



Estelle HE 3-4-5-6-7 ErP

ISTRUZIONI PER L'INSTALLAZIONE E LA MANUTENZIONE



IT	FR	
ES	NL	
GR	DE	
ENG	SL	



Gentile Cliente,
metta in funzione la sua nuova caldaia entro 30gg dalla data di installazione da personale professionalmente qualificato. Potrà così beneficiare sia della garanzia legale, sia della garanzia convenzionale Sime che trova in questo manuale.

Fonderie SIME S.p.A

Cod. 6276059 - 03/2018

ISTRUZIONI ORIGINALI-ISTRUCCIONES ORIGINALES-ΑΡΧΙΚΕΣ ΟΔΗΓΙΕΣ -ORIGINAL INSTRUCTIONS
INSTRUCTIONS ORIGINALES-ORIGINALANLEITUNG-ORIGINALANWEISUNGEN-ORIGINALNA NAVODILA

CONTENTS

1	BOILER DESCRIPTION	
1.1	INTRODUCTION.....	34
1.2	DIMENSIONAL DETAILS	
1.3	TECHNICAL FEATURES	35
1.4	LOSS OF HEAD	
1.5	FUNCTIONAL DIAGRAM.....	36
1.6	COMBUSTION CHAMBER	
1.7	COMPATIBLE BURNERS	
1.8	CONNECTION OF CONDENSATION WATER TRAP.....	37
2	INSTALLATION	
2.1	BOILER ROOM.....	38
2.2	BOILER ROOM DIMENSIONS	
2.3	CONNECTING UP SYSTEM	
2.4	CONNECTING UP FLUE	
2.5	ELECTRICAL CONNECTION	
3	USE AND MAINTENANCE	
3.1	COMMISSIONING THE BOILER.....	40
3.2	LIGHTING AND OPERATION	
3.3	REGULAR CLEANING	
3.4	FROST POTECTION	42
3.5	POWER CABLE	
3.6	DISPOSAL OF THE EQUIPMENT	

CONFORMITY

Our Company declares that ESTELLE HE ErP boilers comply with the essential requirements of the following directives:

- Boiler Efficiency Directive 92/42/EEC
- Ecodesign Directive 2009/125/EC
- Regulation (EU) N. 813/2013 - 811/2013
- Electromagnetic Compatibility Directive 2014/30/UE
- Low Voltage Directive 2014/35/UE
- Energy Labelling 2010/30/EC



1.3 TECHNICAL FEATURES

		ESTELLE HE				
		3 ErP	4 ErP	5 ErP	6 ErP	7 ErP
Output						
80-60°C	kW	25.5	33.0	40.0	48.0	59.7
50-30°C	kW	26.7	35.5	42.2	50.5	62.8
Input						
	kW	26.2	34.8	41.0	49.0	61.0
Seasonal energy efficiency class of the heating system		A	A	A	A	A
Seasonal energy efficiency of the heating system		%	97.0	94.0	93.0	93.0
PIN number		1312CR193R	1312CR193R	1312CR193R	1312CR193R	1312CR193R
Type		B23P	B23P	B23P	B23P	B23P
Sections	n°	3	4	5	6	7
Maximum water head	bar (kPa)	4 (392)	4 (392)	4 (392)	4 (392)	4 (392)
Water content	l	13.8	17.8	21.8	25.8	29.8
Smokes loss of head	mbar (kPa)	0.08 (0.0078)	0.13 (0.0127)	0.18 (0.0176)	0.23 (0.0225)	0.28 (0.0274)
Combustion chamber pressure	mbar (kPa)	0.38 (0.0372)	0.45 (0.0441)	0.50 (0.049)	0.60 (0.0588)	0.90 (0.0882)
Suggested chimney depression	mbar (kPa)	0.15 (0.0147)	0.15 (0.0147)	0.20 (0.0196)	0.20 (0.0196)	0.20 (0.0196)
Smokes temperature						
80-60°C	°C	57	52	55	56	59
50-30°C	°C	55	30	31	30	32
Smokes flow	m³n/h	26.3	37.2	43.8	52.4	65.2
Smokes volume	dm³	9	12	15	18	21
CO₂	%	12.5	12.5	12.5	12.5	12.5
C.H. adjustment range	°C	45÷85	45÷85	45÷85	45÷85	45÷85
Weight	kg	109	135	161	186	212

