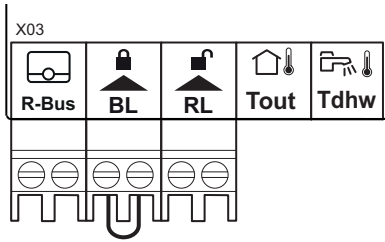
4. Press the clip on the side of the instrument box flap inwards slightly.
5. Open the instrument box flap.
⇒ The connector **X3** on the **CB-03** PCB is now accessible.

6. Guide the relevant connection cable(s) through the round grommet(s) on the boiler's bottom plate.
7. Guide the relevant connection cable(s) through the instrument box via the cable ducts provided.
8. Undo the strain relief clip(s) and feed the cable(s) underneath.
9. Connect the cables to the appropriate terminals on the connector.
10. Press the strain relief clip(s) firmly into place.
11. Close the instrument box.

5.8.3 Connection options for the standard PCB - CB-03

The boiler is fitted with a connection PCB, to which various thermostats and regulators can be connected.

Fig.23 Connectors on the connection PCB



AD-3001367-01

- R-Bus** Room unit (thermostat) connector
- BL** Blocking input
- RL** Release input
- Tout** Outdoor sensor connector
- Tdhw** DHW sensor connector

When the boiler is fitted with the **SCB-10** then the outdoor sensor (**Tout**) and the calorifier sensor (**Tdhw**) must be connected on the **SCB-10**.

■ **Connecting a modulating room thermostat**

The boiler is fitted with a **R-Bus** connection as standard instead of an **OT**-connector. The **R-Bus** connector supports the following types:

- **R-Bus** thermostat (for example, the **Smart TC°**)
- **OpenTherm** thermostat (for example, the **Modulating clock thermostat**)
- **OpenTherm Smart Power** thermostat
- **On/off** thermostat

The software recognizes which type of thermostat is connected.

Tm Modulating thermostat

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

Fig.24 Connecting the modulating thermostat



AD-3000968-02

■ **Connecting the on/off thermostat**

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

Tk On/off thermostat

1. Fit the thermostat in a reference 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.25 Connecting the on/off thermostat



AD-3000969-02

■ **Frost protection combined with on/off thermostat**

When an on/off thermostat is used, the pipes and radiators in a frost-sensitive room can be protected by a frost thermostat. The radiator valve in the frost-sensitive room must be open.

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 with an on/off thermostat (**Tk**) to the terminals **R-Bus** of the connector.

Fig.26 Connection of frost thermostat



AD-3000970-02

Fig.27 Blocking input



AD-3000972-02

**Warning**

If an **OpenTherm** thermostat (for example, the **Smart TC°**) is used, a frost thermostat cannot be connected in parallel to the **R-Bus** terminals. In such cases, install frost protection in the central heating system in combination with an outdoor sensor.

■ Blocking input

The boiler has a blocking input. A potential-free contact can be connected to the **BL** terminals of the connector. If the contact is opened, the boiler will be blocked.

Change the function of the input using parameter **AP001**. This parameter has the following 3 configuration options:

- Complete blocking: no frost protection with the outdoor sensor and no boiler frost protection (pump does not start and burner does not start)
- Partial blocking: boiler frost protection (pump starts when the temperature of the heat exchanger is $< 6^{\circ}\text{C}$ and the burner starts when the temperature of the heat exchanger is $< 3^{\circ}\text{C}$)
- Lock out: no frost protection with outdoor sensor and partial boiler frost protection (pump starts when the temperature of the heat exchanger is $< 6^{\circ}\text{C}$, the burner does not start when the temperature of the heat exchanger is $< 3^{\circ}\text{C}$).

**Caution**

Only suitable for potential-free contacts.

**Important**

First remove the bridge if this input is used.

■ Release input

The boiler has a release input. A potential-free contact can be connected to the **RL** terminals of the connector.

- If the contact is closed during a heat demand, the boiler will be blocked immediately.
- If the contact is closed when there is no heat demand, the boiler will be blocked after a waiting time.

Change the waiting time of the input using parameter **AP008**.

**Caution**

Only suitable for potential-free contacts.

■ Connecting an outdoor sensor

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

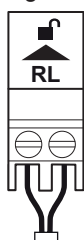
**Important**

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

Use below mentioned sensors, or sensors with identical characteristics. Set parameter **AP056** to the installed outdoor sensor type.

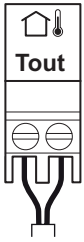
- AF60 = NTC $470 \Omega/25^{\circ}\text{C}$

Fig.28 Release input



AD-3001303-01

Fig.29 Connecting an outdoor sensor



AD-3000973-02

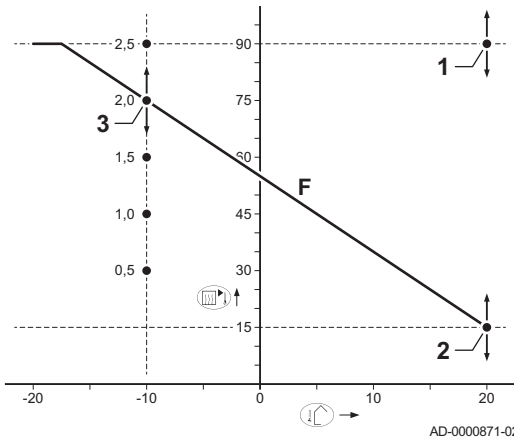
1. Connect the plug from the outdoor sensor to the **Tout** connector.

Tab.20 Heating curve settings

Comfort footpoint of the temperature of heat curve of the circuit (°C) parameter CP210	Heating curve temperature gradient of the zone parameter CP230	Ta (°C) where Tout = -10°C
15	0.5	30
15	1.0	45
15	1.5	60
15	2.0 ⁽¹⁾	75
15	2.5	90
15	3.0	105 ⁽²⁾

(1) Example.
(2) Flow temperature is cut off at Ta (max) = parameter **CP010** (= 90°C).

Fig.30 Internal heating curve



AD-0000871-02

- 1 Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.
Parameter **CP010**
 - 2 Comfort footpoint of the temperature of heat curve of the circuit
Parameter **CP210**
 - 3 Heating curve temperature gradient of the zone
Parameter **CP230**
- Tout** Outdoor temperature
Ta Flow temperature

The parameter settings listed above can be used to change the internal heating curve.



For more information, see
Setting the heating curve, page 43

■ Frost protection combined with outdoor sensor

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



Important
For boilers with an SCB-10 PCB, the outdoor sensor must be connected to the SCB-10 PCB.

1. Connect the plug from the outdoor sensor to the **Tout** connector.

The frost protection works as follows with an outdoor sensor:

- If the outdoor temperature is lower than -10°C: heat demand from the boiler and the pump starts working.
- If the outdoor temperature is higher than -10°C: no heat demand from the boiler.



Important
The outdoor temperature threshold for frost protection can be changed with parameter **AP080**.

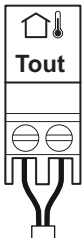
■ Connecting the calorifier sensor/thermostat

A calorifier sensor or thermostat can be connected to the **Tdhw** terminals of the connector. Only NTC 10 kΩ/25°C sensors can be used.



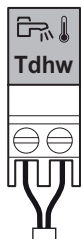
Important
For boilers with an SCB-10 PCB, the calorifier sensor/thermostat must be connected to the SCB-10 PCB.

Fig.31 Connecting an outdoor sensor



AD-3000973-02

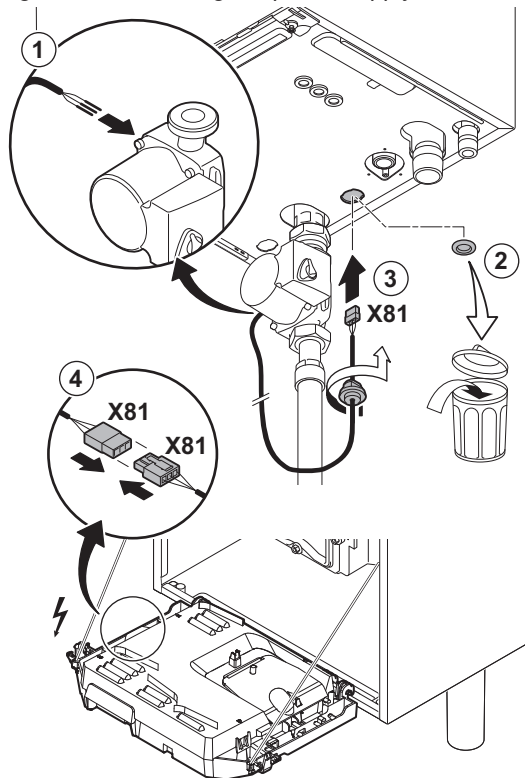
Fig.32 Connecting the calorifier sensor/ thermostat



AD-3000971-02

1. Connect the two-wire cable to the **Tdhw** terminals of the connector.

Fig.33 Connecting the power supply cable



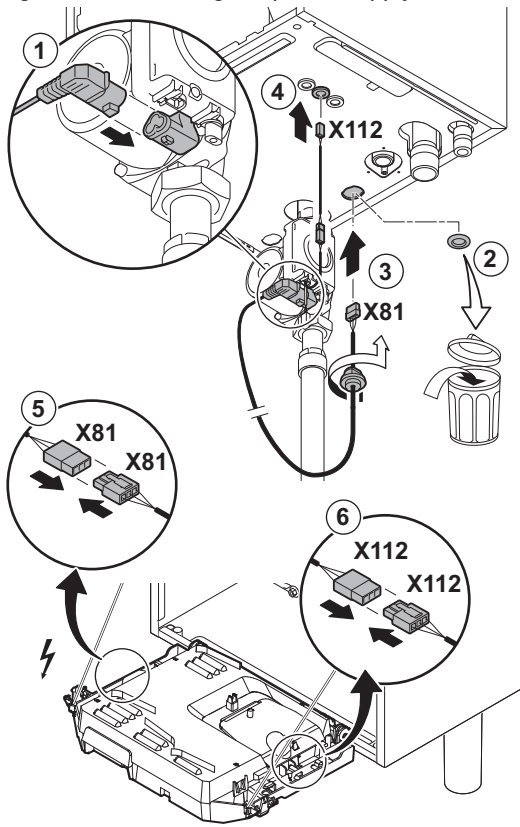
AD-4000093-01

5.8.4 Connecting the standard pump

The pump must be connected to the standard control PCB. To do this, proceed as follows:

1. Connect the X81 power cable supplied with the boiler to the pump.
2. Remove the grommet from the opening in the middle of the base of the boiler.
3. Pass the pump X81 cable through the base of the boiler and seal the opening by tightening the bayonet fitting to the cable.
4. Connect the X81 pump cable to the X81 cable that runs along the cable duct to the left of the instrument box

Fig.34 Connecting the power supply cable



AD-4000094-01

5.8.5 Connecting the PWM pump

The energy-efficient modulating pump must be connected to the standard control PCB. To do this, proceed as follows:

1. Connect the power supply cable and the cable for the PWM signal to the pump.
2. Remove the grommet from the opening in the middle of the base of the boiler.
3. Pass the pump power supply cable through the base of the boiler and seal the opening by tightening the bayonet fitting to the cable.
4. Pass the PWM cable from the pump through one of the grommets on the right in the base of the boiler.
5. Connect the X81 pump power supply cable to the X81 cable that runs along the cable duct to the left of the instrument box.
6. Connect the X112 pump PWM cable to the X112 cable that runs along the cable duct to the right of the instrument box.



