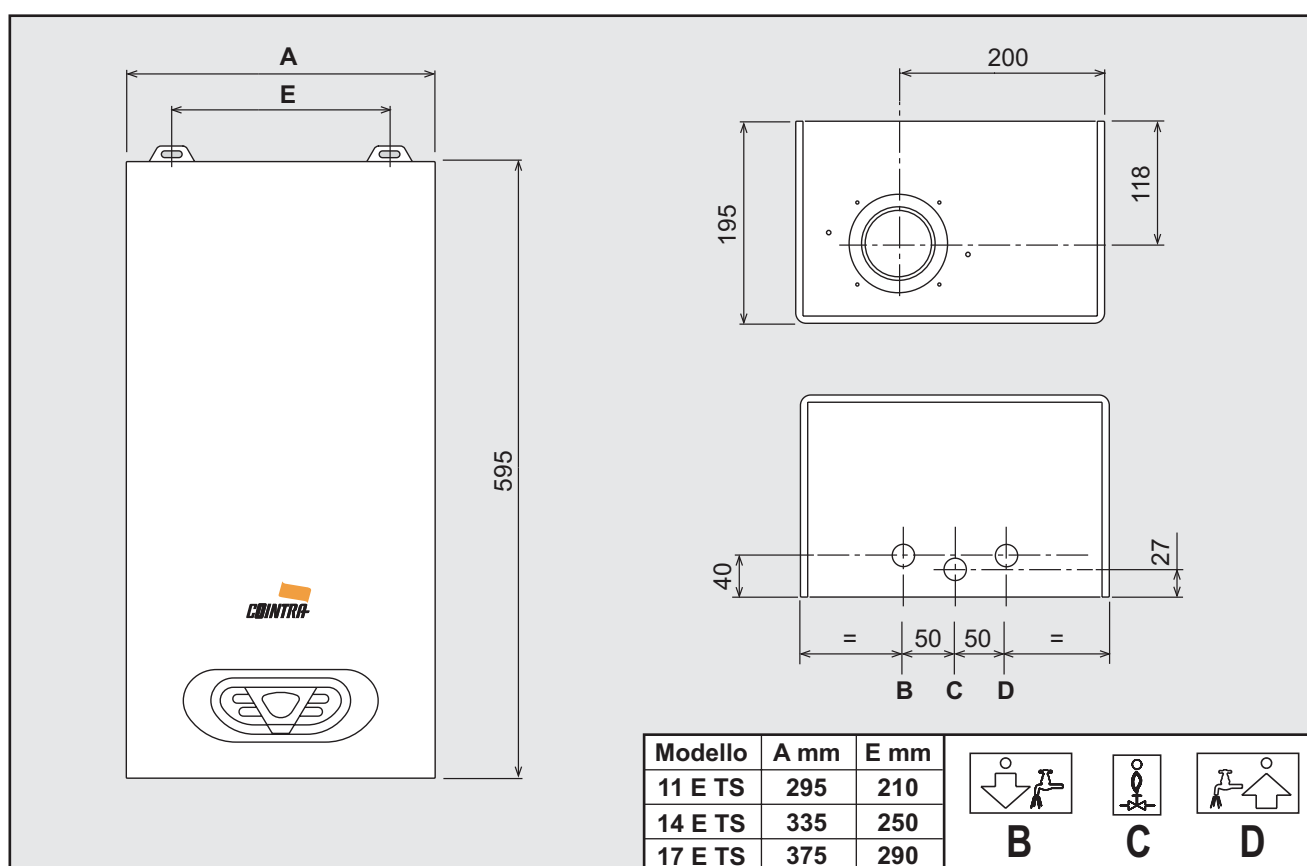


COINTRA

SUPREME E TS



EN - INSTRUCTIONS FOR USE, INSTALLATION AND MAINTENANCE

1. GENERAL INSTRUCTIONS

- Carefully read and follow the instructions contained in this instruction manual.
- After installation of the unit, inform the user regarding its operation and give him this manual, which is an integral and essential part of the product and must be kept with care for future reference.
- Installation and maintenance must be carried out by professionally qualified personnel, in compliance with current regulations and the manufacturer's instructions. Do not carry out any operation on sealed control parts.
- Incorrect installation or inadequate maintenance can result in damage or injury. The Manufacturer declines any liability for damage due to errors in installation and use, or failure to follow the instructions.
- Before carrying out any cleaning or maintenance operation, disconnect the unit from the power supply by means of the the system switch and/or the special cutoff devices.
- In case of a fault and/or poor operation, deactivate the unit; do attempt to repair or operate on it directly. Only contact professionally qualified personnel. Any repair/replacement of the products must only be carried out by professionally qualified personnel using original replacement parts. Failure to comply with the above can compromise the unit's safety.
- This unit must only be used for the purpose for which it was designed. Any other use is deemed improper and therefore hazardous.
- The packing materials are potentially hazardous and therefore must not be left within the reach of children.
- The images given in this manual are a simplified representation of the product. In this representation there may be slight and insignificant differences with respect to the product supplied.

