BWCAAG000120 - BWCAAG000150
BWHAAG000120 - BWHAAG000150

USERS INFORMATION MANUAL

⚠ WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

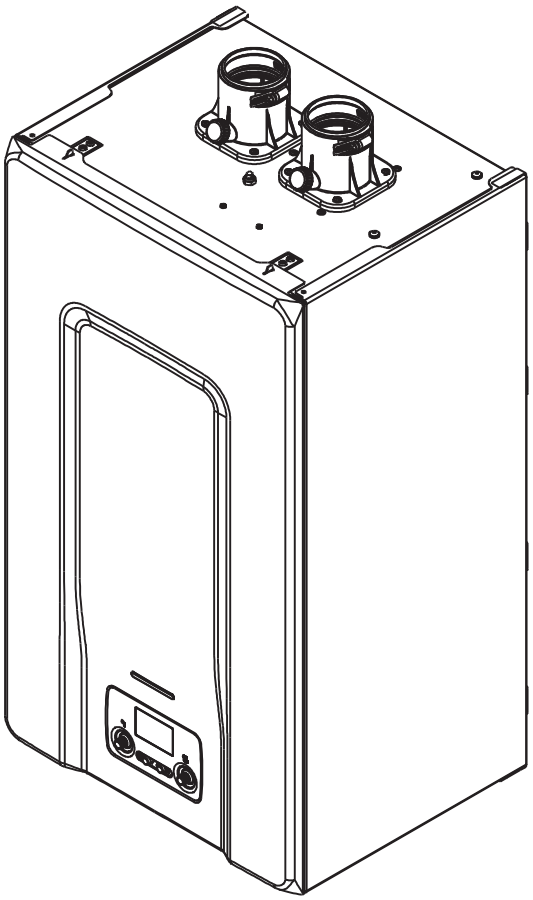
Do not store or use gasoline or other flammable vapors and liquids or other combustible materials in the vicinity of this or any other appliance. To do so may result in an explosion or fire.

WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

This manual should be maintained in legible condition and kept adjacent to the boiler or in a safe place for future reference.



H

CAC/BDP

7310 West Morris St
Indianapolis - IN 46231
USA

OG-BWC-H-01 07/2020

CONTENTS

1 KEY TO SYMBOLS

This ⚠ is the safety−alert symbol. When you see this symbol on the appliance and in instructions or manuals, be alert to the potential for personal injury.
Understand the signal words **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety−alert symbol.

DANGER identifies the most serious hazards which **will** result in severe personal injury or death.
WARNING signifies a hazard which **could** result in personal injury or death.
CAUTION is used to identify hazards which **may** result in minor personal injury or product and property damage.
NOTE and **NOTICE** are used to highlight suggestions which will result in enhanced installation, reliability, or operation.

2 WARNINGS

2.1 GENERAL WARNINGS

⚠ **WARNING:** Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

⚠ **WARNING:** This manual should be maintained in legible condition and kept adjacent to the boiler or in a safe place for future reference.

⚠ **DANGER:** Make sure the gas on which the boiler will operate is the same type as that specified on the boiler rating plate and on the sticker near the boiler gas connection.

⚠ **WARNING:** This product is a gas appliance that emits poisonous gases; such as CO (Carbon Monoxide). For this reason, it is required that CO detectors be installed in buildings where the boiler is installed. Failure to do so may result in severe injury or death.

⚠ **WARNING:** Should overheating occur or the gas supply valve fail to shut off, do not turn off or disconnect the electrical supply to the boiler. Instead, shut off the gas supply at a location external to the boiler.

⚠ **WARNING:** Do not use this boiler if any part has been under water. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any gas control which has been under water.

⚠ **WARNING:** To minimize the possibility of improper operation, serious personal injury, fire, or damage to the boiler:
- Always keep the area around the boiler free of combustible materials, gasoline, and other flammable liquids and vapors.
- The boiler should never be covered or have any blockage to the flow of fresh air to the boiler.

⚠ **WARNING:** Risk of electrical shock. More than one disconnect switch may be required to de-energize the equipment before servicing. Failure to comply could result in severe personal injury, death or substantial property damage.

⚠ **WARNING:** Automatic filling systems are not recommended with this product as they will continually add fresh water to the system if there is a leak resulting in the addition of new contaminants that could reduce the lifespan of the boiler.

⚠ **WARNING:** There is a risk of pipes freezing if the building is left unattended for long periods of time, in excess of 12 hrs, in freezing temperatures. In the event the building will be unoccupied for long periods of time, ensure the proper freeze protection precautions are taken and that a competent person is checking the building at regular intervals to prevent freezing. Failure to do so may result in substantial property damage. Please consult your qualified service technician with regards to proper freeze protection precautions.

⚠ **WARNING - CALIFORNIA PROPOSITION 65:** This product contains chemicals, such as vinyl chloride, known to the State of California to cause cancer, birth defects, or other reproductive harm.

The following instructions must be observed
- The boiler must only be used for its designated purpose, observing the Installation Instructions.
- Only use the boiler in combination with the accessories and spare parts listed.
- Other combinations, accessories, and consumables must only be used if they are specifically designed for the intended application and do not affect the system performance and the safety requirements.
- Maintenance and repairs must only be carried out by authorized professionals at regular intervals.
- You are only allowed to operate the condensing gas boiler with the combustion air/flue gas system that has been specifically designed and approved for this type of boiler.
- Please note that local permission for the flue system and the condensate water connection to the public sewer system may be required.
- The hot water distribution system must comply with all applicable codes and regulations. When replacing an existing boiler, it is important to check the condition of the entire hot water distribution system to ensure safe operation.

⚠ **DANGER:** Flammable gas explodes. Beware if you smell gas: there may be an explosion hazard.

⚠ **WARNING**: If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

⚠ **WARNING:** Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other gas appliance. **Doing so may result in an explosion or fire.**

WHAT TO DO IF YOU SMELL GAS:
- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

⚠ **WARNING:** For propane boilers only — Your propane supplier mixes an odorant with the gas to make its presence detectable. In some instances, the odorant can fade, and the gas may no longer have an odor. Before startup (and periodically thereafter), have the propane supplier verify the correct odorant level in the gas.

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, or loss of life (death).

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

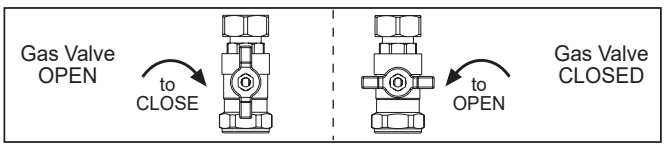
WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to turn the gas control knob. Never use tools. If the knob will not turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above on this label.
2. Set the thermostat to lowest setting.
3. Turn off all electric power to the appliance.
4. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. Turn external gas shutoff valve clockwise to close valve to the full OFF position.
6. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information above on this label.
7. Turn gas shutoff valve counterclockwise to open valve to the ON position.
8. Turn on all electrical power to the appliance.
9. Set thermostat to desired setting.
10. If the appliance will not operate, follow the instructions "To Turn Off Gas To the Appliance" and call your service technician or gas supplier.



TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Turn gas shutoff valve clockwise to close valve to the full OFF position.

POUR VOTRE SECURITE LISEZ AVANT DE METTRE EN MARCHE

AVERTISSEMENT: Quiconque ne respecte pas à la lettre les instructions dans la présente notice risque de déclencher un incendie ou une explosion entraînant des dommages, des blessures ou la mort.

A. Cet appareil ne comporte pas de veilleuse. Il est muni d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allûmer le bruleur manuellement.
B. AVANT DE FAIRE FONCTIONNER, reniflez tout autour de l'appareil pour déceler une odeur de gaz. Reniflez près du plancher, car certains gaz sont plus lourds que l'air et peuvent s'accumuler au niveau du sol.

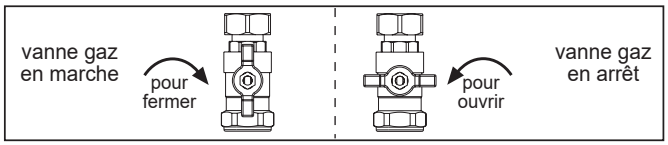
QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

- Ne pas tenter d'allumer d'appareil.
- Ne touchez à aucun interrupteur; ne pas vous servir des téléphones se trouvant dans le bâtiment.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez pas rejoindre le fournisseur, appelez le service des incendies.

