

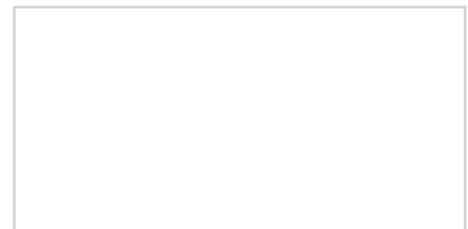


SOLO-DUETTO 25 BF TSE

INSTALLER INSTRUCTIONS



ENG



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IMPORTANT

When carrying out commissioning of the boiler, you are highly recommended to perform the following checks:

- Make sure that there are no liquids or inflammable materials in the immediate vicinity of the boiler.
- Make sure that the electrical connections have been made correctly and that the earth wire is connected to a good earthing system.
- Check that the flue pipe for the outlet of the products of the combustion is unobstructed.
- Make sure that any shutoff valves are open.
- Make sure that the system is charged with water and is thoroughly vented.
- Check that the circulator is not blocked.

1 DESCRIPTION OF THE BOILER

1.1 INTRODUCTION

One of the features of the cast iron thermal group with the integrated gas-oil burner is its functional silence and it has been designed in accordance with the european directives EEC 92/42. The perfectly balanced combustion

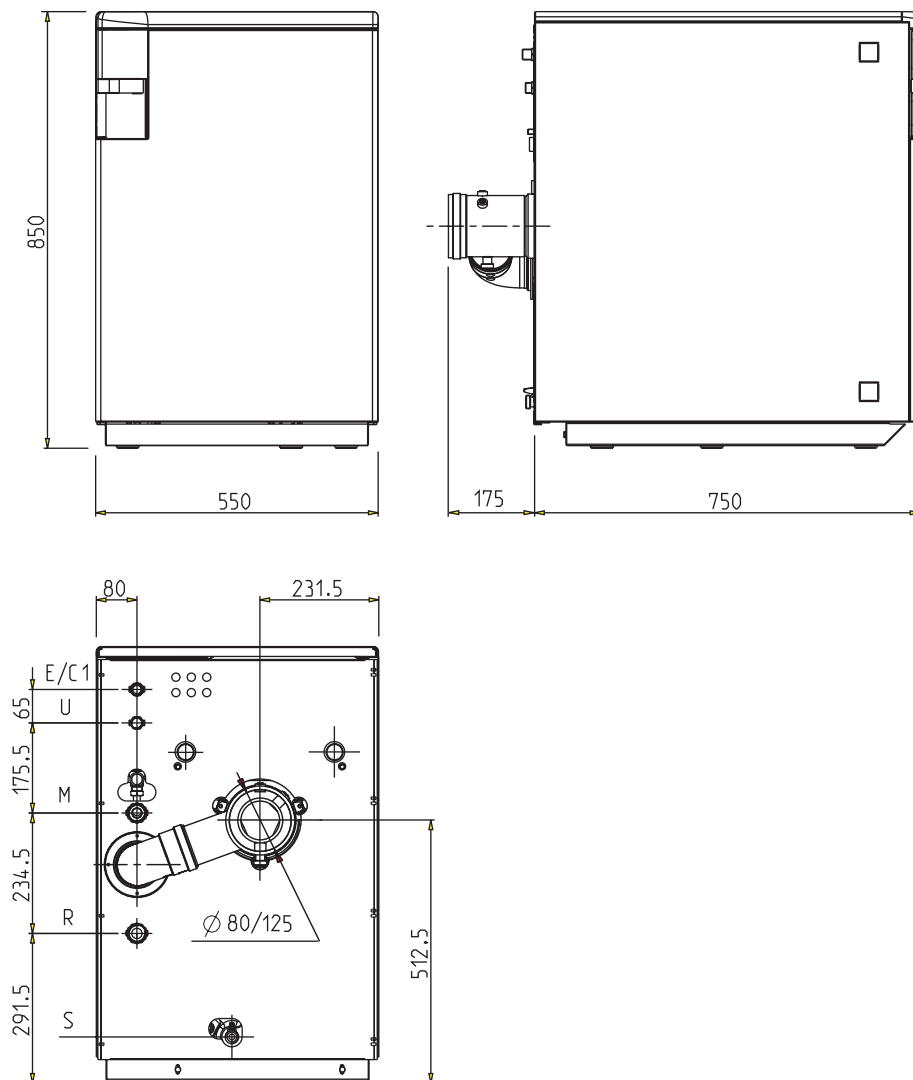
and the high yield allows it to economise considerably the operating costs. The instructions relative to the following models are indicated in the present manual:

- **SOLO 25 BF TSE** for heating only
- **DUETTO 25 BF TSE** for heating and hot water production with instant

tank.