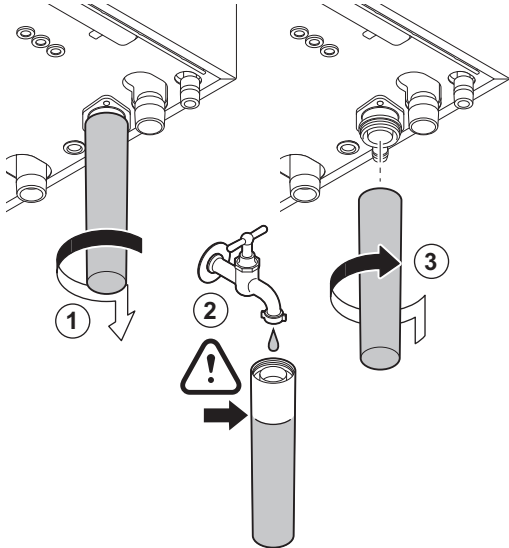
Important

The pump's various settings can be adjusted using the parameters **PP014**, **PP016**, **PP017** and **PP018**.

6 Preparation of commissioning

6.1 Checklist before commissioning

Fig.35 Filling the siphon



AD-0000086-01

6.1.1 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 up with water.
3. Fit the siphon.
 - ⇒ Check that the siphon is securely fitted and that there are no leaks.

6.1.2 Filling the system



Caution

Before filling, open the valves on every radiator in the installation.



Important

In order to be able to read off the water pressure from the boiler display, the boiler must be switched on.

1. Fill the central heating system with clean tap water.



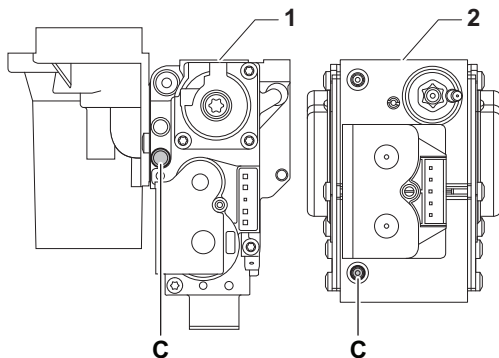
Important

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

2. Check the water-side connections for tightness.

6.1.3 Gas circuit

Fig.36 Gas valve unit measuring points C



AD-0000066-02

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115



Warning

- Ensure that the boiler is switched off.
- Do not put the boiler into operation if the type of gas supplied does not conform to the approved gas types.

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. Check the gas inlet pressure at the measuring point **C** on the gas valve unit.

Warning

- The gas pressure that was measured at the measuring point **C** must fall within the stated gas inlet pressure limits. See Technical data, page 60
- For authorised gas pressures, see: Unit categories, page 58

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

6.1.4 Hydraulic circuit

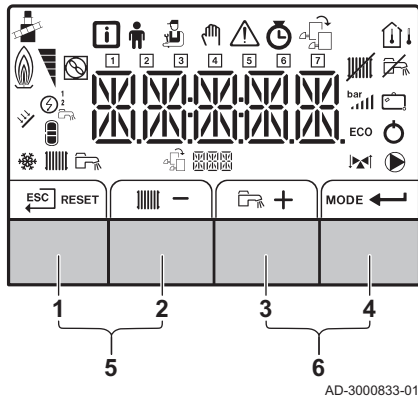
1. Check the siphon; it should be fully filled with clean water.
2. Check the water-side connections for tightness.

6.1.5 Electrical connections

1. Check the electrical connections.

6.2 Control panel description

Fig.37 Control panel



AD-3000833-01

6.2.1 What each key means

1		Escape	Back to the previous level.
	RESET	Reset	Manual reset.
2		CH flow temperature	Access to set central heating temperature.
	-	Minus	Lowering the value or previous menu item.
3		DHW temperature	Access to set domestic hot water temperature.
	+	Plus	Raising the value or next menu item.
4	MODE	CH/DHW function	Toggles function ON/OFF.
		Enter	Confirms selection or value.
5		Chimney-sweeping mode	Press the 1 and 2 keys simultaneously to enter Chimney-sweeping mode.
6		Menu	Press the 3 and 4 keys simultaneously to open the menu.



For more information, see
Additional documentation, page 8

6.2.2 Meaning of the symbols on the display

Tab.21 Possible symbols in the display (depending on available devices or functions)

	Information menu: read out various current values.
	User menu: user-level parameters can be configured.
	Installer menu: installer level parameter can be configured.
	Manual mode menu: manual mode can be configured.
	Error menu: errors can be read out.

	Counter menu: Counter / Timer program / Time display
	Control PCB menu: (optional) control PCBs can be read out.
	Chimney sweep mode is enabled (forced full load or part load for O ₂ measurement).
	The outside temperature sensor is connected.
	The room temperature sensor is connected.
	The burner output level (1 to 5 bars, with each bar representing 20% output)
	The heat pump is switched on.
	Day display
	Central heating function is disabled.
	Domestic hot water function is disabled.
	The solar boiler is on and its heat level is displayed.
	System water pressure display.
	The holiday program (including frost protection) is active.
	Cooling mode is active.
	Central heating function is enabled.
	Domestic hot water function is enabled.
	Displaying the selected PCB.
	Three-way valve indicator.
	The circulation pump is running.
ECO	ECO mode is active.
	Switch the appliance off then on again.

6.2.3 Browsing in the menus

Important

- Depending on the devices or control PCBs connected, the control panel shows selection options in some menus.
- First, select a device, control PCB or zone to view or amend a setting.

Fig.38 Step 1



MW-3000377-02

Fig.39 Step 2



MW-3000299-01

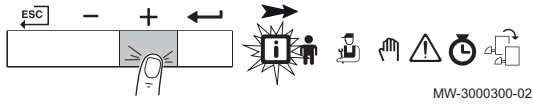
1. Press any key to activate the controller from the stand-by screen.

2. Access the available menu options by pressing the two keys on the right simultaneously.

Tab.22 Possible menu choices

	Information Menu
	User menu
	Installer Menu
	Manual mode menu
	Failure Menu
	Hour Run Meters / Timer Program / Clock menu
	PCB menu ⁽¹⁾
(1) The icon is displayed only if an optional control PCB has been installed.	

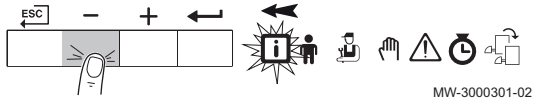
Fig.40 Step 3



MW-3000300-02

3. Press the + key to move the cursor to the right.

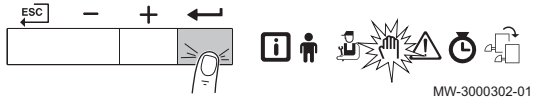
Fig.41 Step 4



MW-3000301-02

4. Press the - key to move the cursor to the left.

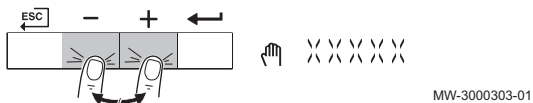
Fig.42 Step 5



MW-3000302-01

5. Press the ← key to confirm selection of the required menu or parameter.

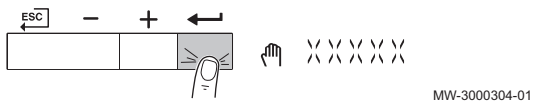
Fig.43 Step 6



MW-3000303-01

6. Press the + or - key to modify the value.

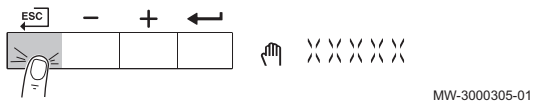
Fig.44 Step 7



MW-3000304-01

7. Press the ← key to confirm the value.

Fig.45 Step 8



MW-3000305-01

8. Press the ESC key to go back to the main display.



Important

The screen will return to stand-by if no key is pressed for three minutes.

7 Commissioning

7.1 Commissioning procedure



Warning

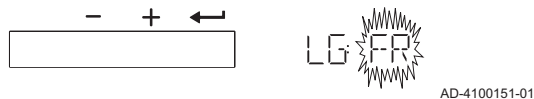
- Initial commissioning must be done by a qualified installer.
- If adapting to another type of gas, e.g. propane, the boiler must be adjusted before it is switched on.



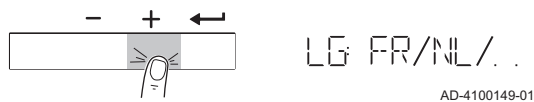
See

Fan speed for different gas types, page 36

1. Open the main gas tap.
2. Open the boiler gas tap.
3. Switch the power on with the boiler's on/off switch.
 - ⇒ The start-up program will start and cannot be interrupted. During the program, all segments of the display are shown briefly.
4. At the end of the start-up program, the display will show: *L G:FR* (FR flashes in the picture)



5. With the key **+** select the desired language.

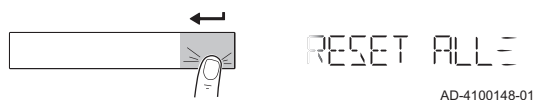


6. Press the **←** key to confirm the selection.



⇒ *RESET AL L* will be displayed.