1.4 LOSS OF HEAD (fig. 2)

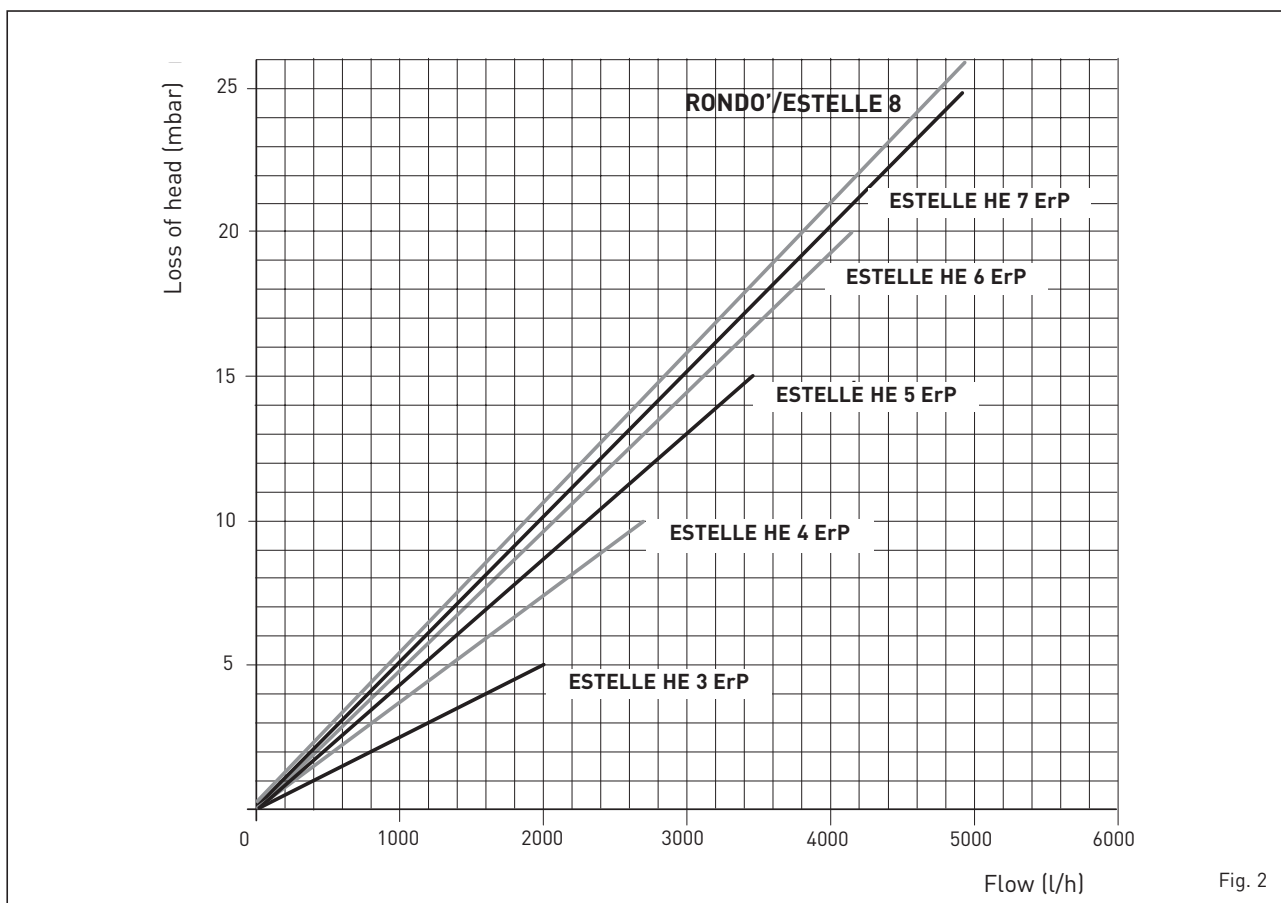
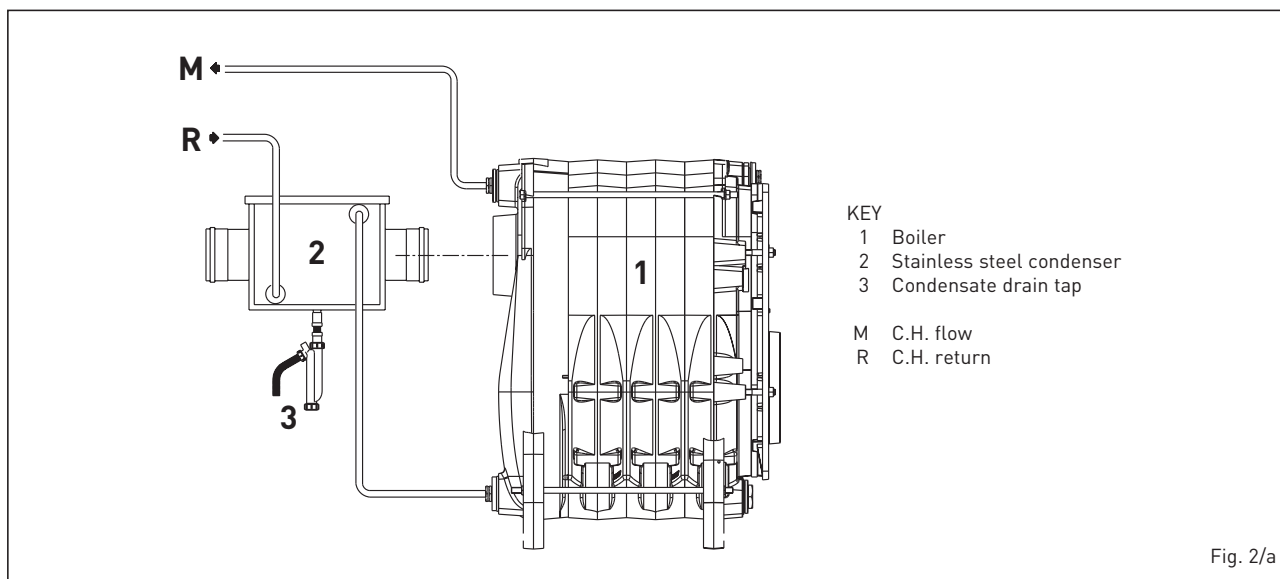


