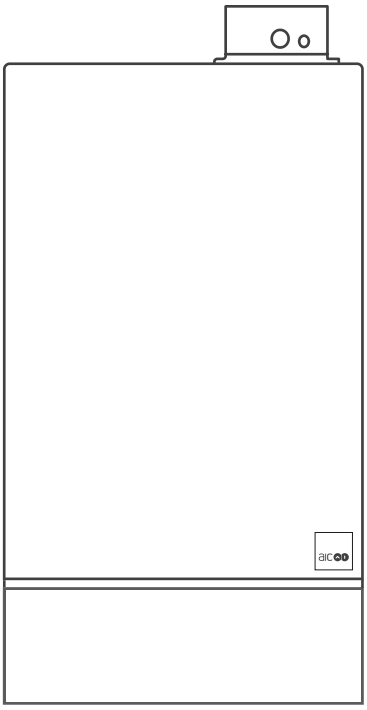
installation and maintenance manual

for the installer and the user

Nesta Chrome

60 · 80 · 100 · 115 · 120 · 150 kW

wall-hung condensing boiler



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About our Boilers

Compliance

All our boilers are compliant with the following directives and regulations:

- **GAR 2016/426/EU**
- **BED 92/42/EEC**
- **LVD 2014/35/EU**
- **EMC 2014/30/EU**

Boiler Naming

In the documentation, products of this range can be designated indifferently using their full name or abbreviated name:

"Nesta Chrome 60 (N 60 WH)" → **Nesta Chrome 60** or **N 60 WH**
"Nesta Chrome 80 (N 80 WH)" → **Nesta Chrome 80** or **N 80 WH**
"Nesta Chrome 100 (N 100 WH)" → **Nesta Chrome 100** or **N 100 WH**
"Nesta Chrome 115 (N 115 WH)" → **Nesta Chrome 115** or **N 115 WH**
"Nesta Chrome 120 (N 120 WH)" → **Nesta Chrome 120** or **N 120 WH**
"Nesta Chrome 150 (N 150 WH)" → **Nesta Chrome 150** or **N 150 WH**

Liabilities of the Manufacturer, the Installer and the End user

Manufacturer

Our products are manufactured in compliance with the requirements of the applicable European and United Kingdom Directives and standards, and are therefore delivered with all the required documentation and markings.

The quality of our products is essential to us, and we aim therefore at improving them continually. To this end, we reserve the right to change the technical characteristics and features of our products without prior notice. Please check for the latest revision of the manual on our website (www.myaic.eu).

The manufacturer shall not be held liable for any malfunction of the product resulting from:

- The failure to comply with the safety and installation instructions provided herein,
- The failure to comply with the safety and operation instructions and recommendations provided herein,
- The failure to have the appliance maintained regularly,
- A modification of the appliance that is not approved by the manufacturer,
- The use the product for any other purpose than its intended use,
- The use of components and accessories that are not approved by the manufacturer.

Installer

The installer is responsible for the correct installation, conversion (as required) and commissioning of the appliance according to:

- The instructions and recommendations provided herein,
- The applicable regulations and standards,

The installer shall provide the end-user with:

- Any relevant explanation about the operation of the appliance and the heating system as well as the safety devices that are provided,
- Any instruction regarding periodic checks to be performed and possible anomaly to be reported,
- All the documentation delivered with the appliance and installed accessories.

The installer shall also inform the end-user of the necessity to have the appliance checked and maintained regularly by a qualified professional.

End-user

To ensure the best performances and safety of the appliance, the end-user shall:

- Make sure that the appliance is installed, converted (as required), commissioned and adjusted by a qualified professional,
- Make sure that the appliance is checked and maintained regularly by a qualified professional,
- Comply with all the instructions and recommendations provided in the appliance documentation,
- Make sure to receive from the installer all the necessary explanations related to the operation of the appliance and the safety devices,
- Make sure to receive from the installer all the appliance and accessories documentation,
- Keep all the appliance documentation in a safe place for future use.

The end-user shall use the product for its intended use.

- ***It is not recommended to operate the appliance continuously at maximum power. Operating the appliance at full power continuously may cause accelerated wear of components and lead to a shortened service life of the entire appliance.***
- ***Should the installer or the end user not comply with the instructions and requirements stated in this manual, the warranty will be void.***
- ***For more information on the warranty terms and conditions, please connect to our website (www.myaic.eu)***

About this Manual

This documentation is part of the product. It will be handed over to the end-user who will keep it, with all the other applicable documents, in a safe place and readily available for use.

Before installing, operating or maintaining the appliance, please carefully read this manual and all the applicable documents provided with the components and accessories. They contain essential safety information.

Symbols in this Manual

Indicates an essential instruction which, if not followed, can result in a hazardous situation that can cause serious damage to equipment and/or injuries or death.

Indicates an essential instruction in relation with the presence of electrical power and a danger of electrical shock.

Indicates an important instruction which, if not followed, could result in a hazardous situation that could cause damage to equipment and/or injuries.

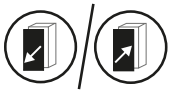
Indicates important information.

The electrical supply to the appliance must be activated/deactivated through the external circuit breaker or the power supply cable must be connected/disconnected.

The appliance must be started/stopped using the ON/OFF switch installed on the appliance.

The gas supply to the appliance must be provided/shut down through the external gas tap.

The water circuit of the appliance must be full of water/empty.



The front and top access panel(s) of the appliance must be removed/installed.

The appliance must have cooled down.

Gas connection.

Heating circuit supply connection.

Heating circuit return connection.

Symbols on the Appliance

High Voltage - danger of electric shock.

Ground / Earth.

Heating circuit connection.

Gas connection.

For an explanation of the symbols on the control panel, please see ***"Symbols and Messages on the Control Panel" on page G-11.***

Symbols on the Packaging

This side up

Keep dry

Fragile

Do not stack

The prefixes used in the page numbering indicate the following:

G- : General information

U- : Pages intended for the end user

I- : Pages intended exclusively for the qualified professional (e.g. installer)

Safety Instructions

IF YOU SMELL GAS:

→ **DO NOT:**
- **Use an open flame**
- **Smoke**
- **Use electrical devices (phones, doorbell, etc.) or switches**

→ **DO:**
- **Close the gas supply**
- **Open all doors and windows to ventilate the room**
- **Inform the neighbours of the danger by knocking at the doors.**
- **Get out of the building**
- **Call the gas company**

- **This product is intended as a heat generator for heating systems.**
- **This appliance must be installed according to the applicable local regulations and standards.**
- **This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- **Children should be supervised to ensure that they do not play with the appliance.**
- **Any modification to the appliance and its components is strictly forbidden without the prior written consent of the manufacturer.**
- **If components need to be replaced, only genuine factory parts or components approved by the manufacturer must be used.**

- **When working on the appliance and the system, make sure to use the appropriate tools to avoid damaging the pipes and components.**
- **If works need to be performed close to the appliance (e.g. in the boiler room or close to the air inlets), make sure to shut down the appliance to prevent dust from entering and accumulating in the appliance.**
- **The appliance contains a frost-protection feature that will protect the appliance against frost, provided that the appliance remains in operation and the radiator valves are open.**

- *When unpacking the appliance, check the integrity and condition of the packaging and that all the components and accessories described in the packing list are present. Contact your supplier in case of problem.*
- *When discarding the packaging, do not contaminate the environment. Dispose of it according to the applicable local regulations on recycling.*

Package Contents

- A NESTA CHROME boiler
- An Installation and Maintenance manual
- A bracket and hardware for wall installation
- A condensate trap (syphon), to be installed

Refer to ***"Unpacking the Product" on page I-28*** for the complete unpacking and installation instructions.

Boiler Marking

The data plate is located at the bottom of the boiler.

In addition, the S/N and appliance type are also available on a sticker placed inside the front face flap to make the information easily available if technical support is needed.

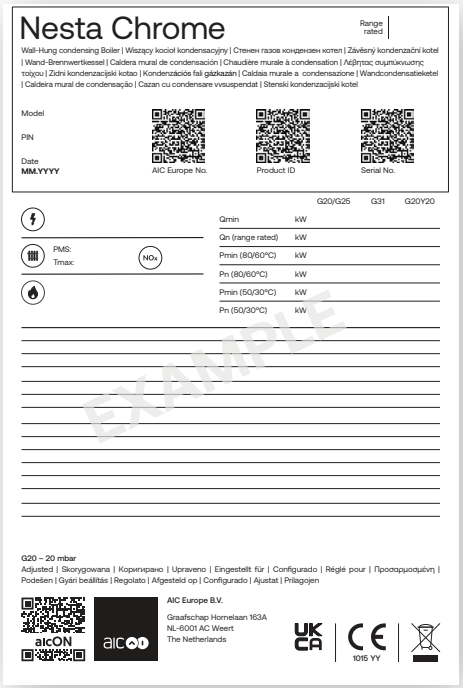


Fig. 1. Data Plate - Example

Symbol	Description	
	Electrical data	
	PMS	maximum operating pressure
	Tmax	maximum primary temperature
	V	water content
	PMS	maximum operating pressure (DHW circuit)
	Tmax	maximum DHW temperature
	V	water content
	Chimney types	
NOx	NOx class	

Symbol	Description
Qmin	Minimum heat input
Qn	Nominal heat input
Pmin (80/60°C)	Minimum heat output (80/60°C)
Pn (80/60°C)	Nominal heat output (80/60°C)
Pmin (50/30°C)	Minimum heat output (50/30°C)
Pn (50/30°C)	Nominal heat output (50/30°C)
CE	CE sign indicating the compliance of the device with CE directives
UKCA	UKCA sign indicating the compliance of the device with UK regulations
	Note about handling electronic equipment waste

The use of symbols on the data plate depends on the type of product.

NESTA CHROME 60-80-100-115-120-150

General Description

This wall-hung series of NESTA CHROME boilers consists of compact, low-emission condensing appliances with a pre-mix burner, a stainless steel heat exchanger and a lightweight casing.

The fully radial burner ensures a high modulation ratio, combustion stability and very low NOx emissions.

The unique and proven "fire-tube" heat exchanger offers a large heat exchange surface to optimise energy and heating efficiency.

The NESTA CHROME series is designed for heating systems and can be used for Domestic Hot Water production (provided that the system contains an optional external tank).

The appliances are built for natural gas but can be converted to operate with liquid gas (propane), using an optional conversion kit. The optional kit installation must take place before commissioning and comply with applicable local regulations and standards.

NESTA CHROME boilers are able to control 3 heating circuits with mixing functions, through 3 optional extension modules. Each extension module requires a power supply and a bus connection. Refer to ***"Optional Modules" on page I-70*** for more information.

The appliance **is not** provided with a built-in circulating pump. Therefore, the system must be equipped with at least one pump for standard system set up.

NESTA CHROME boilers can be connected in a cascade configuration, which means that the boilers are connected to the same water circuit and electronic controller, with one boiler operating as the "Principal", and the others as "subsequent"). Refer to ***"Boilers in a Cascade System" on page I-71*** for more information on cascade system possibilities.

Frost Protection

The NESTA CHROME boilers have a built-in anti-frost protection. The pump and the burner are started as required when the return water temperature drops below 5°C (as measured by the boiler internal sensor installed on the return circuit).

The pump and/or burner will turn off when the return temperature reaches the required setpoint.

The anti-frost protection function only protects the boiler, not the entire system.

Safety Devices

The NESTA CHROME boilers are equipped with a series of sensors and switches that provide safety for your appliance and heating system, such as:

- Water circuit temperature sensors (supply, return, system, etc.)
- Gas pressure switch
- Flue pressure switch
- Burner plate high temp limit switch (Nesta Chrome 100 to 150 only)
- Water pressure sensor
- Flue temperature sensor
- Alarm contacts

The NESTA CHROME boilers **are not** provided with the following mandatory safety equipment that the installer must place in the system:

- Expansion tank, suitable for the system size
- Safety group, composed of a safety valve (pressure rating adapted to the system), an automatic relief valve and a manometer
- Air relief valve(s), at the high point(s) of the system

Optional equipment

Some optional equipment can be used with the NESTA CHROME boilers. Please contact your AIC representative for more information and a list of available equipment.

To lengthen the life of your boiler and heating system, in addition to the recommended water characteristics described in ***"Water Quality Requirements to Prevent Scaling and Corrosion" on page I-32,*** the following equipment can be installed in the heating circuit:

- Water filter
- Dirt/air separator
- Low loss header
- Plate heat exchanger

See ***"Requirements for the Hydraulic Connections" on page I-31*** for more information on this equipment.

The position and/or aspect of the components inside the boiler can slightly differ according to the model. The example shown here is a Nesta Chrome 150.

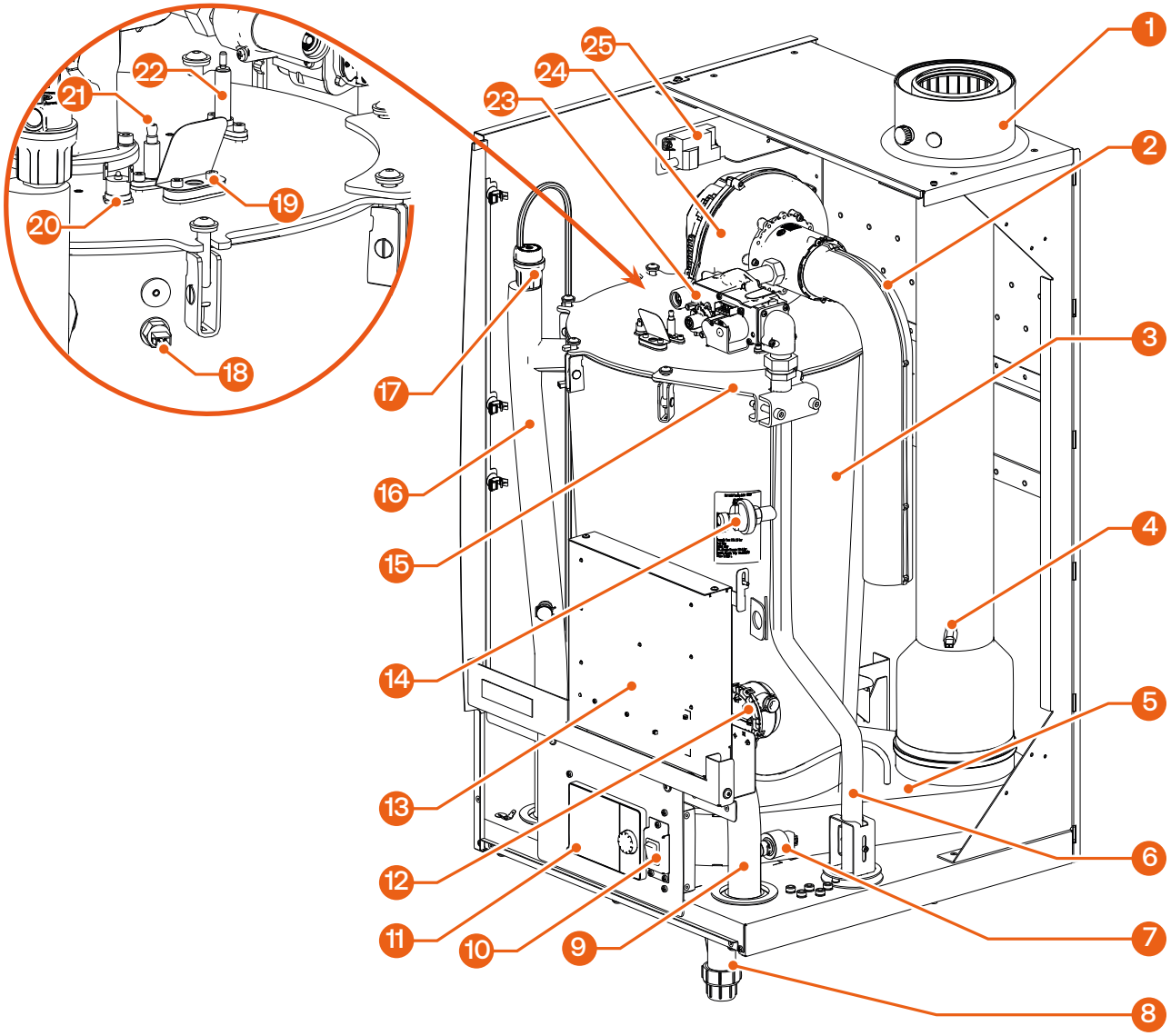


Fig. 2. Boiler Components

KEY

1. Concentric chimney connection (Ø 100/150 mm)
2. Air inlet to air-gas mixer
3. Stainless steel "fire tube" heat exchanger
4. Flue temperature sensor
5. Stainless steel condens dish
6. Gas pipe
7. Water pressure sensor
8. Condensate trap
9. Heating return pipe
10. On-Off switch
11. Control panel with LCD display
12. Flue pressure switch
13. Electronic junction box (incl. boiler management unit - not shown)
14. Gas pressure switch
15. Gas pipe bracket
16. Heating supply pipe
17. Air vent
18. Supply temperature sensor
19. Flame sight glass
20. High temperature limit switch
21. Ignition electrode
22. Ionisation electrode
23. Gas valve, with throttle for combustion adjustment
24. Burner assembly, with fan and air-gas mixer
25. Ignition module

Control Panel and Main Functions

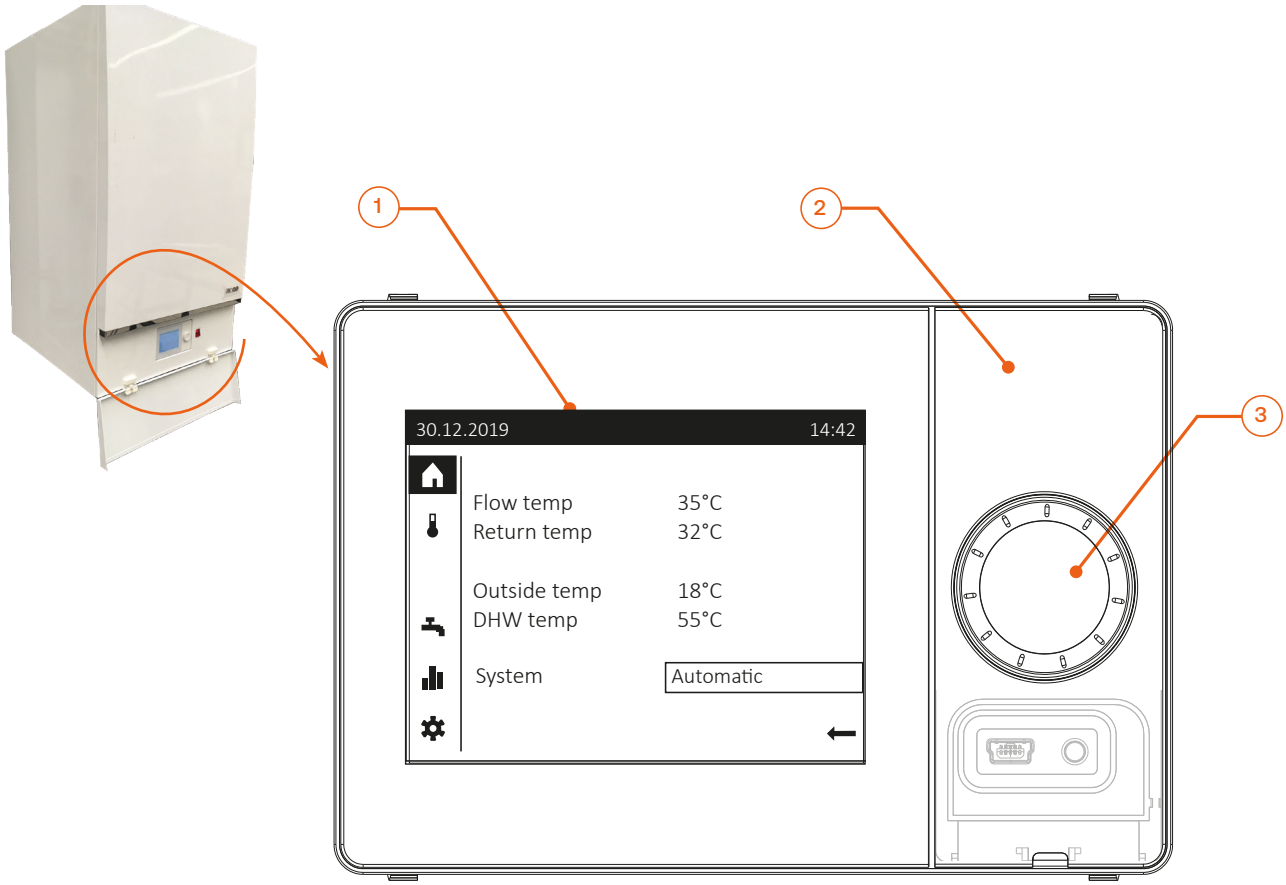


Fig. 3. Control Panel

KEY

1. LCD Display - The display illuminates whenever the rotary selector is rotated or depressed, and remains on for 8 minutes. For a detail of the symbols and messages displayed on the screen, see ***"Symbols and Messages on the Control Panel" on page G-11.***
2. Removable panel - To access the USB connector and Reset button located underneath (showed in light grey on the picture, for information).
3. Rotary selector - It can be used in 3 different ways:
   - Turning the selector to the left or to the right allows to scroll through the menus (icons/ functions) or increase/decrease a value after selecting a function.

When entering a menu/sub-menu, the slow rotation of the selector to the right (clockwise) allows to scroll through the menu, down to the last function. Turning the selector to the left (counter-clockwise) allows to scroll up to the first function of the menu.

   - Depressing the selector (short push) allows to select a function/value and validate a choice.
   - Depressing the selector for more than 3 sec. when an error is displayed on the screen, takes you back to the Home screen. Doing the same in Expert menus brings back to the Expert view start page.

For more information on the operation and menus of the controller, see ***"Basic Settings and Information" on page U-24***.

Symbols and Messages on the Control Panel

The control panel display is divided into several zones (See ***Fig. 4):***

- a **vertical menu bar** (**1**) on the left side of the screen, comprising a series of icons to access various menus. When one of the icon is selected and active, it displays against a black background (**2**). When one icon is selected and activated by pressing the selector, the menu bar disappears and gives way to the work area.
- a **horizontal status bar** (**3**) at the top of the screen. It permanently displays the time and, according to the situation, specific icons (Alarm, Maintenance, Event, Manual adjustment, User level and Producer in operation). See a detail of the symbols below.
- a **work area** (**4**), comprising menu and function-specific information as well as operating mode. It also displays a **back arrow** (**5**), allowing to exit the work area and go back to the vertical menu bar.

Symbols of the **vertical menu bar** (some of them will appear only if the circuit is enabled):

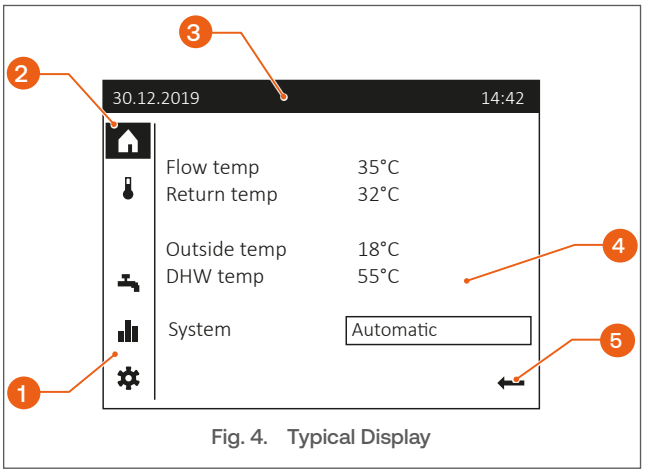


Fig. 4. Typical Display

Home. Gives access to the System status and change it from ***automatic*** to ***off***.

Temperature. Gives access to the heating functions and setpoints.

Ventilation. Not used.

Domestic Hot Water. Gives access to the DHW-related functions.

Information. Gives access to messages (history, errors, etc.), system information and consumption information.

Service/settings. Gives access to setting options on device or system, allows to operate special operations (e.g. for maintenance work) and allows to log in, in expert view (access to additional pages for the Installer only).

Diagnostics (Expert only). Analyze and test info on the system.

Adjust/repair (Expert only). Allows to adjust the parameters in the 'Complete parameter list', and to access the commissioning wizard.

Symbols appearing in the **horizontal status bar**:

Alarm. Indicates an error in the system.

Maintenance/Special operations. It indicates the presence of a maintenance message or special operation feedback.

Manual mode. Indicates that the operating modes on the topic pages are set to manual.

User type. This symbol with number 1, 2 or 3 indicates the access level:

1 - End user/commissioning
2 - Heating engineer/installer
3 - OEM

Producer. This symbol indicates the main producer (e.g. oil/gas boiler, heat pump) that is currently switched on.

Symbols and indications In the **work area**:

abc	Selected item (text or icon)
abc	Activated item (text or icon)
Back	To go back to higher level in the menu
	To return to the vertical menu bar icons

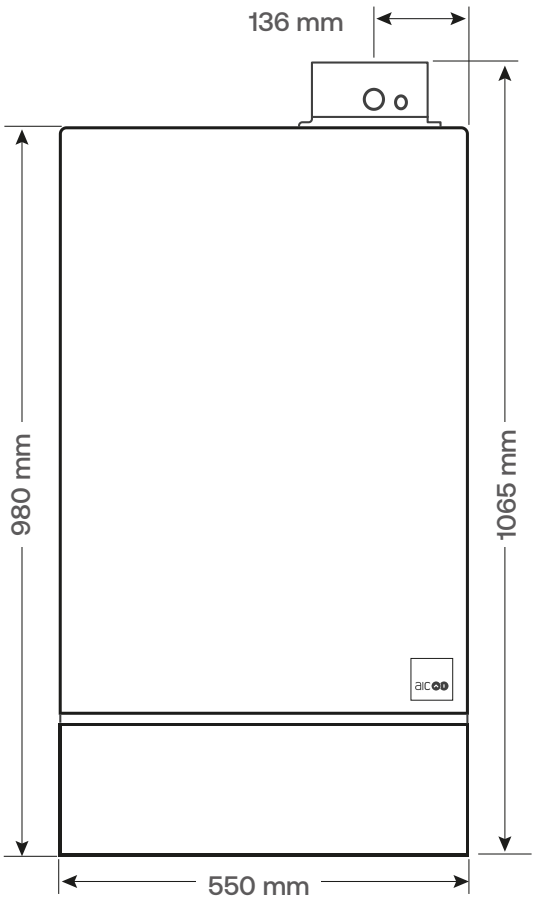
Symbols used in the manual to illustrate the **operation of the selector**:

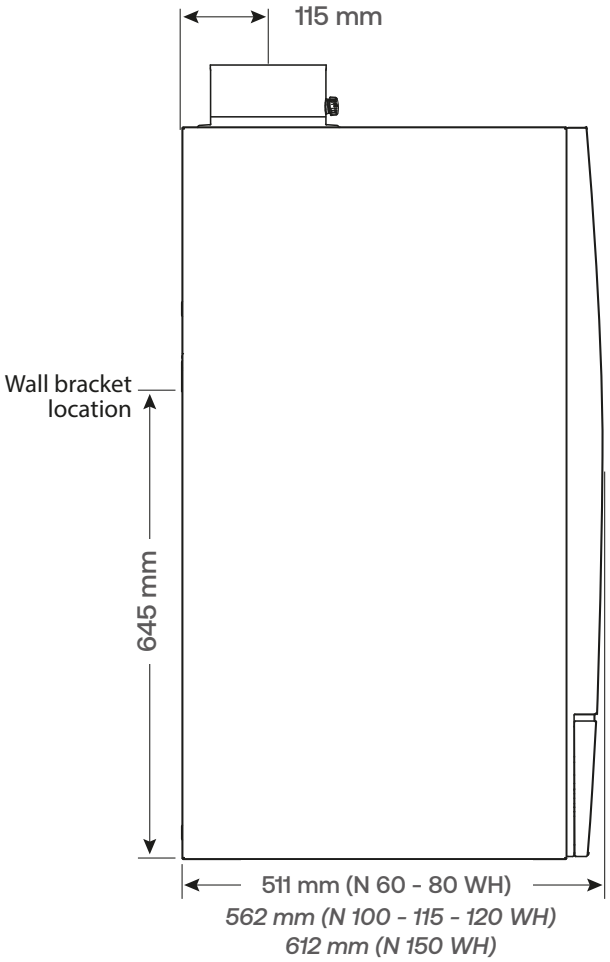
turn the selector to the left or to the right

depress shortly the rotary selector

depress the rotary selector for more than 3 seconds.

Dimensions and Clearances





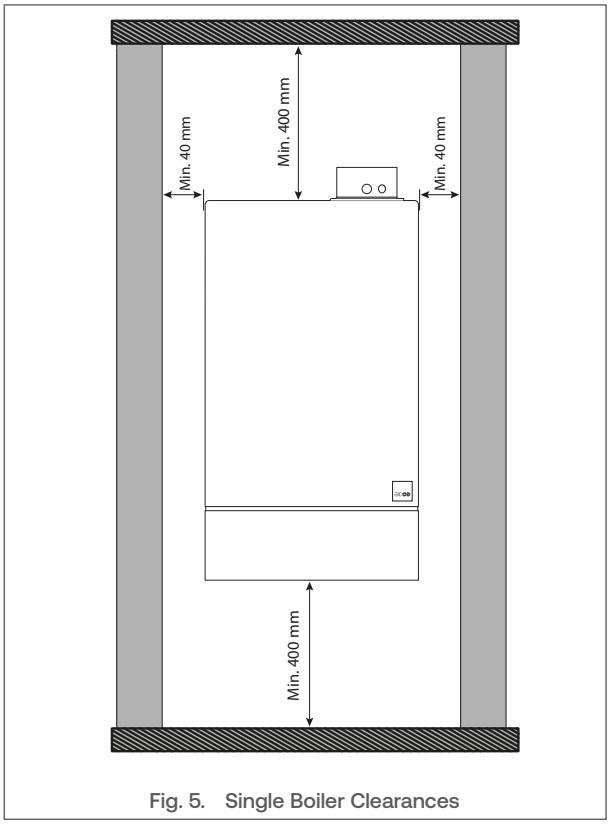


Fig. 5. Single Boiler Clearances

Clearances		Min.	Recommended
top	mm	400	1000
bottom	mm	400	700
front	mm	700	1000
sides	mm	40*	

* In a cascade configuration, boilers can be installed side-by-side with a 40 mm clearance between them.