7. To confirm, press the **←** key.



8. The selected language is now set-up and the main display will appear.
9. Set the components (thermostats, control) so that heat is demanded.



Important

In the event of an error during the start-up, a message with the corresponding code is displayed. The meaning of the error codes can be found in the error table.

7.2 Gas settings

7.2.1 Factory setting

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

Tab.23 Factory settings G20 (H-gas)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5400	5600	6300	6800
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5400	5600	6300	6800

Code	Display text	Description	Adjustment range	45	65	90	115
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

7.2.2 Adjusting to a different gas type

Warning
 Only a qualified installer may carry out the following operations.

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

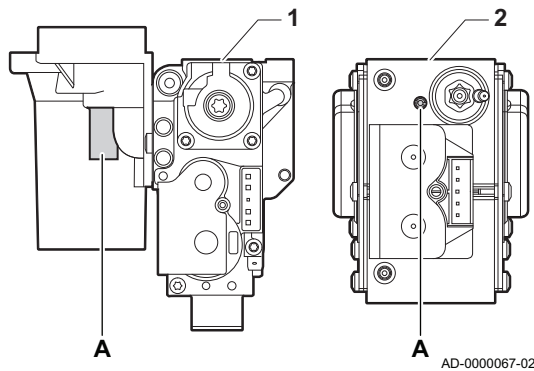
■ **Adjusting the gas valve unit for propane**

Important
 For the AMC Pro 90 boiler; replace the current gas valve unit with the propane gas valve unit according to the instructions supplied with the propane conversion kit.

- 1 Gas valve unit on the AMC Pro 45 - 65 - 90
- 2 Gas valve unit on the AMC Pro 115

1. Using adjusting screw **A**, adjust the factory setting to the setting for propane. The rotations for each boiler type are described in the table.

Fig.46 Position of adjusting screw A



Tab.24 Settings for propane

Boiler type	Action
AMC Pro 45	Rotate the adjusting screw A on the venturi 4¾ turns in a clockwise direction
AMC Pro 65	Rotate the adjusting screw A on the venturi 6½ turns in a clockwise direction
AMC Pro 115	Rotate the adjusting screw A in a clockwise direction until it is closed, then: Rotate the adjusting screw A on the gas valve unit 3½–4 turns in an anticlockwise direction

■ **Fan speed for different gas types**

1. Adjust the fan speed (if necessary) for the gas type used according to the table below. The setting can be changed with a parameter setting.

Tab.25 Adjustment for gas type G20 (H gas) (Switzerland)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5400	5600	6300	6800
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5400	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

Tab.26 Adjustment for gas type G30/G31 (butane/propane)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5100	5300	5800	6500
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5100	5300	5800	6500

Code	Display text	Description	Adjustment range	45	65	90	115
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	2250	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

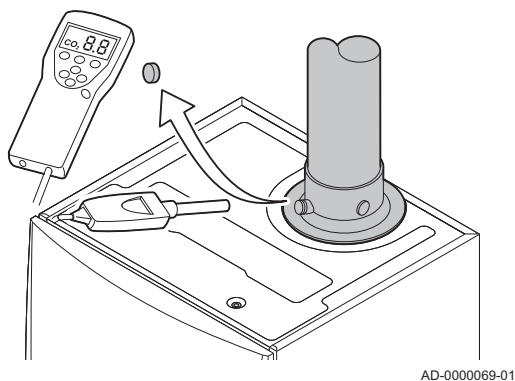
Tab.27 Adjustment for gas type G31 (propane)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5100	5400	6000	6700
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5100	5400	6000	6700
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	2000	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	3000	2500	2500	3500

2. Check the setting of the gas/air ratio.

7.2.3 Checking and setting the gas/air ratio

Fig.47 Flue gas measuring point



AD-0000069-01

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.



Caution

The flue gas analyser must have a minimum accuracy of $\pm 0.25\%$ O₂.

3. Measure the percentage of O₂ in the flue gases. Take measurements at full load and at part load.



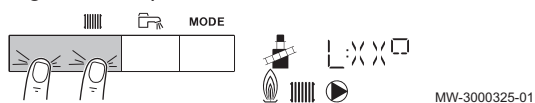
Important

Measurements must be taken with the front casing off.

■ Enable full load

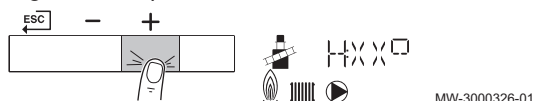
1. Press the two keys on the left simultaneously to select chimney sweep mode.
⇒ The device is now running at part load. Wait until **L:XX°** appears on the display.
2. Press the **+** key twice.
⇒ The device is now running at full load. Wait until **H:XX°** appears on the display.

Fig.48 Step 1



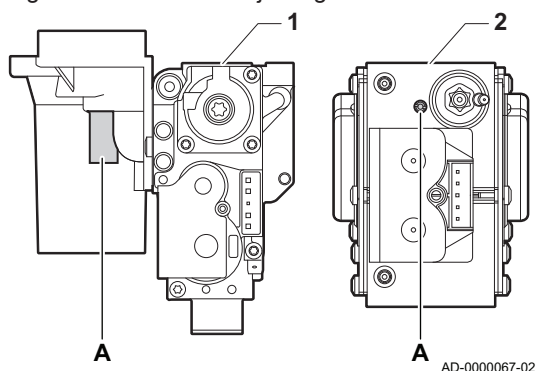
MW-3000325-01

Fig.49 Step 2



MW-3000326-01

Fig.50 Position of adjusting screw A



■ Checking/setting values for O₂ at full load

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115

1. Measure the percentage of O₂ in the flue gases.
2. Compare the measured value with the checking values in the table.
3. If the measured value is outside of the values given in the table, correct the gas/air ratio.



Warning

Only a qualified installer may carry out the following operations.

4. Using adjusting screw A, adjust the percentage of O₂ for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit.

Tab.28 Checking/setting values for O₂ at full load for G20 (H gas)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,3 - 4,8 ⁽¹⁾
AMC Pro 65	4,3 - 4,8 ⁽¹⁾
AMC Pro 90	4,3 - 4,7 ⁽¹⁾
AMC Pro 115	4,2 - 4,7 ⁽¹⁾
(1) Nominal value	

Tab.29 Checking/setting values for O₂ at full load for G20 (H gas)
(Switzerland)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,3 - 4,8 ⁽¹⁾
AMC Pro 65	4,3 - 4,8 ⁽¹⁾
AMC Pro 90	4,3 - 4,7 ⁽¹⁾
AMC Pro 115	4,2 - 4,7 ⁽¹⁾
(1) Nominal value	

Tab.30 Checking/setting values for O₂ at full load for G31 (propane)

Values at full load for G31 (propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,4 - 4,9 ⁽¹⁾
AMC Pro 65	4,6 - 4,9 ⁽¹⁾
AMC Pro 90	5,1 - 5,2 ⁽¹⁾
AMC Pro 115	4,9 - 5,4 ⁽¹⁾
(1) Nominal value	

Tab.31 Checking/setting values for O₂ at full load for G30/G31
(butane/propane)

Values at full load for G30/G31 (butane/propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,7 - 5,2 ⁽¹⁾
AMC Pro 65	4,9 - 5,4 ⁽¹⁾
AMC Pro 90	4,9 - 5,4 ⁽¹⁾
AMC Pro 115	4,9 - 5,4 ⁽¹⁾
(1) Nominal value	



Caution

The O₂ values at full load must be lower than the O₂ values at part load.

Fig.51 Step 1

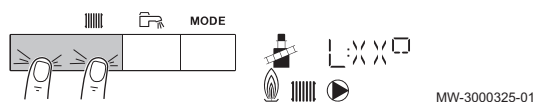
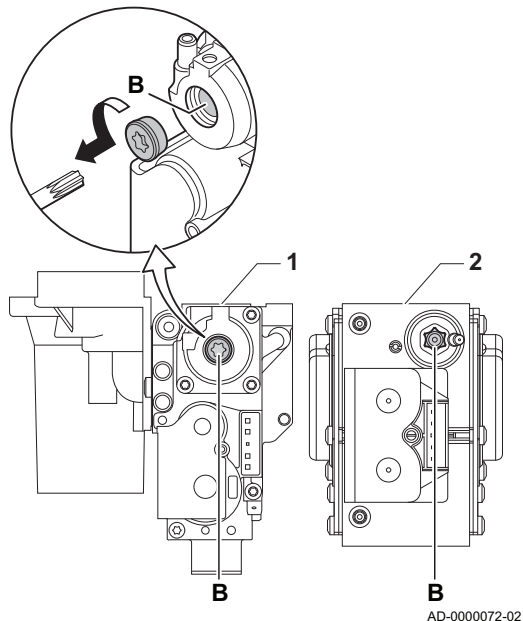


Fig.52 Position of adjusting screw B



■ Enable part load

1. Press the two keys on the left simultaneously to select chimney sweep mode.
⇒ The device is now running at part load. Wait until **L:XX°** appears on the display.
2. If you want to end the part load test, press the **ESC** key to go back to the main display.

■ Checking/setting values for O₂ at part load

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115

1. Measure the percentage of O₂ in the flue gases.
2. Compare the measured value with the checking values in the table.
3. If the measured value is outside of the values given in the table, correct the gas/air ratio.



Warning

Only a qualified installer may carry out the following operations.