SOLO-DUETTO 25 BF TSE versions are boilers with airtight burners. The instructions given in this manual are provided to ensure proper installation and perfect operation of the appliance and should be strictly followed.

1.2 DIMENSIONS (fig. 1)



	SOLO 25 BF TSE	DUETTO 25 BF TSE
M C.H. flow	G 1" (UNI ISO 228/1)	G 1" (UNI ISO 228/1)
R C.H. return	G 1" (UNI ISO 228/1)	G 1" (UNI ISO 228/1)
C1 Loading system	G 1/2" (UNI ISO 228/1)	-
E D.H.W. inlet	-	G 1/2" (UNI ISO 228/1)
U D.H.W. outlet	-	G 1/2" (UNI ISO 228/1)
S Boiler drain	G 1/2" (UNI ISO 228/1)	G 1/2" (UNI ISO 228/1)

Fig. 1

1.3 TECHNICAL FEATURES

SOLO 25 BF TSE		
Heat output	kW	25.08
	kcal/h	21,569
Heat input	kW	27.0
	kcal/h	23,220
Class efficiency (EEC 92/42)		

Type	C	
Elements	n°	4
Maximum water head	bar	4
Water content	l	22
Expansion vessel		
Water content/Preloading pressure	l/bar	10/1
Loss of head smoke	mbar	0.16
Smoke temperature	°C	143
Smoke flow	m ³ n/h	31.6
CO ₂	%	12.5
Maximum temperature	°C	95
Power consumption	W	230
Adjustment range heating	°C	45÷85
D.H.W. production		
D.H.W. flow rate EN 625	l/min	-
Contin. D.H.W. flow rate Δt 30°C	l/h	-
Minimum D.H.W. flow rate	l/min	-
D.H.W. tank maximum water head	bar	-
Gas-oil burner *		
Burner nozzle	0.65 60°W	
Pump pressure	bar	11.5
Shutter position	0.8	
Shutter position (SIME FUEL 30 OFX)	3.8	
Diaphragm position	D	
Diaphragm position (SIME FUEL 30 OFX)	-	
Weight	kg	137

* After changing the calibration values of the burner, always check the CO₂ values.