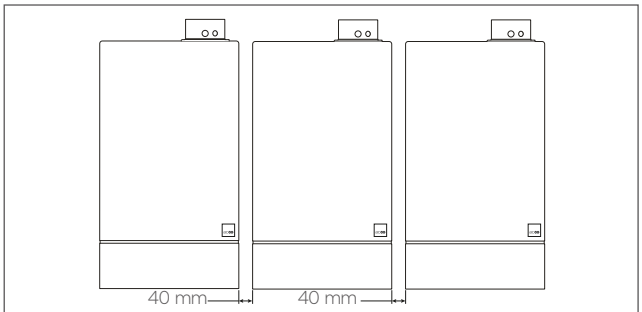
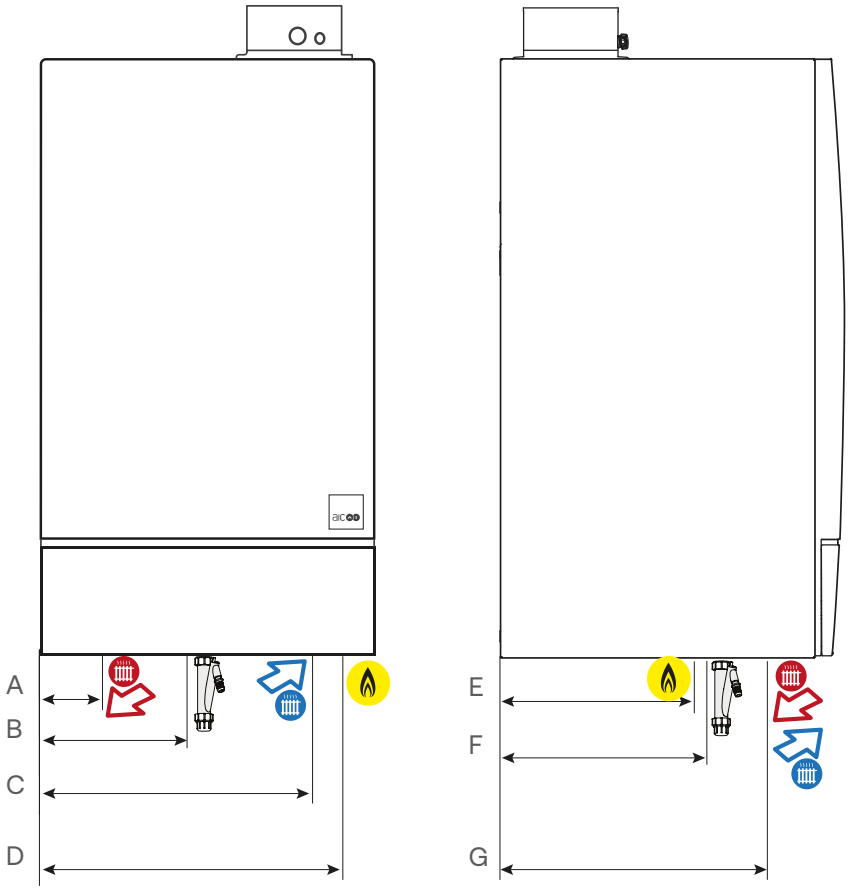


Fig. 6. Clearances for Cascaded Boilers



		N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
A	mm	103	103	103	103	103	71
B	mm	224	224	242	242	242	226
C	mm	447	447	447	447	447	453
D	mm	501	501	496	496	496	496
E	mm	344	344	297	297	297	346
F	mm	208	208	310	310	310	338
G	mm	420	420	447	447	447	490

		N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
dry weight	kg	71	75	93	96	96	117
connections (Ø)							
supply/return ( ) [M]	in.	1 1/4					
gas ( ) [M]	in.	3/4					
chimney	mm	100/150					

Performance and Efficiency Data			N 60 WH (min. - max.*)	N 80 WH (min. - max.*)	N 100 WH (min. - max.*)	N 115 WH (min. - max.*)	N 120 WH (min. - max.*)	N 150 WH (min. - max.*)
heat input (net)	G20/G25	kW	8,2 - 57,5	8,2 - 80,0	12,0 - 99,0	12,0 - 115,0	12,0 - 120,0	15,0 - 145,0
	G20Y20		7,8 - 54,4	7,8 - 75,7	11,4 - 93,7	11,4 - 108,9	11,4 - 113,6	14,2-137,3
	G31		8,4 - 57,5	8,4 - 80,0	12,5 - 99,0	12,5 - 115,0	12,5 - 120,0	14,0 - 150,0
heat output at 80/60°C	G20/G25	kW	8,0 - 55,8	8,0 - 77,8	11,8 - 96,5	11,8 - 112,2	11,8 - 117,1	14,7 - 142,5
heat output at 50/30°C	G20/G25	kW	8,8 - 60,7	8,8 - 84,4	12,9 - 105,2	12,9 - 122,1	12,9 - 127,4	16,2 - 154,0
heating efficiency 80/60°C	G20/G25	%	97,8 - 97,6	97,8 - 97,8	98,0 - 97,9	98,0 - 98,1	98,0 - 98,1	98,1 - 98,3
heating efficiency 50/30°C	G20/G25	%	107,9 - 105,5	107,9 - 105,5	107,8 - 106,2	107,8 - 106,2	107,8 - 106,2	107,8 - 106,0
useful efficiency at 30% (return at 30°C)		%	108,4	108,3	108,3	108,2	108,2	108,2
seasonal efficiency		%	93,0	93,0	93,0	93,0	93,0	93,0

* "min. - max." stands for "@Min output" and "@Max output"

ErP Data

boiler type and model		N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
condensing boiler	Y/N	Y	Y	Y	Y	Y	Y
low temp boiler	Y/N	Y	Y	Y	Y	Y	Y
combination heater	Y/N	N	N	N	N	N	N
useful heat output							
at 30% of rated heat output (P_1)	kW	18,7	26,0	32,2	37,5	39,1	47,1
at rated output and high-temp regime (P_4)	kW	55,8	77,8	96,5	112,2	117,1	142,5
useful efficiency							
at 30% of rated heat output (η_1)	%	97,6	97,6	97,4	97,5	97,5	97,4
at rated output and high-temp regime (η_4)	%	87,9	88,1	88,2	88,4	88,4	88,5
auxiliary electricity consumption (without pump)							
at full load (elmax)	kW	0,10	0,15	0,24	0,30	0,30	0,30
at part load (elmin)	kW	0,028	0,042	0,060	0,070	0,070	0,045
in standby mode (P_{SB})	kW	0,003	0,003	0,003	0,003	0,003	0,003
auxiliary electricity consumption (with pump)							
at full load (elmax)	kW	0,129	0,188	0,288	0,355	0,357	0,371
at part load (elmin)	kW	0,037	0,053	0,074	0,086	0,087	0,066
in standby mode (P_{SB})	kW	0,003	0,003	0,003	0,003	0,003	0,003
standby heat loss (P_{stby})	kW	0,07	0,07	0,12	0,12	0,12	0,15
annual energy consumption for space heating	Gj	98	132	167	191	199	240
sound power level indoors LWA	dB	58	58	59	61	61	63
seasonal space heating energy efficiency class		A	A	A	A	A	A

Combustion Data			N 60 WH (min. - max.*)	N 80 WH (min. - max*.)	N 100 WH (min. - max.*)	N 115 WH (min. - max.*)	N 120 WH (min. - max.*)	N 150 WH (min. - max.*)
chimney type(s)			B23, B23P, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)					
flue gas temperature at 80/60°C		°C	60,0 - 76,5	60,0 - 82,6	60,0 - 75,3	60,0 - 79,1	60,0 - 79,1	60,0 - 74,9
flue gas temperature at 50/30°C		°C	30,0 - 52,1	30,0 - 51,3	30,0 - 50,6	30,0 - 50,1	30,0 - 50,1	30,0 - 44,5
overheat flue gas temperature		°C	110					
max. flue gas pressure (incl. max wind condition)		Pa	200	230	250	300	300	300
max. chimney length (100/150)		m	25					16
mass flow rate of flue gases		g/s	3,5 - 25,0	3,5 - 35,3	5,1-43,1	5,3-49,7	5,3 - 51,8	62,7
max. condensate volume		kg/h	7,2	10,2	12,6	14,7	15,3	17,6
CO emissions		ppm	0 - 48	0 - 48	1 - 51	1 - 51	1 - 51	3 - 70
		mg/kWh	64,8	32,0	80,2	69,7	69,7	94,5
CO_2 contents (G20)	(± 0,1)	%	8,3 - 8,6	8,3 - 8,6	8,3 - 8,7	8,3 - 8,7	8,3 - 8,7	—
	(± 0,2)				—			8,6 - 9,1
CO_2 contents (G25) (± 0,2)		%	8,4 - 9,1					
CO_2 contents (G31)	(± 0,2)	%	10,0 - 10,5					—
	LF ± 0,2 HF +0 / -0,2				—			10,0 - 10,7
O_2 contents (G20/G20Y20)	(± 0,2)	%	6,1 - 5,5	6,1 - 5,5	6,1 - 5,4	6,1 - 5,4	6,1 - 5,4	—
	(± 0,3)				—			5,5 - 4,6
O_2 contents (G25)	(± 0,2)	%	5,7 - 4,4					
O_2 contents (G31)	(± 0,2)	%	5,7 - 4,9					—
	LF ± 0,3 HF +0 / -0,3				—			5,7 - 4,6
NOx level (weighted)		mg/kWh	32,6	32,1	39,8	37,0	37,0	37,5
NOx class			6					
Fan speed	G20/ G20Y20/ G25/G31	rpm	Refer to *"Adjustment of Fan Speeds" on page I-67*					
Ignition fan speed	G20/ G20Y20/ G25/G31	rpm	2300					2500

* "min. - max." stands for "@Min output" and "@Max output"

Electrical Data		N 60 WH	N 80 WH	N 100 WH	N115 WH	N 120 WH	N 150 WH
supply voltage / frequency / current	V / Hz / A	230 / 50 / 6					
protection class	IP	X4D					

Gas Data			N 60 WH (min. - max.*)	N 80 WH (min. - max.*)	N 100 WH (min. - max.*)	N 115 WH (min. - max.*)	N 120 WH (min. - max.*)	N 150 WH (min. - max.*)
gas type(s)			G20 - G20Y20 - G25 - G25.3 - G31					
gas pressure	G20 / G20Y20 (20 mbar)	mbar	17 - 25					
	G25 (25 mbar)	mbar	20 - 30					
	G25.3 (25 mbar)	mbar	18 - 33					
	G31 (30/37/50 mbar)	mbar	25,0-35,0 / 25,0-45,0 / 42,5-57,5					
gas flow rate (G20)**		m^3/h	0,85-6,10	0,84 - 8,44	1,22 -10,29	1,28-11,89	1,28 - 12,40	1,60 - 15,35
gas flow rate (G25)**		m^3/h	0,95-6,74	0,94 - 9,45	1,38 -11,74	1,38 -13,3	1,38 - 13,90	1,79 - 17,2
gas flow rate (G31)**		m^3/h	0,35-2,37	0,40 - 3,22	0,52 - 4,05	0,50 - 4,63	0,50 - 4,83	0,59 - 5,88

* "min. - max." stands for "@Min output" and "@Max output"

** 15°C, 1013.25 mbar, dry gas

Gas categories	Gas type	Pressure (mbar)	Country of destination
I2E(S,R)	G20	20	BE
I2H	G20	20	AT, CH, CZ, DK, EE, ES, FI, GB, GR, HR, HU, IE, IT, LT, LV, NO, PT, RO, SE, SI, SK, TR
I2E	G20	20	DE, PL, RO
I2ELL	G25	20	DE
I2EK	G20/G25.3	25	NL
I3P	G31	30/37/50	AT, BE, CH, CZ, ES, FR, GB, GR, HR, HU, IE, IT, LT, NL, PL, PT, SI, SK, RO, TR
II2E3P	G20/G31	20/37	PL
II2EK3P	G20/G25.3/G31	20/25/37	NL
II2L3P	G25/G31	25/37/50	FR
		25/30	RO
II2H3P	G20/G31	20/30	CZ, FI, RO
		20/37	CH, CZ, GR, HR, IT, LT, SI, SK, TR
		20/50	AT, CH, CZ, SK
II2Er3P	G20/G25/G31	20/25/37/50	FR

Appliances operating with gas categories I2E and I2H can also operate with G20Y20 gas type (G20 natural gas + 20% Hydrogen). Please check your applicable local regulations for compliance before any installation.

Hydraulic Data		N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
water content	l	19,3	17,6	26,3	25,2	25,2	28,3
pressure drop at ΔT = 20k	mbar	70,5	62,0	87,2	87,4	87,4	120
minimum operating pressure	bar	0,6					
maximum operating pressure	bar	6					
maximum boiler temperature	°C	85					

Pressure Drop Curve

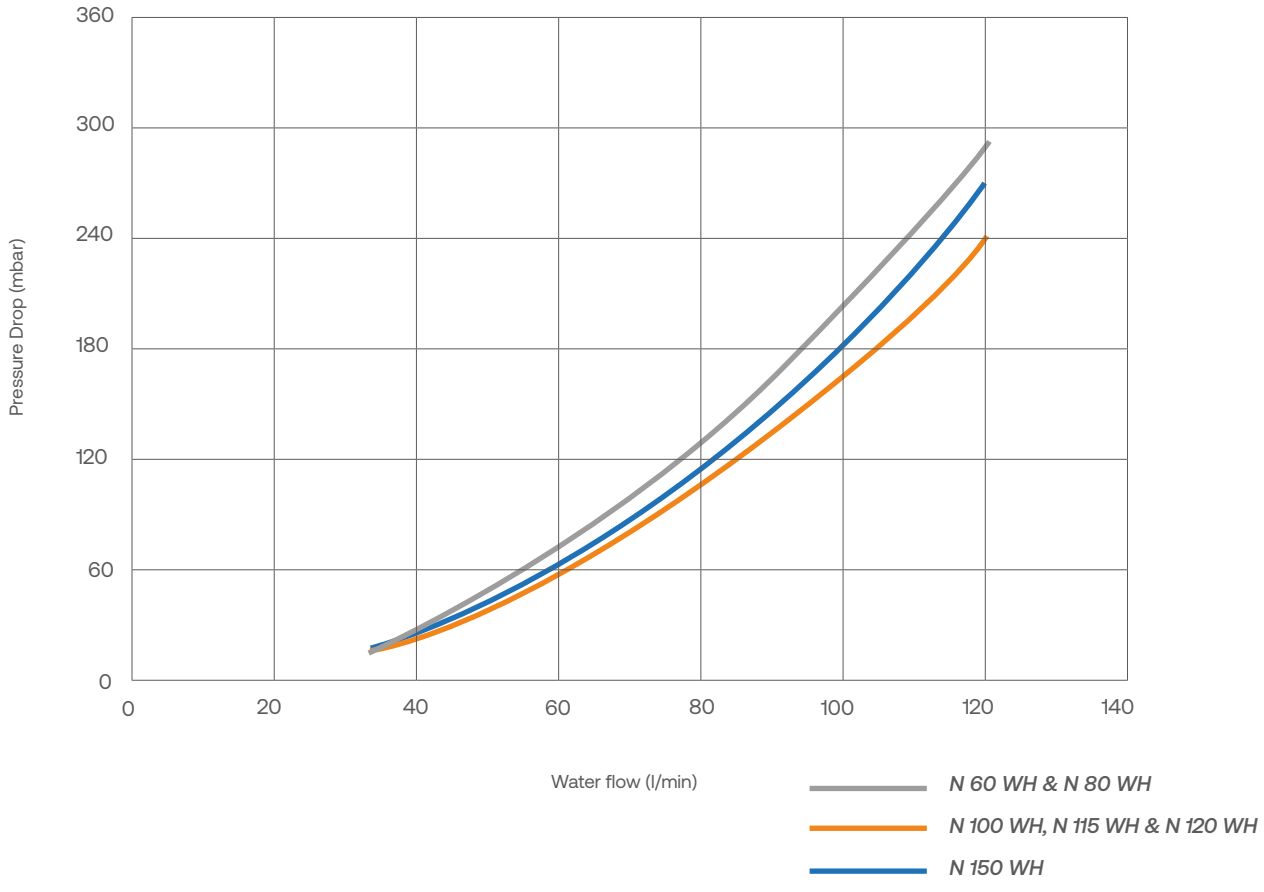


Fig. 7. Hydraulic pressure drop - N 60 WH to N 150 WH

Flow Rate		N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
minimum water flow rate at ΔT = 20k	l/min	40	57	70	80	83	86

Safety Instructions for the User

IF YOU SMELL GAS:

→ **DO NOT:**
- **Use an open flame**
- **Smoke**
- **Use electrical devices (phones, doorbells, etc.) or switches**

→ **DO:**
- **Close the gas supply**
- **Open all doors and windows to ventilate the room**
- **Inform your neighbours of the danger by knocking at the doors.**
- **Get out of the building**
- **Call your installer or gas company**

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- For safety reasons, we recommend that smoke and carbon monoxide detectors are installed in the living areas of your building according to the applicable local regulations.
- If smoke is present, shut down the appliance, ventilate the room and exit the building. Then call your installer to investigate and solve the problem.
- Do not store any flammable, corrosive or explosive products near the appliance.
- Do not modify or deactivate any component, nor any safety device in the system.
- Do not operate the appliance when the casing is open.

- Do not modify any part of the electrical system or access internal components.
- Do not touch the appliance with any wet body parts when the appliance is supplied with electrical power.

- Do not modify or block the condensate outlet(s).
- Do not open any sealed part or component. Failure to comply with this instruction can result in damages and/or injuries.
- The sight glass can be very hot when the appliance is in operation. Do not touch the sight glass or its immediate surroundings.
- Make sure that the appliance and the heating system are prevented from freezing.
- In case of water leakage, disconnect the appliance from the power supply and gas source, turn off the water supply and call a qualified professional.

- **If works need to be performed close to the appliance (e.g. in the boiler room or close to the air inlets), make sure that the appliance is shut down to prevent the ingress and accumulation of dust.**
- **In case of abnormal noises in the system or the appliance, please notify a qualified professional.**
- **Any setting of the appliance by the end-user using the installer-specific functions, that would cause the appliance to malfunction, could result in damages to the equipment. Only the end-user settings described in this manual are available to the end-user.**
- **If a condensate neutralisation system is installed, have it checked and cleaned at least once a year.**

When cleaning the appliance cabinet panels, do not use solvents or aggressive/abrasive cleaning agents. Wipe the surfaces using a soft clean cloth, water and soap.

Periodic checks

- **Check regularly that the water pressure of the system is at least 0,8 bar when cold. If not, top up the system with water as instructed by the installer at appliance installation or call your installer.**
- **If a topping up of the system is required to maintain the minimum recommended water pressure, always turn the appliance off and only add small quantities of water at a time. If a large amount of cold water is added in a hot appliance, the appliance can be damaged permanently.**
- **If the system needs to be topped up regularly, there may be a leak in the system. In that case, call your installer.**
- **Check regularly that there is no water below the appliance. If there is, call your installer**
- **Check regularly that there is no error code displayed on the control panel screen. Call your installer as required.**

Disposal of the Product at the End of Service Life

At the end of service life, the product should not be disposed of as solid urban waste, but should be handed over to a differentiated waste collection centre.

Starting the Appliance

The first start-up of the boiler after its installation must be performed by a qualified professional, according to the procedure in "Start-up and Commissioning" on page I-50.

Conditions:

Procedure:

1. Make sure that the power supply cable is connected to the boiler.
2. Press the On/Off switch located on the right side of the control panel.

When in the ON position, the switch remains illuminated.

Follow-on tasks:

Check the pressure of the circuit in operation. It should be between 1,2 and 6 bar (with pump on).

Stopping the Appliance

Conditions:

None

Procedure:

1. Press the On/Off switch located on the right side of the control panel.

When in the OFF position, the switch internal light comes out.

2. To completely cut the power supply to the boiler, either disconnect the power supply cable from the boiler, or use the external circuit breaker.

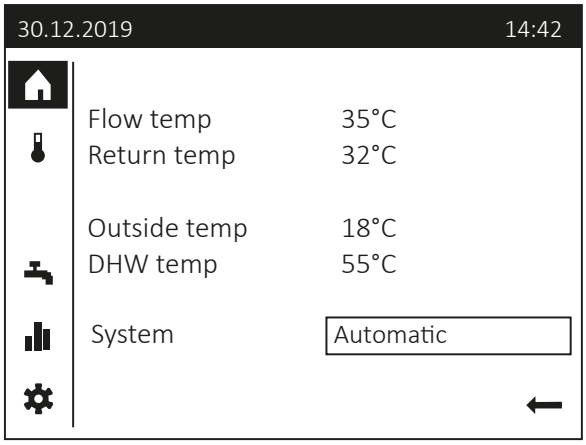
Follow-on tasks:

None

What to Do if...	Cause	Action
Boiler does not start	No power supply	1. Check that the power button is in ON position (illuminated). 2. Make sure the power supply is connected to the mains. 3. Check the external power supply box (circuit breaker) and reset it as required.
Error code 133 displayed	Time out for flame ignition	1. Open controller removable panel and depress Reset button. Refer to ***"Control Panel and Main Functions" on page G-10*** 2. If the fault appears several times, call your installer.
Error code 111 displayed	Temperature limit switch open	Check that radiator valves are open/that there is flow across the boiler.
Error code 105 displayed Maintenance icon ( )	Maintenance message	Select the Information icon ( ) for details. Refer to ***"Symbols and Messages on the Control Panel" on page G-11.***
Error code 118 displayed	Low water pressure	Refill the heating system.

To remove an error code from the display temporarily and go back to the Home screen, depress the rotary selector for more than 3 seconds.

Operating the Controller - End User Level



Some icons and parameters are only visible if the circuit is installed and enabled.

Icons	In the work area	Selectable/ Adjustable Parameters	Remark
Home	Boiler temp: ---°C	—	These items indicate the current temperatures, as detected by the system sensors
	Outside temp: ---°C	—	
	DHW temp : --°C		
	▸ System	▹ Off ▹ Automatic	In the 'Off' position, the plant or zones are switched off. Energy consumption is reduced to a minimum. The building or zones remain, however, protected (e.g. in protection mode)
Temp. setting	▸ Operating mode	▹ Protection ▹ Automatic ▹ Reduced ▹ Comfort	In "Protection", the system operates in frost protection mode. In Automatic, the system is operated as per the time switch program, or energy savings functions (e.g. summer/winter mode).
	▸ Temporary	▹ Warmer ▹ ... ▹ Cooler	Temporary temperature adjustment and time program are available exclusively to the Automatic operating mode. Setting "..." disables the function.
	▸ Comfort setpoint	▹ --°C	Displays the defined setpoint (or default if no change was made). Value can be changed here using the rotary selector.

To display the information through this function, make sure that at least one heating circuit is activated (Pgm 5710, "On").

Icons	In the work area	Selectable/ Adjustable Parameters	Remark
DHW temp. setting	▸ Time program	▹ Monday ▹ Tuesday ▹ ... ▹ Sunday	Clock to be setup from 00 to 24 (default: 06:00 to 22:00). Up to 3 phases of heating per day can be set per zone.
	▸ Operating mode	▹ Off ▹ On	When "off", Hot water heating is switched off; when "On", Hot water is heated to the nominal setpoint as per time program
	▸ Temporary	▹ ... ▹ Recharging	"Recharging" is used to bring the storage tank to the nominal setpoint when there was a high consumption. "..." deactivates the function.
	▸ Nominal setpoint	▹ --°C	Displays the defined setpoint (or default if no change was made). Value can be changed here using the rotary selector.
	▸ Time program	—	Active if operating mode is set to "On".
Info	▸ Error (error code and description)	—	
	▸ Maintenance (maintenance code and description)	—	
	Boiler ▸ Boiler Temp .... °C ▸ Water pressure ... 0bar	—	
	Heating zone 1 ▸ Off ▸ Room temperature ... °C	—	
	Domestic hot water ▸ Charged ▸ DHW temp ... °C	—	
	Outside temp ▸ Outside temp ...°C ▸ Outside temp min ... °C ▸ Outside temp max ... °C	—	
	Customer service ▸ Tel. Number		Can be defined at commissioning

Icons	In the work area	Selectable/ Adjustable Parameters	Remark
Settings	Regional settings ▸ Regional settings (1/3)	▷ Time 01:00 ▷ Date 01.01.2030	
	▸ Regional settings (2/3)	▷ Start of summertime 25.03 ▷ End of summertime 25.10	
	▸ Regional settings (3/3)	▷ Language	(English - Deutsch - Français - Italiano - Nederlands - Español - Portuguese - Dansk - Suomi - Svenska - polski - Slovensky - Česky - Slovenščina - русский - Magyar - Ελληνικά - Türkce - Serbian - Lietuvių)
	Special operations ▸ Special operations (1/3)	▷ Chimney sweep function	These functions can be set to “On” or “Off”.
	▸ Special operations (2/3)	▷ Manual control	When set to “On”, the Chimney Sweep Function remains so for 1 hour, then turns off automatically.
	▸ Special operations (3/3)	▷ Economy mode --	
	Settings ▸ Heating zone (1/2)	▷ Comfort setpoint ▷ Reduced setpoint ▷ Frost protection setpoint	The setpoints can be adjusted here, in steps of 0.5°C
	▸ Heating zone (2/2)	▷ Heating curve slope ▷ Summer/winter heating limit	Heating curve can be defined here when outside temp is used to control the system temperature
	Expert ▸ Select user level	▷ Enduser ▷ Commissioning ▷ Engineer ▷ OEM	
	▸ Enter password	▷ - - - -	For Engineer and OEM access

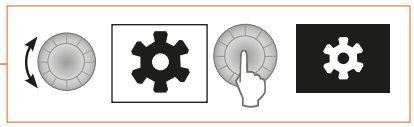
A password is required to access the Engineer level and login will not be possible if you do not enter it. Please contact your AIC representative for more information.

Basic Settings and Information

Symbols used for the **operation of the selector**:

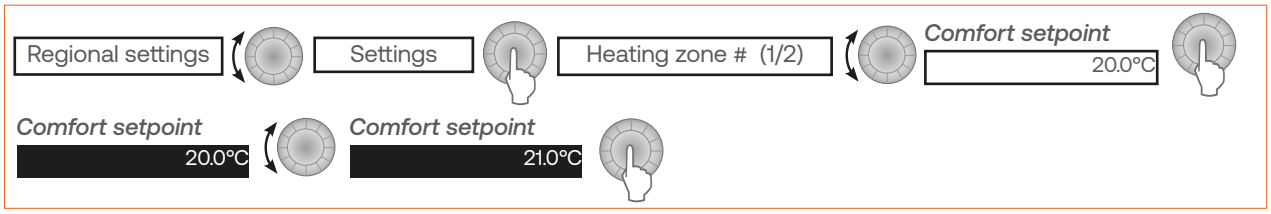
- turn the selector to the left or to the right.
- depress shortly the rotary selector.
- turn the selector to adjust the value, then depress the selector to validate.

1 - Time and Date Adjustment



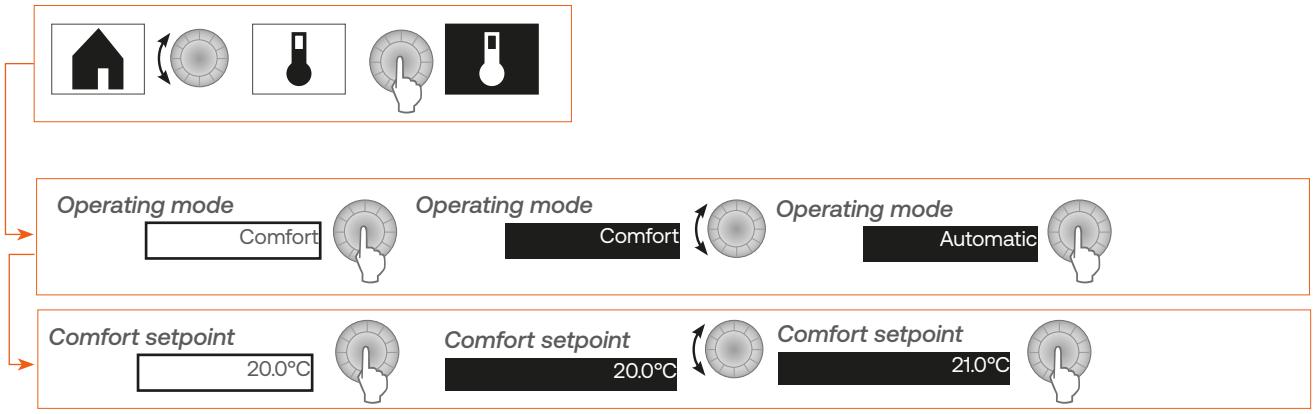
2 - Language Selection

3 - Defining setpoints (Heating)

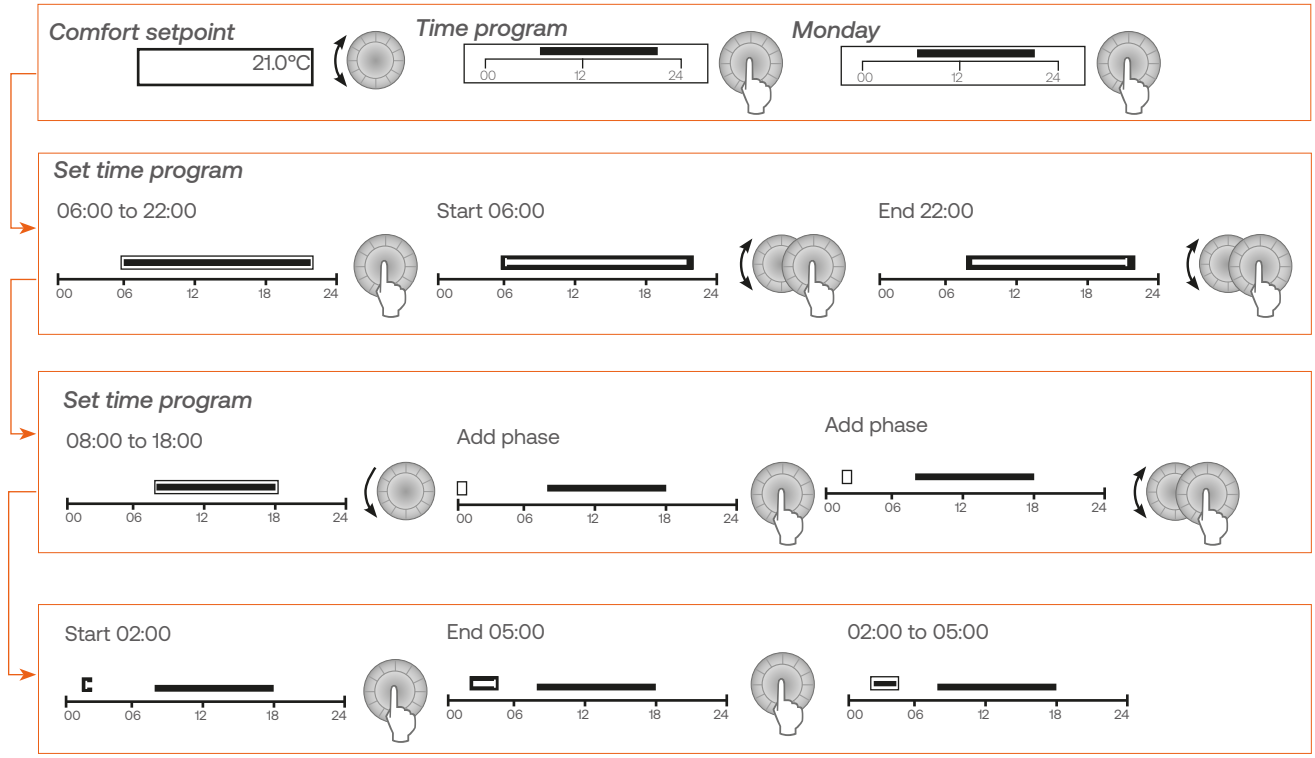


Proceed the same way to adjust "Reduced setpoint" and "Frost protection setpoint".