C. Ne tournez la manette d'admission du gaz qu'à la main; ne jamais utiliser d'outil. Si la manette reste coincée, ne pas tenter de la réparer; appelez un technicien qualifié. Le fait de forcer la manette ou de la réparer peut déclencher une explosion ou un incendie.
D. N'utilisez pas cet appareil s'il a été plongé dans l'eau, même partiellement. Faites inspecter l'appareil par un technicien qualifié et remplacez toute partie du système de contrôle et toute commande qui ont été plongés dans l'eau.

INSTRUCTIONS DE MISE EN MARCHE

1. **ARRÊTEZ!** Lisez les instructions de sécurité sur la portion supérieure de cette étiquette.
2. Réglez le thermostat à la température la plus basse.
3. Coupez l'alimentation électrique de l'appareil.
4. Cet appareil ne comporte pas de veilleuse. Il est muni d'un dispositif d'allumage qui allume automatiquement le brûleur. Ne tentez pas d'allumer le brûleur manuellement.
5. Tournez le bouton de la vanne gaz extérieur dans le sens horaire à la position "arrêt" (OFF).
6. Attendre cinq (5) minutes pour laisser échapper tout le gaz. Reniflez tout au tour de l'appareil, y compris près du plancher, pour déceler une odeur de gaz. Si vous sentez une odeur de gaz ARRÊTEZ! Passez à l'étape "B" des instructions de sécurité sur la portion supérieure de cette étiquette. S'il n'y a pas d'odeur de gaz, passez à l'étape suivante.
7. Tourner le bouton de commande de gaz dans le sens antihoraire à la position "marche" (ON).
8. Mettez l'appareil sous tension.
9. Réglez le thermostat à la température désirée.
10. Si l'appareil ne se met pas en marche, suivez les instructions intitulées "Comment couper l'admission de gaz de l'appareil" et appelez un technicien qualifié ou le fourmisseur de gaz.



COMMENT COUPER L'ADMISSION DE GAZ DE L'APPAREIL

1. Réglez le thermostat à la température la plus basse.
2. Coupez l'alimentation électrique de l'appareil s'il faut procéder à l'entretien.
3. Tournez le bouton de commande de gaz dans le sens horaire à la position "arrêt".

3 INTRODUCTION

3.1 STRUCTURE

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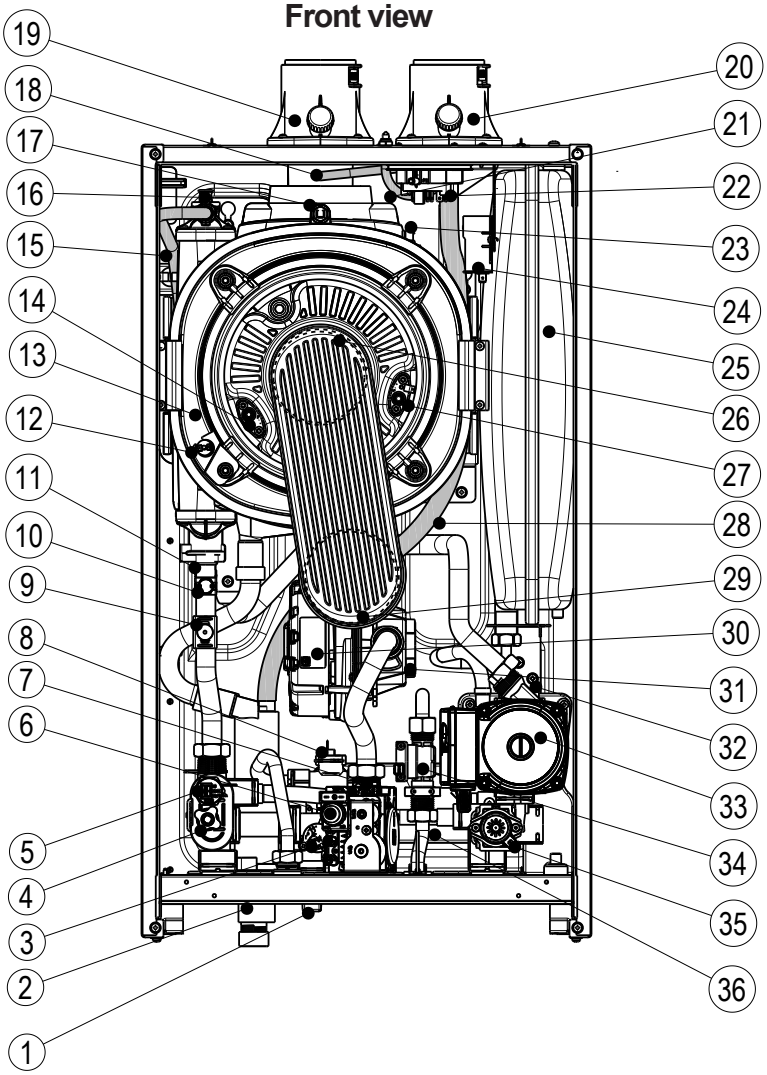
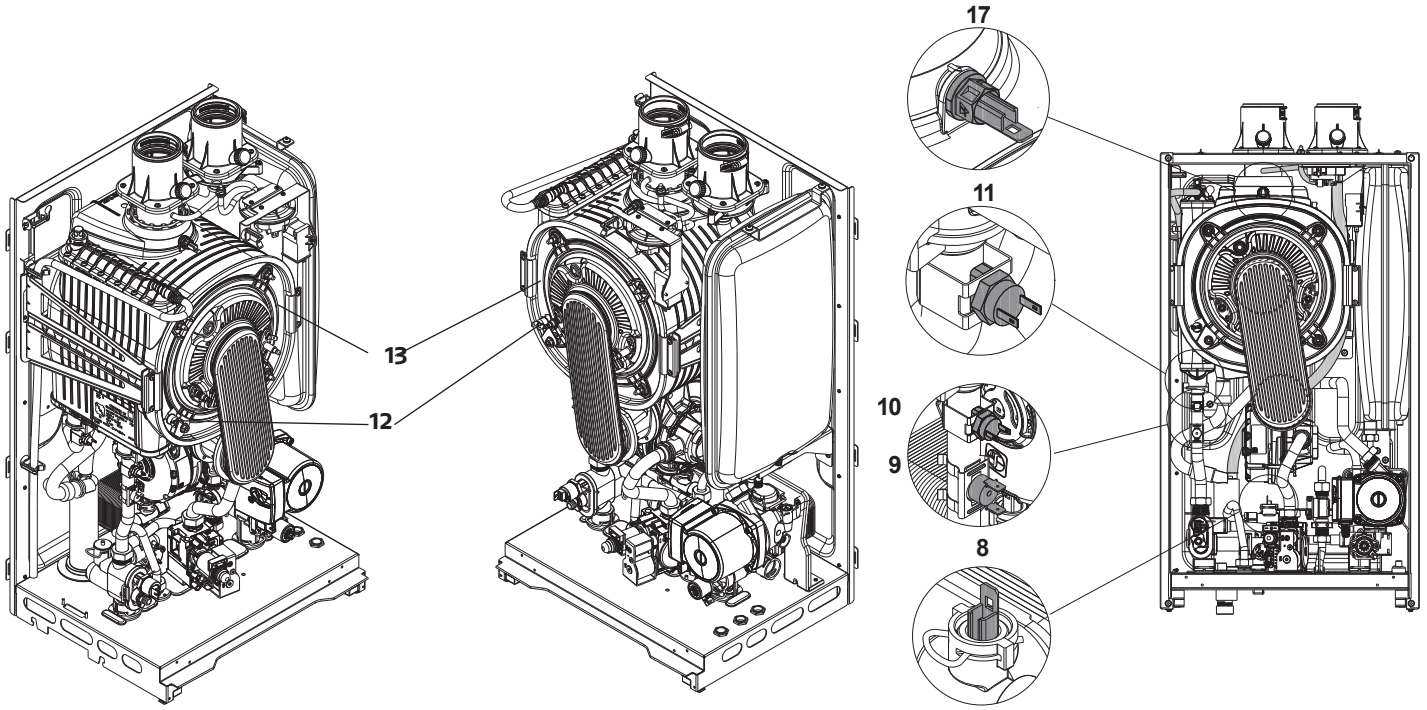
Front view