DUETTO 25 BF TSE

Heat output	kW	25.08
	kcal/h	21,569

Heat input	kW	27.0
	kcal/h	23,220

Class efficiency (EEC 92/42) ★★

Type C

Elements n° 4

Maximum water head bar 4

Water content l 22

Expansion vessel

Water content/Preloading pressure l/bar 10/1

Loss of head smoke mbar 0.16

Smoke temperature °C 143

Smoke flow m³n/h 31.6

CO₂ % 12.5

Maximum temperature °C 95

Power consumption W 230

Adjustment range heating °C 45÷85

D.H.W. production

D.H.W. flow rate EN 625 l/min 11.0

Contin. D.H.W. flow rate Δt 30°C l/h 660

Minimum D.H.W. flow rate l/min 2.5

D.H.W. tank maximum water head bar 6

Gas-oil burner *

Burner nozzle 0.65 60°W

Pump pressure bar 11.5

Shutter position 0.8

Shutter position (SIME FUEL 30 OFX) 3.8

Diaphragm position D

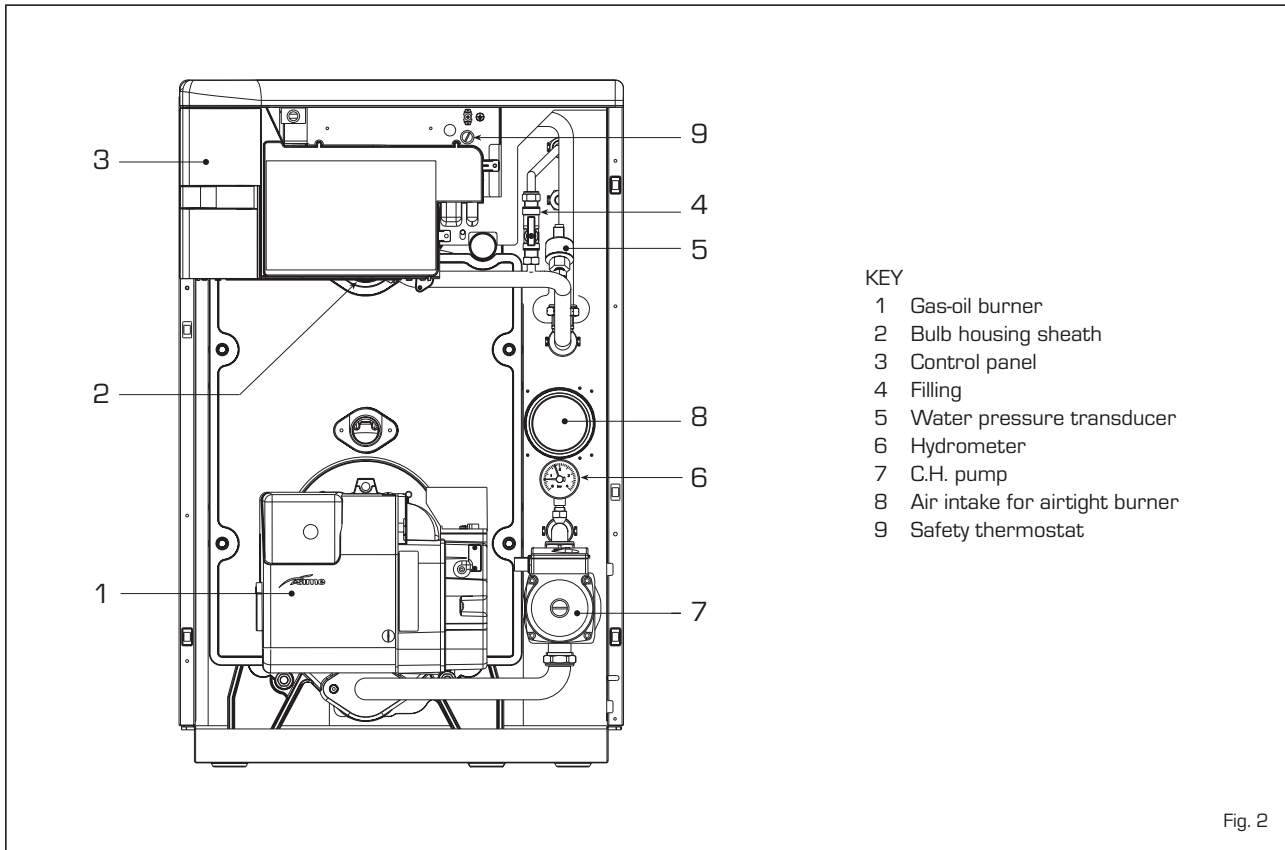
Diaphragm position (SIME FUEL 30 OFX) -

Weight kg 176

* After changing the calibration values of the burner, always check the CO₂ values.