4 - Heating Settings - Quick Setup

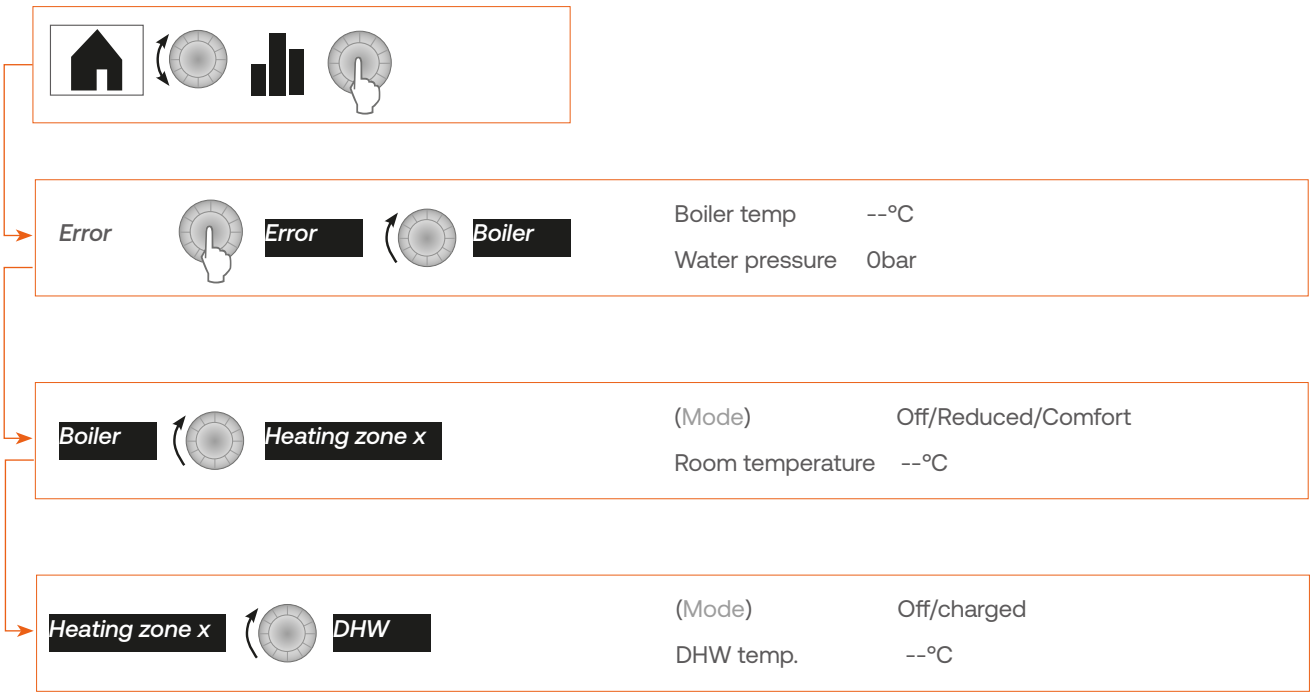


5 - Time Program Definition



- *Up to 3 phases can be defined per day.*
- *The programming process is the same for Heating and Domestic Hot Water circuits.*

6 - Accessing System Pressure and Temperatures



Safety Instructions for the Installation

- All connections (electrical, flue pipe, hydraulic, gas) must be carried out in accordance with current standards and regulations in force.
- If the appliance is installed against a wall made of heat-sensitive material, such as wood, a suitable insulation must be provided by the installer between the appliance and the wall surface.
- Comply with the clearance dimensions provided in this manual, to prevent any hot part of the appliance from being too close to the walls or any combustible material.
- Make sure to maintain a safe distance of 200 mm from flammable materials; the boiler room may not be used as a storage location for material.
- Do not store any flammable, corrosive or explosive products next to the appliance.
- Do not install the appliance in a location where chemical vapours or dust are present in the ambient or combustion air.
- If the appliance is used on professional premises such as hairdresser's, cleaning company, painter's, etc. where chloride products, solvents, paints, dust, etc. are likely to contaminate the air, make sure to install the appliance in a dedicated boiler room so that the appliance is supplied with clean combustion air.
- Install a condensate neutralisation system according to the applicable local regulations and standards.
- If the appliance is intended to be used with G31 liquefied petroleum gas (propane), installing the appliance below ground level can be hazardous and prohibited in some countries. Please refer to applicable local regulations for installation requirements.

- When the appliance is connected to the electrical network, it must be earthed.
- Make sure that a fuse or circuit breaker of the recommended rating (B10A or according to applicable local regulations) is installed outside the appliance, so as to be able to shut the power down.
- Do not touch the appliance with any wet body parts when it is supplied with electrical power.
- Before performing any operation on the electrical circuit, isolate the electrical supply of the appliance through the external power-cutting device (fuse, circuit breaker, etc.)

- The appliance must be installed in a dry and protected area, with an ambient temperature comprised between 0 and 45°C.
- Make sure to protect the appliance and the water circuit against freezing.
- The appliance must be installed to ensure easy access at all times.
- Use an appropriate means of handling, suitable to the appliance size and weight.
- Floor-standing appliances must be installed on a level base and wall-hung appliances, on a vertically plumb support. Material used for base and support must have sufficient strength to support the appliance weight, water included.
- Make sure that the appliance is installed with a sufficient height to allow the condensates to flow to the sewer, and/or allow the installation of a condensate neutralisation system (as required).
- When lifting, moving or installing the appliance, be careful not to drop it. Once in position, make sure that the appliance is secured.
- Install all pipes and ducts without stress to prevent any leaks from occurring.

Handling the Product

- **This appliance requires two people to move and handle it, to prevent it from falling. Make sure to comply with applicable local standards and regulations on product handling.**
- **It is prohibited to handle the boiler using protruding components or rest the boiler on protruding components.**
- **Failure to comply with these recommendations can result in damage to the boiler or injuries to the personnel**

Using a hand truck or another person, move the appliance in its packaging close to the installation location.

Unpacking the Product

The boiler is delivered in a cardboard box:

1. Carefully remove the cardboard packaging and protections.
2. Discard packaging according to applicable local regulations.

Installing and Preparing the Boiler

1. Install the wall bracket to support the boiler, see procedure opposite and related figure. (See ***Fig. 8)***.

Make sure to comply with the recommended clearances for the boiler installation, refer to *"Dimensions and Clearances" on page G-12*.

2. With the help of a second person, install the boiler on the wall bracket and make sure it is secured.

Follow-on task(s):

1. Install the condensate trap, see ***"Installing and Removing the Condensate Trap" on page I-29.***
2. Perform gas conversion using the optional kit, as required. Refer to ***"Conversion to Another Gas Type" on page I-66***.

Installing the Wall Bracket

Tools and Material:

- Pencil
- Tape measure or equivalent
- Spirit level or equivalent
- Power drill and a Ø 10 mm drill bit

Installation Procedure:

1. Mark reference lines on the wall (centerline, boiler sides).
2. Mark the drilling locations according to the dimensions shown in the figure below. Make sure the marks are level.
3. Drill six holes in the supporting wall.
4. Fasten the bracket to the wall using the hardware provided with the boiler.

Follow-on task(s):

1. Install the boiler on the wall bracket.

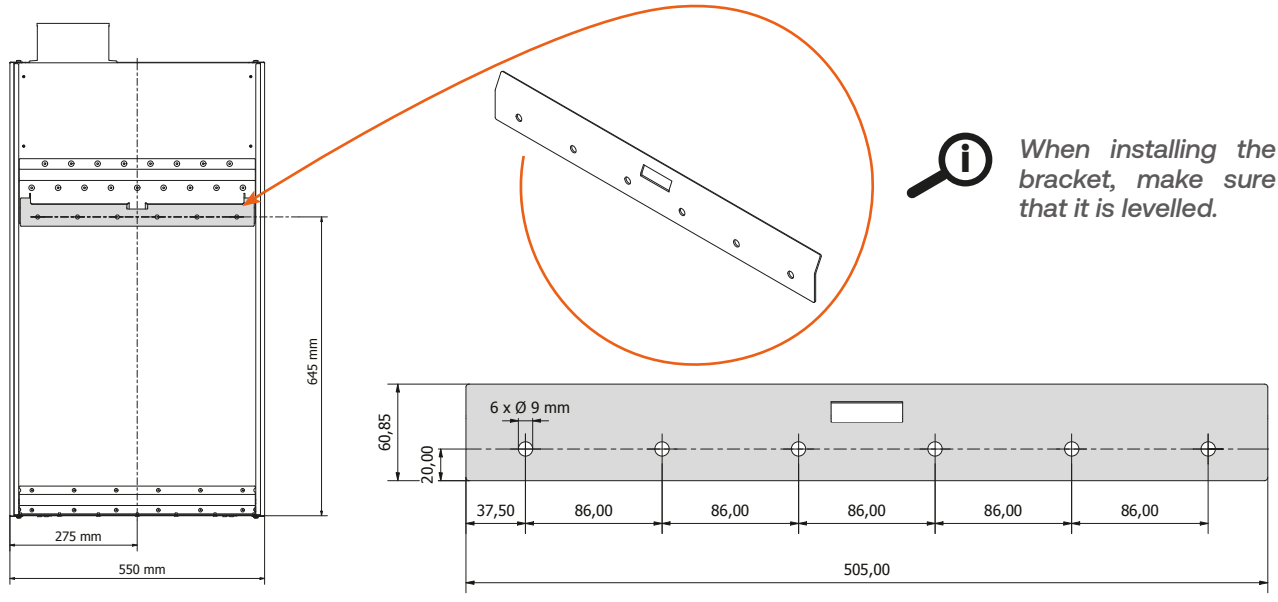


Fig. 8. Wall bracket Installation

Installing and Removing the Condensate Trap

Conditions: OFF

Tools and Material:

The following, provided with the boiler:

- Condensate trap
- Clip
- Adjustable hose (175 mm to 390 mm)

First Installation:

1. Install the O-ring (**1**) on the boiler connection (**9**), at the bottom of the boiler.
2. Slide the fitting (**8**) end of the condensate trap body (**6**) on the boiler connection (**9**).
3. Insert clip (**2**) into the fitting (**8**) to lock the condensate trap in position.
4. Connect the adjustable hose to the condensate trap connection (**4**).
5. Adjust the hose length by pulling on the hose as much as required (max. length : 390 mm).
6. Connect the condensate trap hose to a condensate neutralisation system if required, or directly to the drain.

Removal Procedure for maintenance:

1. Disconnect the hose from the condensate trap connection (**4**).
2. Holding the condensate trap body (**6**) with one hand, rotate the locking ring (**7**) counterclockwise to unlock. Retain ring for reinstallation.
3. Pull the condensate trap body (**6**) away from the fitting (**8**).

At removal, make sure not to lose the condensate trap seal (3) and ball (5), and to retain them for later reinstallation.

Installation Procedure after maintenance:

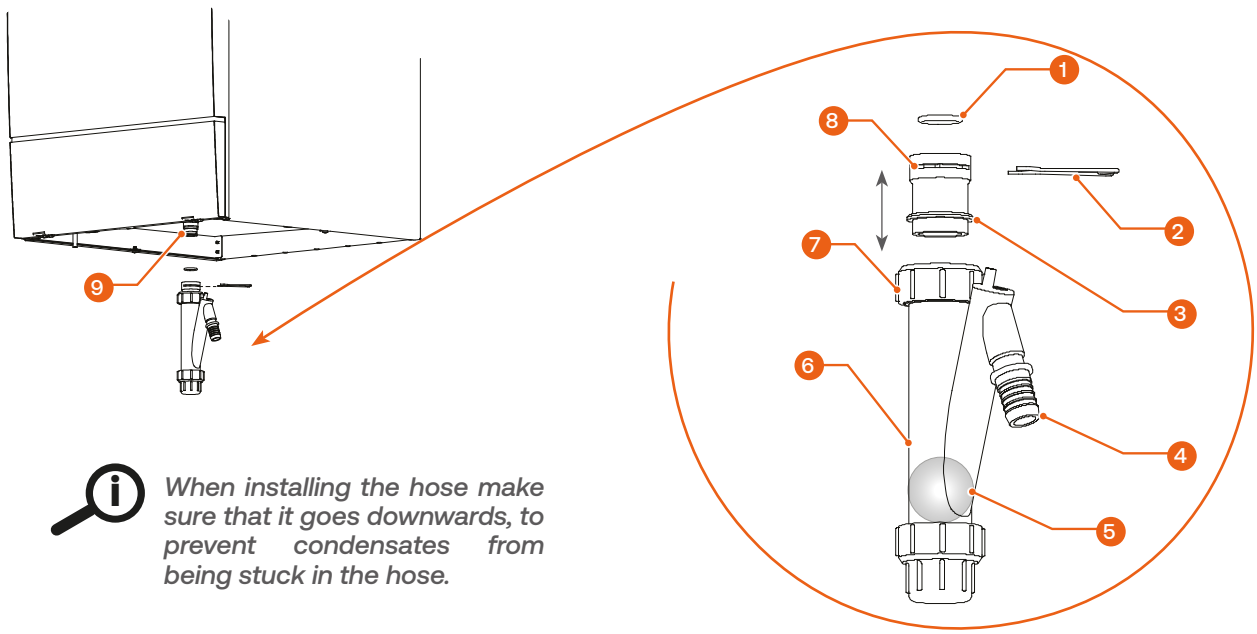
1. Verify that the ball (**5**) is inside the condensate trap body (**6**) and install the upper seal (**3**).

For correct operation of the condensate trap, make sure that the inner ball and upper seal are installed.

2. Slide the condensate trap body on the fitting (**8**).
3. Screw the locking ring (**7**) to lock in position
4. Connect the adjustable hose to the condensate trap connection (**4**).

Follow-on task(s):

1. Before operating the boiler, fill the syphon with water by pouring water into the flue duct.



When installing the hose make sure that it goes downwards, to prevent condensates from being stuck in the hose.

Fig. 9. Condensate Trap Installation

Removing and Installing the Access Panels

Conditions: OFF

Tools and Material:

- Screwdriver, crosshead

Removal Procedure:

Front Panel

1. Remove three bottom screws (**1**). Retain for reinstallation.
2. Pull the bottom of the front panel towards you, then up to disengage the front panel from the top panel groove.

Top panel

1. Remove two screws (**2**) from the left and right top corners of the boiler frame. Retain for reinstallation.
2. Release two side screws (**3**) from the top of the left and right side panels. Retain for reinstallation.
3. Slightly pull outwards the top of the side panels to disengage the top panel and slide it out.

Do not use too much force when pulling the side panels outwards, to prevent the panels from warping. Failure to comply can damage the boiler casing permanently.

4. Lift the top panel, from the front section, and slide it out from under the rear top panel.

Installation procedure

The top panel must be installed before installing the front panel.

Top panel

1. Locate top panel into position, by pulling slightly outwards the side panels.

Do not use too much force when pulling the side panels outwards, to prevent the panels from warping. Failure to comply can damage the boiler casing permanently.

2. Install two side screws (**3**) at the top of the left and right side panels.
3. Install two screws (**2**) in the left and right top corners of the boiler frame.

Font Panel

1. Engage the top of the front panel into the groove of the top panel.
2. Push the bottom of the front panel down toward the boiler frame
3. Install three retained screws (**1**) at the bottom of the boiler frame.

Follow-on task(s):

None

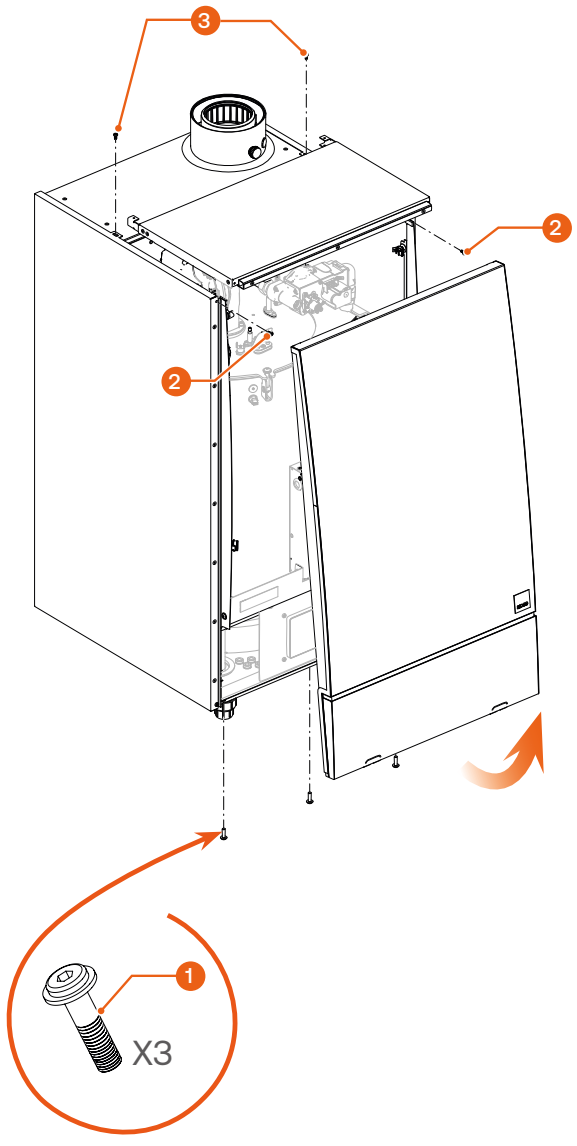


Fig. 10. Removing/Installing the Access Panels

Requirements for the Hydraulic Connections

Make sure that the circuit is provided with a safety pressure relief valve and an expansion vessel that is appropriate for the appliance power and the system size, and the increase in temperature and pressure.

- **The safety group must be installed no more than 1 m from the appliance on the pipe with a diameter no less than that of the valve. No isolating valve may be installed between the appliance and the safety valve. The safety valve drainage must be connected into a pipe with a diameter no less than that of the valve itself.**
- **The pressure of the water network used to fill the appliance must be at least 0,8 bar.**
- **If the supply pressure from the network is higher than 6 bar, make sure to install a pressure reducing valve set at 4,5 bar.**
- **Verify the water quality of the network according to the requirements defined in this manual.**
- **In case inhibitors are used in the system, consult the manufacturer for product suitability.**
- **Any antifreeze used in the primary circuit must comply with Public Hygiene Regulations and must be non-toxic. A food-grade Propylene Glycol is recommended. It must be diluted according to the ratio recommended in the local regulations, but with a maximum ratio of 30%.**
- **Consult the appliance manufacturer to determine the compatibility of the antifreeze product with the appliance materials.**
- **It is recommended to install the following devices in the system to prevent water contamination :**
  - **Water filter and/or dirt separator installed on the return circuit. Have the water circulate for 2 hours after installation and prior to appliance start up in order to clean the circuit of contaminants. Clean the filter after filling the system.**
  - **Plate heat exchanger, combined with a micro-pollutant separator, which will protect the appliance from any contaminants present in an old heating system, where fittings and pipes can be corroded. This is also mandatory for open systems where oxygen can penetrate the system and cause corrosion.**

▷ *The use of antifreeze in the primary circuit will lead to a reduction in the heating performance. The higher the concentration of antifreeze in the circuit, the lower the performance. Maximum output must be adjusted accordingly.*

▷ *The circuit diagrams are theoretical representations that do not necessarily include all the required safety devices. Make sure to correctly plan your system according to the applicable local regulations and standard practices.*

Water Quality Requirements to Prevent Scaling and Corrosion

To prevent the formation of scale and sludge in a closed heating circuit through the penetration of oxygen and carbonates, follow the recommendations below:

- Before filling the system, clean it according to standard EN14336. Chemical cleaning agents can be used.
- If the circuit is in bad condition, or the cleaning operation was not efficient, or there is a large volume of water in the system (e.g. cascade), it is recommended to separate the appliance from the heating circuit using a plate-to-plate heat exchanger or an equivalent accessory. In that case, it is recommended to install a hydrocyclone or magnetic filter on the system side.
- Limit the fill operations. To control the quantity of water added into the system, install a water meter on the filling line of the primary circuit. No more than 5% of the total content of the system is allowed annually.
- Automatic filling systems are not recommended unless the fill frequency is checked and the levels of scale and corrosion inhibitor are maintained at an appropriate level.
- If the system needs to be refilled frequently, check for leaks in the primary circuit.
- Inhibitors may be used according to standard EN 14868.
- An air separator (on the appliance supply circuit) combined with a dirt separator (upstream of the appliance) must be installed according to the manufacturer's instructions.
- Additives can be used to keep the oxygen in solution in the water.
- Use the additives in accordance with the instructions of the manufacturer of the water treatment product.

Water Hardness

- If the hardness of the fill water is higher than 20° fH (11,2° dH), soften it. At commissioning, the water should be soft.
- Check the water hardness regularly and enter the values in the maintenance log sheet (provided at the end of the manual).

Water hardness	°fH	°dH	mmolCa(HCO3)2 / l
Very soft	0 - 7	0 - 3,9	0 - 0,7
Soft	7 - 15	3,9 - 8,4	0,7 - 1,5
Fairly hard	15 - 25	8,4 - 14	1,5 - 2,5
Hard	25 - 42	14 - 23,5	2,5 - 4,2
Very hard	> 42	> 23,5	> 4,2

Water Parameters

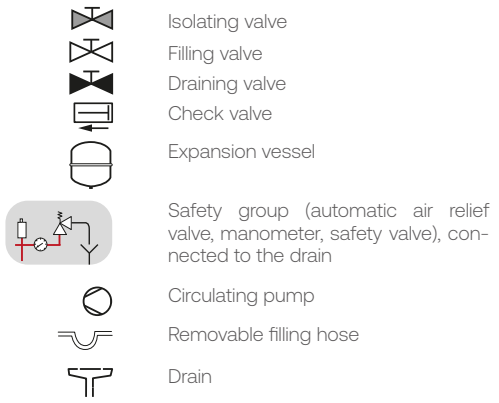
- In addition to the oxygen and the water hardness, other parameters of the water must be checked. Treat the water if the measured values are outside the range of the table below.
- In case the system operates at low temperature, it may be necessary to use an agent that inhibits the spread of bacteria.

Water Parameters	Range
Acidity	8,2 < pH < 9,0
Conductivity	< 400 µS/cm (at 25°C)
Chlorides	< 125 mg/l
Iron	< 0,5 mg/l
Copper	< 0,1 mg/l

Additional requirements for N 150 WH

- **The appliance must be installed in tight hydraulic systems. Annual refills are allowed up 5% of the total system water volume. Higher volumes indicate leaks in the system, which must be repaired.**
- **The installation of a water meter in the refill section is therefore recommended in order to monitor the added volume, and is essential if an automatic refill device is used.**
- **If a water meter IS installed in the refill section, for boiler operation at setpoints above 65°C, the maximum temperature difference between boiler water inlet (return) and outlet (supply) MUST BE lower than 20 K.**
- **Record added water volumes in *"Water Parameters - Log Sheet" on page I-87*.**
- **If NO water meter is installed in the refill section, for boiler operation at setpoints higher than 60°C, the maximum temperature difference between boiler water inlet (return) and outlet (supply) MUST BE lower than 10 K.**
- **Failure to comply with these instructions can damage the system. In case of doubt, please contact your AIC representative for advice.**

Typical Hydraulic Connections - Heating Circuit



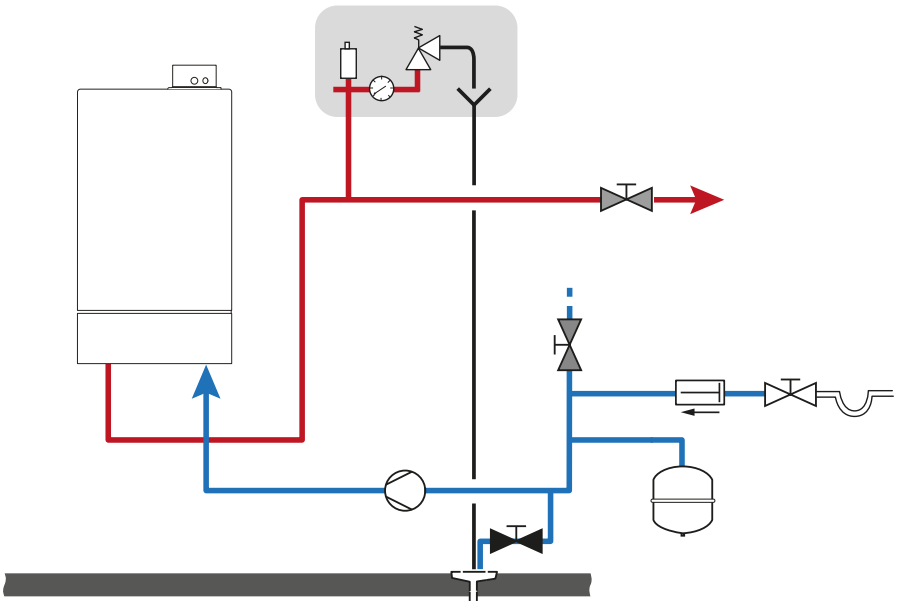


Fig. 11. Typical Heating System

Hydraulic Connections - Cascaded boilers, with External Domestic Hot Water Tank and Plate Heat Exchanger

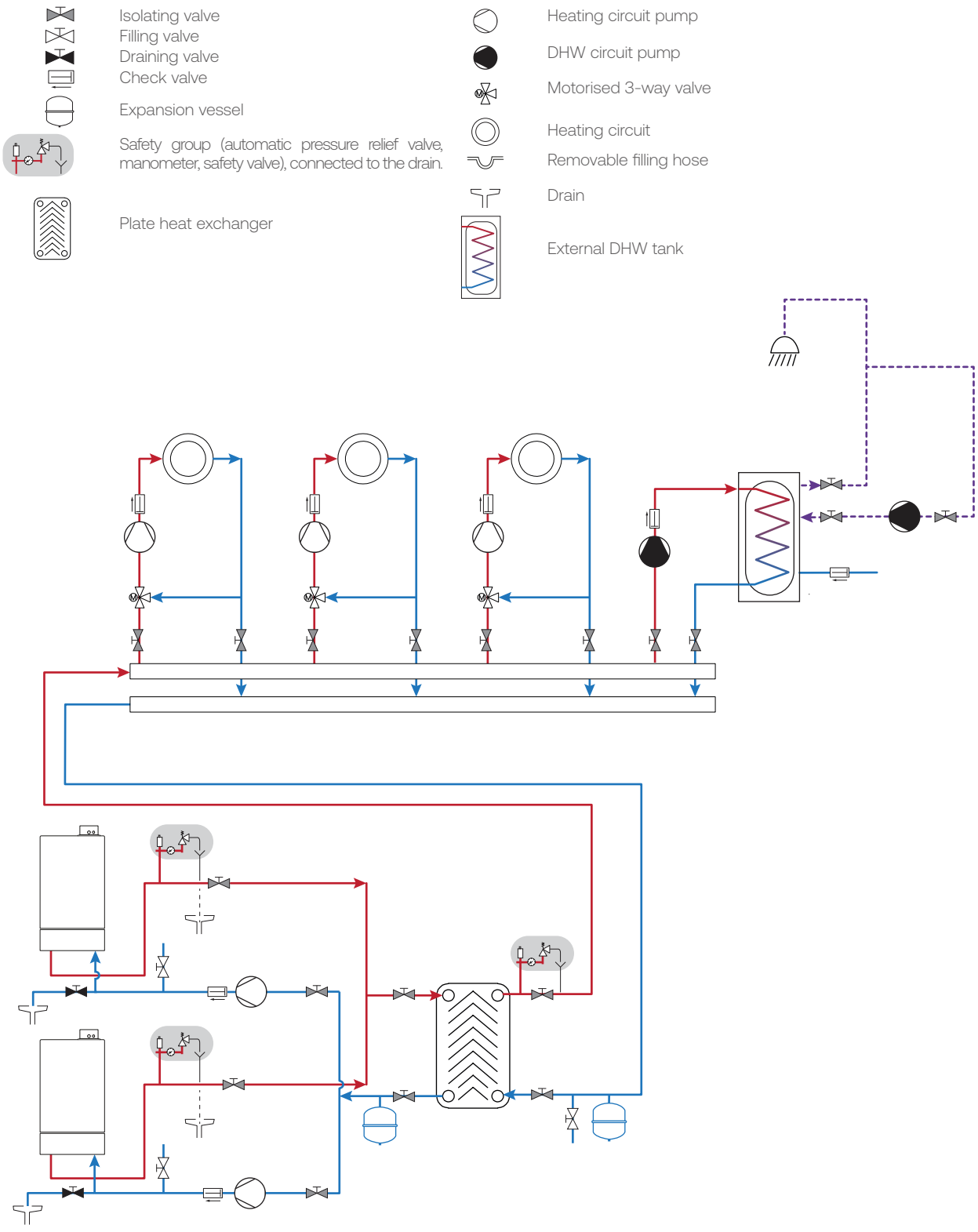


Fig. 12. Cascaded Boilers, with External Domestic Hot Water Tank and Plate Heat Exchanger

Hydraulic Connections - Cascaded boilers, with External Domestic Hot Water Tank and Low Loss Header

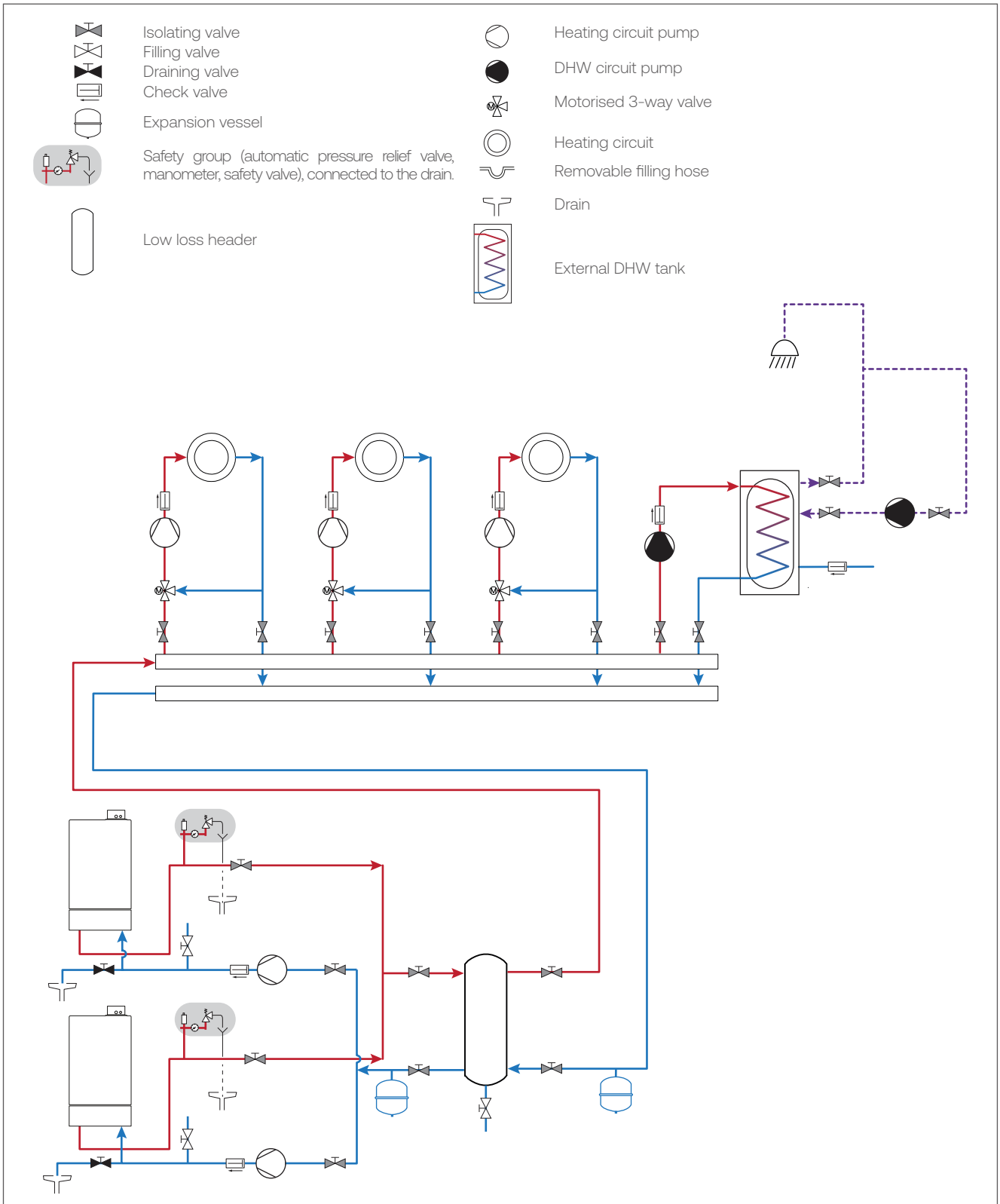


Fig. 13. Cascaded Boilers, with External Domestic Hot Water Tank and Low Loss Header

Safety Instructions for the Gas Connection

- When connecting the gas circuit, make sure to comply with all applicable local regulations and standards. The circuit will be equipped with a meter and a gas pressure regulator if required.
- Check the general condition of the gas valve, that it is free of damages and securely connected inside the appliance. Do not operate the appliance with a damaged gas valve.
- Do not exceed the maximum gas pressure.
- The conversion of the appliance from natural gas to G31 liquefied petroleum gas (propane) or the reverse can only be performed by a qualified professional.
- Gas conversion shall be performed according to applicable local regulations. It is prohibited in some countries (e.g. Belgium). Perform conversion according to the gas category specified for your country on the appliance data plate.
- Bleed the gas duct and check thoroughly if all the internal and external gas pipes and connections are tight.
- After gas circuit connection, check that there is no leak.
- Use a gas detection device or perform a bubble test to check for gas leaks. Never use an open flame, as it could result in an explosion.