4. Using adjusting screw **B**, adjust the percentage of O₂ 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.

Tab.32 Checking/setting values for O₂ at part load for G20 (H gas)

Values at part load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	4,8 ⁽¹⁾ - 5,3
AMC Pro 90	5,2 ⁽¹⁾ - 4,8
AMC Pro 115	5,6 ⁽¹⁾ - 6,1
(1) Nominal value	

Tab.33 Checking/setting values for O₂ at part load for G20 (H gas) (Switzerland)


Values at part load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	4,8 ⁽¹⁾ - 5,3
AMC Pro 90	5,2 ⁽¹⁾ - 4,8
AMC Pro 115	5,6 ⁽¹⁾ - 6,1
(1) Nominal value	

Tab.34 Checking/setting values for O₂ at part load for G31 (propane)

Values at part load for G31 (propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	5,4 ⁽¹⁾ - 5,7
AMC Pro 90	5,5 ⁽¹⁾ - 5,8
AMC Pro 115	5,8 ⁽¹⁾ - 6,3
(1) Nominal value	

Tab.35 Checking/setting values for O₂ at part load for G30/G31 (butane/propane)

Values at part load for G30/G31 (butane/propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	5,7 ⁽¹⁾ - 6,2
AMC Pro 90	5,7 ⁽¹⁾ - 6,2
AMC Pro 115	5,7 ⁽¹⁾ - 6,2
(1) Nominal value	

 **Caution**
The O₂ values at part load must be higher than the O₂ values at full load.


7.3 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.
10. Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
 - The gas supply pressure;
 - If set to overpressure application, fill in the type;
 - The parameters modified for the changes mentioned above.
11. Optimise the settings as required for the system and user preferences.
12. Instruct the user in the operation of the system, boiler and controller.
13. Inform the user of the maintenance to be performed.
14. Hand over all manuals to the user.

Fig.53 Example filled-in sticker

<p>Adjusted for / Réglée pour / Ingesteld op / Eingestellt auf / Regolato per / Ajustado para / Ρυθμιζόμενο για / Nastawiony na / настроен для / Reglat pentru / настроен за / ayarlanmıştir / Nastavljjen za / beállitva/ Nastaveno pro / Asetettu kaasulle / Justert for/ indstillet til/ ل تطبخض :</p> <p><input checked="" type="checkbox"/> Gas <u>G20</u></p> <p><u>20</u> mbar</p> <p><input checked="" type="checkbox"/> C_{(10)3(X)}</p> <p><input type="checkbox"/> C_{(12)3(X)}</p> <p><input type="checkbox"/></p>	<p>Parameters / Paramètres / Parameter / Parametri / Parámetros / Παράμετροι / Parametry / Параметри / Parametrii / Параметри / Parametreler / Paraméterek / Parametrit / Parametere / Parametre / تتامل عمل :</p> <p><u>DP003 - 3300</u></p> <p><u>GP007 - 3300</u></p> <p><u>GP008 - 2150</u></p> <p><u>GP009 -</u></p>
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AD-3001124-01

 **See**
For more information; Settings, page 41 and User instructions, page 51.

8 Settings

8.1 Introduction to parameter codes

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

Fig.54 First letter

CP010
AD-3001375-01

The first letter is the category the code relates to.

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

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

Fig.55 Second letter

CP010
AD-3001376-01

The second letter is the type.

P	Parameter: Parameters
C	Counter: Counters
M	Measurement: Signals

Fig.56 Number

CP010
AD-3001377-01

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

8.2 Changing the parameters

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.



For more information, see

Additional documentation, page 8

8.2.1 Configuring the installation parameters

Fig.57 Step 2



Fig.58 Step 3

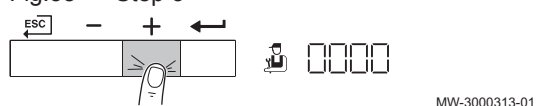


Fig.59 Step 4



1. Navigate to the Installer menu.
2. Press the ← key to open the menu.

3. Keep pressing the + key until the code 0012 is displayed.

4. Press the ← key to confirm opening the menu.

Fig.60 Step 5



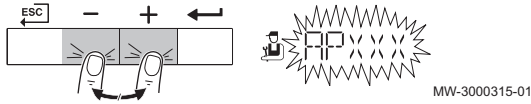
5. Keep pressing the **+** key until the required device, control PCB or zone is displayed.

Fig.61 Step 6



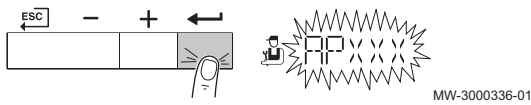
6. Press the **←** key to confirm the selection.

Fig.62 Step 7



7. Keep pressing the **+** or **-** key until the required parameter is displayed.

Fig.63 Step 8



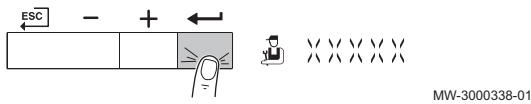
8. Press the **←** key to confirm the selection.

Fig.64 Step 9



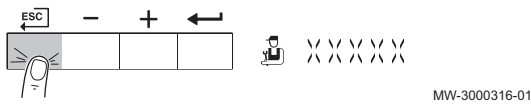
9. Press the **+** or **-** key to modify the value.

Fig.65 Step 10



10. Press the **←** key to confirm the value.

Fig.66 Step 11

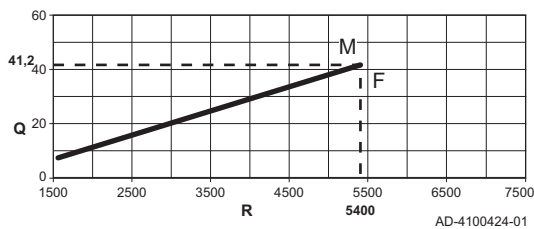


11. Press the **ESC** key multiple times to go back to the main display.

8.2.2 Setting the maximum load for CH operation

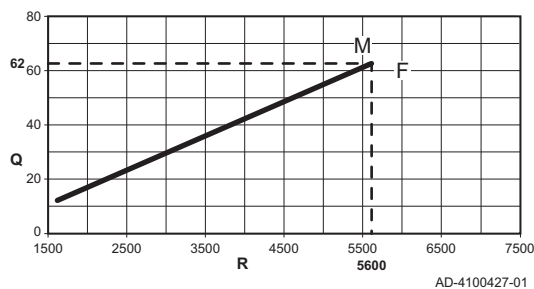
See the graphs for the relationship between load and speed for natural gas. The speed can be changed using parameter **GP007**.

Fig.67 Load AMC Pro 45



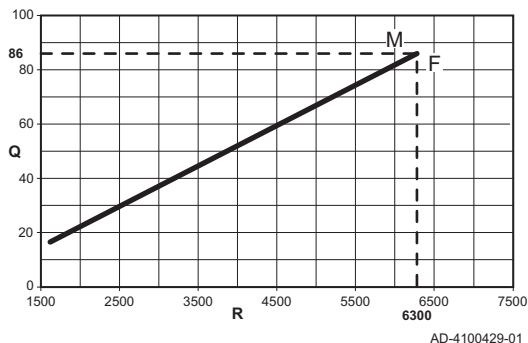
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.68 Load AMC Pro 65



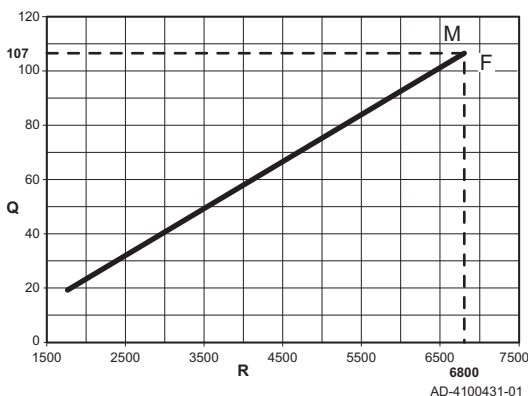
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.69 Load AMC Pro 90



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

Fig.70 Load AMC Pro 115

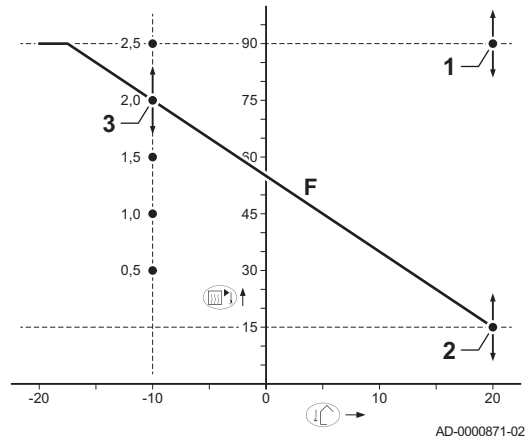


- M Maximum heat input
- F Factory setting
- Q Input (Hi) (kW)
- R Fan speed (rpm)

8.2.3 Setting the heating curve

Various parameter settings can be used to change the internal heating curve.

Fig.71 Internal heating curve



- F Heating curve
- 1 Heating curve set point (maximum flow temperature)
Parameter **CP010 / CP000**
- 2 Heating curve comfort base point
Parameter **CP210**
- 3 Heating curve steepness
Parameter **CP230**
- Outdoor temperature (T_{out})
- Flow temperature (T_a)

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

Tab.36 Internal heating curve settings

Comfort base point (°C) (parameter CP210)	15	15	15	15	15	15
Steepness (parameter CP230)	0.5	1.0	1.5	2.0 ⁽¹⁾	2.5	3.0
T _a (°C) (where T _{out} = -10°C)	30	45	60	75	90	105 ⁽²⁾
(1) See sample drawing						
(2) Flow temperature is cut off at T _a (max) = parameter CP010 / CP000						

8.2.4 Setting for process heat application



Important

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

For this application, adjust the following parameters:

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

8.2.5 Changing the default ΔT setting

The ΔT can be increased with a parameter setting. When increasing the ΔT, the control unit limits the flow temperature to a maximum of 80 °C.

1. Set parameter **GP021** to the required temperature.

Tab.37 Increasing default ΔT setting

Boiler type	Default ΔT setting	Maximum ΔT setting
AMC Pro 45 AMC Pro 65 AMC Pro 90	25 °C	40 °C
AMC Pro 115	20 °C	35 °C

2. If a PWM-controlled central heating-pump is controlled by the boiler control unit; set parameter **PP014** to **2 °C**.

8.3 List of parameters

8.3.1 Control unit settings



Important

- All tables show the factory setting for the parameters.
- All possible options are indicated in the adjustment range. The display of the boiler only shows the relevant settings for the appliance.