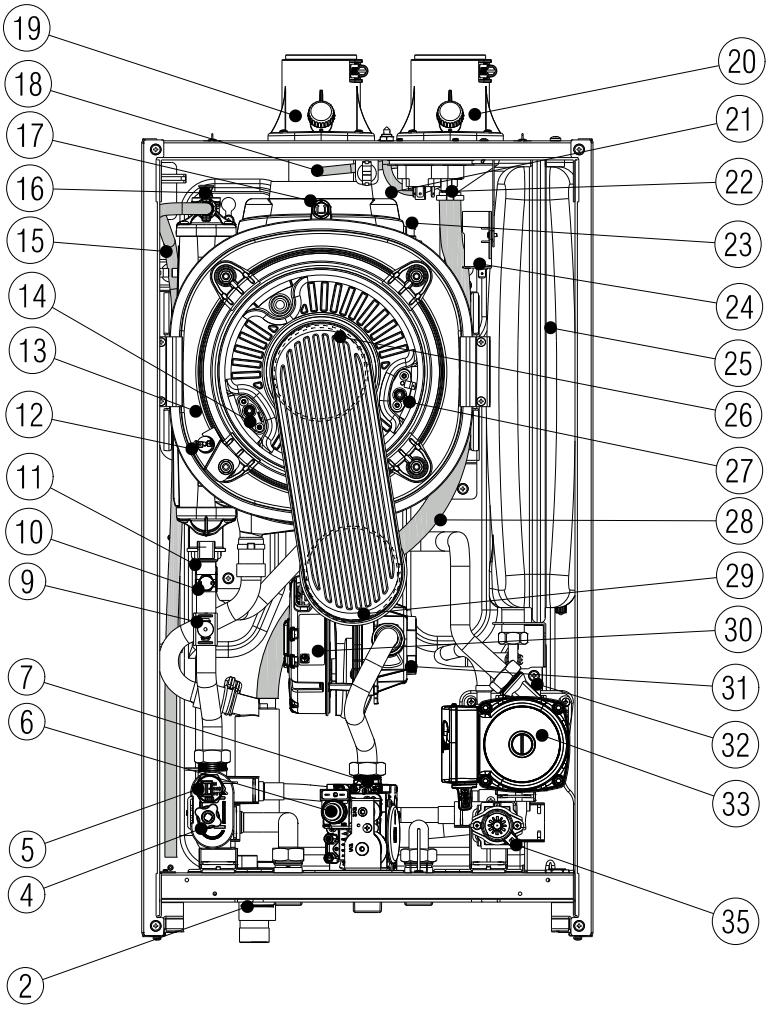
1 Filling tap
2 Condensate Trap
3 Backflow preventer valve
4 Drain valve
5 Low Water Cutoff
6 Gas valve
7 Injector
8 DHW sensor
9 Water Temperature High Limit
10 Supply sensor
11 Return sensor
12 Exchanger thermostat
13 Primary Heat exchanger
14 Flame sensor
15 Manual air vent hose
16 Manual upper air vent valve
17 Flue temperature sensor
18 Positive air pressure tube
19 Flue outlet
20 Air intake
21 Negative air pressure tube
22 Air pressure switch
23 Thermal fuse
24 Ignition transformer
25 Expansion tank
26 Burner
27 Ignition electrode
28 Water discharge hose
29 Clapet
30 Fan
31 Mixer
32 Lower air vent valve
33 Pump
34 Flow sensor
35 Three way valve
36 DHW heat exchanger

Side views



BWHAAG000120 - BWHAAG000150

Front view



2 Condensate Trap
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5 Low Water Cutoff
6 Gas valve
7 Injector
9 Water Temperature High Limit
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12 Exchanger thermostat
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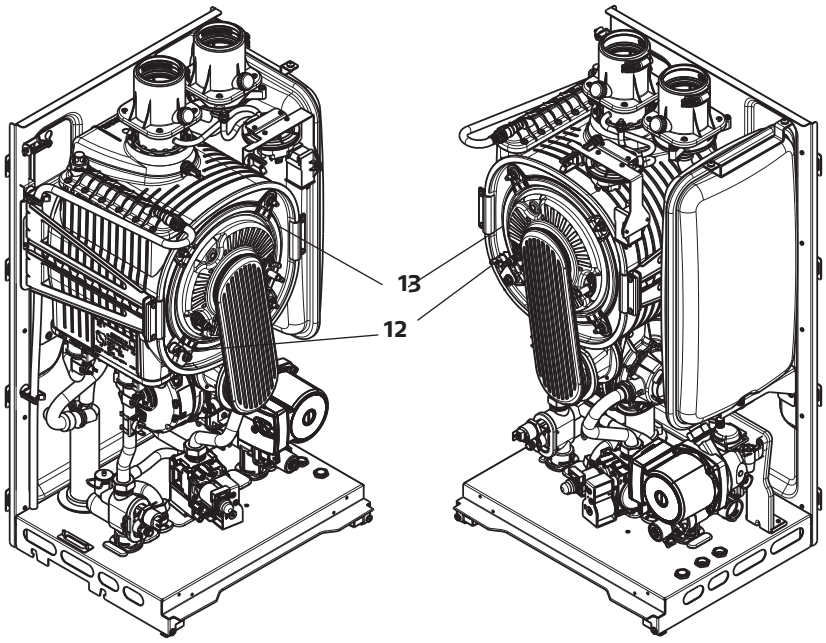
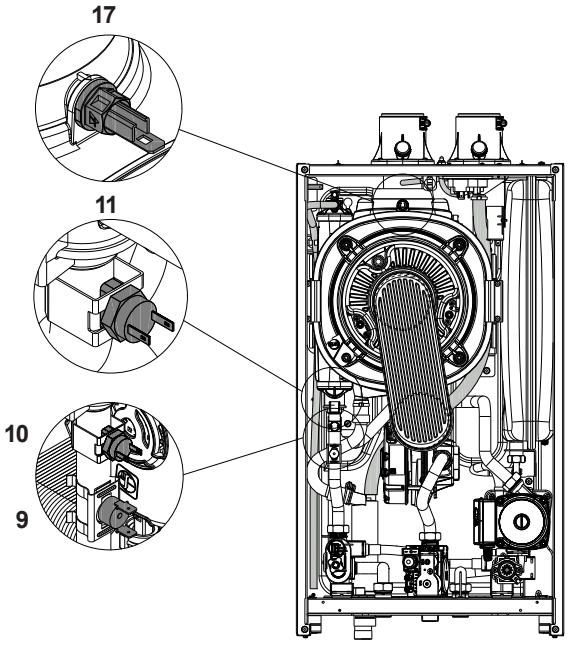
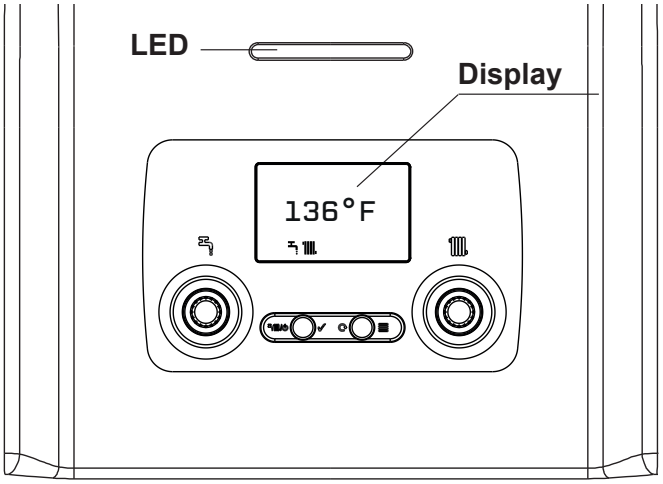
Side views

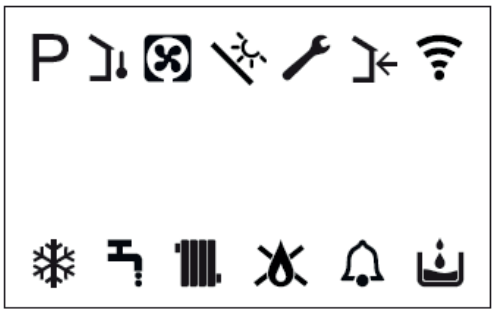




3.2 BOILER FRONT CONTROL



Icons



SOME OF THE ICONS SHOWN ON THE CONTROL DEVICE SCREEN AT THE START-UP PHASE MIGHT NOT BE AVAILABLE DURING FUNCTIONING. THIS DEPENDS ON YOUR BOILER CONFIGURATIONS