- Make sure that the gas type and pressure of the distribution network are compatible with the appliance, as per the information on the appliance data plate.
- The OFFSET (A) setting of the gas valve is factory-preset and sealed. In some countries, it is prohibited to change its setting. Please refer to applicable local regulations.
- The CO_2, gas flow rate, air flow rate and air/gas supply parameters are factory-preset and may not be modified in certain countries. Please refer to applicable local regulations.

Control the gas pressure and consumption at appliance start up, and perform the adjustment procedure provided in the commissioning section of this manual.

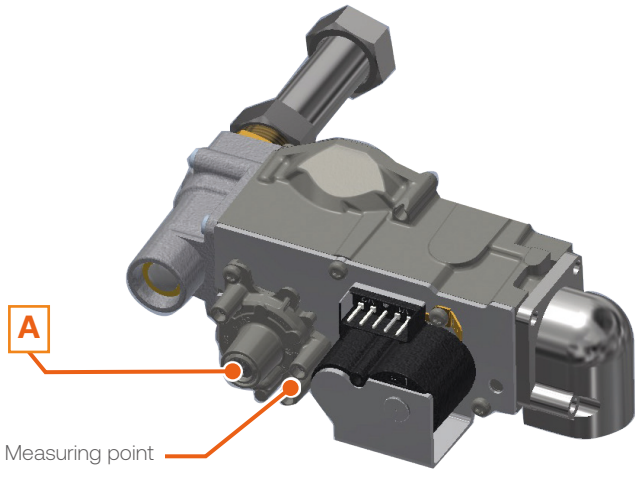


FIG. 14. Nesta Chrome Gas Valve

Safety Instructions for the Chimney Connections

- Verify installed combustion air and flue gas piping are tight and meet all provided instructions and applicable codes and standards.
- Failure to properly support the flue system can cause failure, resulting in flue gases contaminating the ambient air.
- The appliance must be equipped with flue system components from the same manufacturer and be approved by the appliance manufacturer. Ensure that the pipe and connection diameters all match to prevent any leaks from occurring.
- Any gas-fired appliance generates carbon monoxide. Failure to install carbon monoxide detectors with alarm in the boiler room can result in serious injury, or death. Refer to applicable local regulations.
- A condensate neutralisation system needs to be installed according to the applicable local regulations and standards. It must be cleaned and serviced regularly.

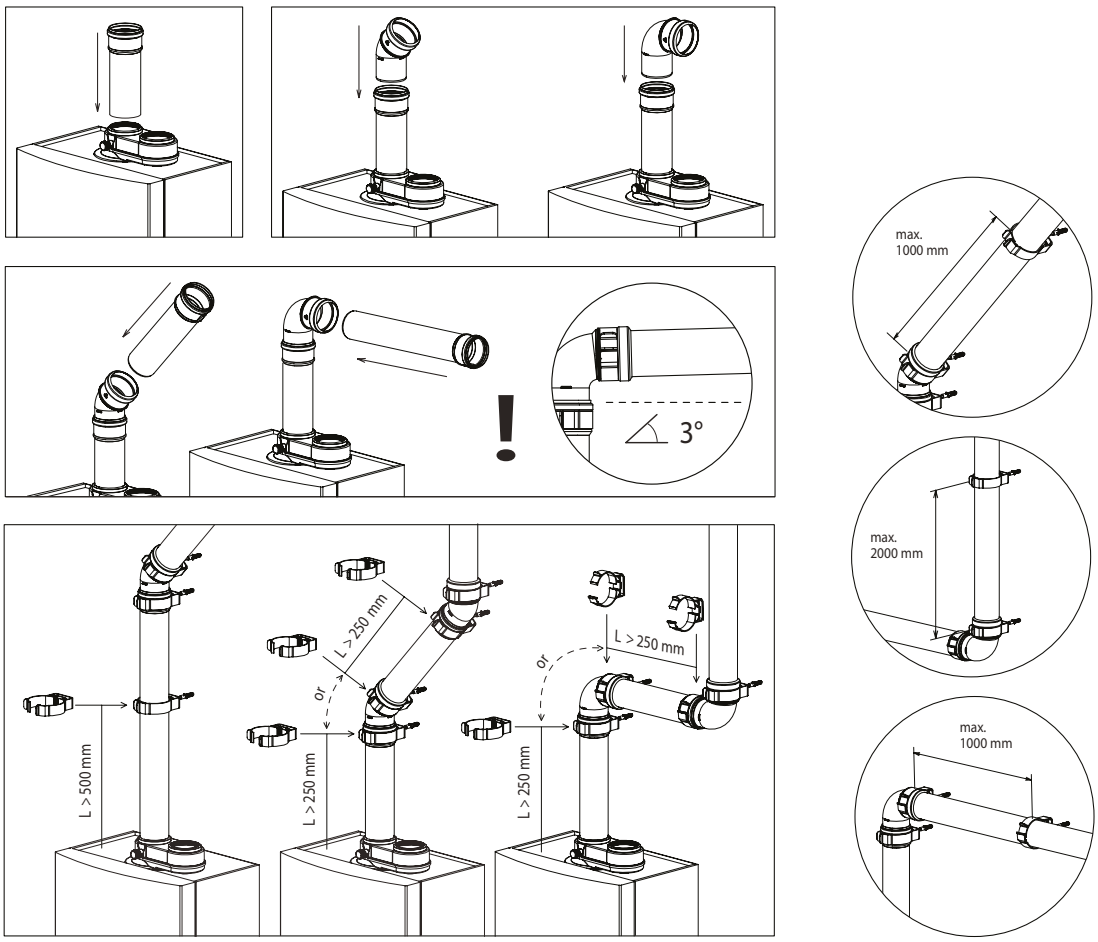
- Do not install the appliance into a common flue pipe with appliances operating with a different type of gas or with oil. This will cause flue gas spillage or appliance malfunction. Please contact your AIC Technical Support for more information.
- A condensation outlet connected to the sewer must be fitted close to the appliance.
- Make sure to secure the flue piping to a solid structure.
- Exclusively use the provided brackets to support the flue system.

- When assembling the pipes, make sure not to put any stress on the components.
- Install the horizontal flue pipes with a slight slope of 5 cm per meter (3°) back towards the appliance.
- It is mandatory to ventilate the boiler room. The high or low air vent opening dimensions depend on the appliance power and the boiler room size. Refer to the local regulations in force.
- If the combustion air inlet is located in an area likely to cause or contain contamination, or if products which could contaminate the air cannot be removed, the combustion air must be repiped and terminated at another location.
- If the appliance is used on professional premises such as hairdresser's, cleaning company, painter's, etc. where chloride products, solvents, paints, dust etc. are likely to contaminate the air, make sure to install the appliance in a dedicated boiler room so that the appliance is supplied with clean combustion air.
- In the case of parallel flue systems, make sure to maintain sufficient distance (at least 40 mm) between the appliance flue piping and combustible materials, and between the flue pipe and air inlet pipe if the latter is made of plastic material.
- Flue pipe elements or PP air inlet elements should not be screwed together.
- Piping elements should not be bonded together using glue (e.g. silicone) or foam (e.g. PUR).

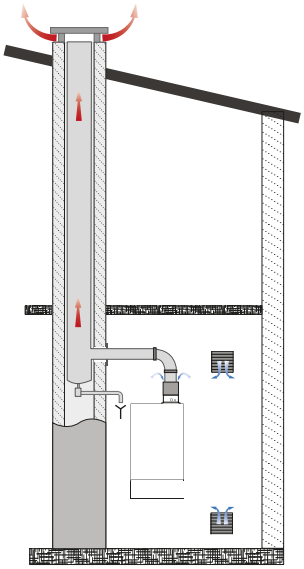
- *Make sure to insulate the flue piping in damp rooms to avoid condensation water from forming and dripping.*
- *Cut the pipes squarely and deburr the edges. This will ensure correct sealing and prevent seals from being damaged.*
- *To ease the assembly of pipes, use exclusively a mixture of water and soap (1%) on the extremity of the pipe to be fit in.*
- *Metal flue pipes should always be fitted into the sleeve to the end stop.*
- *Plastic flue pipes should be allowed to expand under the effect of heat. Leave about 10 mm between the pipe and the sleeve end stop.*
- *The flue system should be fitted with an inspection opening.*

- *Do not exceed the maximum length recommended for the product when connecting the flue pipes, or the system power might decrease.*
- *For B- and C-type appliances, the flue gas exhaust pipes must at least comply with the category T120 H1 W1/2 O30 LI E U when using parallel piping and T120 H1 W1/2 O00 LI/LE E U0 when using concentric piping (EN 14471).*
- *The maximum length of duct must be calculated according to the permissible difference in pressure indicated in the technical specifications.*

General Instructions for the Installation of AIC-approved Chimney Components



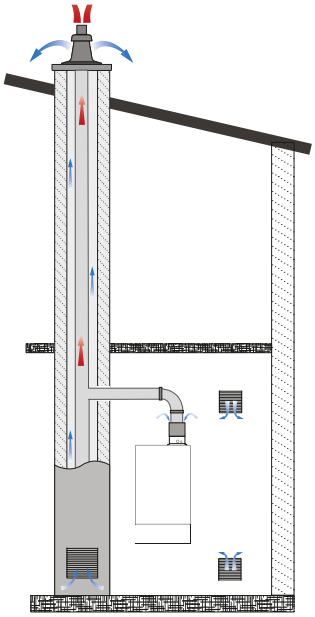
Chimney Connection



B23

Combustion circuit	Open
Flue	Discharged to the outside
Combustion air	Drawn from the boiler room
Remark	Can be used for cascading

Make sure that the ventilation openings remain unobstructed at all times.

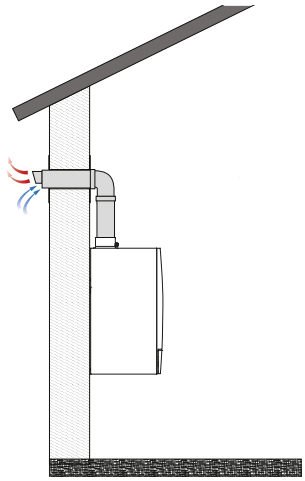


B23p

Combustion circuit	Open
Flue	Discharged to the outside, through positive pressure
Combustion air	Drawn from the boiler room
Remark	Can be used for cascading

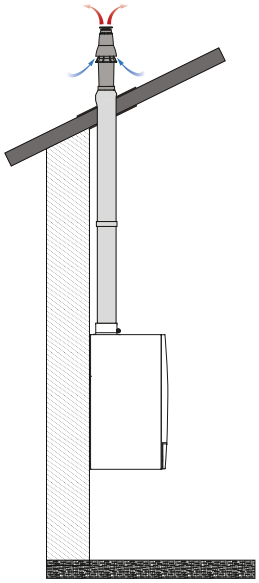
Make sure that the ventilation openings remain unobstructed at all times.

Make sure to install AIC-approved components when building B23 and B23P systems. See *"AIC-Approved Chimney Components" on page I-42.*



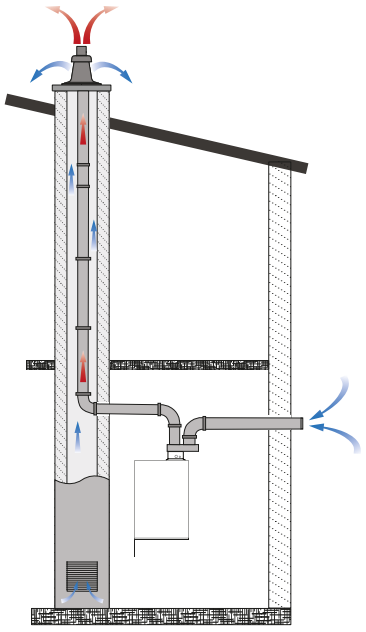
C13(x)

Combustion circuit	Sealed
Connection	Horizontal (wall) terminal
Air inlet/flue outlet orifices	**Concentric** - to a terminal for admission of combustion air from the outside AND flue discharge to the outside



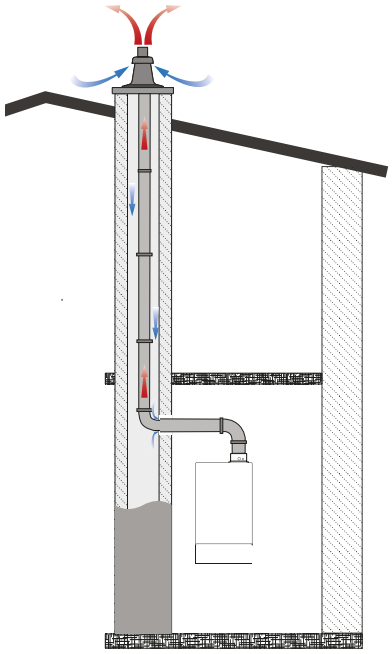
C33(x)

Combustion circuit	Sealed
Connection	Vertical terminal
Air inlet/flue outlet orifices	**Concentric** - to a terminal for admission of combustion air from the outside AND flue discharge to the outside



C53(x)

Combustion circuit	Sealed
Connection	Via separate ducts
Air inlet/flue outlet orifices	Through separate terminals that may terminate in zones of different pressures
Additional requirement	Orifices **may NOT** terminate on opposite walls of the building



C93(x)

Combustion circuit	Sealed
Connection	Vertical terminal
Air inlet/flue outlet orifices	**Separate ducts**, both connected to a **roof terminal**: › Flue duct: connected to a vertical terminal › Air inlet: through an existing duct › Roof terminal admits combustion air from the outside AND discharges flue to the outside OR › Both orifices are close enough to come under similar wind conditions.
Remark	Airtight operation is possible in existing chimney, provided that: › It has been cleaned prior to installation › Clearance area is sufficient for combustion air (min the size of 2 separate ducts)

Make sure to install AIC-approved components when building C13(x), C33(x), C53(x) and C93(x) systems. See “AIC-Approved Chimney Components” on page I-42

C63

Combustion circuit	Sealed
Connection	To a system that is approved and sold separately (external supplier)
Air inlet/flue outlet orifices	May terminate in zones of different pressure
Additional requirements	› Maximum allowable draught is 200 Pa. › Maximum allowable pressure difference between combustion air inlet and flue gas outlet (including wind pressures) is indicated in the technical specifications. › maximum allowable temperature of combustion air is 40°C. › Condensate flow is allowed into the appliance. › Maximum allowable recirculation rate of 10% under wind conditions › Orifices may NOT terminate on opposite walls of the building › The flue gas exhaust pipes must at least comply with the category T120 H1 W1/2 O30 LI E U when using parallel piping and T120 H1 W1/2 O00 LI/LE E U0 when using concentric piping (EN 14471). › **No connection** to a common flue duct (i.e. more than 1 appliance on a common flue duct) operating under positive pressure conditions.

This type of connection is prohibited in some countries - refer to local regulations and standards in force

Please also refer to the additional information in “Engineering the Chimney System” on page I-43 for the construction of your chimney system.

AIC-Approved Chimney Components

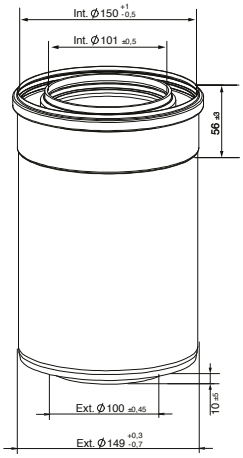
	Art. Designation	AIC Art. code
Twin Pipe System 100 mm	ADAPTER PP 100/100-100/150	1424300036
	ADAPTER PP 150/100-100/100	1424300037
	ADAPTER PP 150/100-100/100	1424400001
	ROOF TERMINAL PP 100/100	1424500005
	WALL TERMINAL 100/100	1424500006
	EXTENSION PP 100X500 EPDM	1424300009
	EXTENSION PP 100X1000 EPDM	1424300003
	EXTENSION PP 100X2000 EPDM	1424300014
	EXT. ADJUSTER PP 100 EPDM	1424300017
	ELBOW PP 100 90 EPDM	1424300018
	ELBOW PP 100 45 EPDM	1424300004
	SUPPORT ELBOW PP 100 90 EPDM	1424300007
	TEE PP 100 90 + COVER EPDM	1424300008
	SEAL EPDM 100	1424300038
	CHIMNEY TOP PP 100	1424500007
	CHIMNEY SHAFT COVER 100	1424500009
	SHAFT DIST.HOLDER PP100 - 2PCS	1424500010
	EXTENSION KIT Ø100XL	1424500019
	WALL BRACKET 100 PP	1424500011
Concentric System 100/150 mm	ROOF TERMINAL PP 100/150	1424200001
	WEATHER SLATE PB 100/150 25-45	1424500020
	WEATHER SLATE FLAT AL 100/150	1424500021
	WALL TERMINAL STD 100/150	1424500003
	EXTENSION PP 100/150X 500 EPDM	1424200002
	EXTENSION PP 100/150X1000 EPDM	1424200003
	EXTENSION PP 100/150X2000 EPDM	1424200004
	EXT. ADJUSTER PP 100/150 EPDM	1424200005
	ELBOW PP 100/150 90 SHORT EPDM	1424200006
	ELBOW PP 100/150 45 LONG EPDM	1424200007
	TEE PP 100/150 + COVER EPDM	1424200008
	HORIZONTAL FLUE PP100/150 1000	1424200009
	CHIMNEY CONNECTION 100/150	1424400004
	WALL BRACKET 150	1424500004

Engineering the Chimney System

The chimney system must be engineered by a qualified professional, according to local standards and regulations. The overall installation resistance of each boiler should not exceed the value indicated in the combustion table (including maximum wind condition) measured at the outlet of each boiler at maximum output. Refer to *"Combustion Data" on page G-15.*

Please contact your AIC representative for more information

- *The flue system length must be calculated so as to ensure a safe performance of the system. See "Calculation of the chimney length" on the right.*
- *Make sure to install the boiler with the shortest length of combustion air and flue ducts.*
- *When several boilers need to be connected to a common duct, please contact your AIC representative for more information.*
- *For C43(x), C63(x) and C83(x) chimney type connections, please consider the following dimensions of the concentric connection for the definition of the components in your chimney system.*



Accessories

If required by local regulations, install a condensate neutralisation system. In that case, it may be necessary to install the boiler on a base to get sufficient downward flow. If flow is not sufficient, install a condensate pump.

Calculation of the Chimney Length

The chimney length must be calculated using the values in the tables below for both parallel and concentric configurations.

1. Compose your system.
2. Add up the values from the tables below (straight pipes and elbows), of all the components used in the chimney system.
3. Compare the resulting value with the maximum length value for your type of chimney connection (parallel or concentric.)

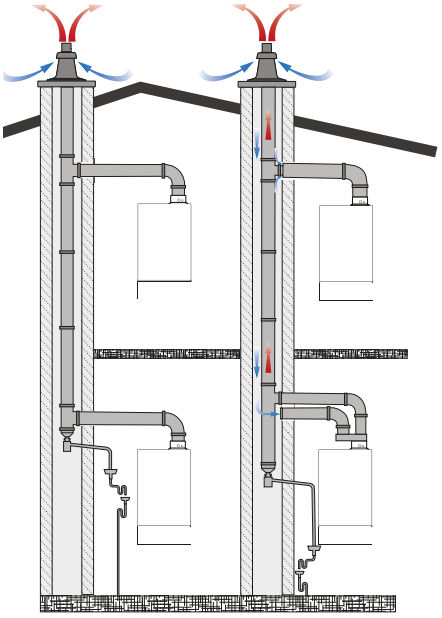
Equivalent Length of Chimney Components

	90° 	45° 	1 m 
Parallel connection (N 60 to N150 WH)	3.7 m	2.3 m	1 m
Concentric connection (N 60 to N150 WH	2.0 m	1.3 m	1 m

Maximum Chimney Length (terminals incl.)

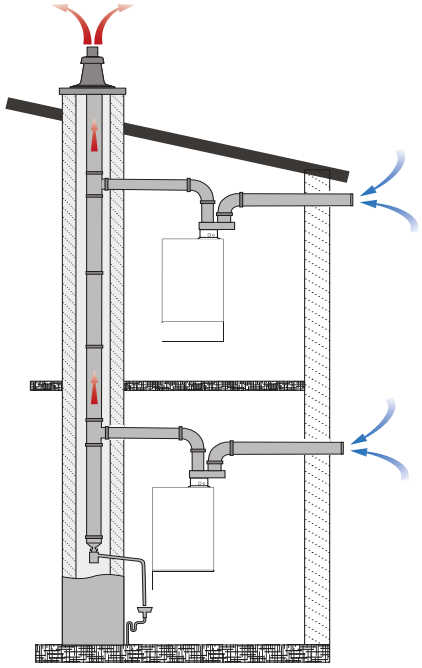
	Parallel (100/100)	Concentric (100/150)
N 60 WH	70 m	25 m
N 80 WH	40 m	
N 100 WH	25 m	
N 115 WH	25 m	
N 120 WH	25 m	
N 150 WH	16 m	16 m

The resulting value must be lower than the maximum value indicated in the table above for the considered appliance. Failure to comply can result in severe injuries or death.



C43(x)

Combustion circuit	Sealed
Connection	**Via two ducts to a common duct system** (part of the building, designed for more than one appliance)
Air inlet/flue outlet orifices	**through a roof terminal that** admits combustion air from the outside AND discharges flue to the outside › Concentric ducts OR › Both orifices are **close enough to come under similar wind conditions**
Additional requirements	› Chimney with natural draught only › Condensate flow is not allowed into the appliance



C83(x)

Combustion circuit	Sealed
Connection	Through: › a single duct system OR › **a common duct system** (part of the building, designed for more than one appliance)
Air inlet/flue outlet orifices	› Flue is discharged to the roof › Combustion air is taken from the outside
Additional requirement	› Condensate flow is not allowed into the appliance

- **When connecting several boilers to the same duct (i.e. types C43x, C83x or cascades), make sure to install an AIC-approved flue gas damper on each boiler in the system.**
- **For B23p chimney cascade, please contact your AIC representative.**

Please also refer to the additional information in "Engineering the Chimney System" on page I-43 for the construction of your chimney system.

Safety Instructions for the Electrical Connections

Electrical connections must be carried out by a qualified professional in accordance with current standards and regulations in force.

- **When the appliance is connected to the electrical network, it must be earthed.**
- **Make sure that a fuse or circuit breaker of the recommended rating (B10A or according to applicable local regulations) is installed outside the appliance, to allow electrical isolation.**
- **Do not touch the appliance with any wet body parts when it is supplied with electrical power.**
- **Before performing any operation on the electrical circuit, isolate the electrical supply of the appliance through the external power-cutting device (fuse, circuit-breaker, etc.)**
- **When routing the cables through sharp-edged holes in the panels, make sure to install glands or grommets, and to secure the cables in order to prevent any damage.**

- **Make sure to make the connections to the correct terminals, as indicated on the wiring diagram. If high voltage cables are installed on a low-voltage terminal, the electronic board will be damaged.**
- **When connecting wires to the terminals, check that the connection is secure and that all the wire strands are tightly held**

Cables

Any damaged power supply cable must be replaced using cables as described below and installed by a qualified professional.

The cross-section of the wires should be at least 1,5 mm² and maximum 2,5 mm², equipped with sleeves at L, N and ground (⏚) ends.

High voltage wiring is connected to a terminal strip located at the front of the boiler.

The main board and the low-voltage terminal strip are also located at the front of the boiler

Routing the Cables

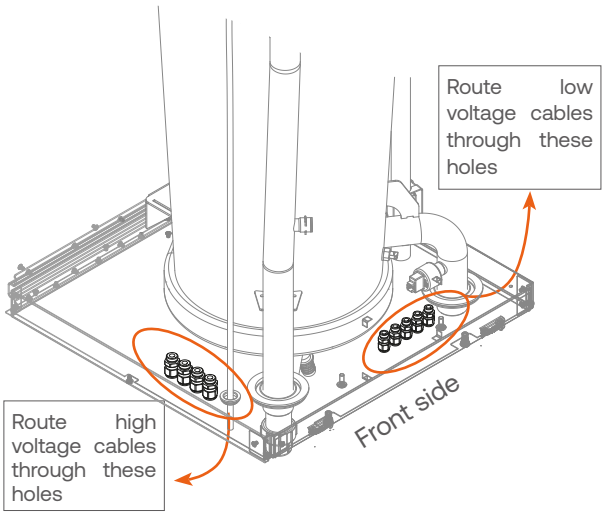


Fig. 15. Routing the Electrical Cables N 60 WH to N 120 WH

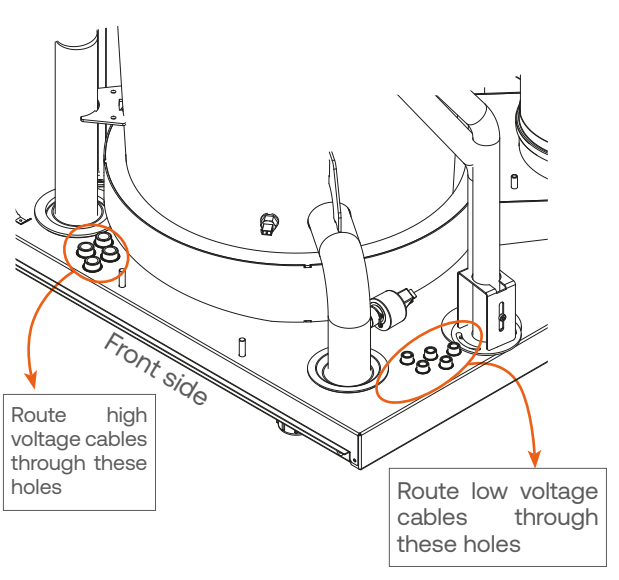
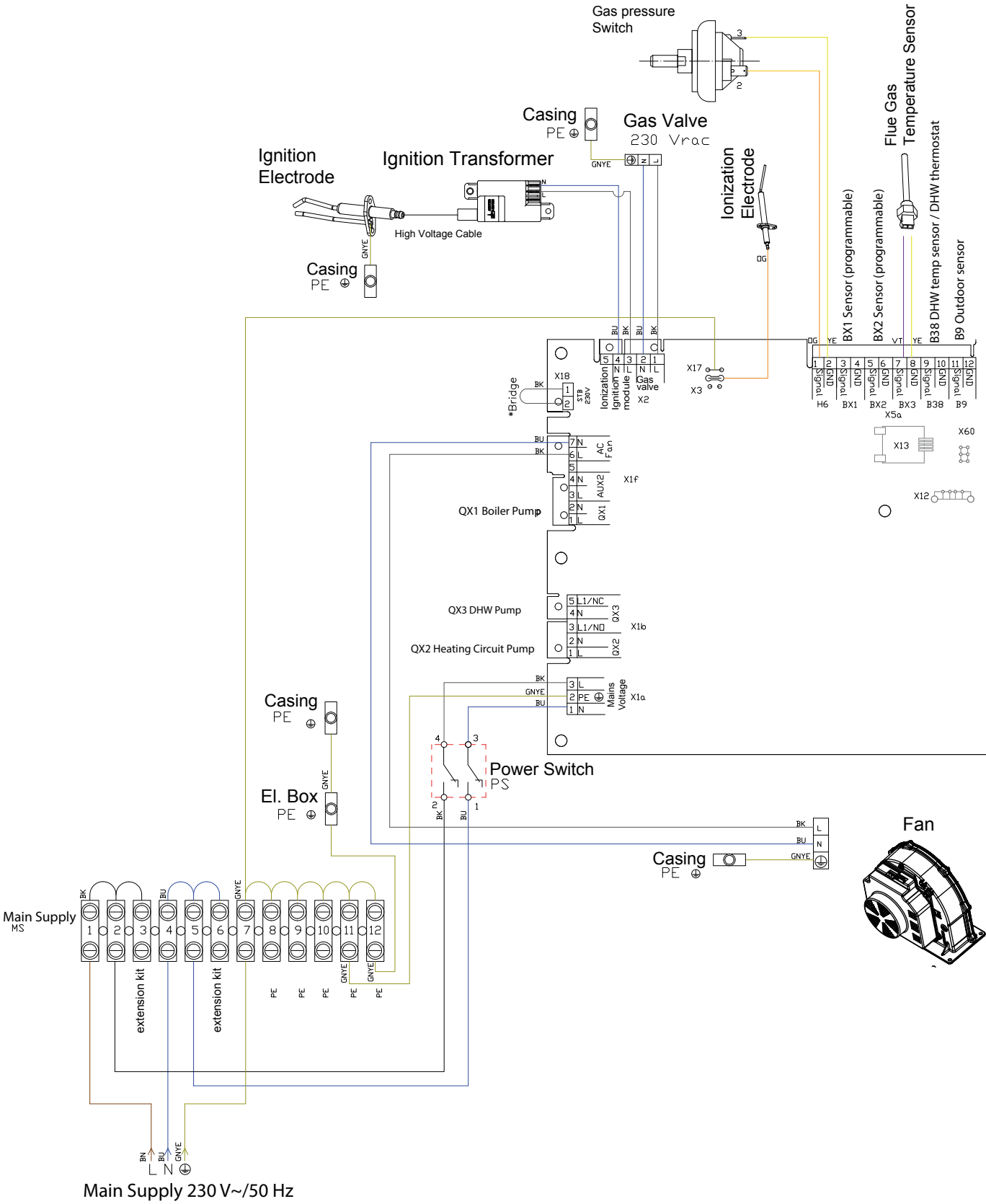
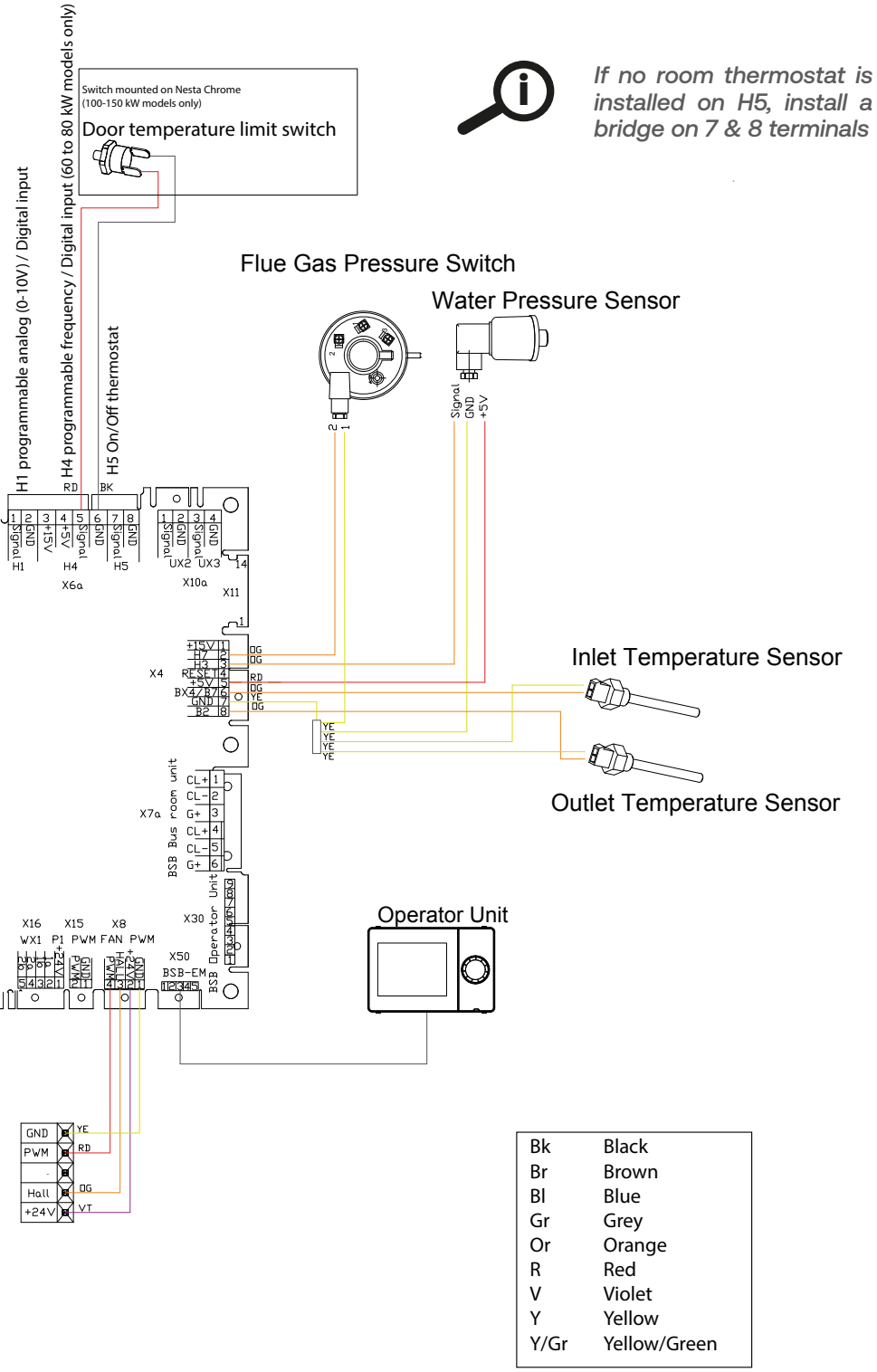


Fig. 16. Routing the Electrical Cables - N 150 WH

Wiring Diagram





Bk	Black
Br	Brown
Bl	Blue
Gr	Grey
Or	Orange
R	Red
V	Violet
Y	Yellow
Y/Gr	Yellow/Green

Accessing the High and Low Voltage Terminal Strips and Electronic Board

Make sure that the power supply to the appliance is deactivated (power supply cable disconnected from the boiler) before accessing the high voltage terminal strip.