Fig. 2

1.5 FUNCTIONAL DIAGRAM (fig. 2/a)



1.6 COMBUSTION CHAMBER (fig. 3)

The combustion chamber is of the straight flow type and complies with standard EN 303-3 appendix E.

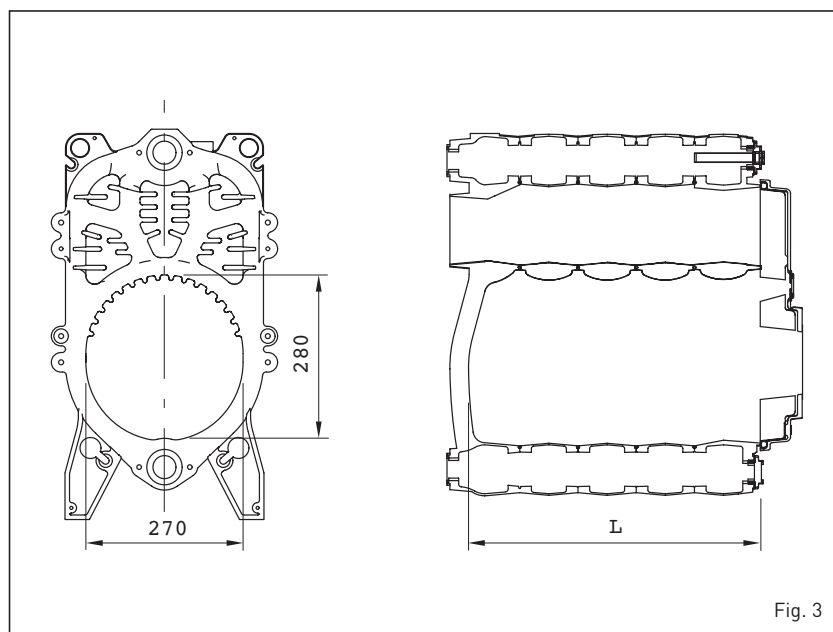
The dimensions are shown in fig. 3.

	L	Volumen
	mm	dm ³
Estelle HE 3 ErP	305	17.5
Estelle HE 4 ErP	405	24.0
Estelle HE 5 ErP	505	30.5
Estelle HE 6 ErP	605	37.0
Estelle HE 7 ErP	705	43.5

1.7 COMPATIBLE BURNERS (EN 267)

In general, the oil burner that is compatible with the boiler should use spray of the semi solid type.

Sections 1.7.1 shows the matching table of the burners with the boilers have been tested with.



1.7.1 Permanent feeding burners

	Model	Code	Nozzle		Atomising angle	Pump pressure bar	Class NOx	Adsorbed power consumption W
			Type	ø				
Estelle HE 3 ErP	SIME MACK 3	8099000	DELAVAN	0,55	60°S	12,5	1	155
Estelle HE 4 ErP	SIME MACK 4	8099010	DELAVAN	0,75	60°W	11,0	1	163
Estelle HE 5 ErP	SIME MACK 5	8099030	DELAVAN	0,85	60°W	13,0	1	163
Estelle HE 6 ErP	SIME MACK 6	8099050	DELAVAN	1,00	60°W	12,0	1	151
Estelle HE 7 ErP	SIME MACK 6	8099050	DELAVAN	1,25	60°W	12,0	1	151
Estelle HE 3 ErP	FBR G0 SR LX TXC	8099124	DANFOSS	0,50	45°H	12,5	3	120
Estelle HE 4 ErP	FBR G0 SR LX TXC	8099125	DANFOSS	0,65	45°H	12,5	3	120
Estelle HE 5 ErP	FBR G1 SR LX	8099126	DANFOSS	0,75	45°H	12,0	3	220
Estelle HE 6 ErP	FBR G1 SR LX	8099126	DANFOSS	1,00	45°H	13,0	3	220
Estelle HE 7 ErP	FBR G2.22 R LX	8099127	DANFOSS	1,25	45°H	12,0	3	140

1.7.3 Burners assembly (fig. 3/a)

The boiler door details is shown in figure 3/a for burner mounting.

The burners must be regulated such that the CO₂ value is that indicated in point 1.3, with a tolerance of $\pm 5\%$.