2. OPERATING INSTRUCTIONS

2.1 Introduction

SUPREME is a high-efficiency instantaneous water heater for domestic hot water production, running on natural gas, equipped with an open-flue burner with electronic ignition, forced ventilation sealed chamber and microprocessor control system, designed for installation indoors or outdoors in a partially protected place (in compliance with EN 297/A6) for temperatures to -5°C (-15°C with optional antifreeze kit).

2.2 Control panel

Panel

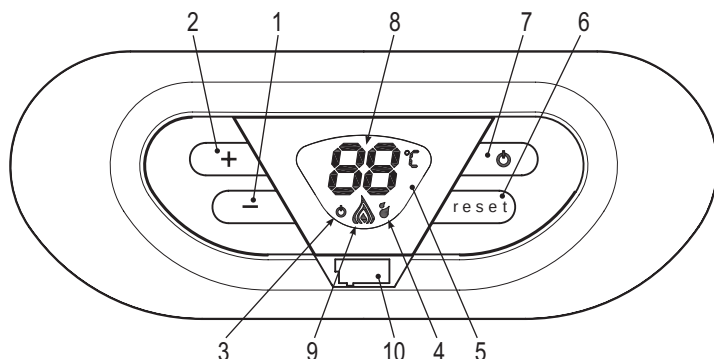


fig. 1 - Control panel

Key of panel fig. 1

- | | |
|----|---|
| 1 | DHW temperature setting decrease button |
| 2 | DHW temperature setting increase button |
| 3 | OFF symbol |
| 4 | DHW mode |
| 5 | Display |
| 6 | Reset button |
| 7 | Unit On/Off button |
| 8 | Multifunction |
| 9 | Burner lit and actual power level (flashing during combustion fault function) |
| 10 | Service Tool connection |

Indication during operation

During a DHW demand (generated by drawing domestic hot water), the display (detail 11 - fig. 1) shows the actual DHW outlet temperature.

Fault

In case of a fault (see cap. 4.4) the display (detail 11 - fig. 1) shows the fault code and, during safety standby times, the messages "d3" and "d4".

2.3 Lighting and turning off

Connection to the power supply

- During the first 5 seconds the display shows the card software version.
- Open the gas cock ahead of the unit.
- The unit is ready to function automatically whenever hot water is drawn.

Turning the unit off and lighting

Press the **on/off** button (detail 7 - fig. 1) for 1 second.

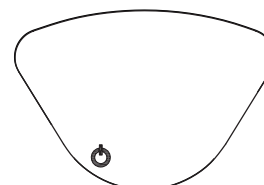


fig. 2 - Turning off

When the unit is turned off, the electronic board is still powered. DHW mode is disabled. The antifreeze system remains activated. To relight the unit, press the **on/off** button (detail 7 fig. 1) again for 1 second.

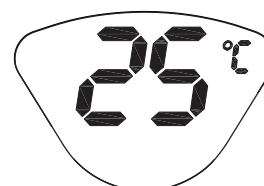


fig. 3

The unit will be immediately ready to work whenever hot water is drawn.



The antifreeze system does not work when the power and/or gas to the unit are turned off. To avoid damage caused by freezing during long idle periods in winter, it is advisable to drain all the water from the water heater.

2.4 Adjustments

Domestic hot water (DHW) temperature adjustment

Use the DHW buttons fig. 1 (details 1 and 2 -) to adjust the temperature from a min. of 40°C to a max. of 50°C.

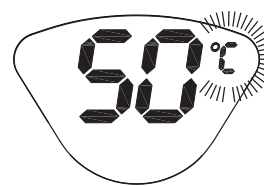


fig. 4

3. INSTALLATION

3.1 General Instructions

THE WATER HEATER MUST ONLY BE INSTALLED BY QUALIFIED PERSONNEL, IN COMPLIANCE WITH ALL THE INSTRUCTIONS GIVEN IN THIS TECHNICAL MANUAL, THE PROVISIONS OF CURRENT LAW, THE NATIONAL AND LOCAL REGULATIONS, AND THE RULES OF PROPER WORKMANSHIP.

3.2 Place of installation

The combustion circuit is sealed with respect to the place of installation, therefore the unit can be installed in any room. However, the place of installation must be sufficiently ventilated to prevent the creation of dangerous conditions in case of even small gas leaks. This safety standard is required by EEC Directive no. 90/396 for all gas units, including those with sealed chamber.

The unit is suitable for operation in a partially protected place in conformity with EN 297 pr A6, with minimum temperature of -5°C (-15°C with optional antifreeze kit). It is advisable to install the water heater under the slope of a roof, inside a balcony or in a sheltered recess.

The place of installation must in any case be free of dust, flammable materials or objects or corrosive gases.

The unit is arranged for wall mounting. Fix it to the wall according to the measurements given on the cover drawing.



If the unit is enclosed in a cabinet or mounted alongside, a space must be provided for removing the casing and for normal maintenance operations

3.3 Plumbing connections

Important

Before making the connection, check that the unit is arranged for operation with the type of fuel available and carefully clean all the system pipes.

Carry out the relevant connections according to the cover diagram and the symbols given on the unit .

System water characteristics

In the presence of water harder than 25° Fr (1°F = 10ppm CaCO₃), use suitably treated water in order to avoid possible scaling in the water heater.