Tab.38 Navigation for user level

Level	Menu cascade
User	> Submenu ⁽¹⁾


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

Tab.39 Factory settings at user level

Code	Display text	Description	Range	Submenu	45	65	90	115
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	CU-GH08	1	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	CU-GH08	1	1	1	1
AP073	Summer Winter	Outdoor temperature: upper limit for heating	10 °C - 30 °C	CU-GH08	22	22	22	22
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	CU-GH08	0	0	0	0
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	0 °C - 90 °C	CIRCA	80	80	80	80

Code	Display text	Description	Range	Submenu	45	65	90	115
CP080	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	16	16	16	16
CP081	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	20	20	20	20
CP082	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	6	6	6	6
CP083	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	21	21	21	21
CP084	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	22	22	22	22
CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	CIRCA	20	20	20	20
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 °C - 30 °C	CIRCA	20	20	20	20
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary	CIRCA	1	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 °C - 30 °C	CIRCA	20	20	20	20
CP550	Zone, fireplace	Fire Place mode is active	0 = Off 1 = On	CIRCA	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 8 = Swimming Pool 9 = DHW Tank 10 = DHW Electrical Tank 11 = DHW Layered Tank 12 = Internal Boiler Tank 13 = Time Program	CIRCA	3	3	3	3
DP060	DHW timeprog. select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3 3 = Cooling	DHW	0	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint from the Domestic Hot Water tank	40 °C - 65 °C	DHW	60	60	60	60
DP080	DHW reduced setpoint	Reduced temperature setpoint from the Domestic Hot Water tank	7 °C - 50 °C	DHW	15	15	15	15
DP190	End change mode	End change mode Time TimeStamp		DHW	-	-	-	-
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary	DHW	1	1	1	1
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 °C - 60 °C	DHW	10	10	10	10

Tab.40 Navigation for installer level

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


Tab.41 Factory settings at installer level

Code	Display text	Description	Range	Submenu	45	65	90	115
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 4 = Backup relieved 5 = Generator relieved 6 = Gen.&Backup relieved 7 = High, Low Tariff 8 = Photovoltaic HP Only 9 = PV HP And backup 10 = Smart Grid ready 11 = Heating Cooling	CU-GH08	1	1	1	1
AP003	Flue Valve Wait Time	Wait time after burner command to open flue gas valve	0 Sec - 255 Sec	CU-GH08	0	0	0	0
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 bar - 6 bar	CU-GH08	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	CU-GH08	0	0	0	0
AP009	Service hours burner	Burning hours before raising a service notification	0 Hours - 51000 Hours	CU-GH08	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	CU-GH08	0	0	0	0
AP011	Service hours mains	Hours powered to raise a service notification	0 Hours - 51000 Hours	CU-GH08	35000	35000	35000	35000
AP063	CH Set Max System	Maximum flow temperature setpoint for burning at central heating	20 °C - 90 °C	CU-GH08	90	90	90	90
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 15	CU-GH08	3	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-60 °C - 25 °C	CU-GH08	-10	-10	-10	-10
AP082	Enable daylight save	Enable daylight saving for the system to save energy during winter	0 = Off 1 = On	CU-GH08	1	1	1	1
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	CU-GH08	0	0	0	0
AP108	OutsideSensorEnabled	Enable the function Outside Sensor	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	CU-GH08	0	0	0	0

Code	Display text	Description	Range	Submenu	45	65	90	115
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	0 °C - 90 °C	CIRCA	80	80	80	80
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 12 = DHW Commercial Tank 31 = DHW FWS EXT	CIRCA	1	1	1	1
CP060	RoomT.Holiday	Wished room zone temperature on holiday period	5 °C - 20 °C	CIRCA	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	CIRCA	16	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	CIRCA	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	CIRCA	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	CIRCA	1,5	1,5	1,5	1,5
CP340	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1	1
CP470	Zone screed drying	Setting of the screed drying program of the zone	0 Days - 30 Days	CIRCA	0	0	0	0
CP480	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone	20 °C - 50 °C	CIRCA	20	20	20	20
CP490	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone	20 °C - 50 °C	CIRCA	20	20	20	20
CP570	ZoneTimeProgram Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3 3 = Cooling	CIRCA	0	0	0	0
CP730	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	CIRCA	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	CIRCA	2	2	2	2
CP750	MaxZone Preheat time	Maximum zone preheat time	0 Min - 240 Min	CIRCA	90	90	90	90

Code	Display text	Description	Range	Submenu	45	65	90	115
CP780	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room Temp. based 2 = Outdoor Temp. based 3 = Outdoor & room based	CIRCA	0	0	0	0
DP004	Legionella calor.	Legionella mode protection calorifier	0 = Disabled 1 = Weekly 2 = Daily	DHW	1	1	1	1
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	DHW	0	0	0	0
DP035	Start pump DHW calo	Start pump for Domestic Hot Water calorifier	-20 °C - 20 °C	DHW	-3	-3	-3	-3
DP150	DHW Thermostat	Set DHW Thermostat function On or Off	0 = Off 1 = On	DHW	1	1	1	1
DP160	DHW AntiLeg Setpoint	Setpoint for DHW anti legionella	50 °C - 90 °C	DHW	70	70	70	70
DP170	Start time holiday	Start time of holiday Time stamp		DHW	-	-	-	-
DP180	End time holiday	End time of holiday Timestamp		DHW	-	-	-	-
GP017	Max power	Maximum power percentage in kilo Watt	0 kW - 80 kW	CU-GH08	71,5	103,6	124,5	140,9
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 kW - 80 kW	CU-GH08	4,7	6,7	10,8	11,4
PP015	CH Pump postrun time	Central heating pump post run time	0 Min - 99 Min	CU-GH08	1	1	1	1

Tab.42 Navigation for advanced installer level


Level	Menu cascade
Advanced installer	 > Submenu ⁽¹⁾ > ADV
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.	

Tab.43 Factory settings at advanced installer level

Code	Display text	Description	Range	Submenu	45	65	90	115
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint 2 = TOutdoor Control	CU-GH08	0	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	10 °C - 90 °C	CU-GH08	40	40	40	40
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60 2 = QAC34	CU-GH08	1	1	1	1
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	CU-GH08	0	0	0	0
AP111	Can line length	Can line length	0 = < 3m 1 = < 80m 2 = < 500m	CU-GH08	0	0	0	0
CP130	T. OutdoorToZone	Assigning the outdoor sensor to zone ...	0 - 4	CIRCA	0	0	0	0
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	CIRCA	3	3	3	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit	-5 °C - 5 °C	CIRCA	0	0	0	0

Code	Display text	Description	Range	Submenu	45	65	90	115
CP670	ConfPairing RU Zone	Configuration of pairing room unit per zone		CIRCA	-	-	-	-
CP770	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	CIRCA	0	0	0	0
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	DHW	5400	5600	6300	6700
DP005	Calorifier Tf offset	Flow setpoint offset for loading calorifier	0 °C - 50 °C	DHW	20	20	20	20
DP006	Hyst calorifier	Hysteresis to start heating calorifier	2 °C - 15 °C	DHW	5	5	5	5
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 Sec - 99 Sec	DHW	10	10	10	10
DP034	DhwCalorifier Offset	Offset for calorifier sensor	0 °C - 10 °C	DHW	2	2	2	2
DP140	DHW load type	DHW load type (0 : Combi, 1 : Solo)	0 = Combi 1 = Solo 2 = Layered cylinder 3 = Process heat 4 = External	DHW	1	1	1	1
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	CU-GH08	5400	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	CU-GH08	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	CU-GH08	2500	2500	2500	2500
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	CU-GH08	0	0	0	0
GP021	Temp diff Modulating	Modulate back when delta temperature is large then this treshold	10 °C - 40 °C	CU-GH08	25	25	25	20
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	1 - 255	CU-GH08	1	1	1	1
PP014	ChPumpDTR eduction	Reduction of temperature delta modulating for pump modulation	0 °C - 40 °C	CU-GH08	18	18	18	18
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 % - 100 %	CU-GH08	100	100	100	100
PP017	ChPumpSpeedMaxFactor	Maximum central heating at minimum load as percentage of max pump speed	0 % - 100 %	CU-GH08	100	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 % - 100 %	CU-GH08	30	30	30	30
PP023	Start hysteresis CH	Hysteresis to start burner in heating mode	1 °C - 10 °C	CU-GH08	10	10	10	10

8.3.2 Description of settings - Inicontrol 2

Tab.44 Factory settings -  > HMI

Code	Display text	Description	Adjustment range	Default setting
AP067	BKL	Setting backlighting	0 = Backlighting off after 3 minutes 1 = Backlighting remains on	0
AP082	DLS	Setting summer time	0 = Manual switching summer/winter time 1 = Automatic switching summer/winter time	1
AP103	LG	Setting the language	0 = No language EN = English FR = French DE = German NL = Dutch IT = Italian ES = Spanish PL = Polish PT = Portuguese	0
AP104	CRT	Setting contrast	0 - 3	3
AP105	UNT	Setting units	0 = bar / °C 1 = psi / °F	0

9 User instructions

9.1 Setting the language and time



Important

First set the desired language, then the correct time, day and date before further use of the control panel.