1.4 MAIN COMPONENTS

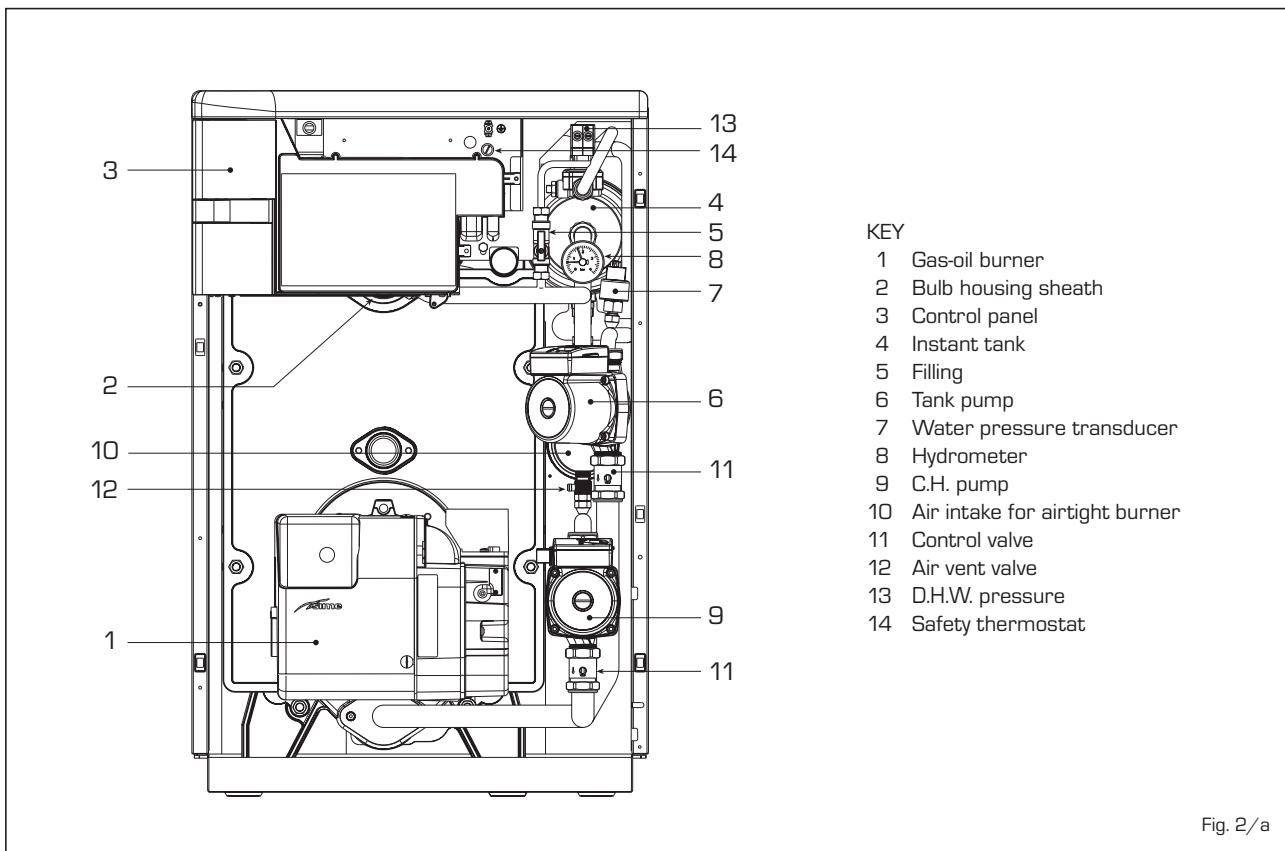
1.4.1 SOLO 25 BF TSE version (fig. 2)



KEY

- 1 Gas-oil burner
- 2 Bulb housing sheath
- 3 Control panel
- 4 Filling
- 5 Water pressure transducer
- 6 Hydrometer
- 7 C.H. pump
- 8 Air intake for airtight burner
- 9 Safety thermostat