Conditions: OFF

Tools and material:

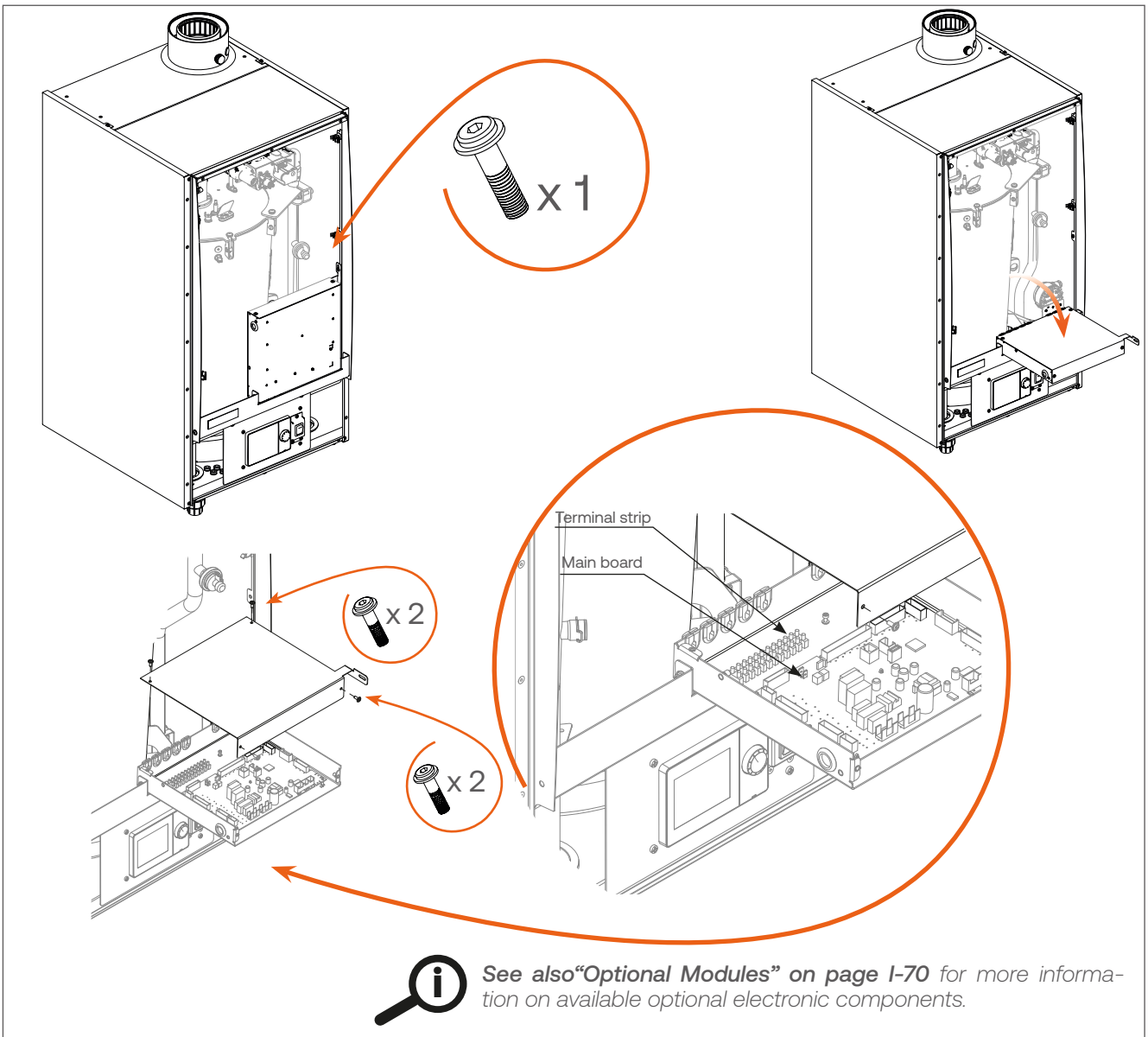
- Wrench, hex head, size 3

Procedure:

1. Remove boiler front panel, see ***"Removing and Installing the Access Panels" on page I-30.***
2. Remove one screw. Retain for installation.
3. Lower the main electronic casing (along with optional extension module casing if it is installed).
4. Release four screws and remove protective cover. Retain hardware for reinstallation.
5. Repeat the process for the optional extension module casing if it is installed.
6. Proceed in the reverse order to reinstall the protective covers and set the casings back in position.

Follow-on tasks:

None



See also"Optional Modules" on page I-70 for more information on available optional electronic components.

Fig. 17. Accessing the Terminal Strip and Electronic Board

Safety Instructions Before Start-up

- **Check that all connections (electrical, flue pipe, hydraulic, gas) have been carried out and that they are tight and secure.**
- **Ensure that the condensate trap is full of water before starting up the appliance.**

- **Before starting the appliance, check that the heating circuit is full of water and the appliance is supplied with gas and electrical power.**
- **Check that the gas pressure is within the allowed range.**
- **Check that the water pressure is sufficient (at least 0,8 bar when cold). Low water pressure is detected by the appliance sensor and will be indicated on the control panel display. Top up the circuit as required.**
- **In case of repeated indication of low pressure in the water circuit, check for leaks and repair as required.**
- **Once the filling of the heating circuit is complete, close the filling valve.**

Once installation is done, connect to the **aicON** *application and fill in all the relevant information. Refer to the back cover of this manual for easy access. Please contact your AIC representative for more information about this app.*

Alternatively, you can also fill in the installation checklist to indicate the components that are part of the system. Refer to"Installation Checklist" on page I-89 .

Filling the System

Conditions: OFF

Procedure:

1. Connect the filling hose ( ) to the system filling valve ( ) and to the water network tap.
2. Make sure that the draining valve ( ) is closed.
3. Open the isolating valves ( ).
4. Open the filling valve ( ) and the water network tap.
5. Bleed the air from the system and bring the system pressure at minimum 1,2 bar.

   Pressure should be suitable for the size/height of the heating system and take into account the pressure rating of the safety valve.
6. Close the filling valve ( ).
7. Remove the filling hose ( ) from the filling valve ( ) as required.

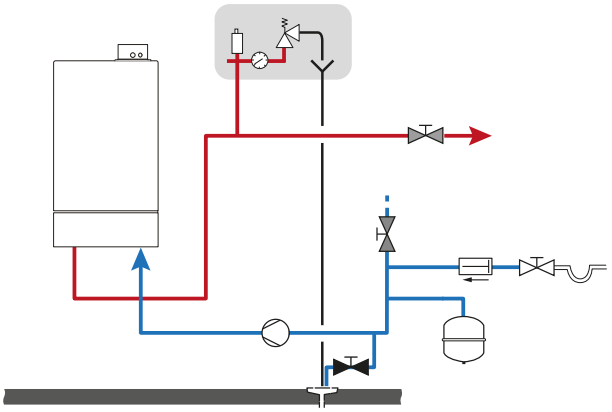


Fig. 18. Filling the System - Typical

Follow-on Task(s): None

Start-up and Commissioning

Conditions:

Tools and material:

None

Procedure:

1. Press the On/Off switch located on the right side of the control panel.

   When starting the boiler for the first time after installation, the controller will open the Commissioning Wizard automatically. This wizard process only appears once, provided that the function is disabled (set to "off") at completion of the process. To bypass it, activate "Continue" or "Skip" displayed at the bottom of the screen, until you reach the end of the process.

2. If required, perform the commissioning setting of the boiler, following the instructions displayed on the screen. Refer to ***"Commissioning Wizard" on page I-52*** for more information and a list of the settings.

Follow-on task(s):

3. If the air-gas mixer was replaced for a conversion to another gas type, perform ***"Adjustment of Fan Speeds" on page I-67***
4. In case of first commissioning, perform the combustion adjustments, as described opposite.

Combustion Adjustments (G20/G25/G31)

Conditions:

Tools and material:

- Flue gas analyser
- Torx, size T40
- Wrench, hex head, size 6

Procedure:

1. Allow the boiler to operate for a few minutes.
2. Connect the flue gas analyser probe to the measuring port of the flue gas pipe.
3. Check CO_2 contents in the flue gas at max output as follows:
   - Select and activate the icon
   - Select "***Special operations (1/3)***"
   - Set "***Chimney sweep function***" to "***on***".
   - Set "***Burner output"*** to ***"Full load"***.
   - Check the CO_2 (or O_2) contents displayed on the gas analyser, and compare the values with those in the technical specifications (See ***"Combustion Data" on page G-15).***
   - If the value is outside the range, adjust combustion by turning the gas valve throttle screw (**1**) in small steps:
     - Rotate throttle screw clockwise (to the right) to decrease the CO_2 rate.
     - Rotate throttle screw counter-clockwise (to the left) to increase the CO_2 rate.
   - Allow the value to stabilise before checking the value again and performing additional adjustments.
4. Check that CO level is not higher than 200 ppm.

If the CO level exceeds 200 ppm, please contact your AIC representative.

5. In "***Special operations (1/3)***", set "***Chimney sweep function***" to "***off***".

Follow-on task(s):

Record the value in the log sheet. Refer to ***"Combustion Parameters - Log Sheet" on page I-87.***

Combustion Adjustments (G20Y20)

Conditions:

Tools and material:

- Flue gas analyser
- Torx, size T40
- Wrench, hex head, size 6

Procedure:

1. Allow the boiler to operate for a few minutes.
2. Connect the flue gas analyser probe to the measuring port of the flue gas pipe.
3. Check O_2 contents in the flue gas at max output as follows:
   - Select and activate the icon
   - Select "***Special operations (1/3)***"
   - Set "***Chimney sweep function***" to "***on***".
   - Set "***Burner output***" to "***Full load***".
   - Check the O_2 contents, and compare the values with those in the technical specifications (See ***"Combustion Data" on page G-15***).
   - If the value is outside the range, adjust the combustion value by turning the gas valve throttle (**1**) in small steps.
     - Rotate throttle screw clockwise (to the right) to increase the O_2 rate.
     - Rotate throttle screw counter-clockwise (to the left) to decrease the O_2 rate.
   - Allow the value to stabilise before checking the value again and performing additional adjustments.
4. Check that CO level is not higher than 200 ppm.

If the CO level exceeds 200 ppm, please contact your AIC representative.

5. In "***Special operations (1/3)***", set "***Chimney sweep function***" to "***off***".

Follow-on task(s):

Record the value in the log sheet. Refer to ***"Combustion Parameters - Log Sheet" on page I-87.***

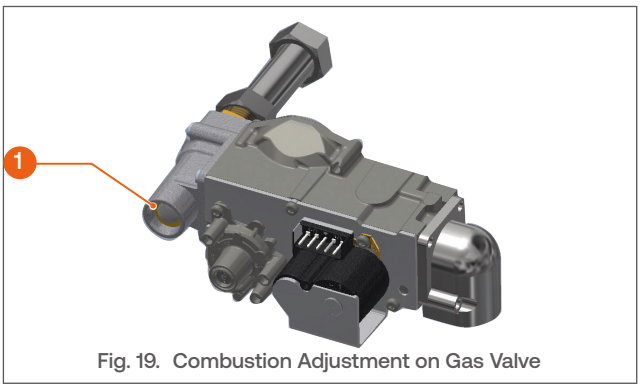


Fig. 19. Combustion Adjustment on Gas Valve

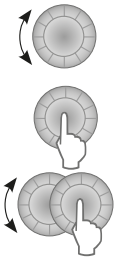
Commissioning Wizard

When starting up the boiler for the first time, a commissioning wizard will be displayed, unless it has been disabled before (e.g. from factory or through a previous manual deactivation). In that case, and if needed, it can be accessed through the "Commissioning" or "Engineer" user level.

To exit the commissioning wizard without adjustments, activate "Continue" or "Skip" displayed at the bottom of the screen, until you reach the end of the process.

The following pages give a view of the structure of the commissioning wizard contents. Program numbers are provided as well as the detail of the menu when required. In orange is the default or recommended value. Please also refer to "Structure of Menus for the Installer" on page I-76.

Symbols used for the **operation of the selector**:

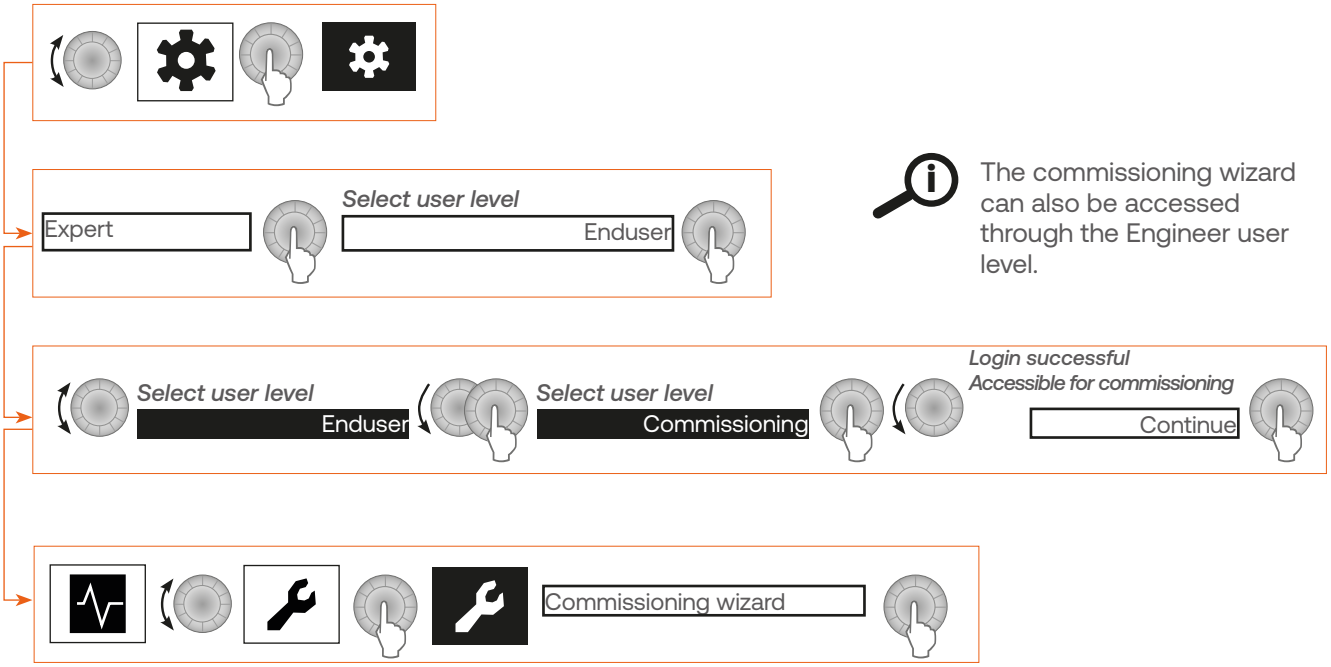


turn the selector to the left or to the right.

depress shortly the rotary selector.

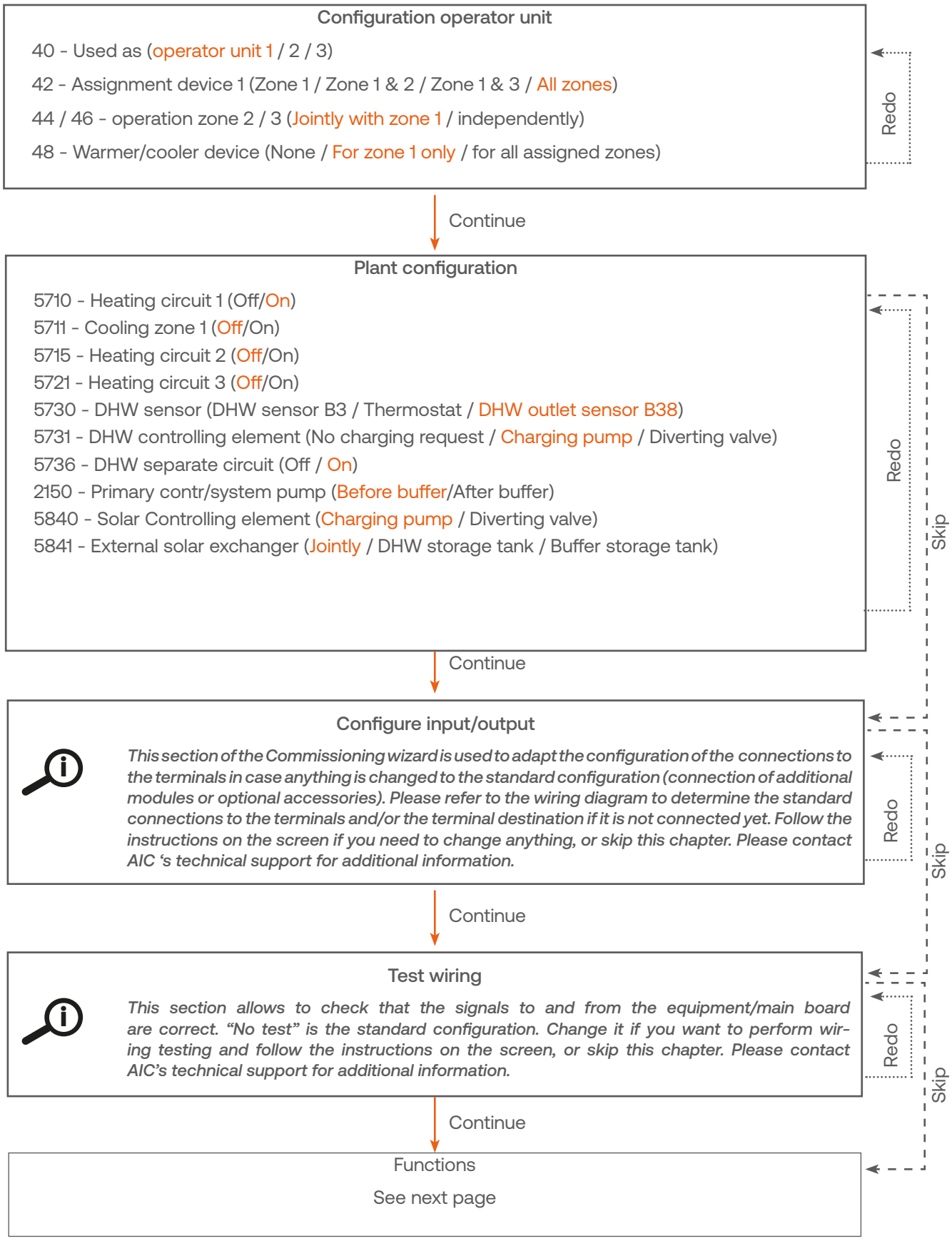
turn the selector to adjust the value, then depress the selector to validate.

Accessing the Commissioning Wizard



The commissioning wizard can also be accessed through the Engineer user level.

General Structure of the Commissioning Wizard



Functions

Heating zone 1

720 - Heating curve slope (1.50)

721 - Heating curve displacement (0°C)

730 - Summer-winter heating limit (18°C)

732 - 24-hour heating limit (-3°C)

740 - Flow temp setpoint min (8°C)

741 - Flow temp setpoint max (80°C)

750 - Room influence (unused (0%) to 100%)

760 - Room temp limitation (1.0°C)

Domestic Hot Water

1612 - Reduced setpoint (40°C)

1620 - Release (24h/day / Time programs HCs / Time program 4/DHW)

1630 - Charging priority (Absolute / Shifting / None / MC shifting, PC absolute)

1640 - Legionella function (Off / Periodically / Fixed weekday)

1645 - Legionella function setpoint (65°C)

1641 - Legionella function periodically (3)

1642 - Legionella function weekday (Monday / Tuesday / Wednesday.../ Sunday)

Consumer circuit 1

Consumer circuit 2

Swimming pool circuit

Solar

These sections allow to define the flow temp for different configurations. Follow the instructions on the screen if you need to change anything or skip this chapter. Please contact AIC's technical support for additional information.

Redo

Skip

Continue

System setup

LPB system

6600 - Device address (1....16)

6601 - Segment address (0...14)

6640 - Clock mode (Autonomously / Slave without remote setting / Slave with remote setting / Master)

Modbus

6651 - Slave address (unused (0) ... 247)

6652 - Baud rate (1 200 / 2 400 / 4 800 / 9 600 / 19 200)

6653 - Parity (Even / Odd / None)

6654 - Stop bit (1 / 2)

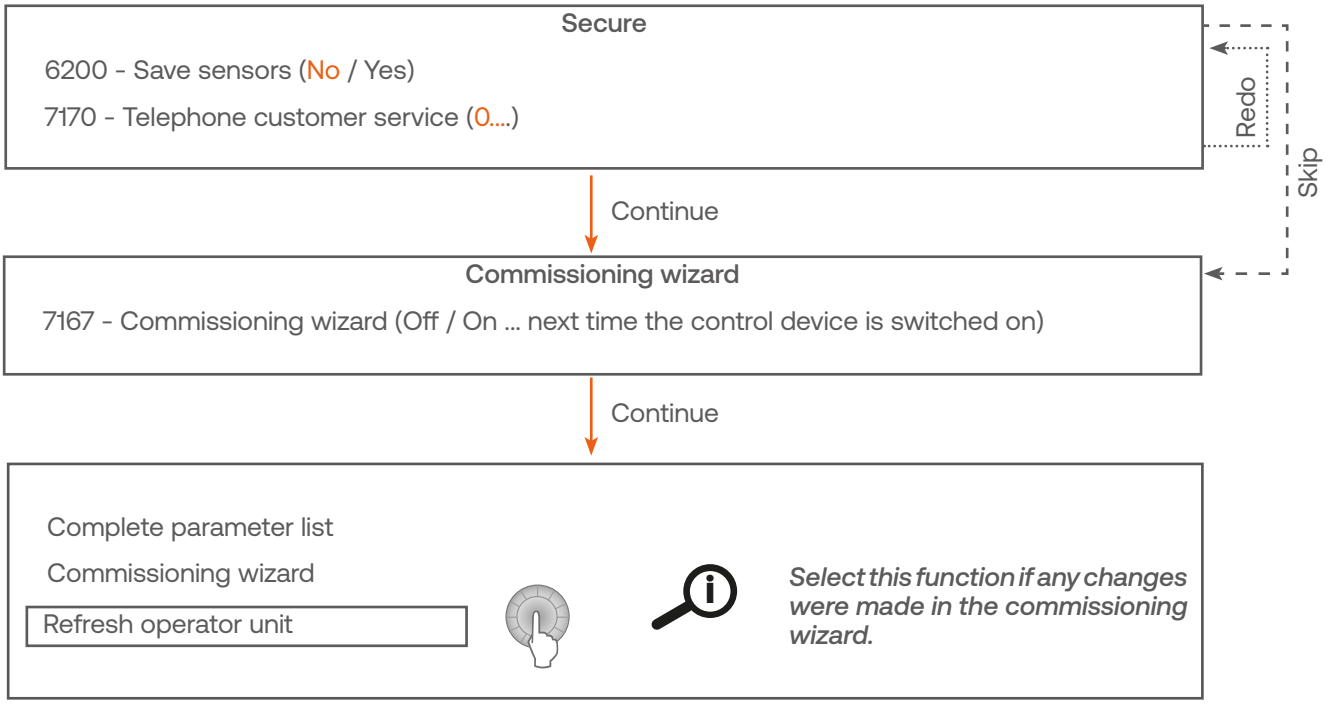
Redo

Skip

Continue

Secure

See next page



- *When performing the setup of the boiler, also refer to "Quick access to functions for the Installer" on page I-75 and to "Weather Compensation Curve" on page I-73.*
- *Once Commissioning is done, connect to the* **aicON** *application and fill in all the relevant information. Refer to the back cover of the manual for easy access. Please contact your AIC representative for more information about this app.*

Safety Instructions for Maintenance

- Inspection and maintenance tasks must be carried out by a qualified and certified professional, at least once a year.
- Water flowing out of the drain valve can be extremely hot. Use extreme caution when draining a hot appliance.
- Once the inspection and maintenance tasks are complete, ensure that all removed components are reinstalled and all connections are tight and secured.

- Before performing any maintenance operation, shut down the appliance using the appliance on/off switch and isolate the electrical supply of the appliance through the external power-cutting device (fuse, circuit-breaker, etc.), unless power is required for the procedure (it will then be indicated in the procedure).
- Do not touch the appliance with any wet body parts when it is supplied with electrical power.
- Be careful! Even when the appliance on/off switch is set to OFF, the high voltage terminals are still supplied with electrical power.

- The maintenance of the appliance and its components must be carried out by a qualified professional.
- Defective parts and components may only be replaced by genuine factory parts or parts approved by the manufacturer.
- Replace any gaskets or seals present on the removed components before reinstallation, unless otherwise specified in the procedures.
- To ensure the performance, durability and reliability of the appliance, it is recommended that the end-user perform the periodic checks mentioned in the Safety section for the user, at the beginning of this manual.
- The minimum pressure of the primary circuit is 0,8 bar when cold, the normal pressure is 0,8 to the maximum pressure, as defined in the hydraulic characteristics in this manual.
- If the water circuit needs to be topped up, allow the appliance to cool down and only add small quantities of water at a time. Adding a large quantity of cold water in a hot appliance can damage the appliance permanently.

The inspection and maintenance tasks are detailed in a table in this section. Make sure to perform all the recommended tasks and to fill in the log sheets available at the end of the manual with all the required information.

In this section, the pictures show a specific appliance, but the removal principle is identical for all Nesta Chrome models.

Maintenance Requirements

*To perform maintenance, connect to the **aicON** application and fill in all the relevant information. Refer to the back cover of the manual for easy access. Please contact your AIC representative for more information about this app.*

Tasks	@ inspection (1 year)	@ maintenance (2 years max)
Check that the boiler room ventilation / boiler air and flue ducts are unobstructed.	X	X
Verify flue gas and combustion air ducts are in good condition, sealed tight and properly supported.	X	X
Open the front panel and check the general condition inside the cabinet. Clean and vacuum as required.	X	X
Check the correct operation of the flue pressure switch, refer to ***"Checking the Flue Pressure Switch operation" on page I-65***	X	X
Clean the condensate trap. Remove condensate trap and flush with clear water, see ***"Installing and Removing the Condensate Trap" on page I-29***	X	X
Clean/service the condensate neutralisation system (if any). Refer to manufacturer's documentation.	X	X
Clean any filter/dirt separator, plate heat exchanger or balance header present in the hydraulic system, as required. Refer to manufacturer's documentation.	X	X
Check for leaks, both inside and outside the appliance: water, gas, flue and condensate.	X	X
Check boiler water pressure (at least 1.2 bar when cold). Top up the system with water if required,	X	X
Check the operation of the burner (flame) through the sight glass and that the combustion parameters (CO & CO_2) are according to requirements. See ***"Combustion Data" on page G-15.***	X	X
Check the gas pressure and that the gas supply shut-off devices are operating properly.	X	
Check that the pump(s) is/are operating properly.	X	
Check that the fan is operating properly.	X	
Remove the burner and check its general condition. Clean as required. See ***"Removing and Installing the Burner" on page I-62.***		X
Replace the ignition and ionization electrodes. Refer to ***"Removing and Installing the Ignition and Ionisation Electrodes" on page I-59.***	X	
Check all control wiring and connections.	X	X
Check the condition of the combustion chamber and clean it if required. See ***"Checking and Cleaning the Combustion Chamber" on page I-65.***		X
Check water quality and record in log sheet, See ***"Water Parameters - Log Sheet" on page I-87***	X	X
Check the operation of the flue damper (non-return valve), if any, and perform the required maintenance. Refer to the manufacturer's documentation.	X	X
Record the operations and results in the Log Sheets provided at the end of the manual	X	X

Shutting Down for Maintenance

Conditions:

None

Procedure:

1. Press the On/Off switch located on the right side of the control panel.

When in the OFF position, the switch internal light comes out.

2. To completely cut the power supply to the boiler, either disconnect the power supply cable from the boiler, or use the external circuit breaker.

Follow-on tasks:

Draining the Boiler

Conditions: OFF

Procedure:

1. Close the isolating valves ( ).
2. Connect the optional draining valve ( ) to the sewer with a hose.
3. Open the draining valve ( ) to empty the heating circuit of the boiler.
4. Provide relief at the manual air vent of the boiler.
5. Close the draining valve ( ) once the heating circuit of the boiler is empty.

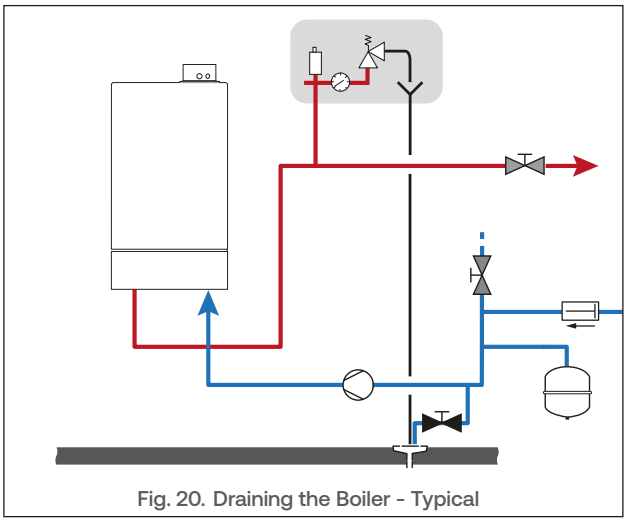


Fig. 20. Draining the Boiler - Typical

Follow-on tasks: None

Restarting after Maintenance

Conditions:

Procedure:

1. Press the On/Off switch located on the right side of the control panel.

The switch is illuminated when in ON position.

2. Select the required heating mode as required.
3. Allow the appliance to operate for a few minutes, then bleed the air from the system.