1.8 CONNECTION OF CONDENSATION WATER TRAP (fig. 4)

The drip board and its water trap must be connected to a civil drain through a pipe ($\varnothing 25$) with a slope of at least 5 mm per metre to ensure drainage of condensation water.

The plastic pipes normally used for civil drains are the only type of pipe which is appropriate for conveying condensation to the building's sewer pipes.

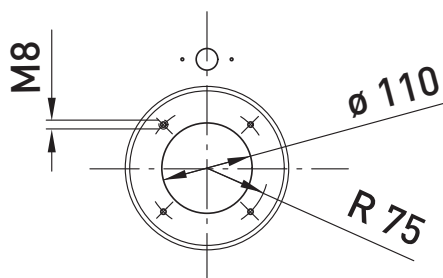
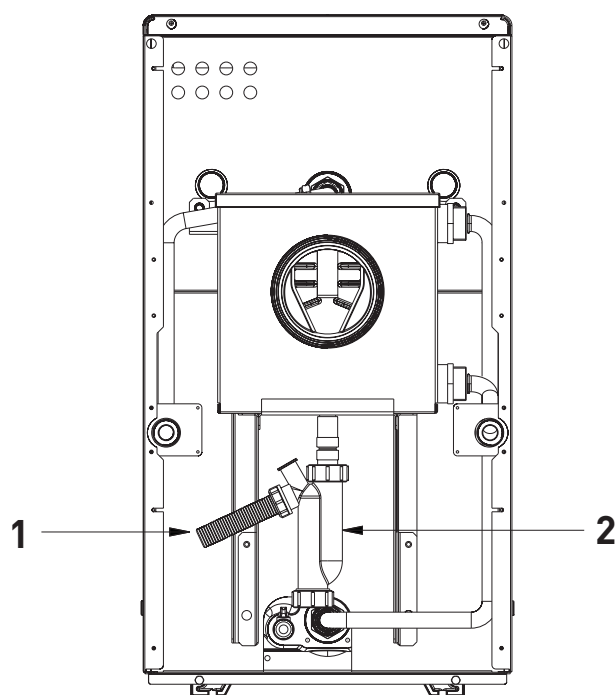


Fig. 3/a



KEY

- 1 Drain hose
- 2 Condensate drain tap

Fig. 4

2 INSTALLATION

ATTENTION: Before performing any work on the boiler, make sure that the same and its components have cooled in order to prevent the risk of burns due to high temperatures.

2.1 BOILER ROOM

The boiler room should feature all the characteristics required by standards governing liquid fuel heating systems.

2.2 BOILER ROOM DIMENSIONS

Position the boiler body on the foundation bed, which should be at least 10 cm high. The body should rest on a surface allowing shifting, possibly by means of sheet metal.

Leave a clearance between the boiler and the wall of at least 0.60 m, and between the top of the casing and the ceiling of 1 m (0.50 m in the case of boilers with incorporated D.H.W. tank).

The ceiling height of the boiler room should not be less than 2.5 m.

2.3 CONNECTING UP SYSTEM

When connecting up the water supply to the boiler, make sure that the specifications given in fig. 1 are observed.

All connecting unions should be easy to disconnect by means of tightening rings. A closed expansion tank system must be used.

2.3.1 Filling the water system

Before connecting the boiler, thoroughly flush the system to eliminate scale which could damage the appliance.

Filling must be done slowly to allow any air bubbles to be bled off through the air valves.

In closed-circuit heating systems, the cold water filling pressure and the pre-charging pressure of the expansion vessel should be no less than or equal to the height of the water head of the installation (e.g. for water head of 5 meters, the vessel pre-charging pressure and installation filling pressure should be at least 0.5 bar/49 kPa).

2.3.2 Characteristics of feedwater

Water supplying the heating circuit must be treated in accordance with UNI-CTI 8065 standards.

It is absolutely essential to treat water

in the heating system in the following cases:

- For extensive systems (with high contents of water).
- Frequent addition of water into the system.
- Should it be necessary to empty the system either partially or totally.

2.3.3 D.H.W. storage tank

The **ESTELLE HE ErP** boilers may be matched with the separate boiler units.

The glass enamelled D.H.W. storage tank comes with a magnesium anode to protect the boiler and an inspection flange for checking and cleaning.

The magnesium anode must be checked annually and replaced if it is worn.

Fit a safety valve calibrated to 6 bar (588 kPa) on the tubing of the cold water supply to the boiler unit.

An case the system pressure is excessive fit an appropriate pressure reducer.

If the safety valve calibrated to 6 bar (588 kPa) frequently intercepts, fit an expansion vessel with a capacity of 8 litres and a maximum pressure of 8 bar (784 kPa). The tank should be of the membrane type, made of natural rubber "caoutchouc", which is suitable for foods.

2.4 CONNECTING UP FLUE

The flue is of fundamental importance for the proper operation of the boiler; if not installed in compliance with the standards, starting the boiler will be difficult and there will be a consequent formation of soot, condensate and encrustation.