1.4.2 DUETTO 25 BF TSE version (fig. 2/a)

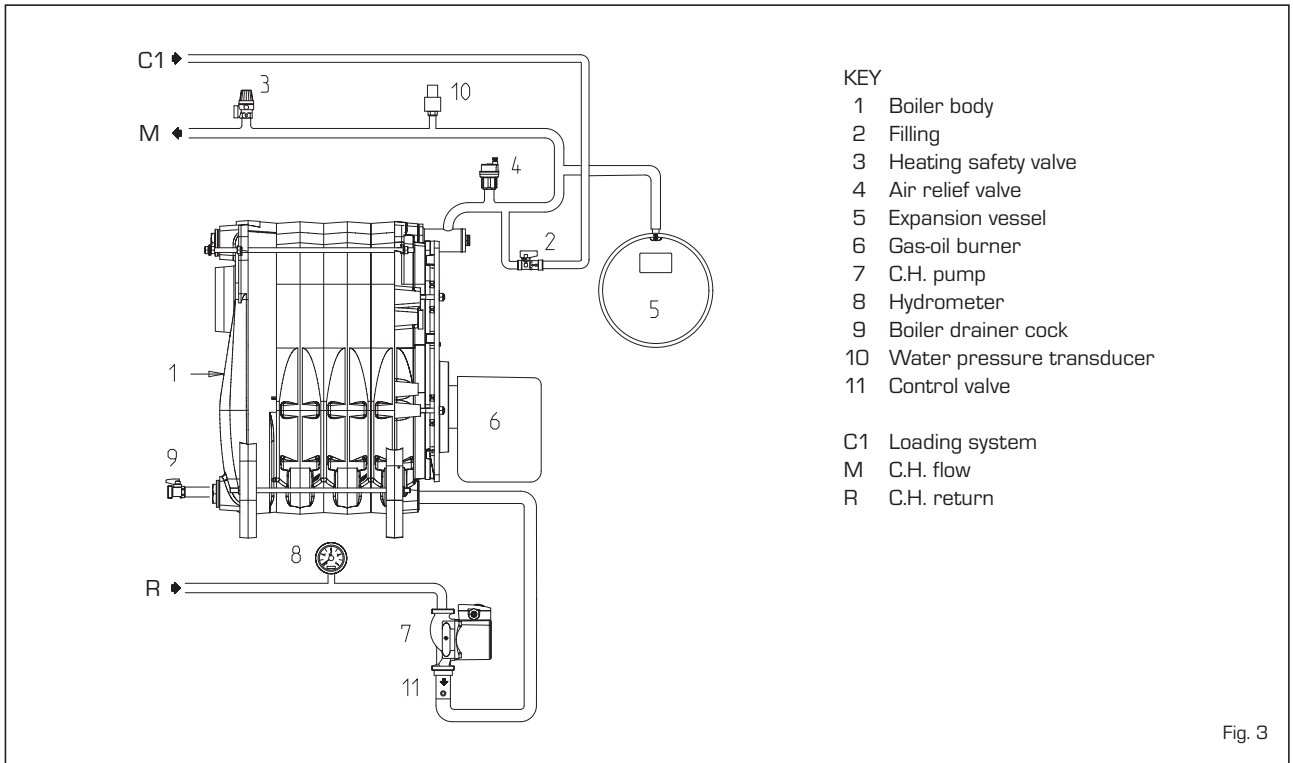


KEY

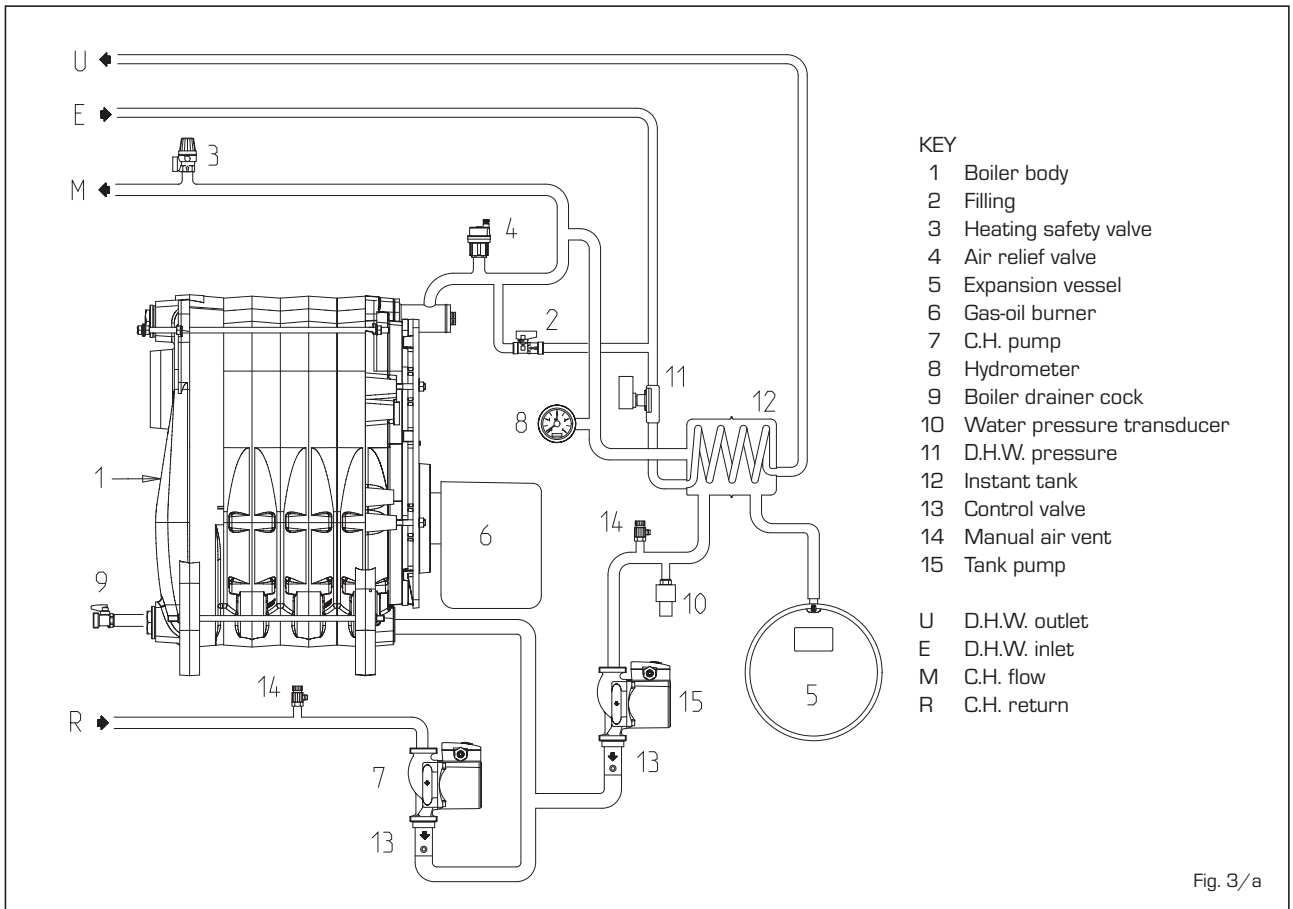
- 1 Gas-oil burner
- 2 Bulb housing sheath
- 3 Control panel
- 4 Instant tank
- 5 Filling
- 6 Tank pump
- 7 Water pressure transducer
- 8 Hydrometer
- 9 C.H. pump
- 10 Air intake for airtight burner
- 11 Control valve
- 12 Air vent valve
- 13 D.H.W. pressure
- 14 Safety thermostat