3.4 Gas connection

The gas must be connected to the respective union (see figure on cover) in conformity with the current regulations, with a rigid metal pipe or with a continuous flexible s/steel tube, installing a gas cock between the system and water heater . Make sure all the gas connections are tight.

3.5 Electrical connections

Important

The unit must be connected to an efficient earthing system in conformity with the current safety standards. Have the efficiency and suitability of the earthing system checked by professionally qualified personnel; the Manufacturer declines any liability for damage caused by failure to earth the system.

The water heater is prewired and provided with a "Y" type cable (without plug) for connection to the electric line . The connections to the grid must be made with a permanent connection and equipped with a double-pole switch with contact gap of at least 3 mm, interposing fuses of max. 3A between the water heater and the line . Make sure to respect the polarities (LINE: brown wire / NEUTRAL: blue wire / EARTH: yellow/green wire) in connections to the electric line.

The unit's power cable must not be changed by the user. If damaged, turn the unit off and have the cable replaced by professionally qualified personnel. In case of replacement , only use "HAR H05 VV-F" 3x0.75 mm² cable with max. external diameter of 8 mm.

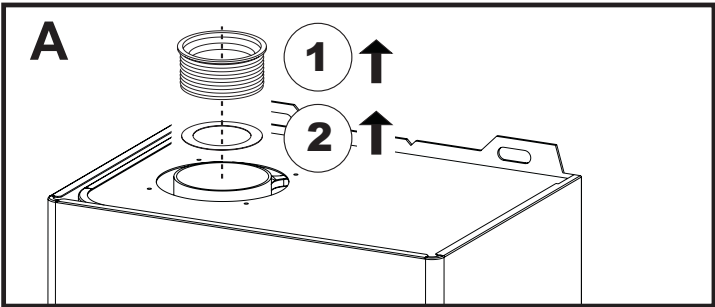
3.6 Fume ducts

Important

The unit is a "C type" with sealed chamber and forced draught, the air inlet and fume outlet must be connected to one of the following extraction/suction systems. The unit is approved for operation with all the Cny flue configurations given on the dataplate. Some configurations may be expressly limited or not permitted by law, standards or local regulations. Before installation, check and carefully follow the instructions. Also, comply with the instructions on the positioning of wall and/or roof terminals and the minimum distances from windows, walls, ventilation openings, etc.

Baffles

Unit operation requires fitting the baffles supplied. Make sure the right baffle (when used) is fitted and correctly positioned.



A Baffle replacement with unit not installed

Connection with coaxial pipes

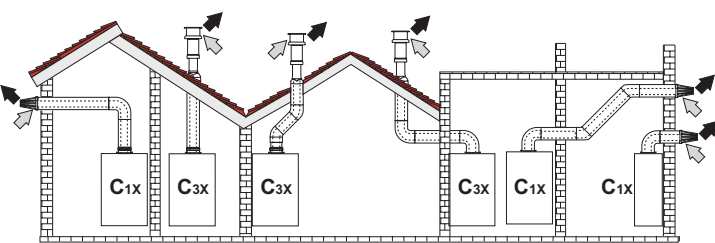


fig. 5 - Examples of connection with coaxial pipes (→ = Air / → = Fumes)

Table. 1 - Typology

Type	Description
C1X	Wall horizontal exhaust and inlet
C3X	Roof vertical exhaust and inlet

For coaxial connection, fit the unit with one of the following starting accessories. For the wall hole dimensions, refer to the figure on the cover.

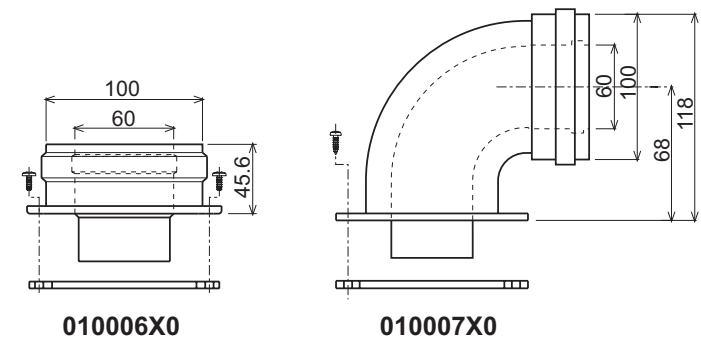


fig. 6 - Starting accessory for coaxial ducts

Table. 2 - Baffles for coaxial ducts

	Coaxial 60/100	Coaxial 80/125
Max. permissible length	4 m	10 m
Reduction factor 90° bend	1 m	0.5 m
Reduction factor 45° bend	0.5 m	0.25 m
Baffle to use	0 ÷ 2 m Model SUP. 11 = Ø43 SUP. 14 = Ø50 SUP. 17 = Ø50	0 ÷ 3 m Model SUP. 11 = Ø43 SUP. 14 = Ø50 SUP. 17 = Ø50
	2 ÷ 4 m no baffle	3 ÷ 10 m no baffle