The flue used to expel combustion products into the atmosphere must meet the following requirements:

- be constructed with waterproof materials, and resistant to smoke temperature and condensate;
- be of adequate mechanical resilience and of low heat conductivity;
- be perfectly sealed to prevent cooling of the flue itself;
- be as vertical as possible; the terminal

section of the flue must be fitted with a static exhaust device that ensures constant and efficient extraction of products generated by combustion;

- to prevent the wind from creating pressure zones around the chimney top greater than the uplift force of combustion gases, the exhaust outlet should be at least 0.4 m higher than structures adjacent to the stack (including the roof top) within 8 m;
- have a diameter that is not inferior to that of the boiler union: square or rectangular-section flues should have an internal section 10% greater than that of the boiler union;
- the useful section of the flue must conform to the following formula:

$$S_{\text{resulting}} = \frac{P}{K \cdot \gamma_H}$$

$S_{\text{resulting}}$ section in cm²
 K reduction coefficient for liquid fuels:
- 0.045 for firewood
- 0.030 for coal
- 0.024 for light oil
- 0.016 for gas
 P boiler input in kcal/h
 H height of flue in meters, measured from the flame axis to the top of the flue reduced by:
- 0.50 m for each change of direction of the connection union between boiler and flue;
- 1.00 m for each metre of union itself.

2.5 ELECTRICAL CONNECTION (fig. 6)

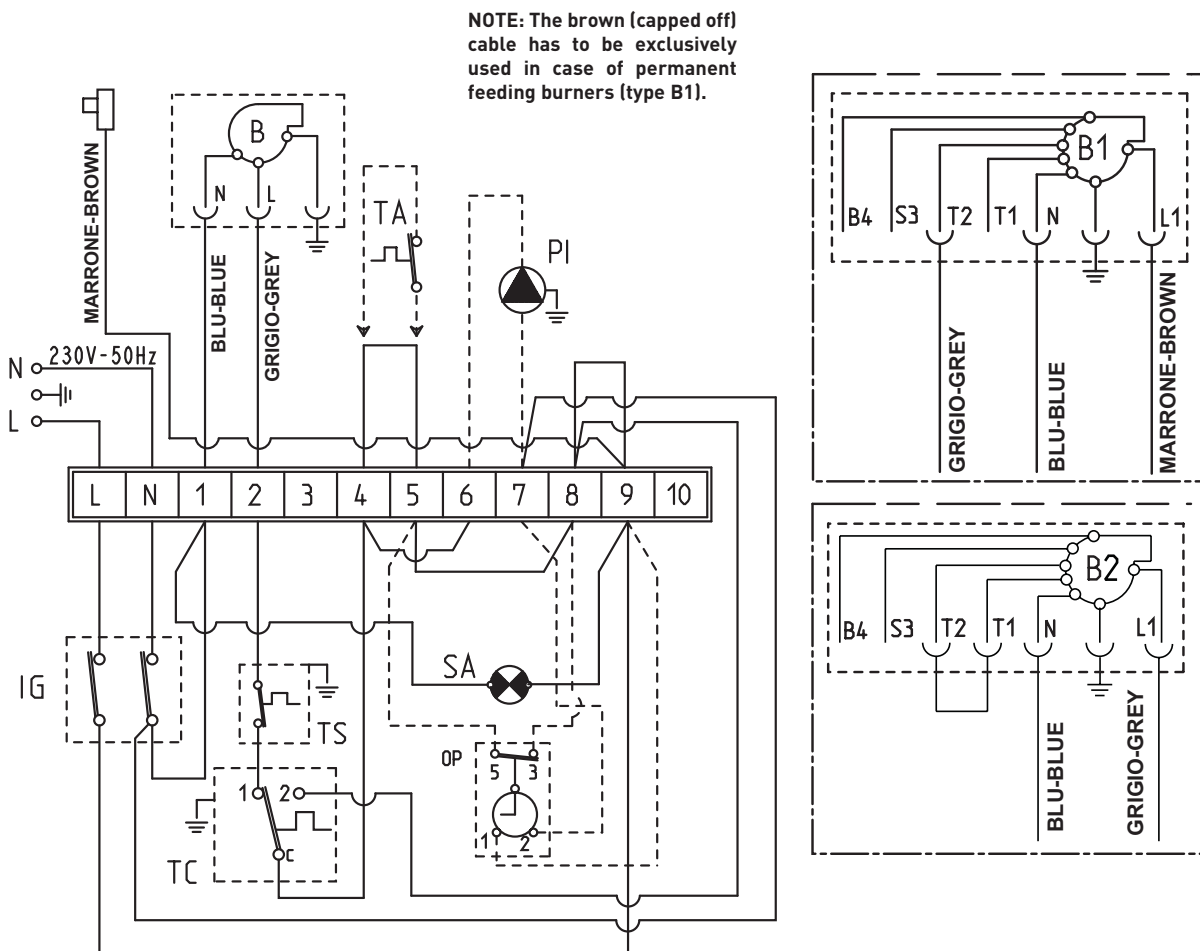
The boiler is fitted with an electricity cable, and requires a 1ph - 230V - 50Hz power supply through the main switch protected by fuses.