1.5 FUNCTIONAL DIAGRAM

1.5.1 SOLO 25 BF TSE version (fig. 3)



1.5.2 DUETTO 25 BF TSE version (fig. 3/a)



2 INSTALLATION

2.1 BOILER ROOM

The boilers with a rating of more than 35 kW must be equipped with a technical room whose dimensions and requirements correspond to the current standards and regulations.

The minimum distance between the walls of the room and the boiler must not be less than 0.60 m., while the minimum height between the top of the boiler and the ceiling must be at least 1 m. which can be reduced to 0.50 m. for boilers with incorporated heaters (however the minimum height of the boiler room must not be less than 2,5 m). The boilers with a rating of less than 35 kW can be installed only in perfectly air-vented rooms. To circulate air in the room, air vents must be made on the outside walls which satisfy the following requirements:

- Have a total surface area of at least 6 cm² for each installed Kw of thermal capacity and however not less than 100 cm².
- To be situated as close as possible to the floor, unobstructable and protected by a grate which does not reduce the air passage area.

2.2 CONNECTING UP SYSTEM

Before proceeding to connect up the boiler, you are recommended to make the water circulate in the piping in order to eliminate any foreign bodies that might be detrimental to the operating efficiency of the appliance. For connecting up the pipes, make sure to follow the indications illustrated in fig. 1. The connections should be easy to disconnect using pipe unions with orientable connections.

The shutoff valve must be connected to a suitable flow system and return pipes

2.2.1 System filling (fig. 4)

The boiler and the relative system must be filled operating on the bearing tap and the pressure of cold charging the system must be included between **1 - 1.2 bar**. During filling the main switch should be left open.

Filling must be done slowly so as to allow any air bubbles to be bled off through the provided air vents. This operation can be made easy by positioning horizontally the incision of the block screw of the shutoff valve.

Upon completing the filling, put the

screw back to its original position. At the end of the operation make sure that the tap is closed (fig. 4).