9.1.1 Setting the language

Fig.72 Step 2



Fig.73 Step 3

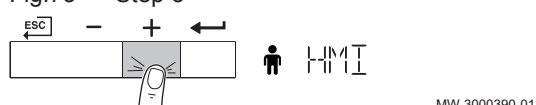


Fig.74 Step 4

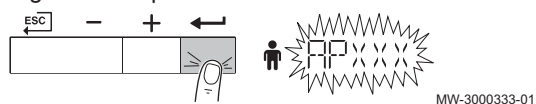


Fig.75 Step 5

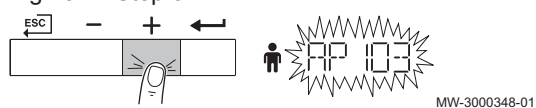


Fig.76 Step 6



Fig.77 Step 7

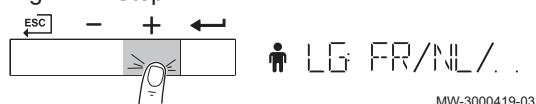


Fig.78 Step 8



Fig.79 Step 9

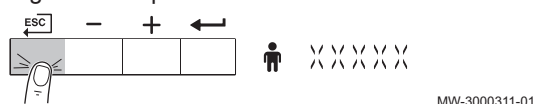


Fig.80 Step 2



1. Navigate to the User menu.
2. Press the key to open the User menu.

3. Keep pressing the key until **HMI** is displayed.

4. Press the key to confirm the selection.

5. Keep pressing the key until **PP 103** is displayed.

6. Press the key to confirm the parameter.

7. Keep pressing the key until the required language code is displayed.

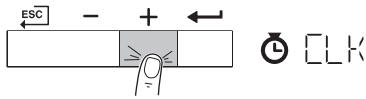
8. Press the key to confirm the choice of language.

9. Press the key repeatedly or press and hold the key to return to the main display.

9.1.2 Setting the time and date

1. Navigate to the Counter menu.
2. Press the key to open the counter menu.

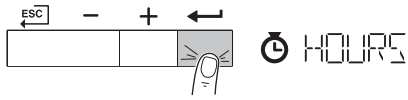
Fig.81 Step 3



MW-3000393-01

3. Keep pressing the + key until the Time display menu is displayed.

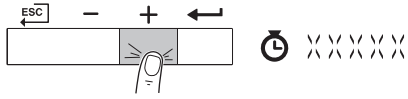
Fig.82 Step 4



MW-3000353-01

4. Press the → key to access the hours.

Fig.83 Step 5

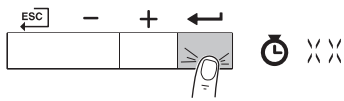


MW-3000446-01

5. Press the + key to access the following parameters:

- Minutes
- Day
- Month
- Year

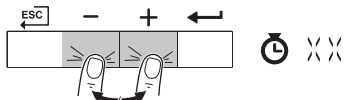
Fig.84 Step 6



MW-3000354-01

6. Press the → key to confirm the parameter.

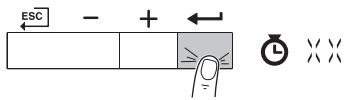
Fig.85 Step 7



MW-3000355-01

7. Press the key + or - to change the value.

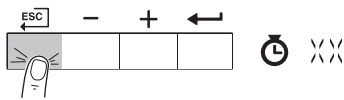
Fig.86 Step 8



MW-3000354-01

8. Press the → key to confirm the value.

Fig.87 Step 9



MW-3000397-01

9. Press the ESC key multiple times to go back to the main display.

9.2 Changing user parameters

The parameters in the user menu can be changed by the end user or the installer.



Important

First, select a device, control PCB or zone to view or amend a setting.



Caution

Modification of the factory settings may impair operation of the device, control PCB or zone.

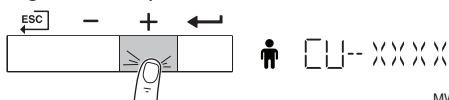
Fig.88 Step 2



MW-3000309-01

1. Navigate to the User menu.
2. Press the → key to open the menu.

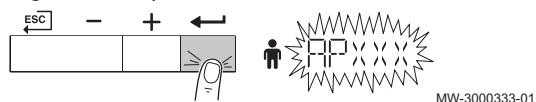
Fig.89 Step 3



MW-3000402-01

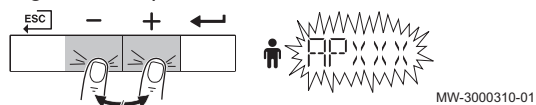
3. Keep pressing the + key until the required device, control PCB or zone is displayed.

Fig.90 Step 4



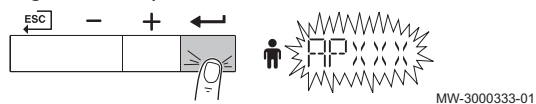
4. Press the ← key to confirm the selection.

Fig.91 Step 5



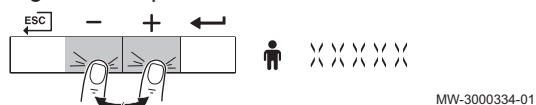
5. Keep pressing the + or - key until the required parameter is displayed.

Fig.92 Step 6



6. Press the ← key to confirm the selection.

Fig.93 Step 7



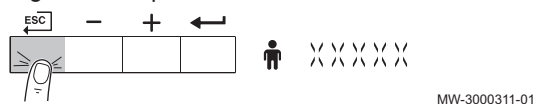
7. Press the + or - key to modify the value.

Fig.94 Step 8



8. Press the ← key to confirm the value.

Fig.95 Step 9



9. Press the ESC key multiple times to go back to the main display.

9.3 Changing the central heating flow temperature

The central heating flow temperature can be raised or lowered separately from the heating requirement.



Important

The central heating flow temperature can only be adjusted in this way if an on/off thermostat is used.

Fig.96 Step 1




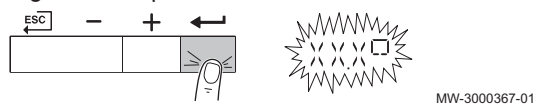
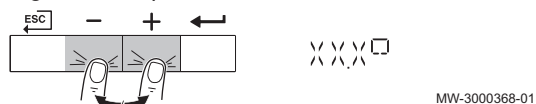
1. Press the  key to select the central heating flow temperature.

Fig.97 Step 2



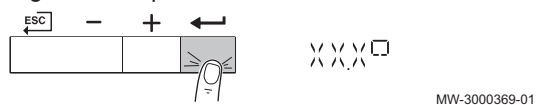
2. Press the ← key to access the central heating flow temperature.

Fig.98 Step 3



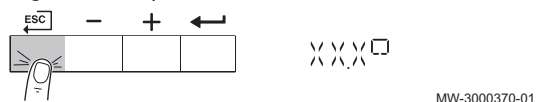
3. Press the + or - key for the required CH flow temperature.

Fig.99 Step 4



4. Press the ← key to confirm the value.

Fig.100 Step 5



5. Press the key to go back to the main display.

i Important
The flow temperature is matched automatically when using a:

- weather-dependent regulator
- **OpenTherm** regulator
- Smart TC° modulating thermostat

9.4 Changing the domestic hot water temperature

The temperature of the domestic hot water can be changed as needed.

i Important
The domestic hot water temperature can only be adjusted in this way if a domestic hot water sensor is installed.

1. Press the key to select the domestic hot water temperature.

Fig.101 Step 1

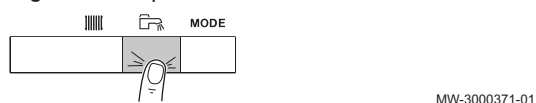
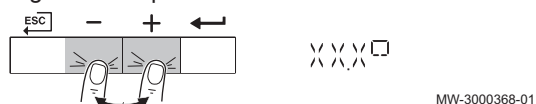
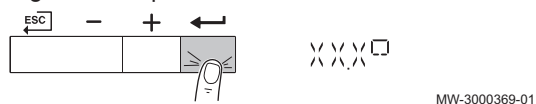


Fig.102 Step 2



2. Press the **+** or **-** key for the required temperature.

Fig.103 Step 3



3. Press the key to confirm the value.

9.5 Setting the Timer Program

If a timed thermostat is not being used, the timer program for the appliance can be used. The Timer Program can be used to lower the heating temperature during the night or an absence during the day. A start and end time for the lower temperature can be set in the Timer Program.

i Important

- Activate the timer program using the parameter: **CP320**
- The timer program can be set for each zone (heating, domestic hot water or cooling).

1. Navigate to the Counter menu.
2. Press the key to open the menu.

Fig.104 Step 2

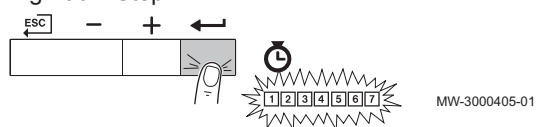


Fig.105 Step 3



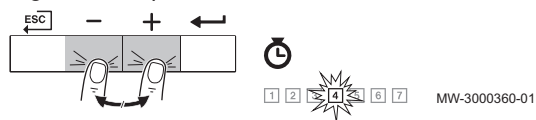
3. Keep pressing the **+** key until the required zone is displayed.
⇒ If there is only a direct heating group, the only option that appears is CIRCA (circuit A).

Fig.106 Step 4



4. Press the key to confirm the selection.
⇒ The icons dedicated to the days of the week all flash at the same time: **1 2 3 4 5 6 7**.

Fig.107 Step 5



5. Select the required day number by keeping the + or - key pressed until the icon for the required day flashes.

Tab.45 Day numbers

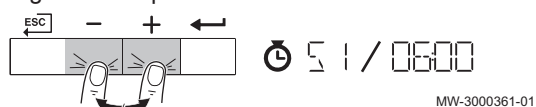
Day selected	Description
1 2 3 4 5 6 7	Every day of the week
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday
7	Sunday

Fig.108 Step 6



6. Press the ← key to confirm the selection.

Fig.109 Step 7

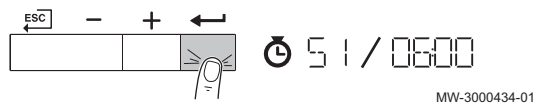


7. Set the start time S1 by pressing the + or - key.

Tab.46 Options

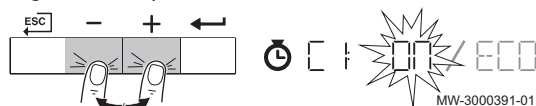
Abbreviation	Description
END	End of programming
S	Switching time or end of day indication (max. 6 switching times)
C	Temperature setting (lower night or comfort temperature)

Fig.110 Step 8



8. Press the ← key to confirm the selection.

Fig.111 Step 9

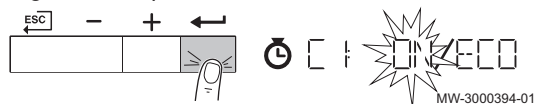


9. Select the status C1 corresponding with the switch time S1 by pressing the + or - key.

Tab.47 Statuses C1 to C6 for the periods S1 to S6

C1 to C6	Description
ON	Comfort temperature
ECO	Lower night temperature

Fig.112 Step 10



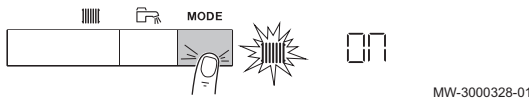
10. Press the ← key to confirm the selection.
11. Repeat the steps to define the switch times (S1 to S6) and the corresponding statuses (C1 to C6).
12. Press the ESC key multiple times to go back to the main display.