The room thermostat (required for enhanced room temperature control) should be installed as shown in fig. 6. Connect the burner with the cable supplied.

NOTE: Device must be connected to an efficient earthing system.

SIME declines all responsibility for injury caused to persons due to failure to earth the boiler.

Always turn off the power supply before doing any work on the electrical panel.



- KEY**
- L Line
 - N Neutral
 - IG Main switch
 - TS Safety stat
 - TC Boiler stat
 - SA Green voltage LED
 - PI C.H. pump
 - B Direct Feeding Burner (not supplied)
 - B1 Permanent Feeding Burner **(optional)**
 - B2 Two stage permanent Feeding Burner **(optional)**
 - TA Room stat
 - OP Programmer's clock **(optional)**

NOTE:

- When a room stat (TA) is to be fitted remove the link between terminal 4 and 5 on the connector plug.
- To connect the programmer's clock (OP), remove the link between terminals 5 and 8.

Fig. 6

3 USE AND MAINTENANCE

WARNINGS

- In case of failure or malfunction of the equipment, contact authorised technical staff.
- For safety reasons, the User cannot access the internal parts of the appliance. All operations involving the removal of protections or otherwise the access to dangerous parts of the appliance must be performed by qualified personnel.
- The appliance can be used by children under 8 years and by persons with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, provided they are under supervision or after they have been given instructions concerning the safe handling of the appliance and the understanding of the dangers inherent to it. Never let children play with the appliance. Children without supervision must not carry out cleaning and maintenance meant to be carried out by the user.

3.1 COMMISSIONING THE BOILER

When commissioning the boiler always make sure that:

- the system has been filled with water and adequately vented;
- the flow and return valves are fully open;
- the flue and chimney are free from obstructions;
- the electrical connections to the mains and the earthing are correct;
- no flammable liquids or materials are near the boiler;
- check that the circulating pump is not locked.

3.2 LIGHTING AND OPERATION

3.2.1 Lighting the boiler (fig. 7)

To light the boiler proceed as follows:

- check that the “Testing Certificate” has been removed from inside the combustion chamber;
- switch on the main switch (1) and verify that the green LED (3) turns on to confirm the presence of voltage. The burner will start;
- turn the boiler stat knob (5) to a temperature no lower than 60°C. The set temperature value can be checked on the thermometer (4).

3.2.2 Safety stat (fig. 7)

The manually reset safety stat (2) trips to switch-off the burners immediately when the boiler temperature exceeds 100°C. To restart the boiler, unscrew the black

cover and press the button underneath.

If the problem occurs frequently, call an authorised technical assistance centre for the necessary checks to be carried out.

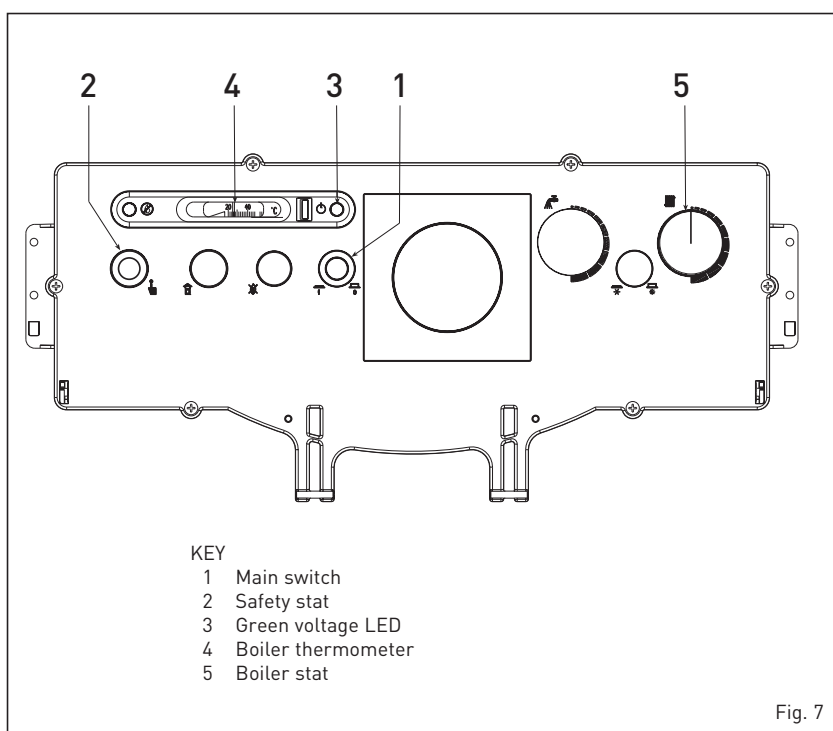


Fig. 7

3.2.3 System filling

Periodically check the pressure values of the hydrometer mounted onto the system, when the system is cold, should range between 1 and 1.2 bar (98 and 117.6 kPa). If the pressure is less than 1 bar (98 kPa), reset the system.