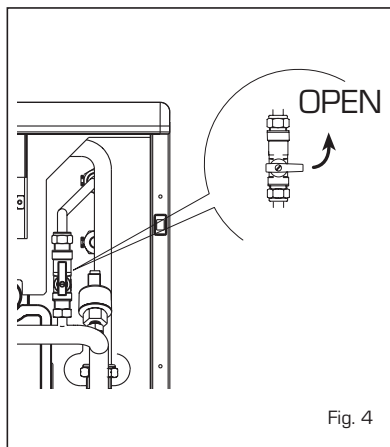


Fig. 4

2.2.2 D.H.W. production on DUETTO 25 BF TSE version (fig. 5)

To adjust water flow use the water pressure gauge flow regulator (fig. 5):

- Turn clockwise and the regulator reduces water supply consequently increasing the relevant temperature.
- Turn counter-clockwise and the regulator increases water supply consequently reducing the relevant temperature.

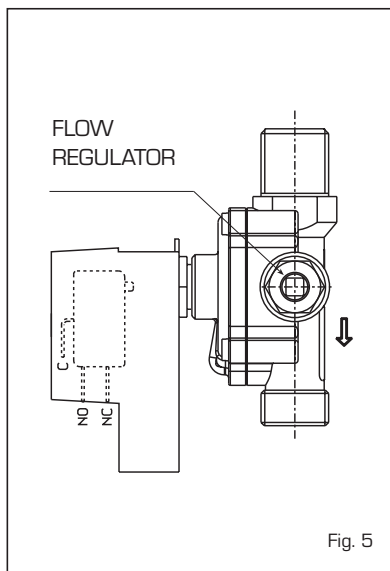


Fig. 5

2.2.3 Characteristics of feedwater

To prevent lime scale and damage to the tap water exchanger, the water supplied should have a hardness of no

more than 20°F.

In all cases the water used should be tested and adequate treatment devices should be installed.

To prevent lime scale or deposits on the primary exchanger, the water used to supply the heating circuit should must be treated in accordance with UNI-CTI 8065 standards. It is absolutely essential that the water is to be treated in the following cases:

- Very extensive systems (with high contents of feedwater).
- Frequent addition of makeup water into the system.
- In case it is necessary to empty the system either partially or totally.

2.3 SMOKE EXHAUST

2.3.1 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, condensation and encrustation.

A flue therefore must satisfy 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:

$$S = K \frac{P}{\sqrt{H}}$$

S resulting section in cm²

K reduction coefficient for liquid

fuels: 0.024

- P boiler input in Kcal/h
- H height of the flue in meters measured from the flame axis to the flue outlet into the atmosphere. When dimensioning the flue, the effective height of the flue in meters must be considered, 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 for each horizontal metre of the union itself.

Our boilers are the B23 type and do

not need any particular connections other than the one to the flue as described above.

2.3.2 Smoke exhaust with \varnothing 80/125 coaxial flue (fig. 6)

SOLO-DUETTO 25 BF TSE version boilers are set to be connected to \varnothing 80/125 stainless steel coaxial flues that can be adjusted to the most suitable direction for room requirements (fig. 6).

The maximum acceptable length of

the flue must not be over 7.0 equivalent meters. Load losses in meters for each single accessory to be used in the exhaust configuration are indicated in Table A.

Only use original SIME accessories and make sure that connections are correct as indicated in the instructions supplied with the accessories.