<table>
<tr><td colspan="2">LED</td><td>Light signal indicating the operating status of the boiler. Can be as follows
<table>
<tr><th>STATUS</th><th>RED LED</th><th>GREEN LED</th><th>RED AND GREEN</th></tr>
<tr><td>Definitive alarm</td><td colspan="3">see “3.14 LIGHTS AND FAULTS / RESET PROCEDURE”</td></tr>
<tr><td>Transitional alarm</td><td colspan="3">see “3.14 LIGHTS AND FAULTS / RESET PROCEDURE”</td></tr>
<tr><td>Initial automatic air purge cycle</td><td></td><td></td><td>flashing 0.5 sec on/1.0 sec off</td></tr>
<tr><td>Stand-by</td><td></td><td>flashing 0.5 sec on/3.5 sec off</td><td></td></tr>
<tr><td>Flame presence</td><td></td><td>ON</td><td></td></tr>
<tr><td>Call for Service – Service expire</td><td></td><td></td><td>flashing 0.1 sec on/0.1 sec off</td></tr>
<tr><td>Reset flue hour counter</td><td></td><td></td><td>flashing 0.5 sec on/1.0 sec off</td></tr>
<tr><td>Combustion analysis with flame</td><td></td><td>ON</td><td></td></tr>
</table></td></tr>
<tr><td></td><td>DHW adjustment left knob</td><td>The knob allows for the domestic hot water setpoint adjustment.
It also allows you to switch from one step to another and change the value of the selected parameter within the PROGRAMMING menu.</td></tr>
<tr><td></td><td>CH adjustment right knob</td><td>The knob allows for the central heating setpoint adjustment. The CH setpoint is displayed while turning the CH knob.
It also allows you to switch from one step to another and change the value of the selected parameter within the PROGRAMMING menu.</td></tr>
<tr><td></td><td>MODE/OK left button</td><td>It allows you to change the BOILER STATUS. You can also:
- navigate through the INFO menu
- select parameters inside the PROGRAMMING menu and confirm the setting of the corresponding parameter value</td></tr>
<tr><td></td><td>MENU/ RESET right button</td><td>It allows you to reset the boiler and enter in the INFO and PROGRAMMING menu. You can also:
- exit from the INFO and PROGRAMMING menu
- reset some error codes</td></tr>
</table>

	This icon indicates that boiler is in the OFF mode (anti-freeze system active). If the icon is not present, the boiler is in the ON mode.
	This icon indicates the status of the boiler. If ON, boiler is in heating mode, if blinking there is a heating request.
	This icon indicates the status of the boiler. If ON, boiler is in the DHW mode, if blinking there is a domestic hot water request.
P	DHW pre-heating (only for combi models): indicates that a pre-heating cycle has been activated.
	Error: indicates any operating irregularities, together with an error code message.
	This icon indicates the servicing operation. If ON, there is a system servicing operation in progress.
	This icon indicates that the system is detecting the presence of a flame.
	This icon indicates that the system is detecting the absence of a flame.
	Water pressure low: these icons are present when the water pressure is low and needs to be re-pressureized.

3.3 BEFORE SWITCHING ON

Before switching the appliance on, please familiarize yourself with:
- how to isolate the appliance from the gas, water, and electrical supplies;
- how to check and top-up – if necessary – the system water pressure;
- any external thermostats and their functions;
- the appliance controls.

3.4 APPLIANCE CONTROLS

NOTICE
The appliance frost protection is active in all the boiler modes.
The control panel functions can be used to vary the temperature of the water that circulates around your heating system and the water that flows from your hot water taps.
The heating temperature range can be adjusted between 68°F - 113°F (20°C - 45°C) (for low temperature) or 68°F - 180°F (20°C - 82°C) (for high temperature) this range is configured by your installer and the default is the high temperature range. The domestic hot water temperature range can be adjusted between 99°F - 140°F (37°C - 60°C).
NOTICE: the actual delivery temperature is also conditional upon the incoming water temperature and the actual flow-rate at the outlet.
Refer to the section “3.13 ACCESS TO THE INFO MENU” for fault indicator and boiler status.

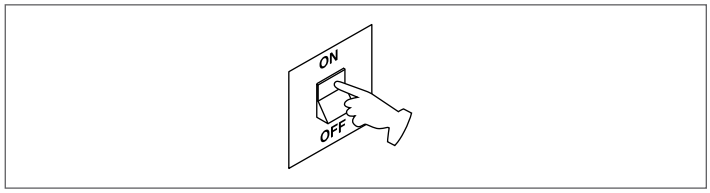
3.5 LIGHTING THE BOILER

1 Set the thermostat to lowest setting.
2 Turn off all electric power to the appliance.
3 This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
4 Turn external gas shutoff valve clockwise to close valve to the full OFF position.
5 Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP!
6 Turn gas shutoff valve counterclockwise to open valve to the ON position.
7 Turn on all electrical power to the appliance.
8 Set thermostat to desired setting.
9 If the appliance will not operate, follow the instructions to “Turn Off Gas To the Appliance” and call your service technician or gas supplier.

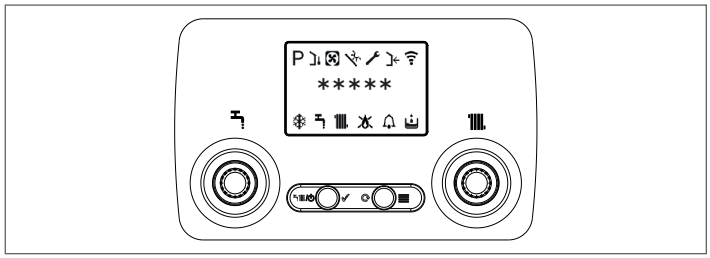
After completing all operations required to prepare commissioning, proceed as with the instructions in sections “3.6 PROGRAMMING THE BOILER” and “3.7 INITIAL START-UP” sequentially to complete lighting the boiler.

3.6 PROGRAMMING THE BOILER

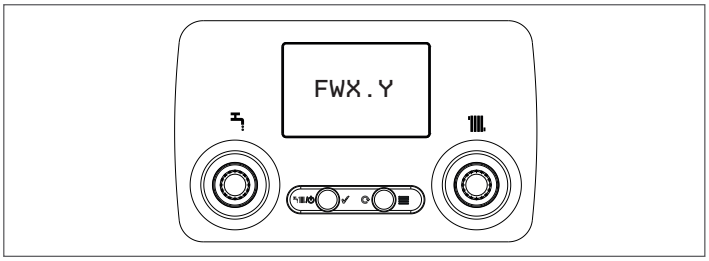
- Plug the boiler into a wall outlet. Turn on the breaker for the outlet.



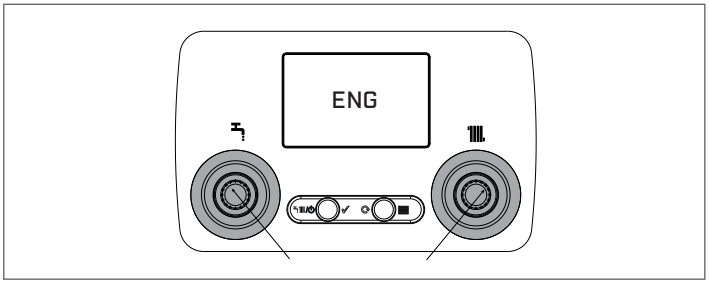
“Start-up phase” activates to check the display function. On the display, the following checks will happen:
- Display functionalities: all icons available and the sliding “*****” text will appear. Press the “MODE/OK” button in order to stop the display testing

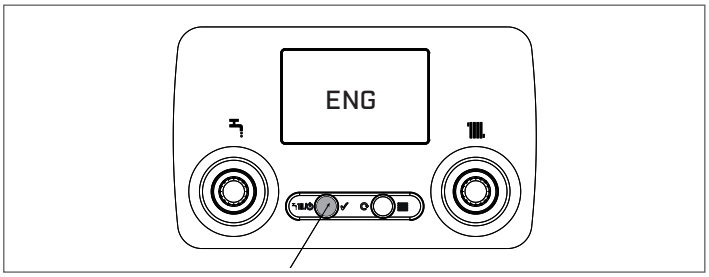


- Display firmware version: e. g. FW0.1 (no actions are required)



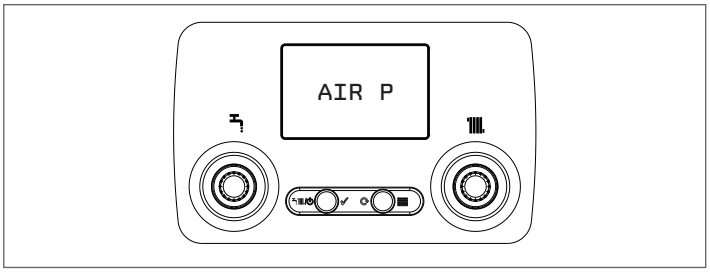
- Set language. Rotate one of the two dials to choose the preferred language (“ENG” default)
- press the “MODE/OK” button in order to confirm. If the “MODE/OK” button is not pressed, the default language is left set up.