Connection with separate pipes

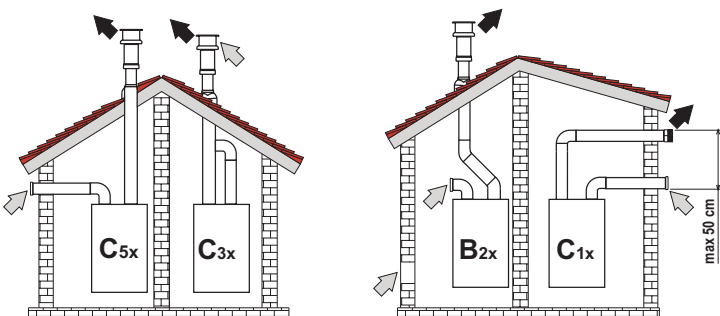


fig. 7 - Examples of connection with separate pipes (→ = Air / → = Fumes)

Table. 3 - Typology

Type	Description
C1X	Wall horizontal exhaust and intake. The inlet/outlet terminals must be concentric or close enough to be undergo similar wind conditions (within 50 cm)
C3X	Roof vertical exhaust and intake. Inlet/outlet terminals like for C12
C5X	Wall or roof exhaust and intake separate or in any case in areas with different pressures. The exhaust and intake must not be positioned on opposite walls.
C6X	Intake and exhaust with separately certified pipes (EN 1856/1)
B2X	Intake from installation room and wall or roof exhaust
⚠ IMPORTANT - THE ROOM MUST BE PROVIDED WITH APPROPRIATE VENTILATION	

For connection of the separate ducts, fit the unit with the following starting accessory:

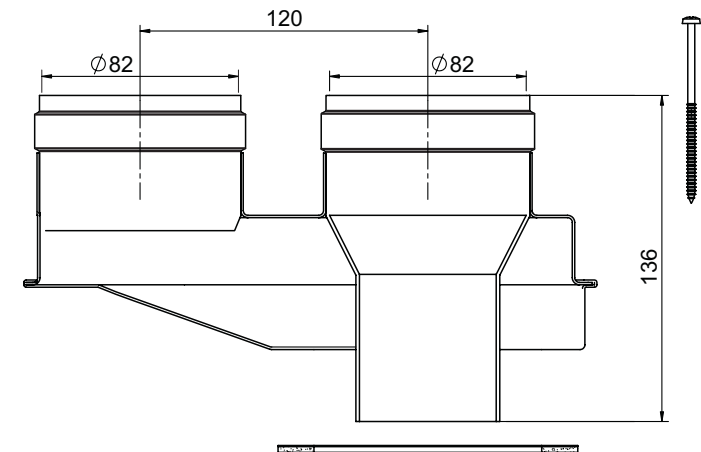


fig. 8 - Starting accessory for separate ducts code 010031X0

Before installation, check the baffle to be used and make sure the maximum permissible length has not been exceeded, by means of a simple calculation:

1. Establish the layout of the system of split flues, including accessories and outlet terminals.
2. Consult the table 5 and identify the losses in m_{eq} (equivalent metres) of every component, according to the installation position.
3. Check that the sum total of losses is less than or equal to the maximum permissible length in table 4.

Table. 4 - Baffles for separate ducts

SUPREME E TS			
	Model	Length	
Max. permissible length	SUPREME 11	65 m_{eq}	
	SUPREME 14	55 m_{eq}	
	SUPREME 17	45 m_{eq}	
Baffle to use	Model	Length	Baffle
	SUPREME 11	0 - 35 m_{eq}	Ø 43
		35 - 65 m_{eq}	No baffle
	SUPREME 14	0 - 30 m_{eq}	Ø 50
		30 - 55 m_{eq}	No baffle
	SUPREME 17	0 - 25 m_{eq}	Ø 50
		25 - 45 m_{eq}	No baffle

Table. 5 - Accessories

				Losses in m_{eq}		
				Air inlet	Fume exhaust	
Ø 80	PIPE	0.5 m M/F	1KWMA38A	0.5	0.5	1.0
		1 m M/F	1KWMA83A	1.0	1.0	2.0
		2 m M/F	1KWMA06K	2.0	2.0	4.0
	BEND	45° F/F	1KWMA01K	1.2	2.2	
		45° M/F	1KWMA65A	1.2	2.2	
		90° F/F	1KWMA02K	2.0	3.0	
		90° M/F	1KWMA82A	1.5	2.5	
		90° M/F + Test point	1KWMA70U	1.5	2.5	
	PIPE SECTION	with test point	1KWMA16U	0.2	0.2	
		for condensate drain	1KWMA55U	-	3.0	
	TEE	for condensate drain	1KWMA05K	-	7.0	
	TERMINAL	air, wall	1KWMA85A	2.0	-	
		fumes, wall with antiwind	1KWMA86A	-	5.0	
	FLUE	Split air/fumes 80/80	1KWMA84U	-	12.0	
		Fume outlet only Ø80	1KWMA83U + 1KWMA86U	-	4.0	

4. SERVICE AND MAINTENANCE

4.1 Adjustments

Gas conversion

The unit can operate on natural gas or LPG and is factory-set for use with one of the two gases, as clearly shown on the packing and on the dataplate. Whenever a gas different from that for which the unit is arranged has to be used, the special conversion kit will be required, proceeding as follows:

1. Replace the nozzles at the main burner, fitting the nozzles specified in the technical data table in cap. 5, according to the type of gas used
2. Modify the parameter for the type of gas:
 - put the water heater in standby mode
 - Press the on/off button detail 7 - fig. 1 for 20 seconds. the display shows "b01" flashing.
 - press the DHW buttons details 1 and 2 - fig. 1 to set parameter 00 (for use with natural gas) or 01 (for use with LPG).
 - Press the on/off button detail 7 - fig. 1 for 20 seconds.
 - the water heater will return to standby mode
3. Adjust the minimum and maximum pressures at the burner (ref. relevant section), setting the values given in the technical data table for the type of gas used
4. Apply the sticker (contained in the conversion kit) near the dataplate as proof of the conversion.