3.2.4 Turnig OFF boiler (fig. 7)

To temporarily turn off the boiler turn off the electricity supply by pressing the main switch (1). The following operations must be carried out if the plant will not be in use for a lengthy period of time:

- position the main switch of the plant on off;
- turn the fuel and water taps of the central heating plant off;
- empty the central heating plant if there is danger of frost:

3.3 REGULAR CLEANING

Maintenance of the boiler should be carried out annually by an authorised service engineer. Disconnect the boiler from the electrical supply before servicing or maintenance is carried out.

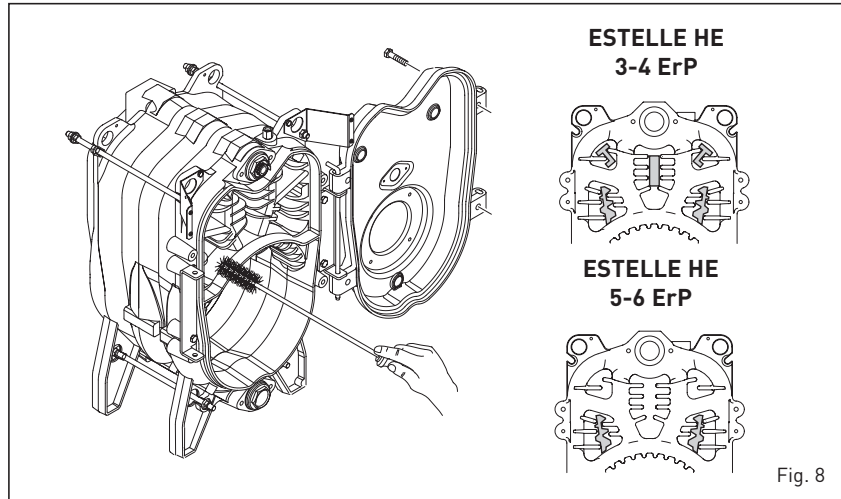


Fig. 8

3.3.1 Smoke side boiler (fig. 8)

To carry out cleaning of the smoke passages remove the screws that fix the door to the body of the boiler and with the special cleaning brush clean the internal surfaces and the smoke evacuation tube well, removing any deposits.

Once the maintenance is complped, the baffles have to be fitted onto the original

positions (ref. **ESTELLE HE 3-4-5-6 ErP** models).

The maintenance operations can be carried out without removing the burner.