Tab.48 Example

Times	1 Monday	2 Tuesday	3 Wednesday	4 Thursday	5 Friday	6 Saturday	7 Sunday
06:00	S1 C1 = ON	S1 C1 = ON	S1 C1 = ON	S1 C1 = ON	S1 C1 = ECO	S1 C1 = ECO	S1 C1 = ON
08:00							
10:00	S2 C2 = ECO	S2 C2 = ECO	S2 C2 = ECO			S2 C2 = ON	S2 C2 = ECO
12:00							
14:00		S3 C3 = ON	S3 C3 = ON	S2 C2 = ECO		S3 C3 = ECO	
16:00					S2 C2 = ON		
18:00	S3 C3 = ON		S4 C4 = ECO	S3 C3 = ON			S4 C4 = ON
20:00		S4 C4 = ECO					
22:00	S4 C4 = ECO			S4 C4 = ECO		S5 C5 = ECO	
23:50							

9.6 Switching off the central heating

Fig.113 Step 1



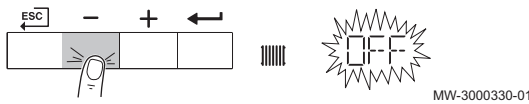
1. Press the **MODE** key for about 2 seconds.

Fig.114 Step 2



2. Press the **←** key to confirm the selection for the central heating.

Fig.115 Step 3



3. Press the **-** key to change the current CH status.

Fig.116 Step 4



4. Press the **←** key to confirm the changed status.
 ⇒ The heating has been switched off. The main display appears, together with the symbol.

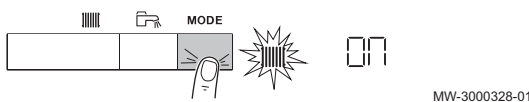


Important

The frost protection function continues to run.

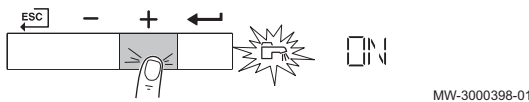
9.7 Switching off DHW production

Fig.117 Step 1



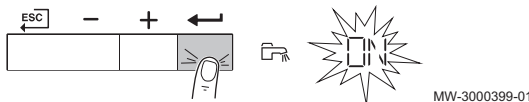
1. Press the **MODE** key for about 2 seconds.

Fig.118 Step 2



2. Press the **+** key to select DHW production.

Fig.119 Step 3



3. Press the **←** key to confirm the selection of DHW production.

Fig.120 Step 4

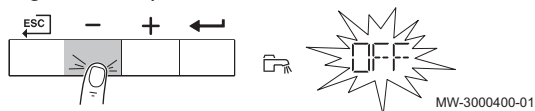
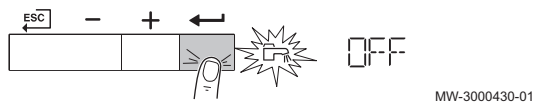



Fig.121 Step 5



4. Press the **-** key to change the current status of DHW production.

5. Press the **←** key to confirm the changed status.

⇒ DHW production is switched off. The main display appears, together with the  symbol.



Important

The frost protection function continues to run.

9.8 Start-up

Start the boiler up as follows:

1. Open the boiler gas tap.
2. Power up the boiler.
3. The boiler runs through an automatic venting program lasting approx. 3 minutes.
4. 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 on the display.

9.9 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. Shut off the gas supply.
2. Keep the area frost-free.

9.10 Frost protection



Caution

- Drain 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 burner 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 outdoor sensor can be connected to the boiler.

9.11 Cleaning the casing

1. Clean the outside of the appliance using a damp cloth and a mild detergent.

10 Technical specifications

10.1 Homologations

10.1.1 Certifications

Tab.49 Certifications

CE identification number	PIN 0063CS3928
Class NOx ⁽¹⁾	6
Type of flue gas connection	B ₂₃ , B _{23P} , B ₃₃ ⁽²⁾ C _{13(X)} , C _{33(X)} , C ₅₃ , C _{63(X)} , C _{93(X)}
(1) EN 15502-1 (2) When installing a boiler with connection type B ₂₃ , B _{23P} , B ₃₃ , the IP rating of the boiler is lowered to IP20.	

10.1.2 Unit categories

Tab.50 Unit categories

Country	Category	Gas type	Connection pressure (mbar)
United Arab Emirates	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Austria	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Algeria	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Armenia	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Azerbaijan	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Belarus	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Bulgaria	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30
		G31 (propane)	50
Switzerland	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30-50
		G31 (propane)	37-50
Cyprus	I _{3B/P}	G30/G31 (butane/propane)	30-50
Chile	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Czech Republic	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30-50
		G31 (propane)	37-50
Georgia	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	50
		G31 (propane)	50
Estonia	II _{2H3P}	G20 (H gas)	20
		G31 (propane)	30

Country	Category	Gas type	Connection pressure (mbar)
Egypt	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Spain	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30-50
		G31 (propane)	37-50
Finland	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30
		G31 (propane)	30
France	II _{2Esi3B/P} II _{2Esi3P}	G20 (H gas)	20
		G25 (L gas)	25
		G30/G31 (butane/propane)	30-50
		G31 (propane)	37-50
Greece	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30-50
		G31 (propane)	30-37
Ireland	II _{2H3B/P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30
Iran	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Israel	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Jordan	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Italy	II _{2HM3B/P} II _{2HM3P}	G20 (H gas)	20
		G230 (M gas)	20
		G30/G31 (butane/propane)	30
		G31 (propane)	30-37
Kazakhstan	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Lebanon	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Lithuania	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30
		G31 (propane)	30
Luxembourg	II _{2H3P} II _{2H3P}	G20 (H gas)	20
		G31 (propane)	50
Latvia	I _{2H}	G20 (H gas)	20
Morocco	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Moldova	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Norway	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30
		G31 (propane)	30
New Zealand	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
State of Palestine	II _{2H3B/P} II _{2H3P}	G20 (H gas)	20
		G30/G31 (butane/propane)	50
		G31 (propane)	50
Portugal	II _{2H3B/P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30-50

Country	Category	Gas type	Connection pressure (mbar)
Romania	II _{2H3P}	G20 (H gas) G31 (propane)	20 50
Russia	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 30-50
Slovenia	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30 30
Slovakia	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 30-37
Syria	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 50 50
Tunisia	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 50 50
Ukraine	I _{2H}	G20 (H gas)	20
South Africa	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 50 50

10.1.3 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.





10.1.4 Factory test

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

- Electrical safety.
- Adjustment of (O₂).
- Water tightness.
- Gas tightness.
- Parameter setting.

10.2 Technical data

Tab.51 General

AMC Pro			45	65	90	115
Nominal output (Pn) Central heating operation (80/60°C)	min-max  ⁽¹⁾	kW	8.0 - 40.8 40.8	12.0 - 61.5 61.5	14.1 - 84.2 84.2	18.9 - 103.9 103.9
Nominal output (Pn) Central heating operation (50/30°C)	min-max  ⁽¹⁾	kW	9.1 - 42.4 42.4	13.5 - 65.0 65.0	15.8 - 89.5 89.5	21.2 - 109.7 109.7
Nominal load (Qnh) Central heating operation (Hi)	min-max  ⁽¹⁾	kW	8.2 - 41.2 41.2	12.2 - 62.0 62.0	14.6 - 86.0 86.0	19.6 - 107.0 107.0
Nominal load (Qnh) Central heating operation (Hs)	min-max  ⁽¹⁾	kW	9.1 - 45.7 45.7	13.6 - 68.8 68.8	16.2 - 95.5 95.5	21.9 - 118.8 118.8
Full load central heating efficiency (Pn) (Hi) (80°C/60°C)		%	99.1	99.2	97.9	97.1
Full load central heating efficiency (Pa) (Hi) (80°C/60°C)		%	97.2	98.3	97.9	97.1

AMC Pro			45	65	90	115
Full load central heating efficiency (Hi) (50°C/30°C)		%	102.9	104.6	104.1	102.5
Central heating efficiency under part load (Hi) (Return temperature 60 °C)		%	97.2	98.3	96.6	96.5
Part load central heating efficiency (Pn) (Hi) (Return temperature 30 °C)		%	110.6	110.4	108.1	108.0
Part load central heating efficiency (Pn) (Hi) (Return temperature 30 °C)		%	108.4	108.9	108.1	108.0
Full load central heating efficiency (Pn) (Hs) (80/60°C)		%	89.2	89.3	88.2	87.4
Full load central heating efficiency (Pa) (Hs) (80/60°C)		%	87.5	88.5	88.2	87.4
Full load central heating efficiency (Hs) (50/30°C)		%	92.7	94.2	93.7	92.3
Heating efficiency under part load (Hs) (Return temperature 60 °C)		%	87.5	88.5	88.2	87.4
Central heating efficiency under partial load (Pn) (Hs) (Return temperature 30 °C)		%	99.6	99.4	97.3	97.3
Central heating efficiency under partial load (Pa) (Hs) (Return temperature 30 °C)		%	97.6	98.1	97.3	97.3
(1) Factory setting						