TEST mode activation

Draw enough domestic hot water to activate the DHW mode.

Press the buttons (details 1 and 2 - fig. 1) together for 5 seconds to activate the **TEST** mode. The water heater will light at the maximum DHW power set as described in the following section.

The DHW power will be shown on the display.

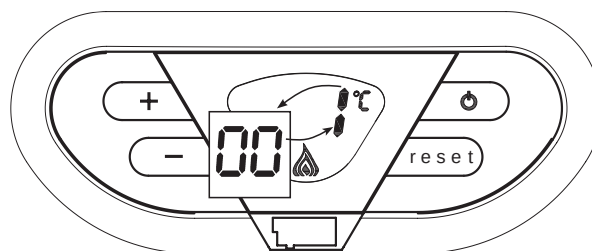


fig. 9 - TEST mode (DHW power = 100%)

Press the buttons (details 1 and 2 - fig. 1) to increase or decrease the power (Min.=0%, Max.=100%).

To deactivate the TEST mode, press the buttons (details 1 and 2 - fig. 1) together for 5 seconds.

The TEST mode is automatically disabled in any case after 15 minutes or on stopping of hot water drawing (if enough hot water was drawn to activate the DHW mode).

Pressure adjustment at the burner

Since this unit has flame modulation, there are two fixed pressure settings: minimum and maximum, which must be those given in the technical data table according to the type of gas.

- Connect a suitable pressure gauge to the pressure point "B" downstream of the gas valve.
- Activate the TEST mode (see cap. 4.1).
- Press the **off** button for 2 seconds to access the gas valve Calibration mode.
- The card goes to the setting "q02"; displaying the actually saved value, by pressing the DHW buttons.
- If the pressure gauge reading is different from the nominal maximum pressure, proceed by increases/decreases of 1 or 2 units of parameter "q02" by pressing the DHW buttons: the value is stored after each modification; wait 10 seconds for the pressure to stabilise.
- Press the **off** button (ref. 7 - fig. 1).
- The card goes to the setting "q01"; displaying the actually saved value, by pressing the DHW buttons.
- If the pressure gauge reading is different from the nominal minimum pressure, proceed by increases/decreases of 1 or 2 units of parameter "q01" by pressing the DHW buttons: the value is stored after each modification; wait 10 seconds for the pressure to stabilise.
- Recheck both adjustments by pressing the Off button and adjust them if necessary by repeating the above procedure.
- Press the **off** button for 2 seconds to return to the TEST mode.
- Deactivate the TEST mode (see cap. 4.1).
- Disconnect the pressure gauge.

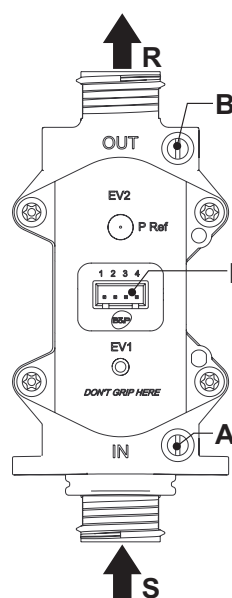


fig. 10 - Gas valve

- A - Upstream pressure point
- B - Downstream pressure point
- I - Gas valve electrical connection
- R - Gas outlet
- S - Gas inlet

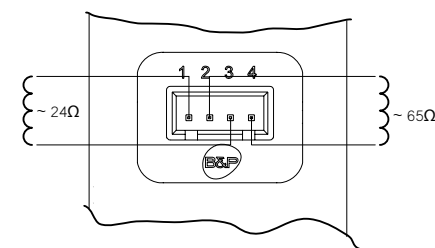


fig. 11 - Gas valve connection

TYPE SGV100
Pi max 65 mbar
24 Vdc - class B+A

DHW power adjustment

To adjust the heating power, switch the unit to TEST mode (see sec. 4.1). Press the buttons detail 3 - fig. 1 to increase or decrease the power (Min. = 00 - Max. = 100). Press the **reset** button within 5 seconds and the max. power will remain that just set. Exit the TEST mode (see sec. 4.1).

4.2 Start-up

Before lighting the water heater

- Check the tightness of the gas system.
- Fill the water system and make sure all air contained in the water heater and system has been vented .
- Make sure there are no water leaks in the system or unit.
- Check correct connection of the electrical system and efficiency of the earthing system.
- Make sure the gas pressure value for heating is that required .
- Make sure there are no flammable liquids or materials in the immediate vicinity of the water heater.