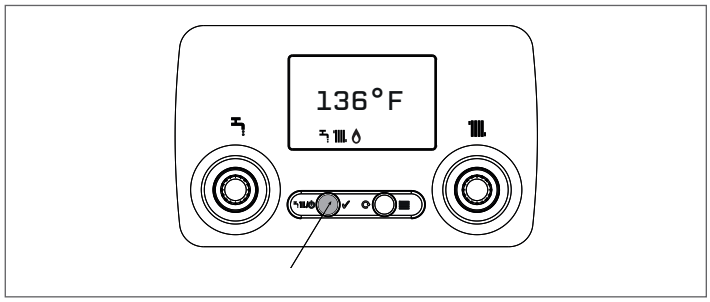
- After the “Start-up phase”, “WAIT COMM.” will always appear, which means that the SC07 front control is waiting for communication with the boiler. After which, the “Operation phase” starts: in this phase it is possibile to perform all the supported actions (with the exception of language selection).
  The controller stays in the “Operation mode” for 60 seconds starting from the last time a knob was rotated or a key was pressed. After 60 seconds has expired, the controller goes into a “Stand-by” mode, backlight OFF. If there is a knob rotation or a button pressed the device goes back to the “Operation mode”, backlight ON, for a period of 60 seconds.

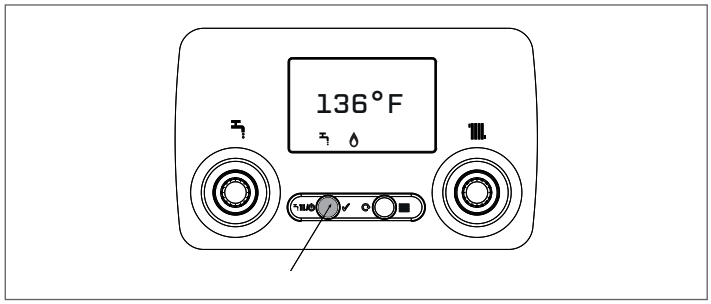
AIR PURGING FUNCTION
NOTICE: Each time the boiler is started up an automatic air purging cylce is carried out; lasting 2 min. When the air purging is in progress, all heat requests are inhibited and the sliding “AIR PURG.” message appears.



3.7 INITIAL START-UP

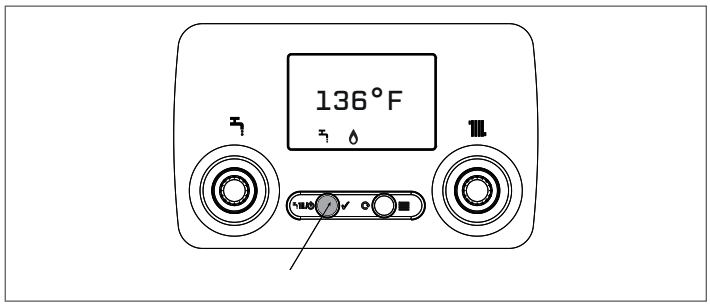
- Rotate the system’s master switch to the “on” position. Plug the boiler into a wall outlet.
- Open the gas tap to allow fuel to flow.
- Adjust the room thermostat to the desired temperature (~72°F/22°C) or, if the system is equipped with a programmable thermostat, set the occupancy temperature to the desired temperature. Ensure that the thermostat is “active” and set correctly (~72°F/22°C)
- Then press the “MODE/OK” button repeatedly to select CH or CH/DHW mode



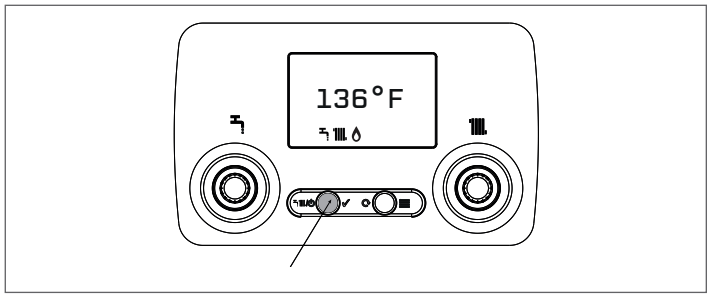


- When there is a heat request and the boiler has ignited, the "🔥" icon appears on the display. The boiler will start-up and continue working until the set temperatures are reached, after which it will then go back to standby.

DHW ONLY 🚰: Press the "MODE/OK" button until the faucet symbol appears to select the DHW ONLY mode, the domestic hot water mode is now activated. The display normally shows the DHW temperature.
With the **heating only boilers** the DHW function is active only when an indirect tank is installed.
The user interface normally displays the temperature of the domestic hot water stored in the indirect tank (only when using an indirect tank sensor).
When using an indirect tank with aquastat or a domestic hot water request in progress, the boiler delivery temperature is displayed.



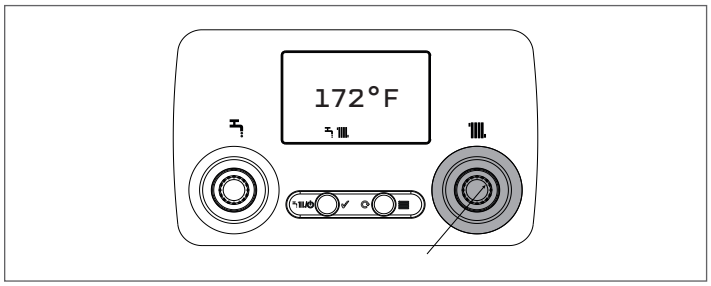
CH&DHW 🚰🔲: Press the "MODE/OK" button repeatedly to select both the faucet and radiator symbol indicating the boiler is in the CH (central heating) & DHW (domestic hot water) mode, the central heating and domestic hot water modes are now both active. The display normally shows the domestic hot water delivery temperature unless a call for central heating is made in which case it will show the actual supply temperature to the heating system.



3.8 ADJUSTING THE HEATING WATER TEMPERATURE WITHOUT AN OUTDOOR TEMPERATURE SENSOR CONNECTED

When there is no outdoor temperature sensor, the boiler operates at a fixed setpoint. If the central heating mode is active, to adjust the central heating temperature rotate the knob until the "🔲" symbol highlighted. Rotate the knob to change the setpoint value. After a few seconds the value will be confirmed automatically.

NOTICE: It is recommend to use the included Outdoor Temperature Sensor with the boiler to conserve energy. Not doing so, depending on the application, could be in violation of local codes. Installation of this sensor is also a Department of Energy requirement for space heating.



3.9 ADJUSTING THE HEATING WATER TEMPERATURE WITH AN OUTDOOR TEMPERATURE SENSOR CONNECTED

When an outdoor temperature sensor is installed, the outlet temperature is automatically selected by the system, which quickly adjusts the ambient temperature according to the variations in the outdoor temperature. If you want to change the temperature, raising it or lowering it with respect to that automatically calculated by the electronic board, it is possible to change the central heating setpoint by rotating the knob with the "🔲" symbol and selecting the desired comfort level within the range 59-77°F (15-25°C) from the environment temperature 68°F (20°C).
Please note that the number displayed is a comfort level: 77°F (25°C) means it feels hotter, 59°F (15°C) means it feels colder. Modifications to this value do not directly change supply temperature but affect the calculation made to automatically determine its value by modifying the reference temperature of the system.
It is recommend to contact your installer or service company if to adjust the adjust Outdoor Reset Curve if rotating this knob 59°F (15°C) to 77°F (25°C) is not adequate enough to provide sufficient comfort.

⚠ **CAUTION:** Adjusting your maximum heating setpoint past the design temperature of your heat emitters may cause minor injuries or property damage. Consult with the installing service agency regarding proper design temperatures before adjusting.