3.3.3 Disassembly of the casing (fig. 10)

To disassemble the casing of the boiler,

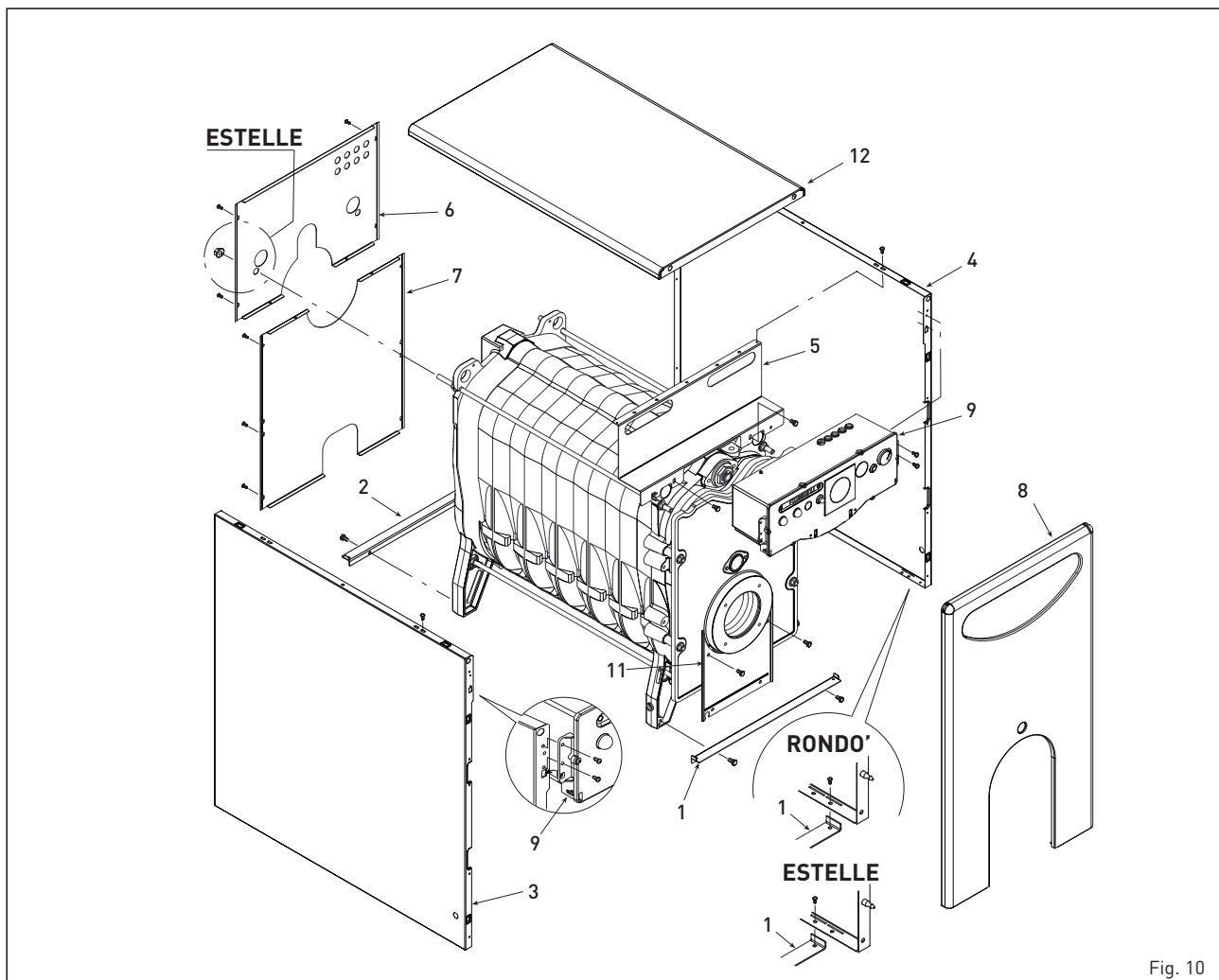


Fig. 10

proceed as follows (fig. 10):

- remove the cover (12) fixed with pin clutches;
- remove the panel (8) which are fixed to the sides by pin clutches;
- remove the control panel (9) whose sides are fixed by four self-tapping screws;
- remove the back panels (6) and (7) which are fixed to the sides by ten self-tapping screws;
- disassemble the left side (3) unscrewing the screws fixing it to the upper bracket (5), and remove the screws that fix it to the lower bracket (1);
- disassemble the right side (4) following the same operations.

3.3.4 Fault finding

Hereafter we outline a number of potential problems that may occur on the appliance and the relevant list of actions required. A working fault, in most cases, provokes the “lock out” signal onto the control panel of the control box.

When this light turns on, the burner can operate again only after the reset button has been pressed; if this has been done and a regular ignition occurs, it means the failure can be defined momentary and not dangerous. On the contrary, if the “lock out” stays, the cause of the fault, as well as the relevant action must be made according to the following chart:

The burner does not ignite

- Check the electric connections.
- Check the regular fuel flow, the cleanliness of the filters, of the nozzle and air vent from the tube.
- Check the regular spark ignition and the proper function of the burner.

The burner ignites regularly but the flame goes out immediately

- Check the flame detection, the air calibration and the function of the appliance.

Difficulty in regulating the burner and/or lack of yield

- Check: the regular flow of fuel, the cleanliness of the boiler, the non obstruction of the smoke duct, the real input supplied by the burner and its cleanliness (dust).

The boiler gets dirty easily

- Check the burner regulator (smoke analysis), the fuel quantity, the flue obstruction and the cleanliness of the air duct of the burner (dust).

The boiler does not heat up

- Control the cleanliness of the shell, the matching, the adjustment, the burner performances, the pre-adjusted temperature, the correct function and

position of the regulation stat.

- Make sure that the boiler is sufficiently powerful for the appliance.

Smell of unburnt products

- Control the cleanness of the boiler shell and the flue, the airtightness of the boiler and of the flue ducts (door, combustion chamber, smoke ducts, flue, washers).
- Control the quality of the fuel.

Frequent intervention of the boiler shutoff valve

- Control the presence of air in the system, the function of the circulation pumps.
- Check the load pressure of the appliance, the efficiency of the expansion tanks and the valve calibration.

3.4 FROST PROTECTION

In the event of frost, ensure that the central heating plant is functional and effective frost protection interlocks are in place to protect against frost damage

3.5 POWER CABLE

It is mandatory that the dedicated power cable is replaced only with a spare cable ordered and connected by professionally qualified personnel.

3.6 DISPOSAL OF THE EQUIPMENT

Once it reaches the end of its operating life, the equipment **MUST BE RECYCLED** in line with current legislation.

IT **MUST NOT** be disposed of together with urban waste.

It can be handed over to recycling centres, if there are any, or to retailers that offer this service.

Recycling prevents potential damage to the environment and health. It allows to recover a number of recyclable materials, with considerable savings in terms of money and energy.



Fonderie Sime S.p.A - Via Garbo, 27 - 37045 Legnago (Vr)
Tel. +39 0442 631111 - Fax +39 0442 631292 - www.sime.it