Checks during operation

- Switch the unit on.
- Make sure the fuel circuit and water systems are tight.
- Check the efficiency of the flue and air/fume ducts while the water heater is working.
- Make sure the gas valve modulates correctly in the heating and hot water production stages.
- Check proper lighting of the water heater by doing several tests, turning it on and off with the room thermostat or remote control.
- Make sure the fuel consumption indicated on the meter matches that given in the technical data table on cap. 5.

4.3 Maintenance

Periodical check

To ensure correct operation of the unit over time, have qualified personnel carry out a yearly check, providing for the following:

- The control and safety devices (gas valve, flowmeter, etc.) must work properly.
- The fume exhaust circuit must be perfectly efficient.
- The air/fume terminal and ducts must be free of obstructions and leaks
- The burner and exchanger must be clean and free of deposits. For cleaning, do not use chemical products or wire brushes.
- The electrode must be properly positioned and free of scale.

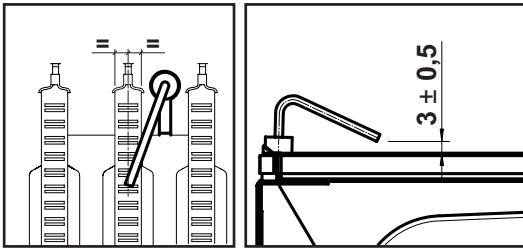


fig. 12 - Electrode positioning

- The gas and water systems must be tight.
- The gas flow and pressure must correspond to that given in the respective tables.

4.4 Troubleshooting

Diagnostics

The water heater has an advanced self-diagnosis system. In case of a fault in the unit, the display will flash together with the fault symbol (detail 11 - fig. 1) indicating the fault code.

There are faults that cause permanent shutdown (marked with the letter "A"): to restore operation just press the RESET button (detail 6 - fig. 1) for 1 second or RESET on the optional remote timer control if installed; if the water heater fails to restart, it is necessary to eliminate the fault .

Other faults (marked with the letter "F") cause temporary shutdowns that are automatically reset as soon as the value returns within the water heater's normal working range

List of faults

Table. 6

Fault code	Fault	Possible cause	Cure
A01	No burner ignition	No gas	Check the regular gas flow to the water heater and that the air has been eliminated from the pipes
		Ignition/detection electrode fault	Check the wiring of the electrode and that it is correctly positioned and free of any deposits
		Faulty gas valve	Check gas valve and replace it if necessary
		Gas valve wiring disconnected	Check the wiring
		Ignition power too low	Adjust the ignition power
A02	Flame present signal with burner off	Electrode fault	Check the ionisation electrode wiring
		Card fault	Check the card
A03	Overtemperature protection activation	DHW sensor damaged	Check the correct positioning and operation of the DHW sensor
		No water circulation	Check the flowswitch
F04	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary
F05	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary
	Fan fault	Wiring disconnected	Check the wiring
		Faulty fan	Check the fan
		Card fault	Check the card
A06	No flame after the ignition phase	Low pressure in the gas system	Check the gas pressure
		Burner minimum pressure setting	Check the pressures
F07	Card parameter fault	Wrong card parameter setting	Check the card parameter and modify it if necessary
A09	Gas valve fault	Wiring disconnected	Check the wiring
		Faulty gas valve	Check the gas valve and replace it if necessary
F10	DHW sensor 1 fault	Sensor damaged	Check the wiring or replace the sensor
		Wiring shorted	
		Wiring disconnected	
F14	DHW sensor 2 fault	Sensor damaged	Check the wiring or replace the sensor
		Wiring shorted	
		Wiring disconnected	
A16	Gas valve fault	Wiring disconnected	Check the wiring
		Faulty gas valve	Check the gas valve and replace it if necessary
F20	Combustion control fault	Fan fault	Check the fan and fan wiring
		Wrong baffle	Check the baffle and replace it if necessary
		Flue obstructed or not correctly sized	Check the flue
A21	Poor combustion fault	Fault F20 generated 6 times in the last 10 minutes	See fault F20
F34	Supply voltage under 180V.	Electric mains trouble	Check the electrical system
F35	Faulty mains frequency	Electric mains trouble	Check the electrical system
A41	Sensor positioning	DHW sensor disconnected from pipe	Check the correct positioning and operation of the sensor
F42	DHW sensor fault	Sensor damaged	Replace the sensor
F50	Gas valve fault	Modulating Operator wiring disconnected	Check the wiring
		Faulty gas valve	Check the gas valve and replace it if necessary
A51	Poor combustion fault	Inlet/exhaust flue obstruction	Check the flue

5. TECHNICAL DATA AND CHARACTERISTICS

Table. 7 - Key of figures cap. 5

5 Sealed chamber	28 Fume manifold
7 Gas inlet	29 Fume outlet manifold
8 Domestic hot water outlet	38 Flowswitch
9 Cold water inlet	44 Gas valve
16 Fan	73 Antifreeze thermostat (not supplied)
19 Combustion chamber	81 Ignition and detection electrode
20 Burner assembly	187 Fume baffle
21 Main nozzle	288 Antifreeze kit (optional)
22 Burner	R1 - R2 - R3 - R4 Electric heaters
27 Copper exchanger for heating and DHW	344 Double sensor (Safety + Heating)