3.10 ADJUSTMENT OF THE DOMESTIC HOT WATER TEMPERATURE

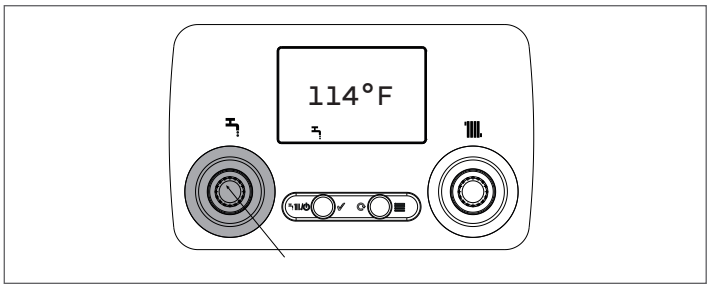
To adjust the domestic hot water temperature (bath, shower, kitchen, etc.) rotate the knob with the "🚰" symbol. Rotate the knob to change the setpoint value.

Wait for two seconds from the last rotation, then the value will be confirmed and the display will come back to the main page.

For **heating only boilers:**

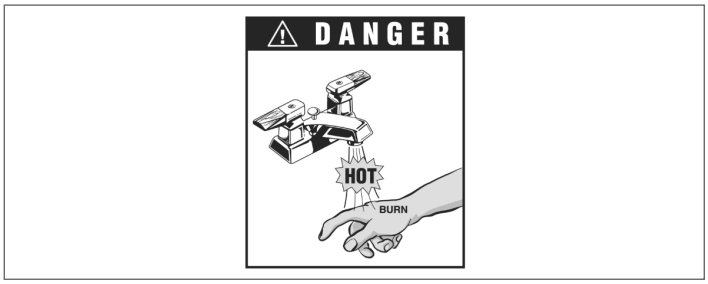
- **EXAMPLE A:** Heating only with tank thermostat: in this condition, the boiler delivers hot water to the water tank whenever a demand is made by the relative thermostat.
- **EXAMPLE B:** Heating only with tank sensor and sliding outlet: in this case, the outlet setpoint in a DHW request is not fixed at 176°F (80°C) but variable (default for BWH model).
- **EXAMPLE C:** Heating only with tank sensor and fixed outlet: this setting performs a modulation to a fixed outlet value of 176°F (80°C) when there is a DHW request.

When an external tank is used on the boiler and the tank sensor is not a factory authorized accessory, ensure that the relative indirect tank sensor (NTC sensor) has the following characteristics: 10 kOhm at 77°F (25°C), B 3435 ±1%.
Ask you installer or servicer about the kit KBANT0101111 available for purchase.



3.11 GENERAL SAFETY

⚠ Water temperatures over 125°F (52°C) can cause instant severe burns or death from scalds.
When supplying general purpose hot water, the recommended initial setting for the temperature control is 120°F (49°C).
Safety and energy conservation are factors to be considered when setting the water temperature on the thermostat. The most energy-efficient operation will result when the temperature setting is the lowest that satisfies the needs of the application.
Children, disabled, and elderly are at highest risk of being scalded.
- Feel water before bathing or showering.
- Temperature limiting valves are available.



NOTICE (for heating only model): When this boiler is supplying general purpose hot water for use by individuals, a thermostatically controlled mixing valve for reducing point of use water temperature is recommended to reduce the risk of scald injury. Contact a licensed plumber or the local plumbing authority for further information.

Maximum water temperatures occur just after the boiler's burner has shut off. To determine the water temperature being delivered, turn on a hot water faucet and place a thermometer in the hot water stream and read the thermometer.

⚠ **Only for heating only model**

WARNING: This boiler cannot supply hot water for use by individuals directly. A heat exchanger must be used in conjunction with this boiler to meet DHW needs.

3.12 SCALDING TIME/TEMPERATURE RELATIONSHIPS

The following chart details the relationship of water temperature and time with regard to scald injury and may be used as a guide in determining the safest water temperature for your applications.

Water Temperature	Time to Produce Serious Burn
120°F (49°C)	More than 5 minutes
125°F (52°C)	1-1/2 to 2 minutes
130°F (54°C)	About 30 seconds
135°F (57°C)	About 10 seconds
140°F (60°C)	Less than 5 seconds
145°F (63°C)	Less than 3 seconds
150°F (66°C)	About 1-1/2 seconds
155°F (68°C)	About 1 second

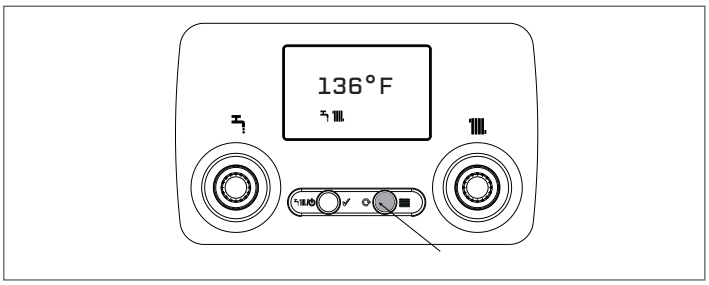
Table courtesy of The Shriners Burn Institute.

The temperature of the water in the boiler can be regulated by using the boiler front control. To comply with safety regulations, the control is set to a lower temperature when shipped from the factory.
CAUTION: Hotter water increases the risk of scalding. There is a hot water scald potential if the thermostat is set too high.

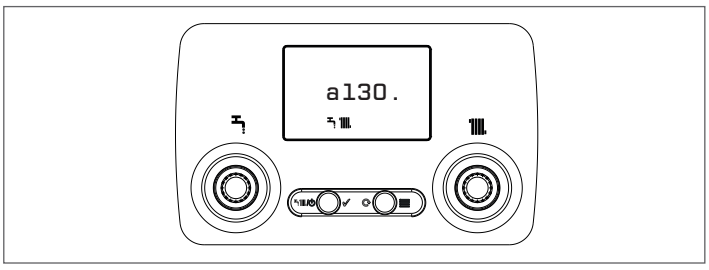
3.13 ACCESS TO THE INFO MENU

NOTICE: Make sure you are in the "Operation mode", backlight ON (see section "3.6 PROGRAMMING THE BOILER").

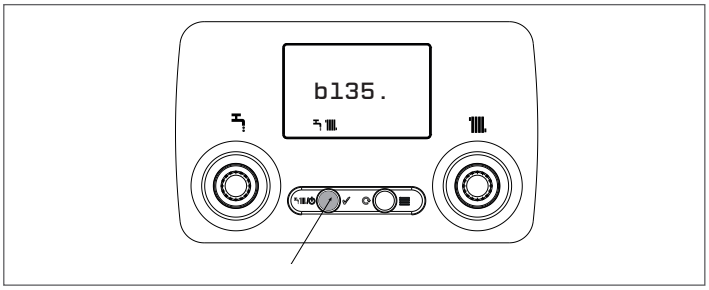
Using the boiler control panel it is possible to access the INFO menu by pressing the "MENU/RESET" button one to illuminate the screen, then again for less than 5 seconds. The INFO menu allows the user to view some of the boilers sensor readings and can be very helpful when diagnosing issues with the unit (see INFO list in the next column; indexed by a lowercase alphabetical letter.).
Note: Pressing the "MENU/RESET" button for more than 5 seconds will access the Parameter menu. This menu will timeout with inactivity in about 30 seconds if accidental accessed.



Once the button is pressed, the first value of the INFO menu appears: e. g. "a130.6°F".
It scrolls from right to left because of the length of the string (up to 5 characters) in the following sequence: letter + value + unit of measure.



To move from one letter to another press the "MODE/OK" button. The next value will appear: e. g. "b135.1°F" (sliding from right to left).
To exit INFO menu, press "RESET" button again, or wait 10 seconds for automatic exit.