Follow-on tasks:

1. Check there is no leak in the water and gas circuits.
2. Check the combustion values according to ***"Combustion Data" on page G-15***.
3. Record values in ***"Combustion Parameters - Log Sheet" on page I-87***.
4. Check the heating circuit pressure (between 1,5 and 6 bar).

Removing and Installing the Ignition and Ionisation Electrodes

Conditions: 

Tools and material:

- Wrench, hex head, size 3
- Torque wrench

When replacing the electrodes, make sure to use the screws provided in the AIC replacement kit. Failure to use these screws may cause improper installation or damage.

Removal Procedure:

1. Disconnect all connectors and grounding cables from the electrodes.

   ▷ *The procedure is identical for both electrodes.*

   ▷ *When removing the electrodes in the scope of the periodic maintenance, the electrodes, gaskets and screws shall be discarded and replaced by new ones provided in the AIC replacement kit.*

2. Release two screws (**1**) from the electrode flange.
3. Remove the electrode and screws from the burner plate and discard.
4. Remove electrode gasket (**2**) and discard.
5. Scrap and clean any remaining traces of electrode gasket from the burner plate.

Installation procedure:

1. Install new gasket (**2**) on the burner plate.
2. Insert the new electrode and fasten with two new screws (**1**) from the replacement kit.
3. Torque screws at 2,5 Nm.
4. Reconnect all connectors and grounding cables to the electrodes.

Follow-on tasks:

1. Reinstall all removed access panels, refer to *"Removing and Installing the Access Panels" on page I-30*
2. Restart the appliance, see *"Restarting after Maintenance" on page I-58.*

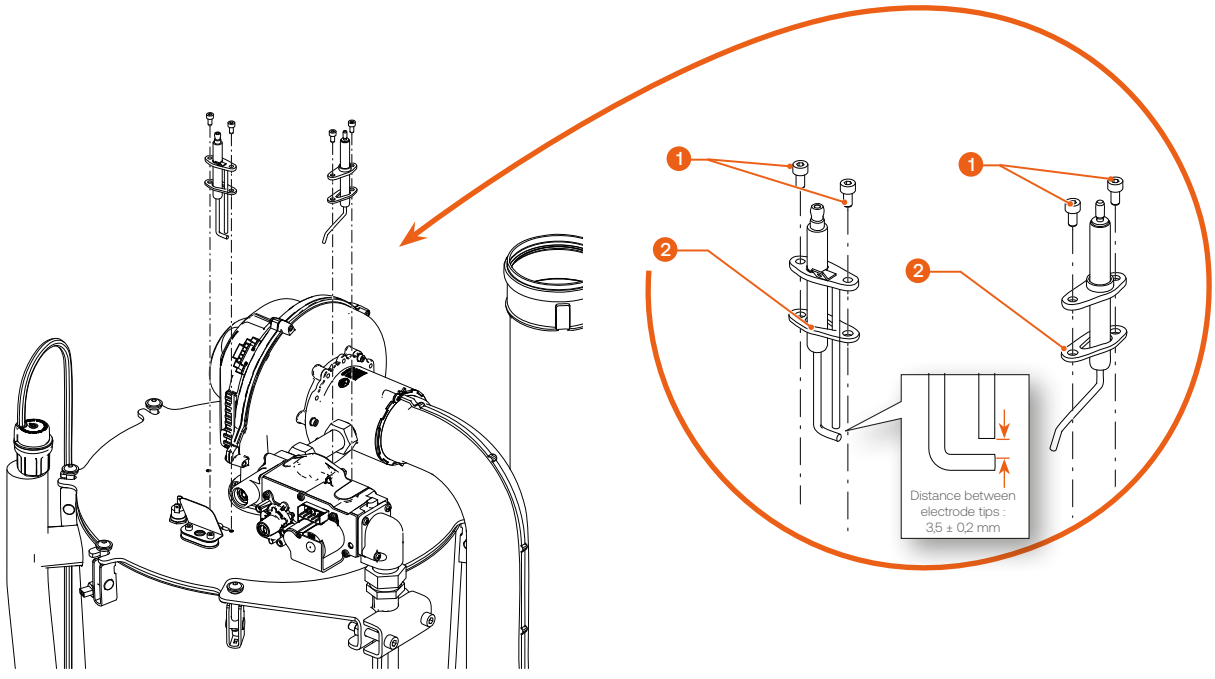


Fig. 21. Removing and Installing the Electrodes

Removing and Installing the Fan and Air-Gas Mixer Assembly

Conditions:

Tools and material:

- Wrench, hex head, size 5
- Wrench, flat
- Torque wrench

Removal Procedure:

1. Disconnect all connectors and ground wires from the electrodes, the fan and the gas valve.
2. Disconnect the air inlet duct (**1**) from the air-gas mixer.
3. Release gas pipe connection (**2**) from the gas valve (**3**).

In this procedure, the Nesta Chrome 150 is illustrated. The number of fasteners is different for other models, but the removal and installation principles are identical for all models.

4. Release screws and washers (**4**) securing the fan assembly (**5**) to the burner plate.
5. Remove the assembly (**5**) formed by the fan, the air-gas mixer and gas valve. Retain for reinstallation.
6. Remove the fan gasket (**6**) and retain, as required, for reinstallation.

When removing the gasket, check its general condition. Discard and replace the gasket if it is cracked or torn.

7. Remove the electrodes, as required, refer to ***"Removing and Installing the Ignition and Ionisation Electrodes" on page I-59.***
8. Remove the burner, as required, refer to ***"Removing and Installing the Burner" on page I-62.***
9. Clean the combustion chamber, as required, refer to ***"Checking and Cleaning the Combustion Chamber" on page I-65.***

Installation Procedure

1. Install the fan assembly (**5**) with a new gasket (**6**) (if required) on the burner plate, using three retained screws and washers (**4**).
2. Torque the screws (**4**) at 4 Nm.
3. Connect gas pipe (**2**) to gas valve (**3**)
4. Connect the air inlet duct (**1**) to the air-gas mixer.
5. Reconnect all connectors to the electrodes, gas valve and fan.

Follow-on task(s):

1. Close all panels, refer to ***"Removing and Installing the Access Panels" on page I-30.***
2. Restart the boiler, as required, refer to ***"Restarting after Maintenance" on page I-58.***

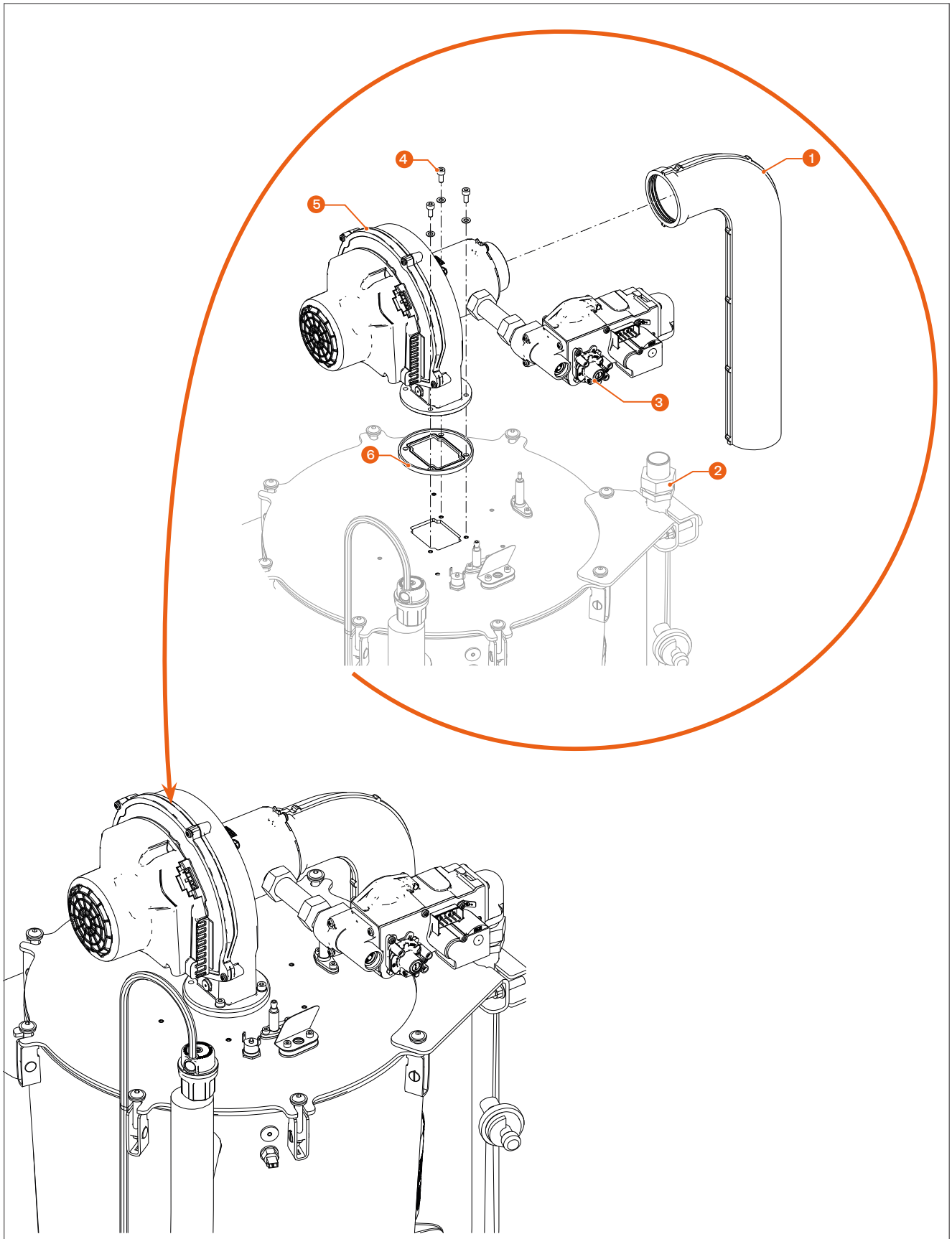


Fig. 22. Removing and Installing the Fan and Air-Gas Mixer Assembly

Removing and Installing the Burner

Conditions:

- Fan and air-gas mixer assembly removed, refer to ***"Removing and Installing the Fan and Air-Gas Mixer Assembly" on page I-60.***
- Electrodes removed, refer to ***"Removing and Installing the Ignition and Ionisation Electrodes" on page I-59.***

Tools and material:

- Wrench, hex head, sizes 3 (N 60 & 80 WH) and 4 (N 100 - 115 - 120 - 150 WH)
- Torque wrench
- Air compressor

Removal Procedure:

Hardware quantity attaching the burner plate to the heat exchanger can be different depending on the size of the heat exchanger (N 60 to 80 WH : 5 M4 screws, N 100 to 150 WH : 6 M5 screws). The removal and installation principles are the same for all models.

1. Disconnect high temperature limit switch cables from switch (**11**).
2. Release two screws (**10**) securing the gas pipe bracket (**9**) to the burner plate bracket (**8**). Remove and retain bracket and hardware for reinstallation.
3. Release two burner plate screws (**7**) securing the burner plate bracket (**8**) to the heat exchanger. Remove and retain bracket and hardware for reinstallation.
4. Release the remaining screws (**6**) securing the burner plate (**1**). Remove the burner plate (**1**) and its hardware. Retain for reinstallation.
5. Remove carefully the burner plate insulation (**4**).
6. Remove six screws and washers (**5**) to remove the burner tube (**3**) and gasket (**2**) from the burner plate. Discard the gasket.

Cleaning and Checks:

1. Visually check the condition of the burner tube (**3**).
2. Clean with compressed air to remove residues. If it is in bad condition after cleaning, replace it.
3. Visually check the condition of the burner plate insulation plate (**4**). If the fabric cover is damaged, replace the insulation plate.
4. Clean the combustion chamber, see ***"Checking and Cleaning the Combustion Chamber" on page I-65***.

Installation procedure:

1. Install burner tube (**3**) and new gasket (**2**) on burner plate (1) using six retained screws and washers (**5**).
2. Install the burner plate insulation (**4**).
3. Position burner plate (**1**) on heat exchanger.
4. Install burner plate bracket (**8**) on burner plate (**1**) and secure with retained hardware (**7**).
5. Install the remaining screws (**6**) and torque all the screws in a crosswise pattern at 2,5 Nm.
6. Install gas pipe bracket (**9**) with two retained screws (**10**) to secure the gas pipe to the burner plate bracket (**8**).
7. Connect high temperature limit switch cables to switch (**11**).

Follow-on tasks:

1. Reinstall the fan and air-gas mixer assembly, refer to ***"Removing and Installing the Fan and Air-Gas Mixer Assembly" on page I-60.***
2. Reinstall all removed access panels, refer to ***"Removing and Installing the Access Panels" on page I-30.***
3. Restart the appliance, see ***"Restarting after Maintenance" on page I-58.***

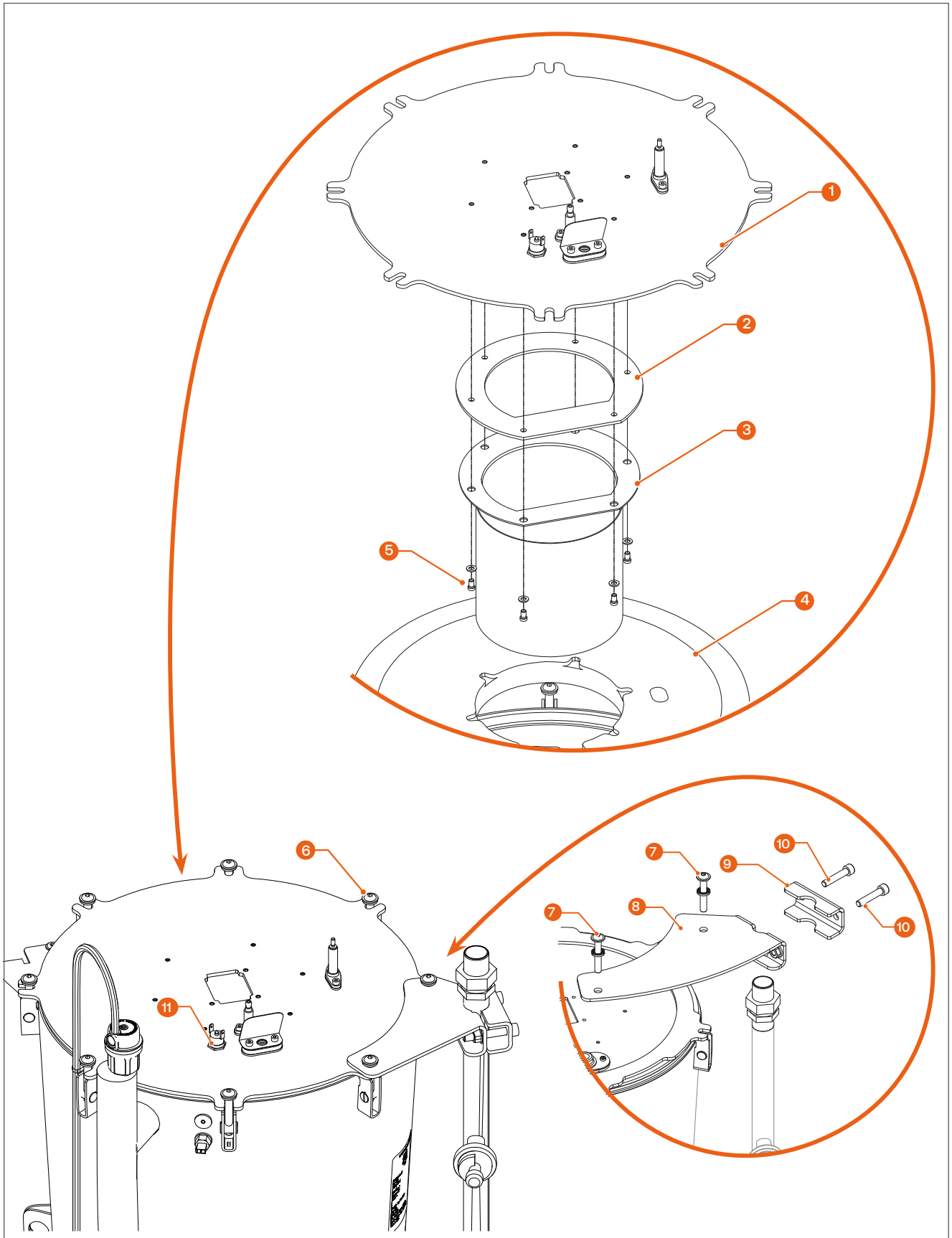


Fig. 23. Removing and Installing the Burner

Air-Gas Mixer Replacement

Conditions:

Fan and air-gas mixer assembly removed, refer to ***"Removing and Installing the Fan and Air-Gas Mixer Assembly" on page I-60***.

Tools and material:

- Wrench, hex head
- Screwdriver, flat
- Torque wrench

Air-Gas Mixer Removal Procedure (Fig. 2)

1. Release union (**2**) securing the gas valve and tube (**1**) to the air-gas mixer (**4**).
2. Remove the gas valve and tube (**1**) with O-ring (**3**) from the air-gas mixer assembly (**4**).
3. Release 3 screws and washers (**5**) securing the air-gas mixer (**4**) to the fan (**7**).
4. Remove the air-gas mixer (**4**) and the hardware.
5. Retain hardware for reinstallation.

When removing the air-gas mixer, check the general condition of the O-rings. Discard and replace O-ring if it is cracked or torn.

Air-Gas Mixer Installation Procedure (Fig. 2)

1. Install the new air-gas mixer (**4**) on fan (**7**) using hardware retained at removal. Check the O-ring (**6**) condition and replace as required.
2. Install O-ring (**3**) and fasten the gas valve with pipe (**1**) to the air-gas mixer (**4**) with union (**2**).

Follow-on Task(s)

1. Reinstall the fan and air-gas mixer assembly, refer to ***"Removing and Installing the Fan and Air-Gas Mixer Assembly" on page I-60***
2. Reinstall all removed access panels, refer to ***"Removing and Installing the Access Panels" on page I-30.***
3. Restart the appliance, see ***"Restarting after Maintenance" on page I-58.***
4. Perform the fan speed adjustment. See ***"Adjustment of Fan Speeds" on page I-67.***

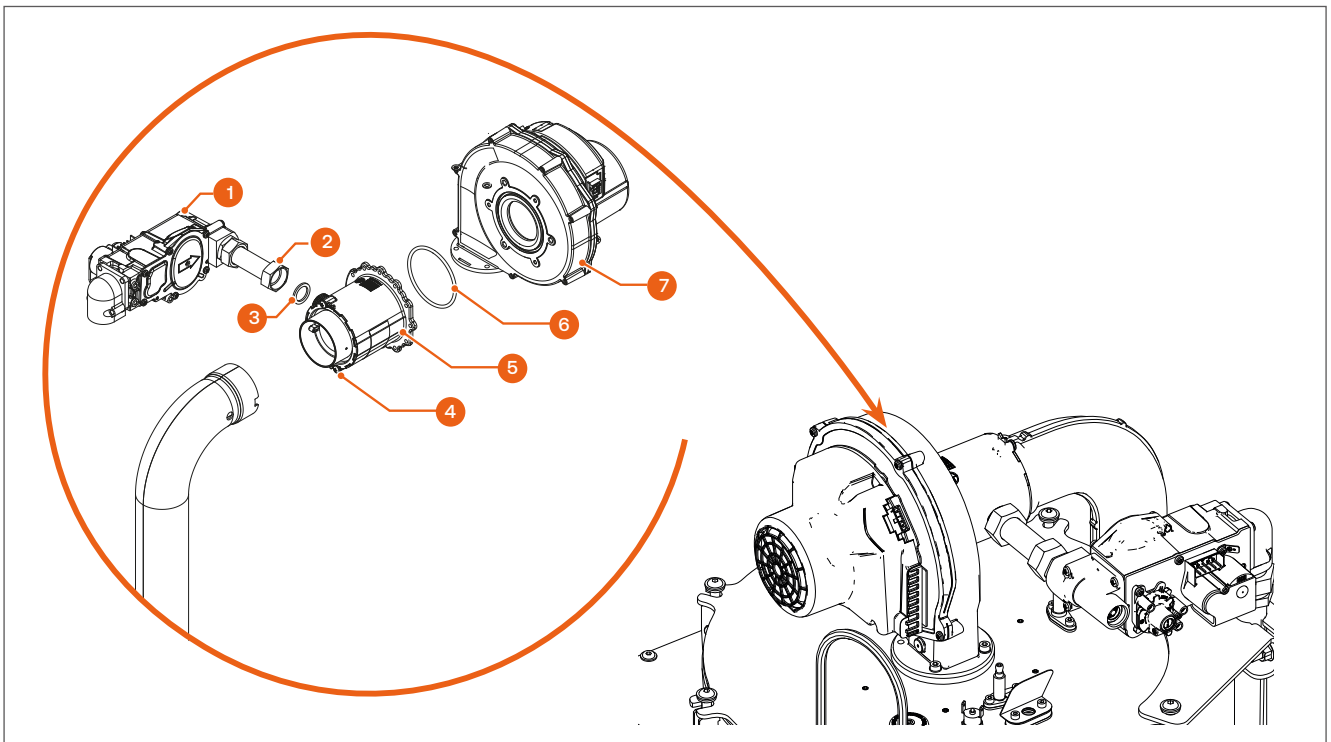


Fig. 24. Removal and Installation of the Air-Gas Mixer

Checking and Cleaning the Combustion Chamber

Conditions:

- Burner removed, see ***"Removing and Installing the Burner" on page I-62.***

Tools and material:

- Industrial vacuum cleaner
- Nylon bristle brush
- Torch

Check Procedure:

1. Using a torch, visually check the condition of the combustion chamber. If it is dirty, clean it.

Cleaning Procedure:

1. Using a nylon bristle brush, sweep the walls of the combustion chamber.
2. Using an industrial vacuum cleaner, remove all deposits from the combustion chamber heating surfaces.
3. Pour some clean water to remove any residues.

Follow-on tasks:

1. Remove and clean condensate trap, refer to ***"Installing and Removing the Condensate Trap" on page I-29***
2. Install the burner, see ***"Removing and Installing the Burner" on page I-62.***

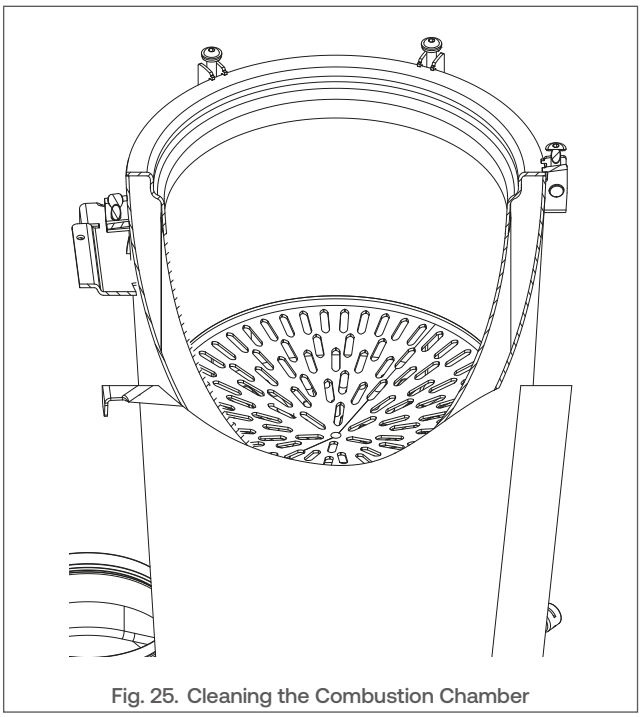


Fig. 25. Cleaning the Combustion Chamber

Checking the Flue Pressure Switch operation

Conditions:

Tools and material:

- Manometer (measuring range up to min. 400 Pa)

Check Procedure:

This procedure needs to be performed with boiler (and controller) running, and the front panel open.

When performing the following procedure, do not touch the high voltage connections and do no touch any inner component of the boiler with any wet body part.

1. At the adapter (**2**), disconnect the hose (**1**) running from the condens dish to the flue pressure switch.
2. Connect a T-piece to the hose.
3. Connect pressure meter to one of the T-piece connections.
4. Blow air into the hose while it is connected to the flue pressure switch and to the manometer.
5. Verify that the pressure switch switches at the set pressure (400 Pa) and that the controller displays an error (refer to ***"Error Codes and Solutions" on page I-79)***.
6. In case of malfunction, replace the flue pressure switch.

Follow-on tasks:

1. Reconnect the hose (**1**) to the adapter (**2**).
2. Check that the connection is not leaking.

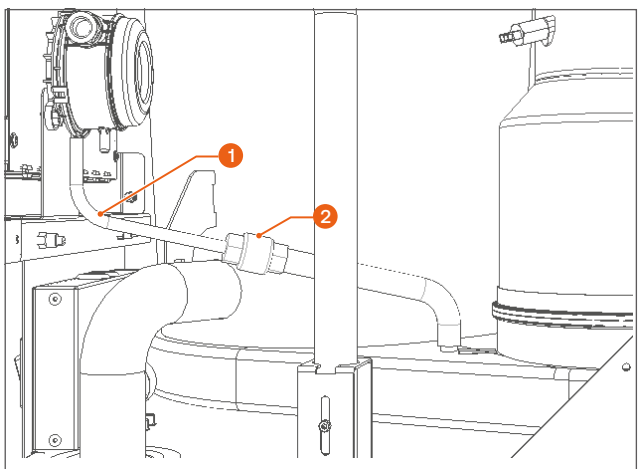


Fig. 26. Testing the Flue Pressure Switch

Conversion to Another Gas Type

- **Conversion of the appliance from one gas type to another can only be performed by a qualified professional.**
- **Gas conversion shall be performed according to applicable local regulations. It is prohibited in some countries. Perform conversion according to the gas category specified for your country on the appliance data plate.**
- **If the boiler is intended to be used with liquefied gas (propane), installing the boiler below ground level can be hazardous and prohibited in some countries. Please refer to applicable local regulations for installation requirements.**
- **If the boiler is already installed before conversion, the boiler must be turned off, the power supply must be disconnected through the external fuse or circuit breaker, and the gas supply to the gas valve must be closed.**

- **Make sure that the gas type and pressure of the distribution network are compatible with the appliance, as per the information on the appliance data plate.**
- **If the boiler was in operation before conversion, allow it to cool down before performing any task.**

The appliance can be operated with G20/G20Y20, G25 or G31 gas, provided that the G20/G20Y20 (natural gas or natural gas/hydrogen mixture) factory-installed air-gas mixer is replaced by an air-gas mixer for either G25 natural gas or G31 liquefied gas (Propane). See ***Fig. 27*** for air-gas mixer location and table below for air-gas mixer top and bottom injector sizes.

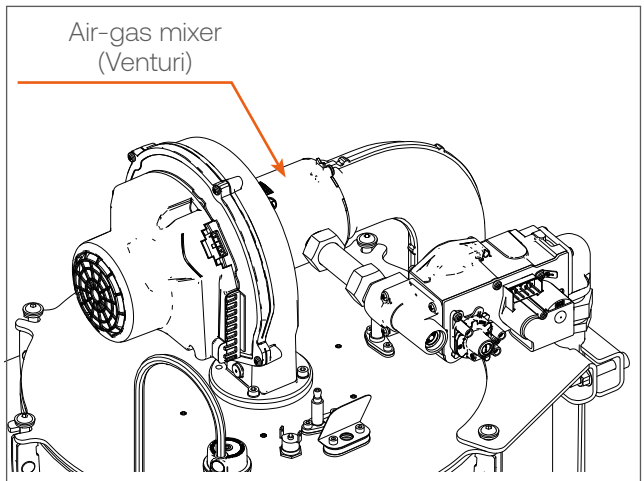


Fig. 27. Component Location

	G25	G31
Model	Top - Bottom	Top - Bottom
N 60 - 80 WH	6,0 - 6,0	4,5 - 4,7
N 100 -115 - 120 WH	6,6 - 6,6	5,0 - 5,3
N 150 WH	9,5 - 9,5	5,0 - 5,3

Adjustment of Fan Speeds

Conditions:

Adjustment Procedure (Fig. 28)

1. Restart the boiler, refer to ***"Starting the Appliance" on page U-20***.
2. Rotating the selector (**1**) and depressing it to confirm each selection:
   - select the icon,
   - select "***Expert***",
   - in "*Select user level*"; select "***Engineer***", then "***Continue***"
   - select the icon,
   - select "***complete parameter list***",
   - select "***Time of day and date***" to access the list of menus.
3. Rotating the selector (**1**), scroll to the bottom of the list, "***Burner Control***",
4. On page "***(4/12)***", select "***9524 Required speed LF***". Press the selector (**1**) to modify the value. The value is displayed in white on a black background (**2**).
5. Rotating the selector (**1**), adjust the minimum fan speed according to the table shown at the bottom of the page.
6. Press the selector (**1**) to confirm and save the value.
7. Rotating the selector, go up the screen, back to the Burner Control page number. Select page number "***(4/12)***" by pressing the selector (**1**), then go to the following page.
8. On page "***(5/12)***", select "***9529 Required speed HF***". Press the selector (**1**) to modify the value. The value is displayed in white on a black background.
9. Rotating the selector (**1**), adjust the nominal fan speed according to the table shown at the bottom of the page.
10. Press the selector (**1**) to confirm and save the value.
11. Press the selector (**1**) for more than 3 sec. to exit the setting menu.

Follow-on Task(s)

- Perform the combustion adjustment. See ***"Combustion Adjustment after Gas Conversion" on page I-68.***

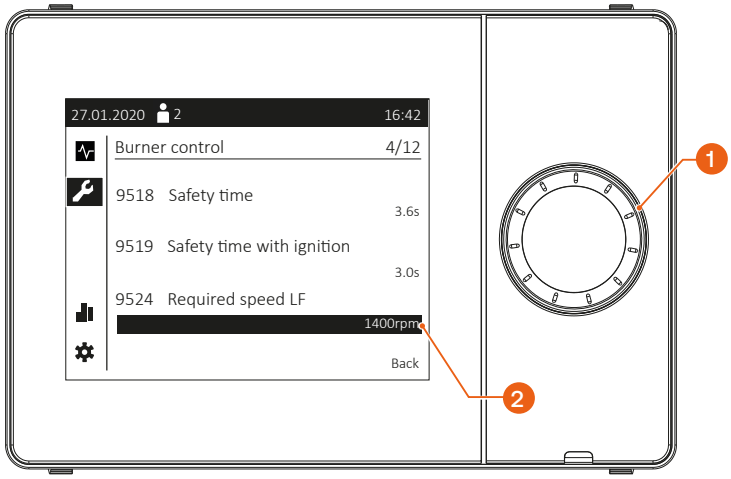


Fig. 28. Fan Speed Adjustment - Typical Screen

			N 60 WH	N 80 WH	N 100 WH	N 115 WH	N 120 WH	N 150 WH
Fan speeds for G20/ G20Y20 (Natural Gas / Natural gas + 20% H2)	Minimum	rpm	1400	1400	1400	1400	1400	1400
	Nominal	rpm	6050	7180	7180	8050	8350	7500
Fan speeds for G25 (Natural Gas)	Minimum	rpm	1400	1400	1400	1400	1400	1200
	Nominal	rpm	5790	7080	7180	8050	8350	6900
Fan speeds for G31 (Liquefied Gas)	Minimum	rpm	1400	1400	1300	1300	1300	1400
	Nominal	rpm	5350	6500	6570	7300	7600	7200

Combustion Adjustment after Gas Conversion

Conditions:

Tools and material:

- Flue gas analyser
- Torx, size T40
- Wrench, hex head, size 6

Adjustment Procedure:

1. Allow the boiler to operate for a few minutes.
2. Connect the flue gas analyser probe to the measuring port of the flue gas pipe.
3. Check CO_2 contents in the flue gas at max. output as follows:
   - Using the rotary selector (**1**), select and activate the icon,
   - Select "***Special operations (1/3)***",
   - Set "***Chimney sweep function***" to "***On***",
   - Set "***Burner output"*** to ***"Full load"***.