5.1 General view and main components

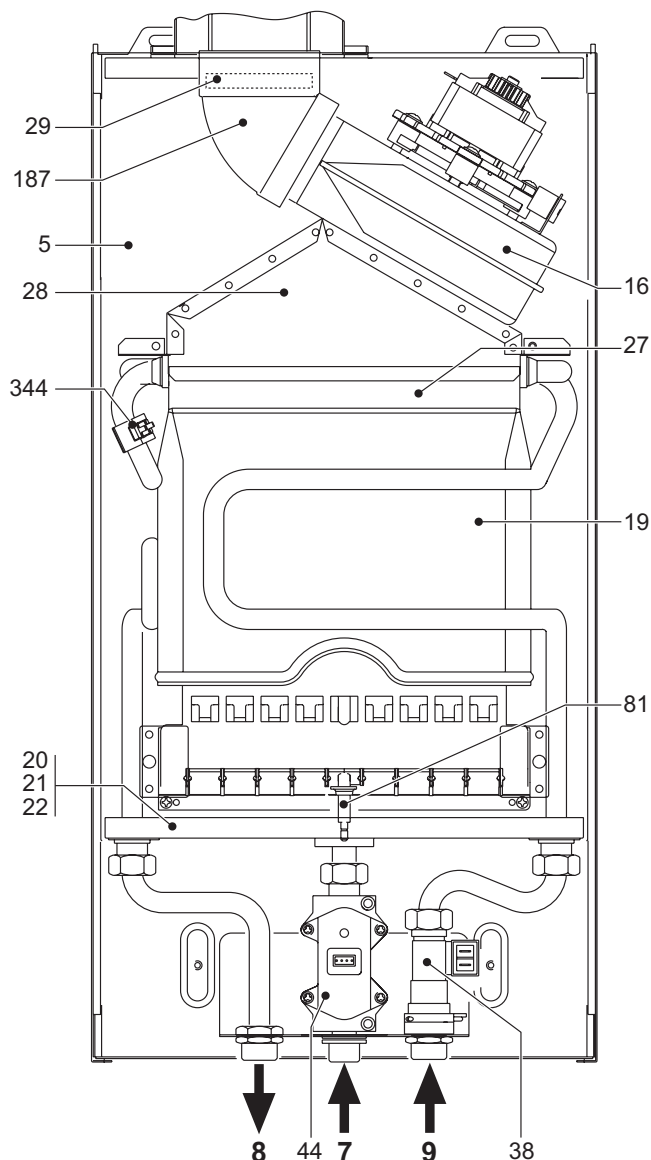


fig. 13 - General view

5.2 Plumbing diagrams

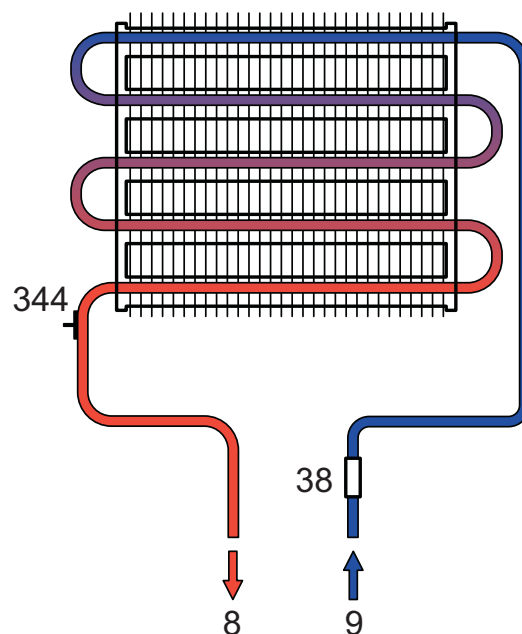


fig. 14 - Water circuit

5.3 Technical data table

Data	Unit	SUPREME 11	SUPREME 14	SUPREME 17	
Max. heating capacity	kW	21.7	26.9	32.9	(Q)
Min. heating capacity	kW	8.3	10.3	12.6	(Q)
Max. heat output	kW	19.2	23.9	29.2	
Min. heat output	kW	7.1	8.8	10.7	
Pmax efficiency	%	88.5	88.7	88.9	
Burner nozzles G20	no.x Ø	10 x 1.25	12 x 1.25	14 x 1.25	
Gas supply pressure G20	mbar	20.0	20.0	20.0	
Max. gas pressure at burner	mbar	13.0	13.0	15.0	
Min. gas pressure at burner	mbar	2.0	2.0	2.0	
Max. gas delivery G20	m³/h	2.30	2.85	3.48	
Min. gas delivery G20	m³/h	0.88	1.10	1.33	
Burner nozzles G31	no.x Ø	10 x 0.77	12 x 0.77	14 x 0.77	
Gas supply pressure G31	mbar	37	37	37	
Max. gas pressure at burner	mbar	35.0	35.0	35.0	
Min. gas pressure at burner	mbar	5.0	5.0	5.0	
Max. gas delivery G31	kg/h	1.70	2.11	2.58	
Min. gas delivery G31	kg/h	0.65	0.80	0.99	
Max. working pressure	bar	10	10	10	(PMS)
Min. working pressure	bar	0.20	0.20	0.20	
DHW flowrate Δt 25°C	l/min	11.0	13.7	16.8	
DHW flowrate Δt 50°C	l/min	5.5	6.9	8.4	(D)
Protection rating	IP	X5D	X5D	X5D	
Power supply voltage	V/Hz	230V	230V	230V	
Electrical power input	W	40	40	40	
Empty weight	kg	13	14	17	
Type of unit		C ₁₂ -C ₂₂ -C ₃₂ -C ₄₂ -C ₅₂ -C ₆₂ -C ₇₂ -C ₈₂ -B ₂₂			
PIN CE		0461CL0983			