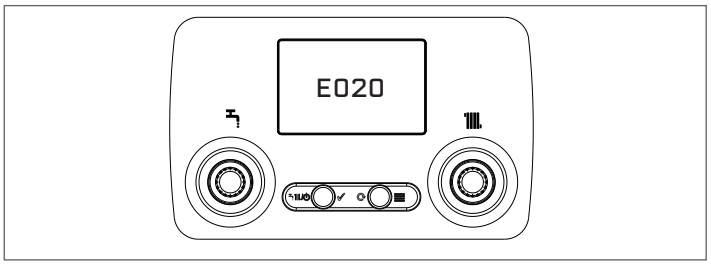


INFO list

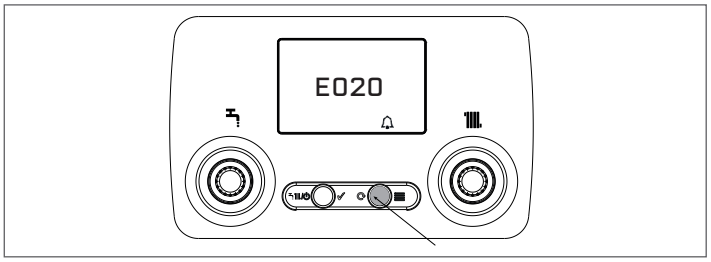
INFORMATION	STRING
CH sensor	“a” + “value (e.g. xx.x)” + “°F”
Return sensor	“b” + “value (e.g. xx.x)” + “°F”
DHW sensor	“c” + “value (e.g. xx.x)” + “°F”
Flue sensor	“d” + “value (e.g. xx.x)” + “°F”
Outdoor temperature sensor	“e” + “value (e.g. xx.x)” + “°F”
Fan speed	“f” + “value (e.g. xxxx)” + rpm
Flue hour counter	“g” + “value” + “h”
CH Water Pressure	“h” + “value” + “psi”
Domestic Flow Rate	“i” + “value” + “gpm”
Boiler firmware version	"j" + “version”
Past days since service required	“k” + “number of days” + “days”

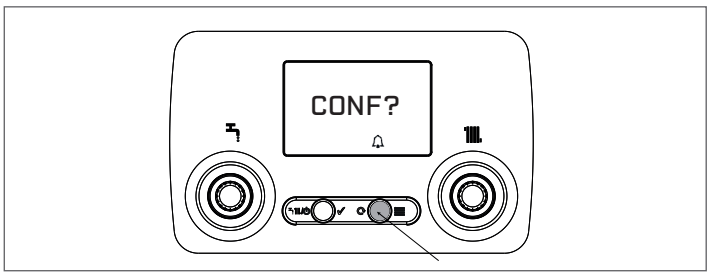
3.14 LIGHTS AND FAULTS / RESET PROCEDURE

If any faults should occur a brief alphanumeric description of the fault will appear on the display.
See “Boiler fault list” below for a description of the errors.

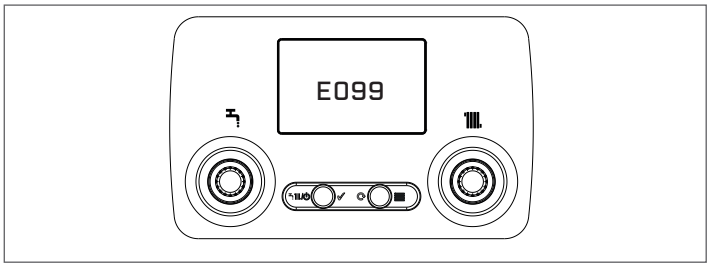


The reset procedure consists of pressing the “MENU/RESET” button two times: the first time to request a reset procedure, the second to confirm it.





At this point, if the correct operating conditions have been restored, the boiler will restart automatically. There are a maximum of 3 consecutive attempts to reset a fault. In case of all the attempts are exhausted, the definitive fault “E099” occurs on display. In that case the appliance will need to be disconnected briefly from the electrical supply. Once the electrical supply has been restored, further attempts can be carried out.



WARNING: If the attempts to reset the boiler are unsuccessful, call a qualified technician.

WARNING: If in the “Start-up Phase” and the sliding message “WAIT COMM.” persists, call a qualified technician.

NOTICE: If communication between SC07 front control and boiler is lost, “COMM.LOST” appears on the display: contact a qualified service agency.

Boiler faults list

ERROR CODE	ERROR MESSAGE	RED LED	GREEN LED	RED and GREEN	DESCRIPTION OF TYPE OF ALARM
E010	flame lockout/ACF electronic fault	ON			definitive
E011	parasitic flame	flashing 0.2 sec on/0.2 sec off			transitional
E020	water high limit/thermal fuse	flashing 0.5 sec on/0.5 sec off			definitive
E030	fan fault	ON			definitive
E040	low water cutoff - check system water pressure			ON	definitive
E041	low water cutoff - check system water pressure		flashing 0.5 sec on/0.5 sec off		transitional
	low water pressure fault		flashing 0.5 sec on/0.5 sec off		transitional
E042	low water cutoff fault			ON	definitive
E044	high water fault		flashing 0.5 sec on/0.5 sec off		transitional
E060	domestic hot water sensor fault (combi model) / indirect tank sensor fault (heating only model)			flashing 0.5 sec on/0.5 sec off	transitional
E070	supply sensor fault high limit supply sensor supply/return sensor differential error	ON			transitional definitive definitive
E077	external error contact	ON			transitional
E080	fault return line sensor return line sensor high limit supply/return line sensor differential error	ON			transitional definitive definitive
E090	fault flue gases sensor flue gases high limit sensor			flashing 0.5 sec on/0.5 sec off	transitional definitive
E091	clean primary heat exchanger			flashing 0.5 sec on/0.5 sec off	transitional
E099	reset attempts exhausted, boiler blocked	It is referred to the last fault occured			definitive, not resettable
WAIT COMM.	wait communication from the boiler board				transitional
COMM. LOST	lost communication from the boiler board	ON			transitional

List of combustion faults

ERROR CODE	ERROR MESSAGE	RED LED	GREEN LED	DESCRIPTION OF TYPE OF ALARM
E021	iono alarm	ON		These are temporary errors that if they occur several times in an hour they become a hard lock-out; the alarm E097 is displayed and is followed by post-purging for 45 seconds at the fan's maximum speed. It is not possible to release the error before the end of the post-purging unless the boiler's power supply is switched off.
E022	iono alarm	ON		
E023	iono alarm	ON		
E024	iono alarm	ON		
E067	iono alarm	ON		
E088	iono alarm	ON		
E097	iono alarm	ON		
E085	incomplete combustion	ON		These are temporary errors that if they occur several times in an hour they become a hard lock-out; the last error to occur is displayed and is followed by a post-purging of 5 minutes at the fan's maximum speed. It is not possible to release the error before the end of the post-purging unless the boiler's power supply is switched off.
E094	incomplete combustion	ON		
E095	incomplete combustion	ON		
E058	supply voltage fault	ON		These are temporary faults that restrict the ignition cycle.
E065	current modulation error	ON		
E086	obstruction fumes error	ON		Temporary fault reported during the post ventilation. It is maintained a post ventilation of 5 min at maximum fan speed.

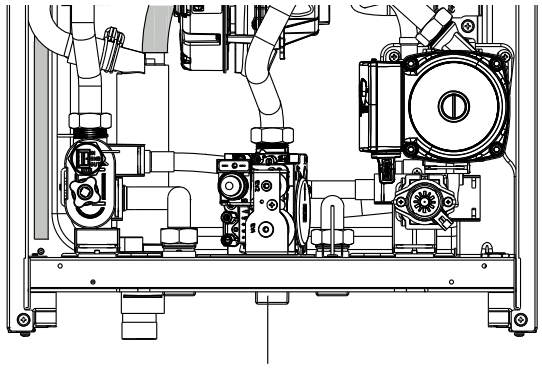
⚠ **DANGER:** The boiler should only be serviced by a qualified technician, service agency, or gas utility. Attempting to repair the boiler yourself may result in severe personal injury, death, or substantial property damage.

4 HOW TO...

4.1 HOW TO INCREASE THE SYSTEM PRESSURE

The system pressure must be checked periodically to ensure the correct operation of the boiler. The system pressure is shown in parameter “h” of the info menu. When the boiler is at room temperature, the system pressure should be approximately 14.5 psi. If the pressure needs to be increased use the following instructions as a guide.

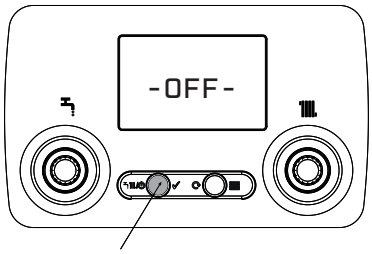
- Open the fill tap (external for heating only boiler model) slowly until you hear water entering the system.
- Close the fill tap (external for heating only boiler model) when the pressure reads between 14.5 and 21.7 psi.
- Pressure can be read from INFO menu. Refer to section “3.13 ACCESS TO THE INFO MENU”.



filling tap

4.2 HOW TO SHUT DOWN THE SYSTEM FOR SHORT PERIODS

In the event of temporary absences (weekends, short breaks, etc.) set the status of the boiler to OFF by pressing the “MODE/OK” button until the display shows “-OFF-“.