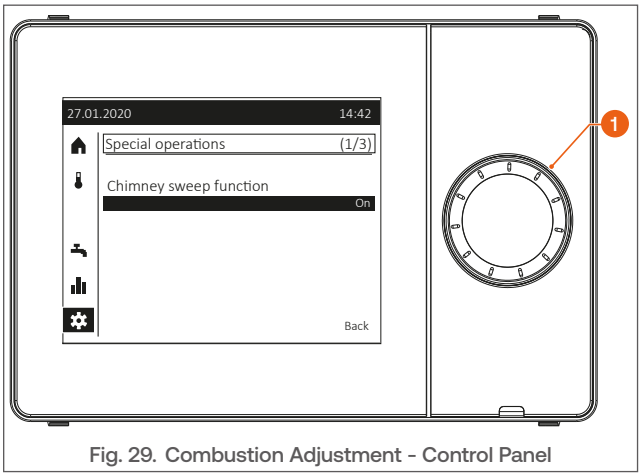


Fig. 29. Combustion Adjustment - Control Panel

4. Check the CO_2 (or O_2) contents displayed on the gas analyser, and compare the values with those in the tables below.

5. If the value is outside the range, adjust the combustion value by turning the gas valve throttle (**2**) in small steps, to allow the value to stabilise before performing additional adjustments.
   - Rotate throttle screw **clockwise (to the right) to decrease** the CO_2 contents.
   - Rotate throttle screw **counter-clockwise (to the left) to increase** the CO_2 contents.
6. Check CO_2 contents in the flue gas at min. output as follows:
   - Set "***Burner output"*** to ***"Partial load"***.
   - Check the CO_2 contents, and compare the values with those in the table at the bottom of the page.
   - If the value is outside the range, adjust the combustion value by turning the offset screw (**3**) in small steps to allow the value to stabilise before performing additional adjustments.

The offset screw (3) is factory-sealed. After adjustment, make sure to reseal it.

7. Check that CO level is not higher than 200 ppm.

If the CO level exceeds 200 ppm, please contact your AIC representative

8. Once measurement is complete, in "***Special operations (1/3)***", set "***Chimney sweep function***" to "***off***".
9. Press the selector (**1**) for more than 3 sec. to exit the setting menu.
10. Restart the boiler to check the ignition behaviour. Control the correct operation of the boiler by repeating steps 1 to 7.
11. Reseal the offset screw (**3**) using some paint or tape.

			@Min output	@Max output
N60 WH to N120 WH	G25	$\%CO_2$	8,4 (±0,2)	9,1 (±0,2)
	G31	$\%CO_2$	10,0 (±0,2)	10,5 (±0,2)
	G25	$\%O_2$	5,7 (±0,2)	4,4 (±0,2)
	G31	$\%O_2$	5,7 (±0,2)	4,9 (±0,2)
N 150 WH	G25	$\%CO_2$	8,4 (±0,2)	9,1 (±0,2)
	G31	$\%CO_2$	10,0 (±0,2)	10,7 (+0;-0,2)
	G25	$\%O_2$	5,7 (±0,2)	4,4 (±0,2)
	G31	$\%O_2$	5,7 (±0,3)	4,6 (+0;-0,3)

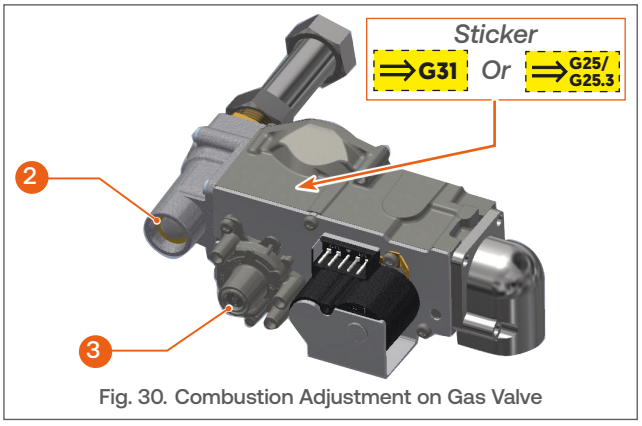


Fig. 30. Combustion Adjustment on Gas Valve

Follow-on Task(s):

- On the gas valve (***Fig. 30***), place the yellow sticker indicating that a gas conversion has been carried out.
- Fill in the yellow gas conversion sticker with all relevant information and place it next to the data plate, below the boiler. See ***Fig. 31.***
- Reinstall front and top panels, Refer to ***"Removing and Installing the Access Panels" on page I-30.***
- Record the combustion values in the log sheet available in ***"Combustion Parameters - Log Sheet" on page I-87.***
- Record the gas conversion in ***"Gas conversion - Log Sheet" on page I-88.***

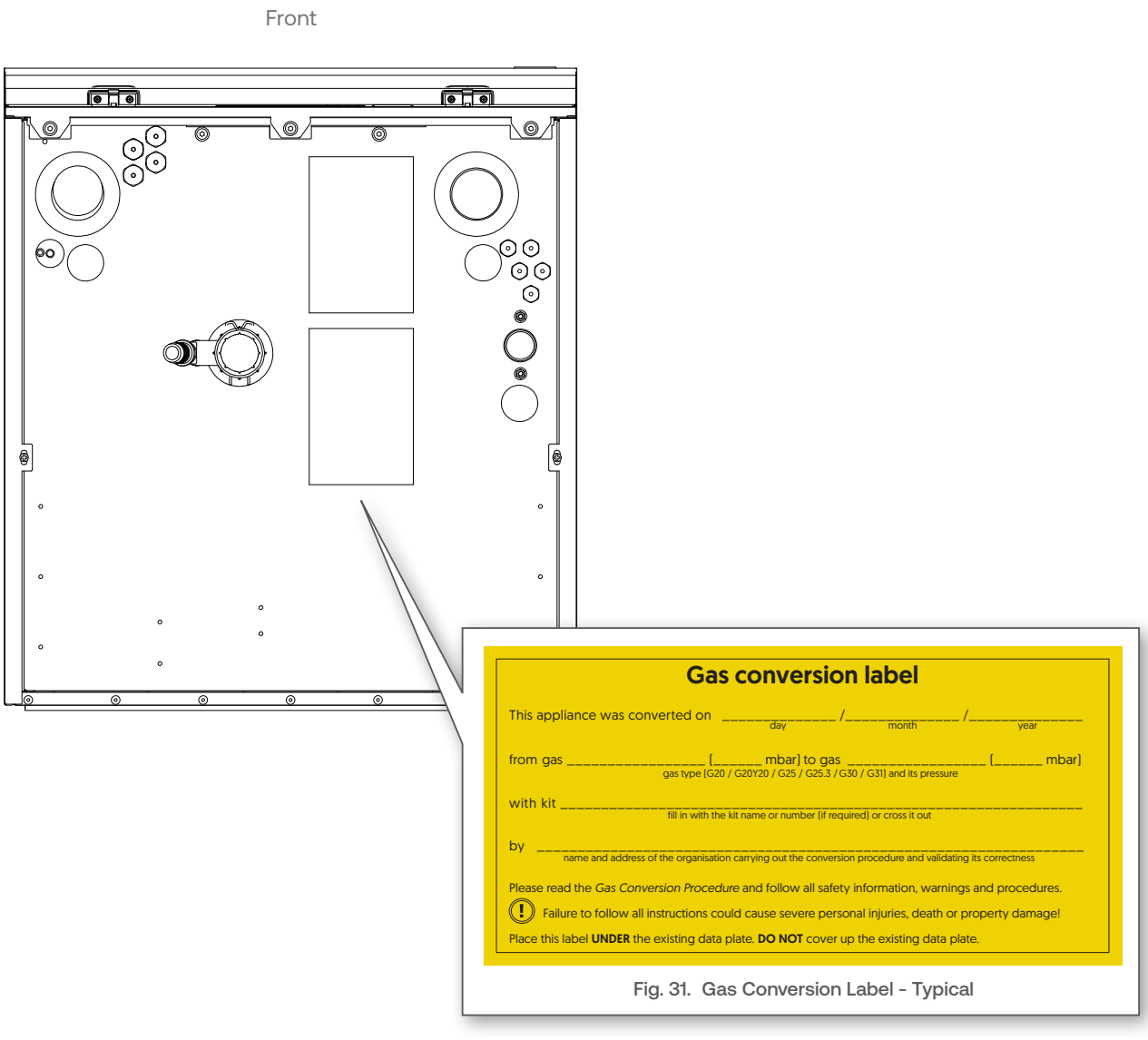


Fig. 31. Gas Conversion Label - Typical

Optional Modules

Extension Modules

Nesta Chrome boilers can control 3 heating circuits with mixing functions, using 3 extension modules. Each extension supply needs to be provided with power supply and a bus connection.

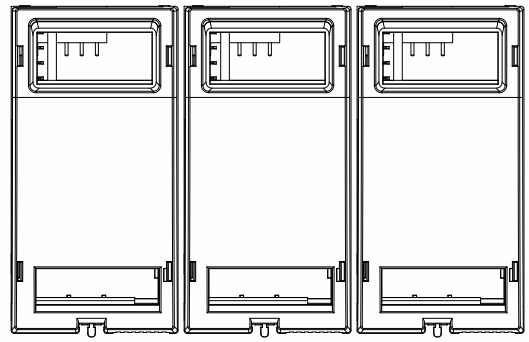


Fig. 32. Extension Modules

Cascade module (standard from Nesta Chrome 100)

This module allows the installation of several boilers in a cascade to increase the heating power in specific applications. This cascade module enables communication from one boiler to another, and must be installed in each boiler. See ***"Boilers in a Cascade System" on page I-71.***

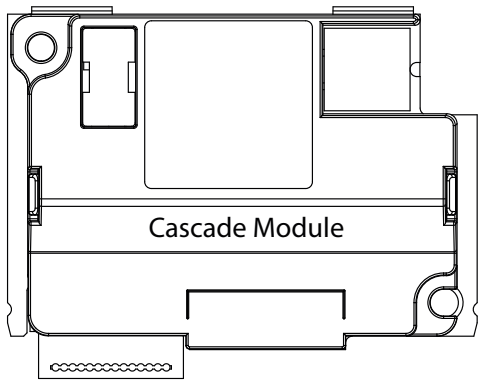


Fig. 33. Cascade Module

Web Server Module

Through the use of this module, you can connect to an Ethernet and get remote access to the boiler and all the heating system via the Internet. Using a computer or mobile devices, you can monitor and control the installation remotely. Management takes place via a web browser.

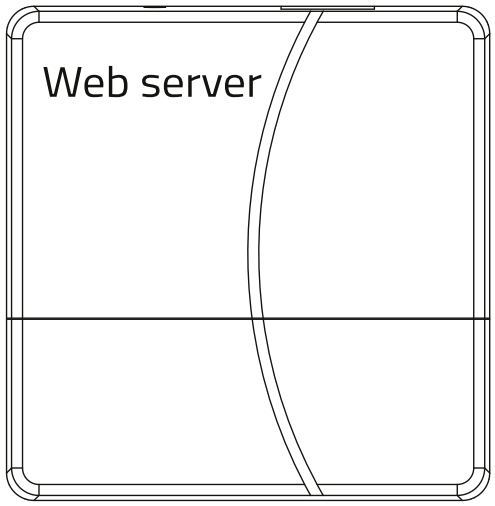


Fig. 34. Web Server Module

Boilers in a Cascade System

In a heating system comprised of several boilers, it is important that the power generated by the boilers adapts at any moment to the demand of the installation, always optimising the generators' efficiency.

Up to 4 boilers can be connected in a cascade to one chimney, and 4 such groups of boilers with their chimneys can be controlled using the control unit of one boiler.

The boiler with device address 1 assumes the role of the cascade Principal, and the others are Subsequent.

In the controller menus, please note that the Principal boiler is called "Master" and a Subsequent boiler is called "Slave".

The principal boiler activates the required functions and shows the additional menus with the parameters for use with the cascaded system.

This boiler has all the logic control of the cascaded system and also regulates the stop/start sequence of each boiler according to the demand of the installation.

The boilers are connected with each other using the cascade module (see Fig. 36). Each boiler has its own module, which is connected directly to the board.

When several boilers are cascaded through their chimney system, make sure to install a non-return valve (flue damper) between the boiler flue outlet and the chimney connection. This will prevent any back flow of the flue gases into a boiler that is not in operation. Please refer to the manual provided with the accessory for installation and maintenance recommendations.

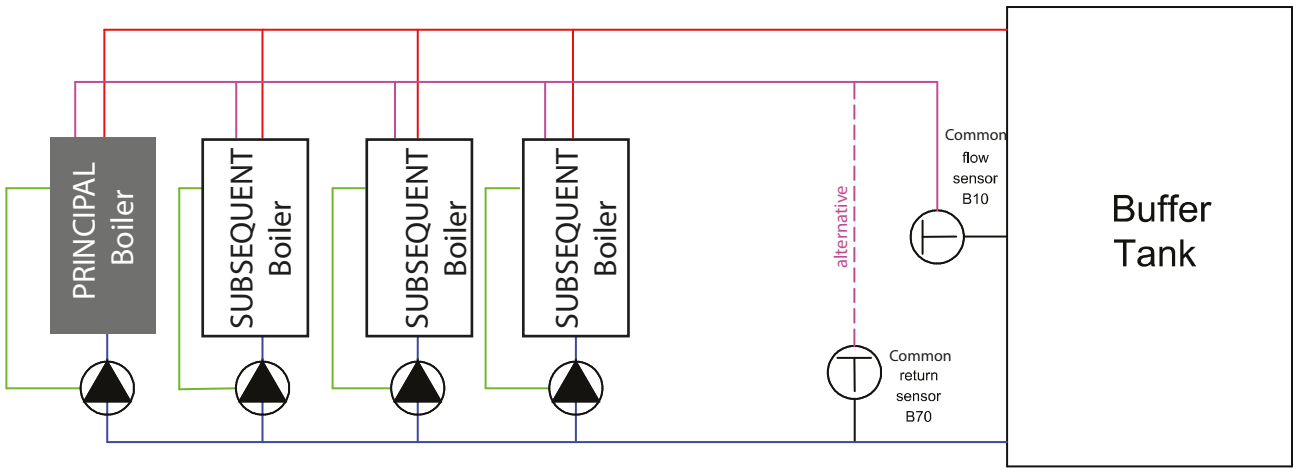


Fig. 35. Principles of Cascade

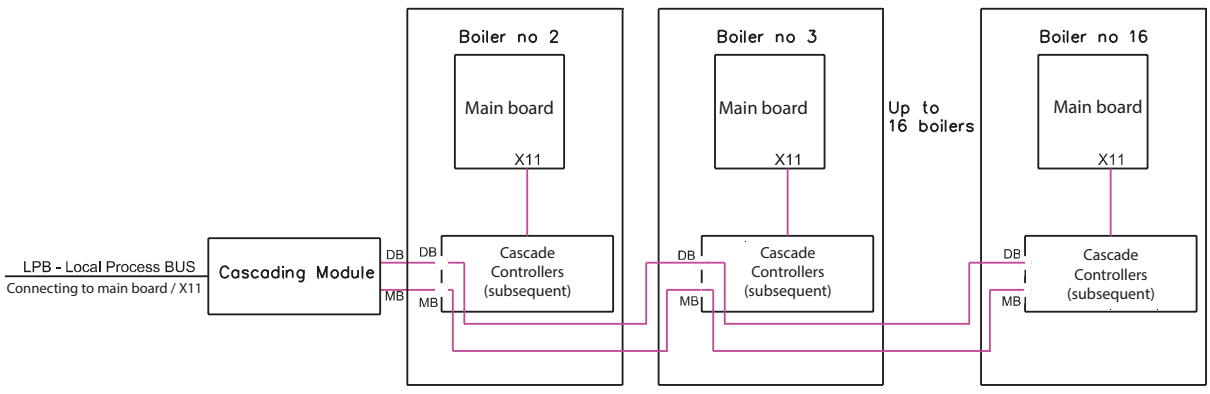
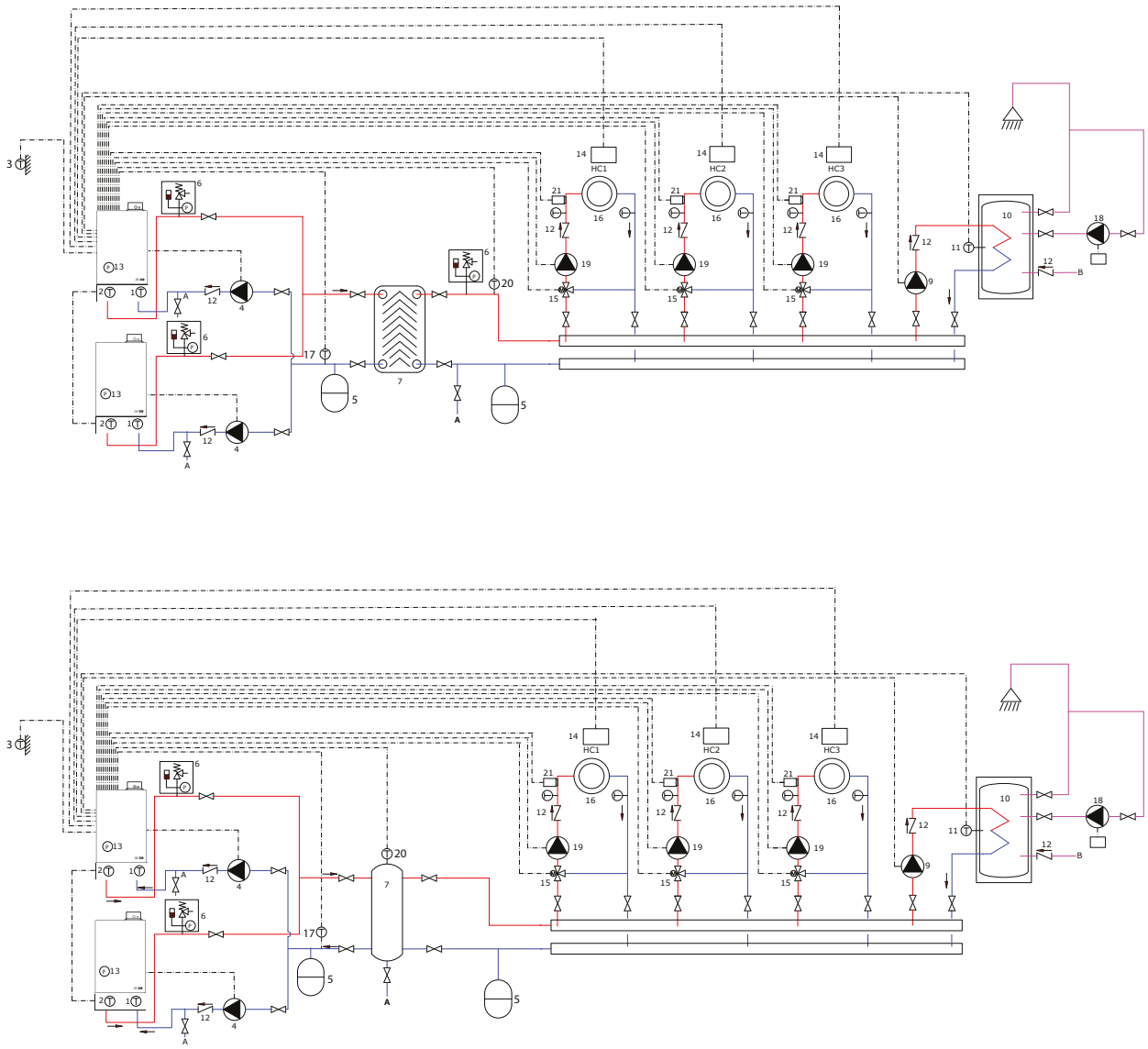


Fig. 36. Cascading Module



H.C. – Heating circuit
D.H.W. – Domestic hot water
A – Mains cold water supply/drain
B – DHW cold water supply

1. Return temperature sensor
2. Supply temperature sensor
3. Outside temperature sensor
4. Boiler pump
5. Expansion tank
6. Safety group (safety valve, air vent - air purge, manometer)
7. Plate heat exchanger/Low loss header
8. Air vent
9. DHW Pump
10. DHW Storage tank
11. DHW Storage tank temperature sensor
12. Check valve
13. Water pressure sensor
14. Room unit / Room thermostat
15. Mixing valve
16. Consumers
17. Cascade return sensor
18. DHW Circulation pump (with timer)
19. HC Pump
20. System supply sensor
21. HC1, HC2, HC3 temperature sensor

Fig. 37. Cascade System with Plate Heat Exchanger / Low Loss Header

Weather Compensation Curve

The heating curve generates the flow temperature setpoint (program lines 720, 1020 and 1320 for HC1 to HC3), which is used to maintain a certain flow temperature level depending on the prevailing weather conditions. The heating curve can be adjusted in different ways, thus matching the heat output and the room temperature to individual needs.

When the heating curve slope is raised, the flow temperature increases as the outside temperature drops. Or, in other words, if the room temperature is not correct at low outside temperatures but correct at higher outside temperatures, the heating curve slope must be readjusted.

Increasing the slope: Raises the flow temperature, especially when the outside temperature is low.

Decreasing the slope: Lowers the flow temperature, especially when the outside temperature is low.

The set heating curve is based on a room temperature setpoint of 20 °C. If this setpoint is changed, the heating curve adapts automatically to the new value

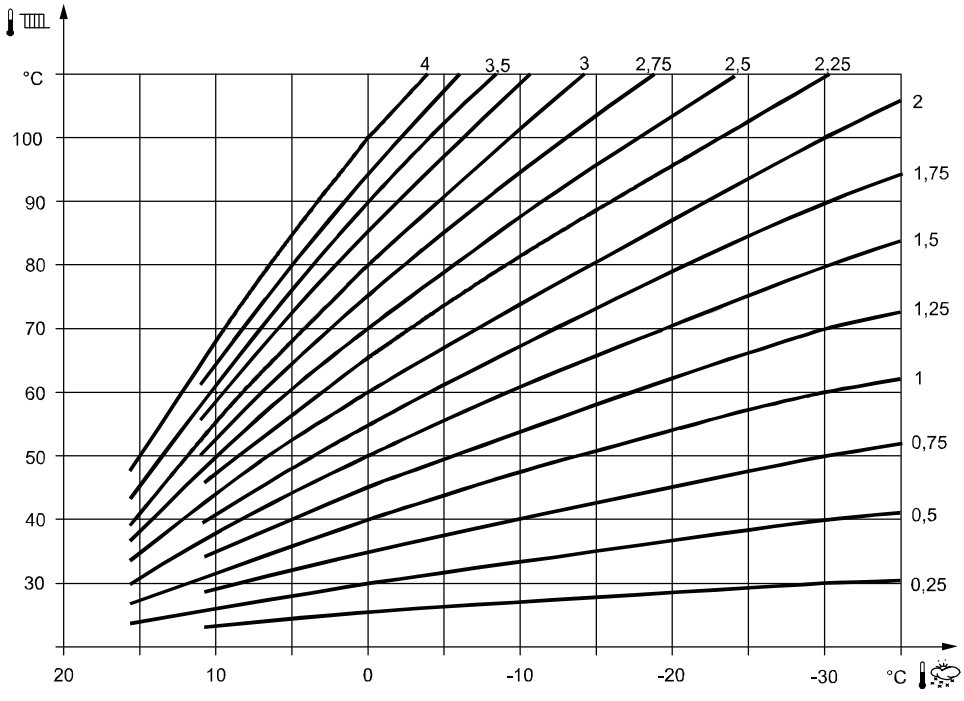


Fig. 38. Heating Curve Slope

Boiler Settings for the Installer

Access Levels

Three different levels of settings are available for the Installer : End user level, Commissioning level and Engineer level. A fourth level, OEM, is only accessible at factory level, through the use of a code.

Each level allows to set certain specific parameters or program the boiler, according to the installed circuits.

The menus of the End user level are described in ***"Operating the Controller - End User Level" on page U-21.*** The menus for the qualified professional (Commissioning and Engineer) are described in the following pages.

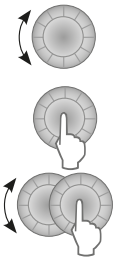
To access the Commissioning and the Engineer levels, proceed as follows:

Menus and Settings

The following table contains some of the menus and submenus for the installer. The last column allows the installer to write down the setting defined for each parameter at installation, if it is different from the default.

For any question related to the menus, please contact AIC's technical support.

Symbols used for the **operation of the selector**:



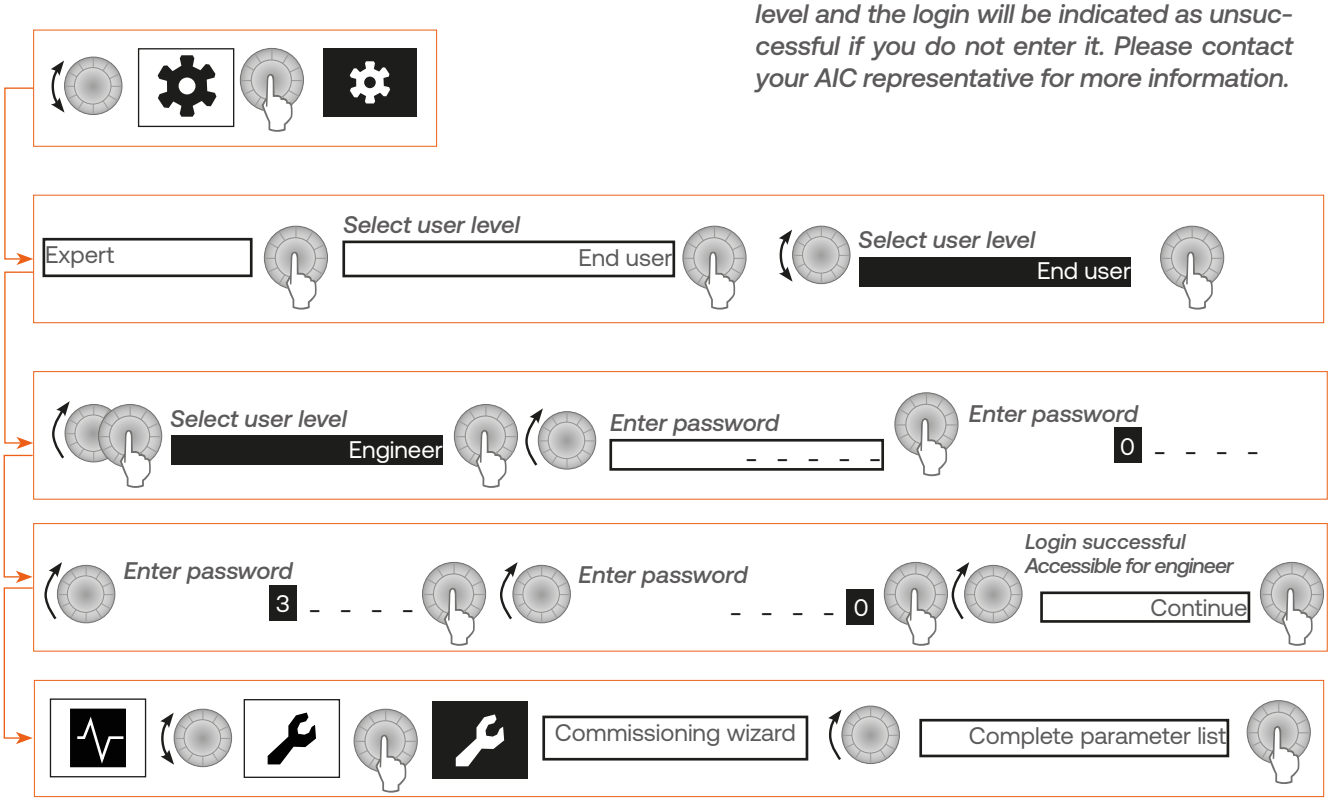
turn the selector to the left or to the right.

depress shortly the rotary selector.

turn the selector to adjust the value, then depress the selector to validate.