5.4 Wiring diagram

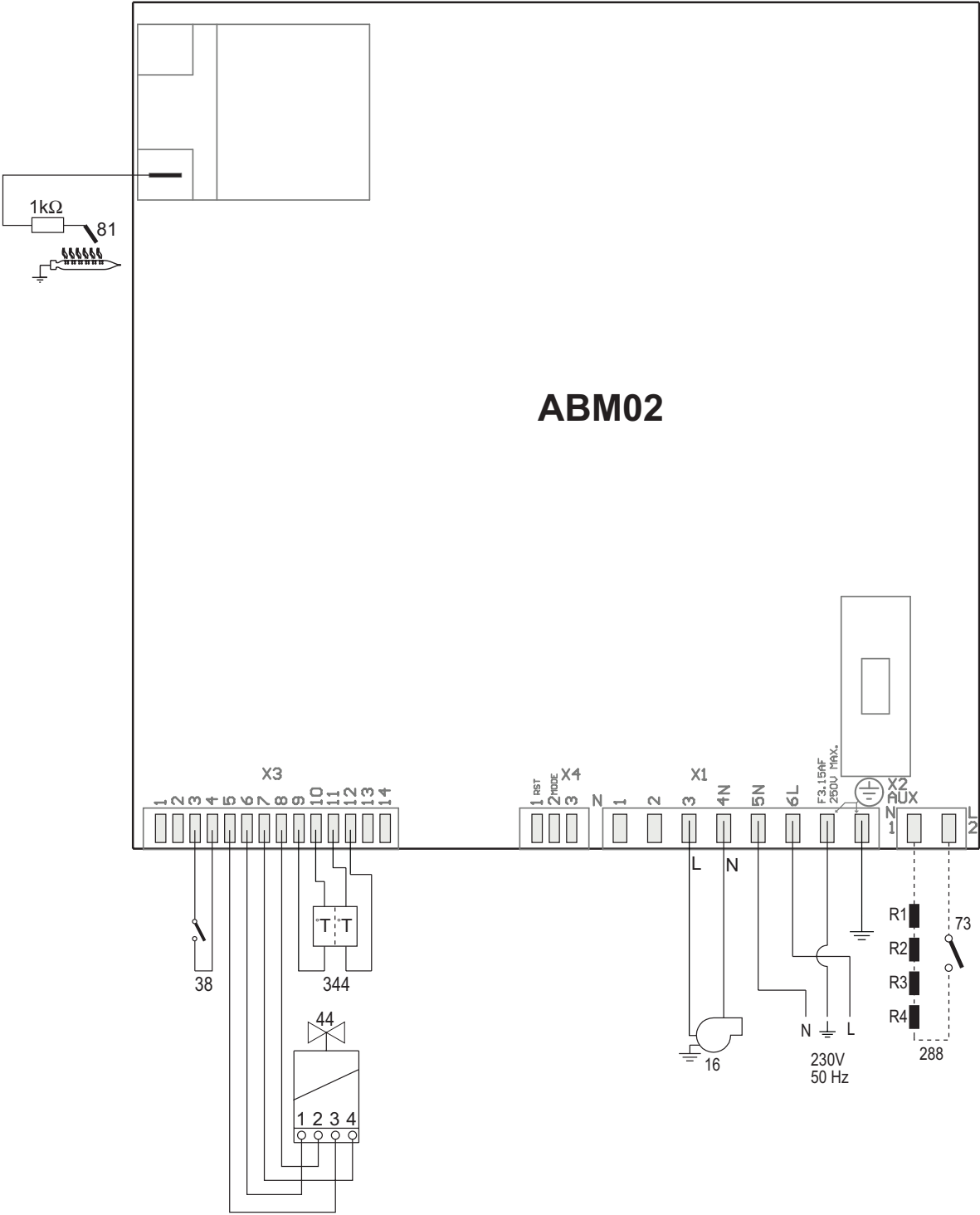


fig. 15 - Electrical circuit



Declaration of conformity

Manufacturer: FERROLI S.p.A.

Address: Via Ritonda 78/a 37047 San Bonifacio VR Italy

declares that this unit complies with the following EU directives:

- Gas Appliance Directive 2009/142
- Low Voltage Directive 73/23 (amended by 93/68)
- Electromagnetic Compatibility Directive 89/336 (amended by 93/68)

President and Legal Representative

Cav. del Lavoro

Dante Ferrolì



COINTRA GODESIA

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28820 Coslada

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