While the electrical supply and the fuel supply remain active, the boiler is protected by the following:

- **heating anti-freeze:** this function is activated if the temperature measured by the flow sensor drops below 41°F (5°C). A heat request is generated in this phase with the ignition of the burner at minimum output, which is maintained until the outlet water temperature reaches 95°F (35°C);
- **domestic hot water anti-freeze:** the function starts if the temperature measured by the DHW NTC probe falls below 41°F (5°C). A heat request is generated in this phase with the ignition of the burner at minimum output, which is maintained until the outlet water temperature reaches 131°F (55°C);
- **domestic hot water anti-freeze (only an indirect water tank is connected - heating only boiler model): the function starts if the temperature measured by the indirect tank sensor falls below 41°F (5°C). A heat request is generated in this phase with the ignition of the burner at minimum output, which is maintained until the outlet water temperature reaches 131°F (55°C.)**

NOTICE: The activation of the ANTI-FREEZE function is indicated by the ❄ icon displayed on the front control.

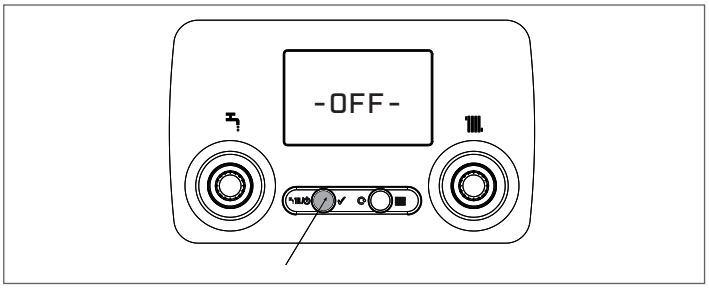
- **circulator anti-seize:** the circulator activates every 24 hours for 30 seconds if there is no heating or domestic requests.

4.3 HOW TO SHUT DOWN THE SYSTEM FOR LONG PERIODS

If the boiler is not used for a long time, the following operations must be carried out:

- set the status of the boiler to OFF by pressing the “MODE/OK” button till the display shows “-OFF-“
- set the system’s main switch to “OFF”
- close the fuel and water taps of the heating and domestic hot water system.

⚠ **WARNING:** In this case, the anti-freeze and anti-seize systems are deactivated. Drain the heating and domestic water system if there is any risk of freezing.



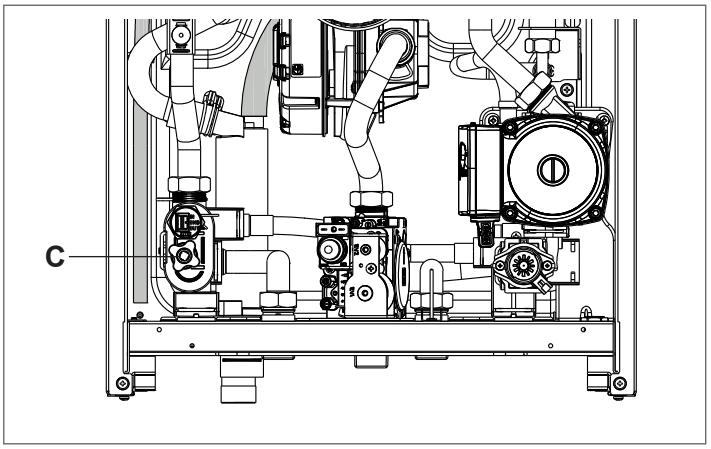
4.4 DRAINING THE HEATING CIRCUIT OF THE BOILER

Before draining the system, switch off the electrical supply by turning off the main switch of the system.

- Close the heating system’s valves.
- Manually loosen the system drain valve (**C**).
- Secularly attached the rubber drain tube supplied with the boiler to (**C**)

NOTICE: It is recommended to have a qualified person refill and commission the boiler after an extended shutdown period.

⚠ **DANGER:** The system water temperature could be very hot, be sure when opening the drain valve that the rubber pipe is well attached. Water could spray from the front of the unit and cause instant severe burns or death from scalds.



4.5 EMPTYING THE DOMESTIC HOT WATER SYSTEM

Whenever there is risk of freezing, the domestic hot water system must be emptied in the following way:

- turn off the main water supply tap
- turn on all the hot and cold water taps
- drain from the lowest points.

5 WHAT IF...

5.1 WHAT IF I SUSPECT A GAS LEAK

If you suspect a gas leak, turn off the gas supply at the gas meter and contact your installer or local gas supplier. If you require further advice please contact a qualified service technician.

5.2 WHAT IF I HAVE FREQUENTLY TO INCREASE THE SYSTEM PRESSURE

If the system regularly requires the pressure increased, it may be indicative of a leak. Please contact your installer and ask him to inspect the system.

5.3 WHAT IF THE APPLIANCE IS DUE FOR ITS ANNUAL SERVICE

NOTICE: Please contact your qualified local service technician to have your appliance serviced. It is a condition of the boiler's warranty that required service and maintenance be performed per the Installation Instructions.

⚠ **WARNING:** Failure to have the boiler properly serviced and inspected on a regular basis by a qualified service technician may result in property damage, serious injury, or death.

⚠ **WARNING:** Failure to keep the Vent and Combustion Air-intake clear of ice, snow and other debris may result in property damage, serious injury or death.

5.4 WHAT IF I NEED TO CALL A SERVICE TECHNICIAN

If you think your boiler may have developed a fault, please contact your installer.
Have all your details in hand including full address, relevant contact numbers, and your complete boiler serial number.

6 MAINTENANCE

6.1 SUGGESTED MINIMUM MAINTENANCE SCHEDULE

To ensure the continued safe and efficient operation of the boiler, it is recommended that it is checked and serviced at regular intervals. Maintenance is mandatory according the below schematic program, refer to the table and to the relevant explanation that the table refer to.

- The yearly maintenance is also highlighted on the display with CALL FOR SERVICE (refer to paragraph "Lights and Faults" for understand the conditions related to the CALL FOR SERVICE.
- The maintenance must be done every year or each time that alarm E91 appears on the boiler display (refer to paragraph "Lights and Faults" for understand the conditions related to the E91).
- The first maintenance is intended within 365 days from first ignition and the followings maintenances within 365 days from the previous one.

Also include table from12.3 Maintenance program from the Install Manual.

⚠ **WARNING:** Service should only be carried out by a qualified service technician. This appliance produces carbon monoxide (CO) gases. The venting should never be taken apart by anyone other than a qualified technician. The venting should not be separated. Failure to comply may result in severe personal injury or death.

⚠ **WARNING:** To avoid electric shock, disconnect electrical supply before performing maintenance.

⚠ **WARNING:** Annual service should ONLY be performed by a qualified service agency. Schedule annual service by calling a licensed service agency.

Yearly (Beginning of Each Heating Season)

- Visually check top of vent for soot. Call service person to clean. Some sediment at bottom of vent is normal.
- Visually inspect all flue product carrying areas of the boiler including the venting system and main burner for proper functioning, deterioration, or leakage. Ensure that condensate drains are inspected and ensure that condensate is being directed to appropriate condensate management system or drain, as required by local codes.
- Check that area is free from combustible materials, gasoline, and other flammable vapors and liquids.
- Check for and remove any obstruction to the flow of combustion or ventilation air to the appliance.
- Check operation of safety devices.
- Visually inspect the burner flame presence and ignition sequence to ensure proper operation.
- Check for piping leaks around pumps, relief valves and other fittings. Repair, if found. DO NOT use petroleum-based stopleak.

Periodically

- Clean the outer casing use only a clean damp cloth. Do not use any scourers or abrasive cleaners.
- Check the condensate check valve and, if necessary, please contact your service technician.
- Condensate trap must be periodically cleaned.
- Cleaning of magnetic strainer if required
- Cleaning of the screens in the vent terminal, where applicable.
- Periodic examination of the venting systems is required.
- Periodic inspection of the low water cutoffs in the boiler and system.

⚠ **WARNING:** Do not clean the appliance or its parts with flammable substances (e.g. petrol, alcohol, etc.).

⚠ **WARNING**: Do not clean panels, painted parts and plastic parts with paint thinner.

⚠ **CAUTION**: Panel cleaning must be carried out only with soapy water.

⚠ **WARNING**: Do not obstruct the flow of the combustion and ventilation air.

Yearly maintenance program	Yearly maintenance program	Door gasket maintenance procedure	Gas valve
Year 1	X		
Year 2	X	X	
Year 3	X		
Year 4	X	X	
Year 5	X		
Year 6	X	X	
Year 7	X		
Year 8	X	X	
Year 9	X		
Year 10	X	X	X

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