Tab.52 Gas and flue gas data

AMC Pro			45	65	90	115
Gas inlet pressure G20 (H gas)	min-max	mbar	17 - 25	17 - 25	17 - 25	17 - 25
Gas inlet pressure G31 (propane)	min-max	mbar	37 - 50	37 - 50	37 - 50	37 - 50
Gas consumption G20 (H gas) ⁽¹⁾	min-max	m ³ /h	0.9 - 4.4	1.3 - 6.6	1.5 - 9.1	2.1 - 11.3
Gas consumption G31 (propane) ⁽¹⁾	min-max	m ³ /h	0.4 - 1.7	0.5 - 2.5	0.9 - 3.5	0.9 - 4.4
Gas resistance between boiler connection point and measurement point on the gas valve unit (measured with G20)	max	mbar	1.0	2.0	2.5	3.0
NOx annual emissions G20 (H gas) EN15502 O2 = 0%	Hs	mg/kWh	42	48	53	41
NOx annual emissions G20 (H gas) O2 = 0%	Hs	mg/kWh	42	48	53	41
CO annual emissions G20 (H gas) O2 = 0%	Hs	mg/kWh	62	71	78	84
NOx annual emission G31 (propane) O2 = 0%	Hs	mg/kWh	62	68	56	51
CO annual emission G31 (propane) O2 = 0%	Hs	mg/kWh	104	119	90	90
Flue gas quantity	min-max	kg/h	14 - 69	21 - 104	28 - 138	36 - 178
Flue gas temperature	min-max	°C	30 - 67	30 - 68	30 - 68	30 - 72
Maximum counter pressure		Pa	150	100	160	220
Central heating chimney efficiency (Hi) (80/60°C) at 20°C amb.		%	99.1	99.2	97.9	97.1
Central heating chimney losses (Hi) (80/60°C) at 20°C amb.		%	0.9	0.8	2.1	2.9
(1) Gas consumption based on lower heating value under standard conditions: T=288.15 K, p=1013.25 mbar. Gag 30.33; G25 29.25; G31 88.00 MJ/m ³						

Tab.53 Central heating circuit data

AMC Pro			45	65	90	115
Water content		l	4.3	6.4	9.4	9.4
Water operating pressure	min	bar	0.8	0.8	0.8	0.8
Water operating pressure (PMS)	max	bar	4.0	4.0	4.0	4.0
Water temperature	max	°C	110.0	110.0	110.0	110.0
Operating temperature	max	°C	90.0	90.0	90.0	90.0
Hydraulic resistance ($\Delta T=20K$)		mbar	114	163	153	250
Casing-related losses	ΔT 30°C	W	101	110	123	123
	ΔT 50°C		201	232	254	254

Tab.54 Electrical data

AMC Pro			45	65	90	115
Supply voltage		VAC	230	230	230	230
Power consumption - Full load central heating ⁽¹⁾	max	W	75	89	114	182
Power consumption - Part load central heating (30%) ⁽¹⁾	min	W	22	29	30	36
Power consumption - Minimal load central heating ⁽¹⁾	min	W	20	26	26	32
Power consumption - Stand-by (Psb) ⁽¹⁾	max	W	6	7	7	6
Electrical protection index		IP	X4D	X4D	X4D	X4D
Fuses (slow)	Main CU-GH08	A	2.5	2.5	2.5	2.5

(1) without pump

Tab.55 Other data

AMC Pro			45	65	90	115
Total weight including packaging		kg	60.5	66.5	76.5	76.5
Minimum mounting weight ⁽¹⁾		kg	50	56	65.2	65.2
Average acoustic level at a distance of one metre from the boiler		dB(A)	45.1	46.7	51.6	51.1

(1) Without front panel.

Tab.56 Technical parameters

AMC Pro			45	65	90	115
Condensing boiler			Yes	Yes	Yes	Yes
Low-temperature boiler ⁽¹⁾			No	No	No	No
B1 boiler			No	No	No	No
Cogeneration space heater			No	No	No	No
Combination heater			No	No	No	No
Rated heat output	<i>P_{rated}</i>	kW	41	62	84	104
Useful heat output at nominal heat output and high temperature operation ⁽²⁾	<i>P₄</i>	kW	40.8	61.5	84.2	103.9
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>P₁</i>	kW	13.7	20.5	27.9	34.7
Seasonal space heating energy efficiency	η_s	%	94	94	-	-
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	89.3	89.4	88.2	87.5
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	99.6	99.5	97.4	97.3
Auxiliary electricity consumption						

AMC Pro			45	65	90	115
Full load	el_{max}	kW	0.075	0.100	0.124	0.184
Part load	el_{min}	kW	0.020	0.029	0.030	0.036
Standby mode	P_{SB}	kW	0.006	0.007	0.007	0.006
Other items						
Standby heat loss	P_{stby}	kW	0.101	0.110	0.123	0.123
Ignition burner power consumption	P_{ign}	kW	-	-	-	-
Annual energy consumption	Q_{HE}	GJ	125	188	-	-
Sound power level, indoors	L_{WA}	dB	53	55	60	59
Emissions of nitrogen oxides	NO_x	mg/kWh	42	48	53	41
(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**

The back cover for contact details.

10.3 Circulating pump

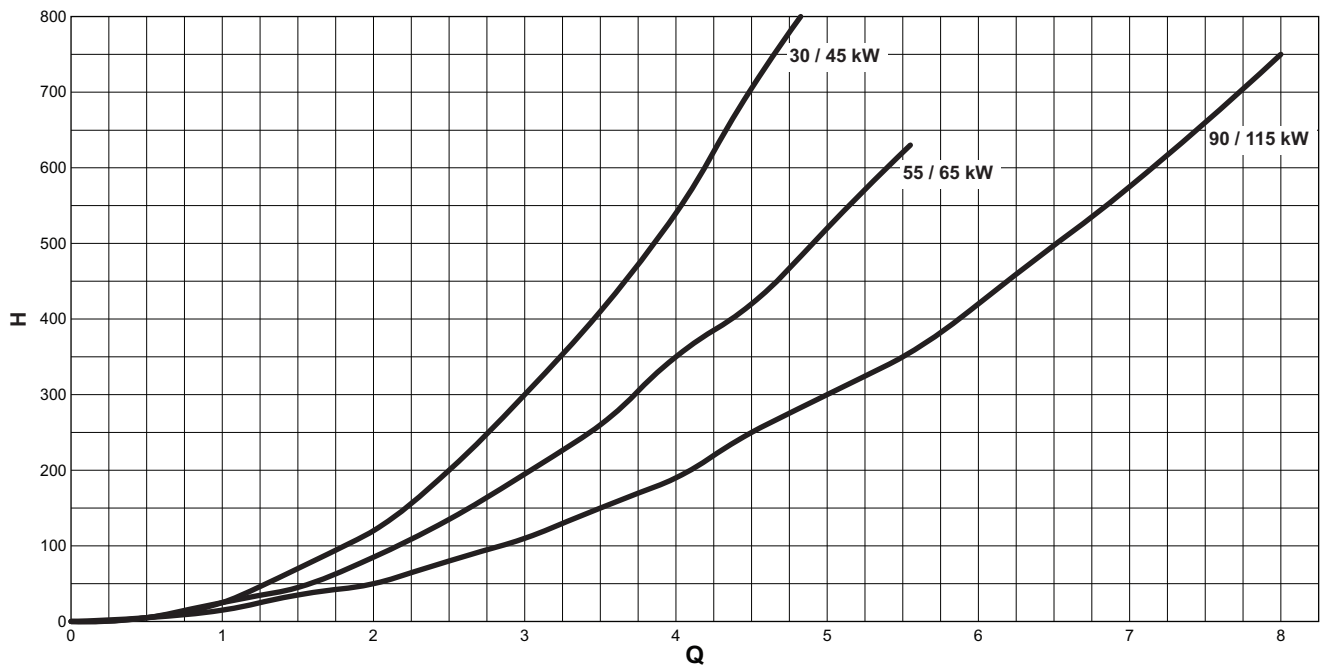
A circulation pump is not supplied with this boiler. Take the boiler resistance and system resistance into account when selecting a pump. The graphs show the hydraulic resistance at various water flow rates. The table shows some significant nominal flow data and the corresponding hydraulic resistance.

If possible, install the pump directly under the boiler on the return connection.

**Important**

When the circulating pump is managed by the boiler control unit, the de-airation program must be turned ON via parameter **AP101**.

Fig.122 Hydraulic resistance



AD-3001405-01

Q Water flow (m³/h)

H Hydraulic resistance (mbar)

Tab.57 Nominal flow data

	Unit	45	65	90	115
Q at $\Delta T = 10^{\circ}\text{C}$	m ³ /h	3,50	5,28	7,20	9,0
H at $\Delta T = 10^{\circ}\text{C}$	mbar	456	652	612	1000
Q at $\Delta T = 20^{\circ}\text{C}$	m ³ /h	1,75	2,64	3,60	4,50
H at $\Delta T = 20^{\circ}\text{C}$	mbar	114	163	153	250
Q at $\Delta T = 35^{\circ}\text{C}$	m ³ /h	-	-	-	2,55
H at $\Delta T = 35^{\circ}\text{C}$	mbar	-	-	-	72
Q at $\Delta T = 40^{\circ}\text{C}$	m ³ /h	0,90	1,32	1,80	not permitted
H at $\Delta T = 40^{\circ}\text{C}$	mbar	30	45	40	not permitted

11 Appendix

11.1 ErP information

11.1.1 Product fiche

Tab.58 Product fiche

De Dietrich – AMC Pro		45	65	90	115
Seasonal space heating energy efficiency class		A	A	_(1)	_(1)
Rated heat output (<i>Prated or Psup</i>)	kW	41	62	84	104
Seasonal space heating energy efficiency	%	94	94	-	-
Annual energy consumption	GJ	125	188	-	-
Sound power level L_{WA} indoors	dB	53	55	60	59

(1) For CH boilers and boilers over 70 kW, no ErP information needs to be provided.



See

For specific precautions about assembling, installing and maintaining: Safety, page 3

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

Tab.59 Weighting of boilers

$P_{sup} / (Prated + P_{sup})^{(1)(2)}$	II, package without hot water storage tank	II, package with hot water storage tank
0	0	0
0.1	0.3	0.37
0.2	0.55	0.70
0.3	0.75	0.85
0.4	0.85	0.94
0.5	0.95	0.98
0.6	0.98	1.00
≥ 0.7	1.00	1.00

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.
(2) Prated is related to the preferential space heater or combination heater.

11.2 EC declaration of conformity

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

The original declaration of conformity is available from the manufacturer.

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