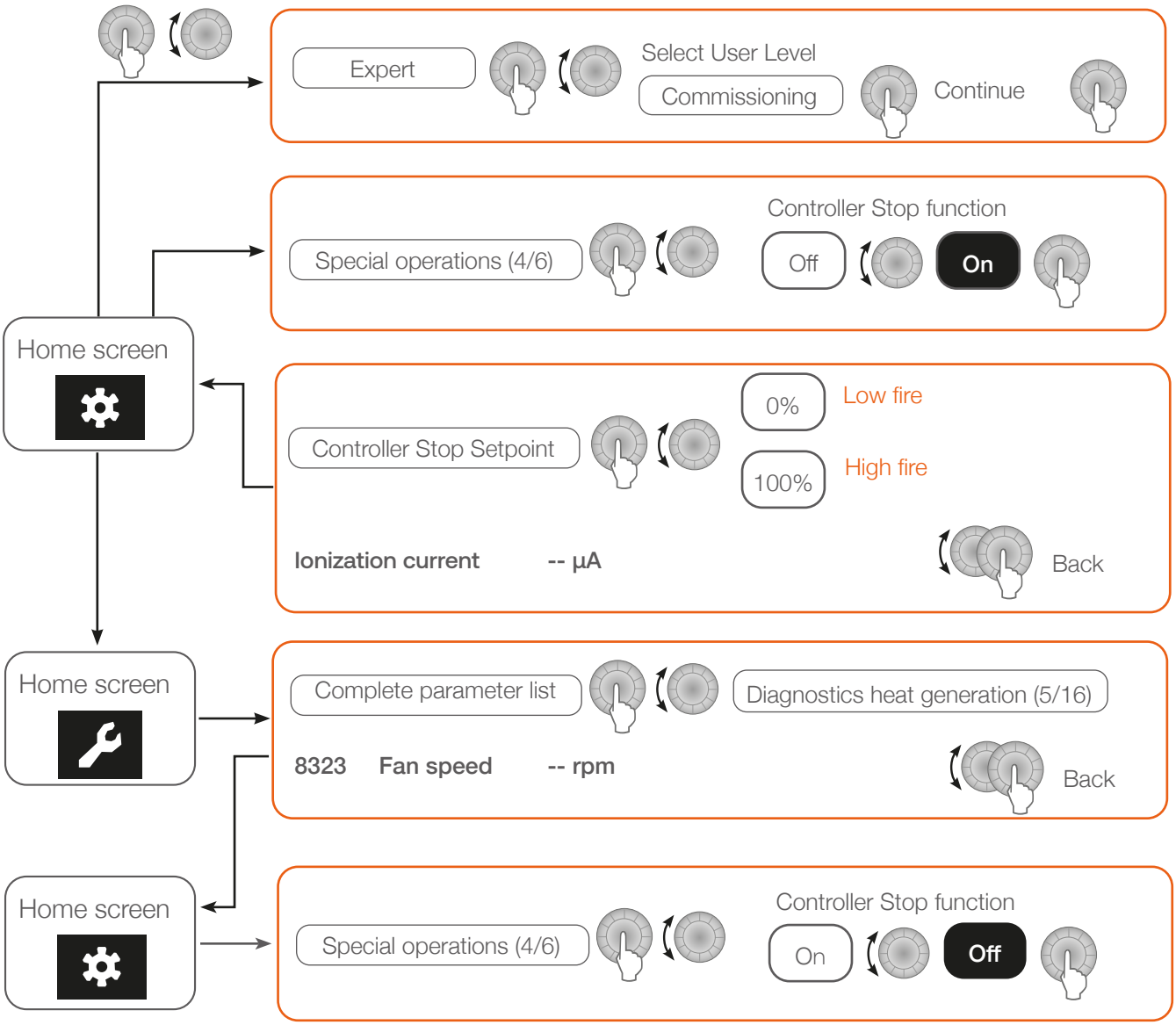
Selecting the User Level & Accessing the Complete Parameter List

- ▷ *The process is identical to access the commissioning level.*
- ▷ *A password is required to access the Engineer level and the login will be indicated as unsuccessful if you do not enter it. Please contact your AIC representative for more information.*

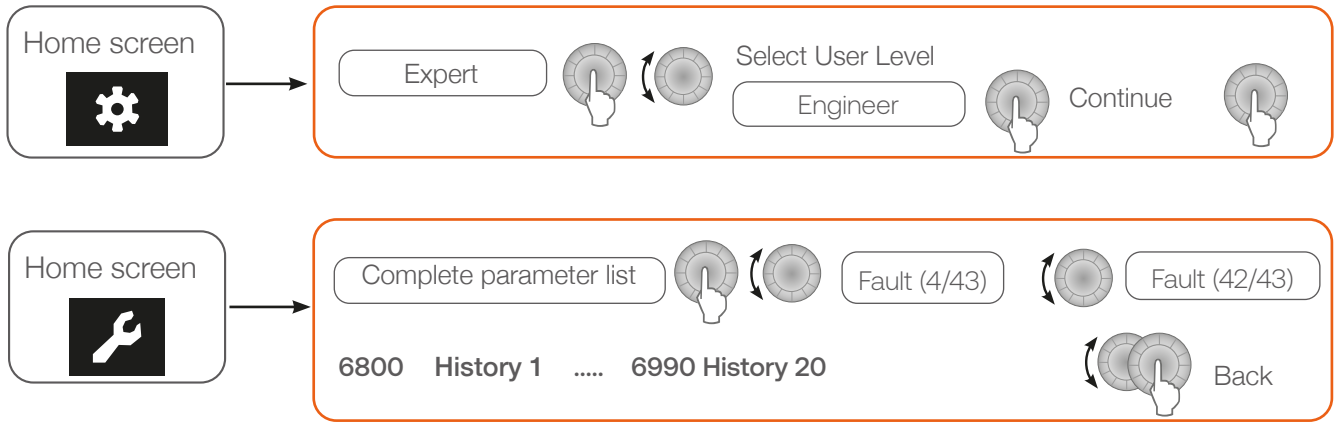


Quick access to functions for the Installer

Setting to Low/High Fire - Reading Ionization current and fan speed



Reading the Error History



Structure of Menus for the Installer

Top menu	page	Pgm No.	Submenu 1	Submenu 2	Default	Setting
Time of day and date (2 pages)	p. 1/2	1	▸ Hours / Minutes		01:00 (hh:min)	
		1	▸ Date		01.01.2030 (dd.mm.yyyy)	
	p. 2/2	5	▸ Start of summertime		25.03 (dd.mm)	
		6	▸ End of summertime		25.10 (dd.mm)	
Operator section (3 pages)	p. 1/3	20	▸ Language	English - Deutsch - Français - Italiano - Nederlands - Español - Portuguese - Dansk - Suomi - Svenska - polski - Slovensky - Česky - Slovenščina - русский - Magyar - Ελληνικά - Türkce - Serbian - Lietuvių	English	
		40	▸ Used as	▹ Operator unit 1 ▹ Operator unit 2 ▹ Operator unit 3	Operator unit 1	
		42	▸ Assignment device 1	▹ Zone 1 ▹ Zone 1 and 2 ▹ Zone 1 and 3 ▹ All zones	All zones	
	p. 2/3	44	▸ Operation HC2	▹ Jointly with zone 1 ▹ Independently	Jointly with zone 1	
		46	▸ Operation HC3/P	▹ Jointly with zone 1 ▹ Independently	Jointly with zone 1	
		48	▸ warmer/cooler device 1	▹ None ▹ For zone 1 only ▹ For all assigned zones	For zone 1 only	
	p. 3/3	70	▸ Software version			
Time Prog heating circuit 1		—	▸ Set time program	ⓘ	*Refer to "Basic Settings and Information" on page U-24*	
		516	▸ Default values	▹ No ▹ Yes	No	
Time Program 5		—	▸ Set time program	ⓘ	*Refer to "Basic Settings and Information" on page U-24*	
		616	▸ Default values	▹ No ▹ Yes	No	
Heating circuit 1 (16 pages)	p. 1/16	710	▸ Comfort setpoint		20.5°C	
		712	▸ Reduced setpoint		16.0°C	
		714	▸ Frost protection setpoint		10.0°C	
	p. 2/16	716	▸ Comfort setpoint max		35.0°C	
		720	▸ Heating curve slope		1.5	
		721	▸ Heating curve displacement		0.0°C	
	p. 3/16	726	▸ Heating curve adaptation	▹ Off ▹ On	Off	
		730	▸ Summer/winter heating limit		18.0°C	
		732	▸ 24-hour heating limit		-3°C	

Top menu	page	Pgm No.	Submenu 1	Submenu 2	Default	Setting
Heating circuit 1 (Ctn'd)	p. 4/16	733	▶ Ext'n 24-hour heating limit	▷ No ▷ Yes	Yes	
		740	▶ Flow temp setpoint min		8°C	
		741	▶ Flow temp setpoint max		80°C	
	p. 5/16	742	▶ Flow temp setpoint room stat		65°C	
		744	▶ Swi-on ratio room stat		---	
		746	▶ Delay heat request		0 s	
	p. 6/16	750	▶ Room influence		Unused	
		760	▶ Room temp limitation		1°C	
		761	▶ Heating limit room controller		---	
	p. 7/16	770	▶ Boost heating		5°C	
		780	▶ Quick setback	▷ Off ▷ To reduced setpoint ▷ To frost prot setpoint	To reduced setpoint	
		790	▶ Optimum start control max		0 min	
	p. 8/16	791	▶ Optimum stop control max		0 min	
		800	▶ Reduced setp increase start		Unused	
		801	▶ Reduced setp increase end		-15°C	
	p. 9/16	809	▶ Continuous pump operation	▷ No ▷ Yes	No	
		820	▶ Overtemp prot pump circuit	▷ Off ▷ On	On	
		830	▶ Mixing valve boost		5°C	
	p. 10/16	832	▶ Actuator type	▷ 2 position ▷ 3 position	3 position	
		833	▶ Switching differential 2-pos		2°C	
		834	▶ Actuator running time		120 s	
	p. 11/16	835	▶ Mixing valve Xp		32°C	
		836	▶ Mixing valve Tn		120s	
		850	▶ Floor curing function	▷ Off ▷ Functional heating ▷ Curing heating ▷ Curing/Functional heating ▷ Functional/Curing heating ▷ Manually	Off	
	p. 12/16	851	▶ Floor curing setp manually		25°C	
		855	▶ Floor curing setp current		---	
		856	▶ Floor curing day current		---	
	p. 13/16	861	▶ Excess heat draw	▷ Off ▷ Heating mode ▷ Always	Always	
		870	▶ With buffer	▷ No ▷ Yes	Yes	
		872	▶ With prim contr/system pump	▷ No ▷ Yes	Yes	
Heating circuit 1 (Ctn'd)	p. 14/16	880	▶ Pump speed reduction	▷ Operating level ▷ Characteristic ▷ Temp differential nominal	Characteristics	
		881	▶ Starting speed		100%	
		882	▶ Pump speed min		50%	
	p. 15/16	883	▶ Pump speed max		100%	
		888	▶ Curve readj. at 50% speed		33%	
		889	▶ Filter time const speed ctrl		5 min	

Top menu	page	Pgm No.	Submenu 1	Submenu 2	Default	Setting
	p. 16/16	890	▸ Flow setp readj speed ctrl	▹ No ▹ Yes	Yes	
		898	▸ Operating level changeover	▹ Frost protection ▹ Reduced ▹ Comfort	Reduced	
		900	▸ Optg mode changeover	▹ None ▹ Protection ▹ Reduced ▹ Comfort ▹ Automatic	Protection	
Boiler		2214	▸ Setpoint manual control		60°C	
Fault		6705	▸ SW Diagnostic code			
		6706	▸ Burn ctrl phase lockout pos			
Service/ special operation (8 pages)	p. 3/8	7130	▸ Chimney sweep function	▹ Off ▹ On	Off	
	p. 4/8	7131	▸ Burner output	▹ Partial load ▹ Full load ▹ Max heating load	Max heating load	
		7140	▸ Manual control	▹ Off ▹ On	Off	
Diagnostics heat generation (20 pages)	p. 9/20	8338	▸ Hours run heating mode			
	p. 10/20	8339	▸ Hours run DHW			
		8378	▸ Total gas energy heating			
	p. 11/20	8379	▸ Total gas energy DHW			
		8380	▸ Total gas energy			
		8381	▸ Gas energy heating	▹ Yes ▹ No		
	p. 12/20	8382	▸ Gas energy DHW	▹ Yes ▹ No		
		8383	▸ Gas energy			
	p. 18/20	8526	▸ 24-Hour yield solar energy			
		8527	▸ Total yield solar energy			
		8530	▸ Hours run solar yield			
		8532	▸ Hours run collector pump			
Diagnostics consumers	p. 1/27	8700	▸ Outside temp			
		8701	▸ Outside temp min Reset?			
		8702	▸ Outside temp max Reset?			

Error Codes and Solutions

- ▷ *The codes in the following table apply to several ranges of appliances. Depending on the internal wiring of components, some codes can indicate several types of fault sources. When that is the case and if applicable, the appliance range is specified in the Action(s) column, allowing to define the actions applicable to your appliance.*
- ▷ *In some cases, a Reset is required to have the appliance resuming its operation after the fault is corrected. Please refer to "Performing Reset" on page I-84.*

Error code	Fault description	Explanation	Action(s)
10	Outside temperature sensor error		Check connection and/or sensor. Replace as required. Emergency operation Contact AIC technical support.
20	Boiler temperature 1, sensor error	Short circuit or Open circuit boiler flow sensor.	Check connection and sensor. Replace as required.
26	Common flow temperature, sensor error	Short circuit or Open circuit common flow temperature sensor.	Check connection and sensor. Replace as required.
28	Flue gas temperature sensor error	Short circuit or Open circuit flue gas sensor.	Check connection and sensor. Replace as required.
30	Flow temperature 1, sensor error	Short circuit or Open circuit flow sensor.	Check connection and sensor. Replace as required.
32	Flow temperature 2, sensor error	Short circuit or Open circuit boiler flow sensor.	Check connection and sensor. Replace as required.
38	Flow temperature, primary controller, sensor error		Check connection and sensor. Replace as required.
40	Return temperature 1, sensor error	Short circuit or Open circuit boiler return sensor.	Check connection and sensor. Replace as required.
46	Cascade return temperature, sensor error		Check connection and sensor. Replace as required.
47	Common return temperature, sensor error		Check connection and sensor. Replace as required.
50	DHW temperature 1 sensor error		Check connection and sensor. Replace as required.
52	DHW temperature 2, sensor error		Check connection and sensor. Replace as required.
54	Flow temperature DHW, sensor error	Short circuit or Open circuit DHW flow sensor.	Check connection and sensor. Replace as required.
57	DHW circulation, sensor error		Check connection and sensor. Replace as required.
60	Room temperature 1, sensor error		Check connection and sensor. Replace as required.
65	Room temperature 2, sensor error		Check connection and sensor. Replace as required.
68	Room temperature 3, sensor error		Check connection and sensor. Replace as required.
70	Storage tank temperature 1 (top), sensor error		Check connection and sensor. Replace as required.
71	Storage tank temperature 2 (bottom), sensor error		Check connection and sensor. Replace as required.
72	Storage tank temperature 3 (center), sensor error		Check connection and sensor. Replace as required.
78	Water pressure, sensor error		Check connection and sensor. Replace as required.

Error code	Fault description	Explanation	Action(s)
81	LPB short circuit or no bus power supply		Check LPB connections and bus power supply.
82	LPB address collision		Check addresses of connected control modules
83	BSB wire cross-sectional/no communication		Check connection of the room units
84	BSB wire address collision	2 room devices have the same assignment (prog.no. 42)	Correct device address.
85	BSB RF communication error		Check bus connection and components.
91	Data overrun in EEPROM	Internal fault in controller, process sensor	Contact AIC technical support.
98	Extension module 1, error		Check extension module connections.
99	Extension module 2, error		Check extension module connections.
100	2 clock time masters		Check time master
102	Clock time master without backup		Check clock
103	Communication error		Check connection and components
105	Maintenance message		See maintenance code (press information button once) for detailed information
109	Supervision boiler temperature		Contact AIC technical support.
110	STB (SLT) lockout	No heat removal, STB interruption, possible short-circuit in the gas valve, internal fuse faulty; Internal pump malfunction	Allow device to cool down and carry out reset; if the fault occurs several times inform AIC technical support Check the internal pump, water cooled burner plate not properly air-vented (applicable for boiler with water-cooled burner plate).
111	Temperature limiter safety shutdown		Contact AIC technical support.
117	Water pressure too high		Release the water to a suitable pressure
118	Water pressure too low		Top up the system with water to reach a suitable pressure
121	Flow temperature heating circuit 1 not reached	Heat losses in circuit	Check the circuit for fault insulation and heat losses.
122	Flow temperature heating circuit 2 not reached	Heat losses in circuit	Check the circuit for fault insulation and heat losses.
125	Maximum boiler temperature exceeded		Contact AIC technical support.
126	DHW charging temperature not reached		Check operation and heat up times for DHW
127	DHW legionella temperature not reached		Check operation of appliance
128	Loss of flame during operation	Ionization current lost after successful ignition	Check electric supply, polarity and ionization electrode, as well as ignition components/ parameters.
129	Wrong air supply		Check air supply
130	Flue gas temperature limit exceeded	Heat engine is overheating	Check causes of high temps Check connection and sensor. Replace as required Check connection and chimney.

Error code	Fault description	Explanation	Action(s)
132	Gas pressure switch safety shut down	Lack of gas	Check gas supply and pressure Check connection and component
133	Safety time for establishment of flame exceeded	Lack of gas, Polarity of mains connection, safety period,	Reset, if the fault re-occurs more than 3 times, contact AIC technical support. Check ignition electrode and ionization current
146	Configuration error sensor/ controlling elements		Check sensor configuration or replace component
151	LMS14... error, internally		Check parameters (see adjustment table installer and/or call-up values) Reset controller and/or replace as required, Check electrode wiring Contact AIC technical support.
152	Parameterization error	Incorrect / Conflicting parameters input.	Verify parameters or reset to default parameters
153	Unit manually locked	Reset button stuck in	Check reset button
160	Fan speed threshold not reached	Fan/relay possibly defective, speed threshold set wrongly.	Check parameters, connections and component. Replace as required
162	Air pressure switch error	Air pressure switch/Flue pressure switch does not close	Check flue path for obstructions. Unblock as required Check connection/wiring and pressure switch. Replace as required. **Floor appliances (from 120 kW):** Check air intake for obstructions. Unblock as required.
164	Flow/pressure switch, heating circuit error	No flow detected	Remove the air from the circuit; Update the parameter set. Check connection and switches in HC. Replace as required
166	Air pressure switch error	Air pressure switch does not open	Check connection and adjustments on air pressure switch. Replace as required.
170	Error water pressure sensor, primary side		Check connection and sensor. Replace as required.
171	Alarm contact 1 active		Correct the active fault
172	Alarm contact 2 active		
173	Alarm contact 3 active		
174	Alarm contact 4 active		
176	Water pressure 2 too high		Release the water to a suitable pressure.
177	Water pressure 2 too low		Top up the system with water to reach a suitable pressure.
178	Temperature limiter heating circuit 1		Allow the circuit to cool down and carry out reset; if the fault occurs several times inform AIC technical suport.
179	Temperature limiter heating circuit 2		Allow the circuit to cool down and carry out reset; if the fault occurs several times inform AIC technical suport.
183	Unit in parametrization mode		Wait until parametrization process is complete

Error code	Fault description	Explanation	Action(s)
193	Start prevention signal input	Short circuit or Open circuit According to appliance model, can apply to the following : › condensate level switch › burner plate temp. limit switch › Additional external max. temp limit switch › Additional external max. pressure limit switch › Gas overpressure switch (N 1080-1260 FSW only)	**Nesta Chrome 60 to 150 kW** Check connection/wiring and burner plate temp. limit switch. Replace as required **Nesta 120 to 300 kW & Texas 99-230 kW:** 1. Check connection/wiring and condensate level switch. Replace as required 2. Check connection/wiring and burner plate temp. limit switch. Replace as required **Nesta Plus 280 to 840 kW (N 280 to 840 FS)** 1. Check connection/wiring and condensate level switch. Replace as required. 2. Check connection/wiring and burner plate temp. limit switch. Replace as required **Nesta Plus with water-cooled burner plate , from 280 to 1260 kW (N 280 to 1260 FSW)** 1. Check connection/wiring and condensate level switch. Replace as required. 2. Check connection/wiring and switch of Gas Overpressure Switch (N 1080-1260 FSW only). Replace as required. If the problem is not solved, contact AIC Technical support. **Floor appliances >300 kW** *This point is not applicable in Italy.* Check additional external max temp limit switch and additional external max pressure limit switch and connection. Replace as required
195	Maximum duration of the refill per charging exceeded		Check automatic refill system.
		The use of an automatic refill system is not recommended	
196	Maximum duration of the refill per week exceeded		Check automatic refill system.
		The use of an automatic refill system is not recommended	
209	Fault heating circuit		Check the heating circuit configuration. Reset to default parameters
216	Fault boiler		Check the heating circuit configuration. Reset to default parameters
217	Sensor error		Check connection and sensor. Replace as required.
218	Pressure supervision		Check system pressure.

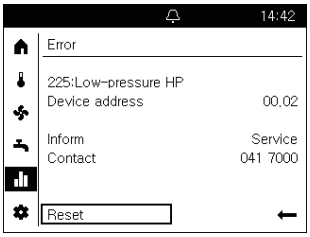
Error code	Fault description	Explanation	Action(s)
243	Swimming pool sensor, error		Check connection and sensor. Replace as required.
260	Flow temperature 3, sensor error		Check connection and sensor. Replace as required.
270	Temperature difference, heat exchanger too large		Check the heating system external hydraulic components.
317	Mains frequency outside permissible range		Check correct electric supply in boiler terminals.
320	DHW charging temperature, sensor error		Check connection and sensor. Replace as required.
321	DHW outlet temperature, sensor error		Check connection and sensor. Replace as required.
322	Water pressure 3 too high		Release the water to a suitable pressure.
323	Water pressure 3 too low		Top up the system with water to reach a suitable pressure.
324	Input BX, same sensors		Check configuration in parameters list
325	Input BX/extension module, same sensors		Check configuration in parameters list.
326	Input BX/mixing group, same sensors		Check configuration in parameters list.
327	Extension module, same function		Check configuration in parameters list.
328	Mixing group, same function		Check configuration in parameters list.
329	Extension module/mixing group same function		Check configuration in parameters list.
330	Sensor input BX1 without function		Connect temperature sensor in BX terminal
331	Sensor input BX2 without function		Connect temperature sensor in BX terminal
332	Sensor input BX3 without function		Connect temperature sensor in BX terminal
333	Sensor input BX4 without function		Connect temperature sensor in BX terminal
335	Sensor input BX21 without function		Connect temperature sensor in BX terminal
336	Sensor input BX22 without function		Connect temperature sensor in BX terminal
341	Sensor B6 missing	Solar sensor missing	Check parameters, connection and component.
349	Buffer storage tank return valve Y15 missing		Check connection of return valve Y15. Replace as required.
350	Buffer storage tank address error		Correct device address.
351	Primary controller/ system pump, address error		Correct device address.
352	Pressureless header, address error		Correct device address.
353	Sensor B10 missing	Common flow sensor missing	Check parameters, connection and component
371	Flow temperature heating circuit 3		Check the circuit for fault insulation and heat losses.

Error code	Fault description	Explanation	Action(s)
372	Temperature limiter heating circuit 3		Allow the circuit to cool down and carry out reset; if the fault occurs several times inform AIC technical suport.
378	Internal repetition		Contact AIC technical support
382	Repetition speed		Contact AIC technical support
384	Extraneous light		Shut off gas supply and contact AIC technical support
385	Mains undervoltage		Check electric supply in boiler terminals
386	Fan speed tolerance		Check air supply
388	DHW sensor no function		Check connection and sensor. Replace as required.
391	Room controller 1		Check addresses and parameters
392	Room controller 2		
393	Room controller 3		
426	Feedback flue gas damper		Check the connection and component
427	Configuration flue gas damper		Check configuration parameters
429	Dynamic water pressure too high	Expansion tank is defective	Verify pump Replace expansion tank
430	Dynamic water pressure too low		Verify pump
431	Sensor primary heat exchanger		Check connection and sensor. Replace as required.
432	Function ground not connected		Check ground connection and install as required
433	Temperature primary heat exchanger too high		Check the heating system external hydraulic components.

Performing Reset

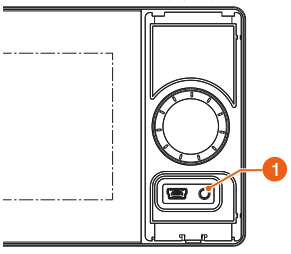
There are two types of resets depending on the kind of error:

1. **Reset interactive errors through the function.**



- Select "***Reset***" and press on rotary button.
- The text changes to "***Confirm***". Press on rotary button.
- The page is automatically closed if the error has disappeared.

2. **Reset locking errors through the Unlock button.**



Locking error features:

- Remain saved also after mains off.
- Unlocking is required even after the fault no longer is present.
- If error still persists, remove first the error.

- Remove the side cover using the tip of a screwdriver.
- Depress the Unlock button (**1**) using a sharp object (e.g. pen point) for 0,4 to 10 seconds.
- The message "***! Reset***" appears on the screen.
- If the problem is still present, call your AIC representative.

Troubleshooting

Problem	Cause(s)	Solution(s)
Boiler does not start	No power supply	1. Check that the power button is in ON position (pushed in and illuminated) 2. Make sure the power supply cable is connected to the mains 3. Check the external power supply box (circuit breaker) and reset it as required.
Boiler display remains blank	No power supply	1. Check wiring connection. 2. Check wiring continuity. 3. Replace wiring.
	Main board fuse(s) blown	Replace blown fuse(s) on electronic board (T6 3AH 250V).
Circulating pump does not start	Pump power supply	1. Check wiring connection. 2. Check wiring continuity. 3. Replace wiring.
	Relay malfunction	1. Check the relay. 2. Replace the electronic board.
	Pump malfunction	1. Reset the pump. 2. Check if there is voltage at the pump. If there is, replace the pump.
Gas smell	Leak in gas circuit	1. Check tightness of connections and circuit. 2. Check that pressure measuring points are closed.
Unburned gas smell	Leak in flue gas circuit	1. Check tightness of connections. 2. Check there are no obstructions in the flue system. 3. Check the quality of combustion.
Irregular combustion	Wrong combustion settings	Check the values with a gas analyser and readjust as required.
	Combustion air circulation	Check that the air openings are not blocked.
	Burner and combustion chamber condition	Check if they are clean.
	Heat exchanger fire tubes are blocked	Check if condensate outlets are not obstructed. Clean as required.
	Fan malfunction	1. Check if fan is working. 2. Check wiring connections 3. Check wiring continuity 4. Check if there is voltage at the fan. If there is, replace the fan. 5. Verify signal cable connection
Hard ignition	Wrong size of flue and/or combustion air ducts.	Check duct sizes and correct as required
	Wrong combustion settings	Check the values with a gas analyser and readjust as required.
	Ignition electrode malfunction	Check the condition and distance at stem tips (refer to Electrode Removal procedure)

Problem	Cause(s)	Solution(s)
Burner does not start after receiving signal from boiler controller	Gas valve malfunction Fan malfunction Ignition/ionization electrode malfunction	1. Check wiring connections 2. Check components
Combustion chamber gets dirty	Wrong combustion settings	Check the values with a gas analyser and readjust as required.
Boiler does not reach working temperature	Boiler controller	1. Adjust temperature setpoint. 2. Check controller operation. 3. Replace controller.
	Poor heat transfer	Clean combustion chamber
	Insufficient burner power	Check combustion settings
	Dirty burner	Clean burner
	Wrong chimney pressure drop	Check chimney pressure drop
Temperature too high compared to setpoint	Boiler controller malfunction	1. Check temperature setpoint. 2. Check controller operation. 3. Check position of temperature sensors.
Heat exchanger reaches temperature setpoint but radiators are cold	Radiator valves closed	Open radiator valves
	Air in the system	Bleed the air present in the heating system
	Circulating pump malfunction	1. Check if circulating pump is running 2. Check pump wiring connection and continuity. 3. Reset pump 4. Check if there is voltage at the pump. If there is, replace the pump.
Safety valve opens frequently	System safety valve	Check pressure rating of the safety valve (suitable to the system pressure).
	Pressure in the heating system	Check the pressure in the system (See hydraulic data table).
	Expansion tank	Check the expansion tank size and operation.

Maintenance Messages

Code	Meaning	Action
1	Number of burner hours run exceeded	***Contact Maintenance service***
2	Number of burner starts exceeded	
3	Maintenance interval exceeded	
5	Water pressure 1 heating circuit too low	***Fill the circuit to reach acceptable pressure.***
18	Water pressure 2 heating circuit too low (dropped below lower pressure limit 2)	

Combustion Parameters - Log Sheet

CO_2 %	Flue gas T°	Remarks	Name	Date & Signature

Water Parameters - Log Sheet

Water Filling Date	Water Top-up Date	Water Quality	Water Treatment	Remarks	Name & signature

Gas conversion - Log Sheet

This appliance was converted on ____/____/_20_____ (dd/mm/yyyy)

from gas _______________to gas ______________________ (Gas Type: Natural gas G20, G20Y20, G25, G25.1, G25.3/ Propane G31)

with Kit ____ (fill in with kit name or number (if required) or cross it out)

by: ____ (name and address of organization making this conversion, who accepts responsibility for the correctness of this conversion)

This appliance was converted on ____/____/_20_____ (dd/mm/yyyy)

from gas _______________to gas ______________________ (Gas Type: Natural gas G20, G20Y20, G25, G25.1, G25.3/ Propane G31)

with Kit ____ (fill in with kit name or number (if required) or cross it out)

by: ____ (name and address of organization making this conversion, who accepts responsibility for the correctness of this conversion)

This appliance was converted on ____/____/_20_____ (dd/mm/yyyy)

from gas _______________to gas ______________________ (Gas Type: Natural gas G20, G20Y20, G25, G25.1, G25.3/ Propane G31)

with Kit ____ (fill in with kit name or number (if required) or cross it out)

by: ____ (name and address of organization making this conversion, who accepts responsibility for the correctness of this conversion)

This appliance was converted on ____/____/_20_____ (dd/mm/yyyy)

from gas _______________to gas ______________________ (Gas Type: Natural gas G20, G20Y20, G25, G25.1, G25.3/ Propane G31)

with Kit ____ (fill in with kit name or number (if required) or cross it out)

by: ____ (name and address of organization making this conversion, who accepts responsibility for the correctness of this conversion)

	Unit	Values/Comments
General/heating system		
Type of building/system		
Commercial purpose (Y/N) ?		
Year of manufacture		
Output of system	kW	
Heated surface	m^2	
Number of heating circuits:		
• Floor heating		
• Radiators		
• Other		
Cascade (Y/N)? Number of appliances?		
Water		
Water hardness at start up	mol/m^3 or mg/l	
System volume	L	
Additive(s)/Antifreeze (Y/N)?		
• Type		
• Quantity	%	
Gas		
Type?		
Heating value	kWh/m^3	
Gas pressure regulator installed (Y/N)? Type ?		
Hydraulics		
Heating circuit normal pressure	bar	
Air purged from the system (Y/N)?		
Safety valve installed (Y/N)? Rating?	bar or kW	
Expansion tank(s) installed (Y/N)? Type(s) ?		
• Size?	L	
• Precharged pressure ?	bar	
• Number		
Plate heat exchanger in the system (Y/N)? Type?		
Low loss header in system (Y/N)? Type ?		
Number of mixers ?		
Buffer tank (Y/N)? Size?	L	
DHW tank (Y/N)? Type?	L	
Pump(s) (Y/N)? Type?		
• In which circuit(s)		
• Chosen according to requirements for the appliance?		

Installation Checklist

	Unit	Values/Comments
Flue gas		
Open or closed system?		
Dimensions of combustion air openings if closed system	cm^2	
Material of flue piping		
Diameter and length of piping system	mm / m	
Chimney system engineered by?		
Calculated pressure drop, including maximum wind condition (<200 Pa)?	Pa	
Cascade (Y/N)?		
Back-flow preventer or non-return valve installed (Y/N)? Type?		
Condensates		
Condensate discharge slope	° or cm/m	
Condensate trap filled (Y/N)?		
Neutralisation system installed (Y/N)? Type ?		
Condensate pump installed (Y/N)?		
Condensate pump control line connected (Y/N)?		
Controller		
Appliance controller?		
Other controller (Y/N)? Type?		
Optional modules installed (Y/N)		
• Type?		
Optional items installed (Y/N)?		
• Outdoor sensor (Y/N)? Type?		
• Room unit(s) (Y/N)? Type?		
• Others?		
Miscellaneous		
The end user has received all relevant information (Y/N)?		
The end user has received all relevant documents (Y/N)?		

Name

Date

Signature

UK CA CE 1015

EU Declaration of Conformity No. 2019/03EU/04

Product identification: **Wall-hung Condensing Boiler**
Nesta Chrome N 24 WH, Nesta Chrome N 32 WH, Nesta Chrome N 38 WH, Nesta Chrome N 45 WH, Nesta Chrome N 60 WH, Nesta Chrome N 80 WH, Nesta Chrome N 100 WH, Nesta Chrome N 115 WH, Nesta Chrome N 120 WH, Nesta Chrome N 150 WH.

Manufacturer: AIC EUROPE BV
Graafschap Hornelaan 163A
NL-6001 AC Weert
Netherlands

This declaration of conformity is issued under the sole responsibility of the manufacturer. The object of the declaration described above is in conformity with the relevant harmonization legislation:

EU legislation:		UK legislation:
GAR	Gas Appliance Regulation (EU) 2016/426	Gas Appliances (Enforcement) and Miscellaneous Amendments Regulations 2018 (UK SI 2018/389)
BED	Boiler Efficiency Directive 92/42/EEC	
ErP	Energy Related Products Directive 2009/125/EC	Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 (UK SI 2019/696)
ELD	Energy Labelling Directive 2010/30/EU	
LVD	Low Voltage Directive 2014/35/EU	Product Safety, Metrology and Mutual Recognition Agreement (Amendment) (EU Exit) Regulations 2019 (UK SI 2019/1246)
EMC	EMC Directive 2014/30/EU	
RoHS	RoHS Directive 2011/65/EU	

Conformity assessment procedure: **Module B + D**

Name, address, identification number of the NB: **Module B: Kiwa Nederland B.V. Apeldoorn, Netherlands, ID no. 0063**

Type Examination Certificate No. (CE): **19GR0382/06 (validity 23.06.2032) / 19BE0050/03**
Type Examination Certificate No. (UKCA): **UKCA/0558/22/017 (validity 23.06.2032)**

Product-ID-Number: **0063CU3550**

Name, address, identification number of the NB: **Module D: SZUTEST Engineering Test Institute, Brno, Czech Republic, ID no. 1015**

The conformity of the product described above with the provisions of the applied Directives and Regulations is demonstrated by compliance with the following standards:

BS EN 15502-1:2021
BS EN 15502-2-1:2012+A1:2016
BS EN 60335-1:2012+A1:2019+A2:2019+A11:2014+A13:2017+A14:2019
BS EN 60335-2-102:2016
BS EN IEC 55014-1:2021
BS EN IEC 55014-2:2021
BS EN IEC 61000-3-2:2019
BS EN 61000-3-3:2013

Signed for and on behalf of AIC EUROPE B.V.
Weert, 10.07.2023

Cyril Bongaerts,
Research & Development Director

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