2.4 FUEL ADDUCTION (fig. 7 - fig. 7/a)

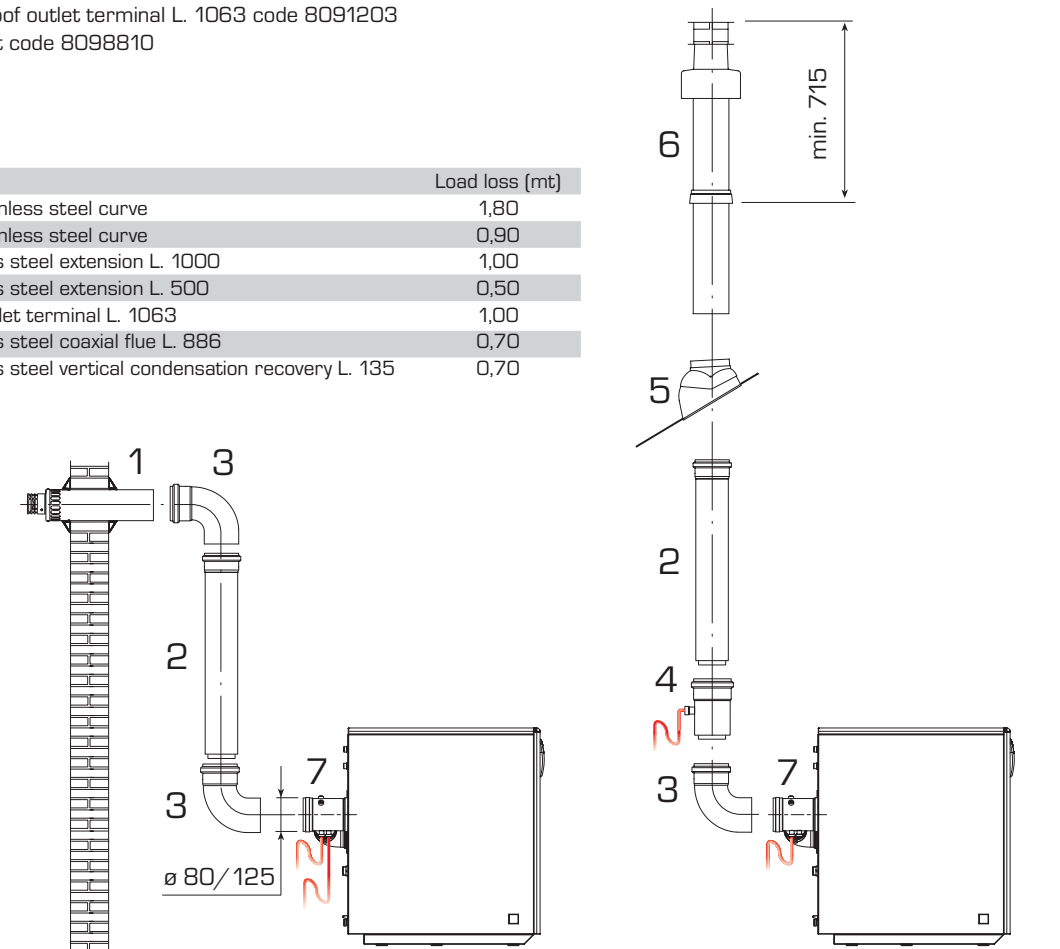
The fuel can be fed into the thermal group sideways, the ducts must be

KEY

- 1 Stainless steel coaxial flue L. 886 code 8096220
- 2 a Stainless steel extension L. 1000 code 8096121
- 2 b Stainless steel extension L. 500 code 8096120
- 3 a 90° stainless steel curve code 8095820
- 3 b 45° stainless steel curve code 8095920
- 4 Stainless steel vertical condensation recovery L. 135 code 8092820
- 5 Tile with hinge code 8091300
- 6 Roof outlet terminal L. 1063 code 8091203
- 7 Kit code 8098810

TABLE A

	Load loss (mt)
90° stainless steel curve	1,80
45° stainless steel curve	0,90
Stainless steel extension L. 1000	1,00
Stainless steel extension L. 500	0,50
Roof outlet terminal L. 1063	1,00
Stainless steel coaxial flue L. 886	0,70
Stainless steel vertical condensation recovery L. 135	0,70



WARNING: The maximum acceptable length of the flue must not be over 7.0 equivalent meters. Always use the condensation recovery (4) in outlets with vertical exhaust.

Fig. 6

passed through the aperture on the right or left hand side of the shell for connection to the pump (fig. 7 - 7/a).

Important

- Make sure, before turning on the boiler, that the return tube is free. An excessive counter-pressure would break the pump seal.
 - Make sure that the tubes are sealed.
 - The maximum depression of 0.4 bar (300 mmHg) (see Table 1) must not be exceeded. Gas is freed from the fuel above that value and can cause cavitation of the pump.
 - It's advisable to bring the return tube in the depression systems up to the same height of the intake tube. In this case the foot valve is unnecessary.
- If instead the return tube arrives above the fuel level, the foot valve is indispensable.

Starting the pump

Turn on the burner to start the pump and check the flame ignition. If a "lock out" occurs before fuel arrival, wait for at least 20 seconds then press the burner release button "RESET" and wait for the whole start-up operation to repeat until the flame lights up.

2.5 BURNER ADJUSTMENTS

Each unit is shipped with a burner unit equipped with a nozzle and calibrated at the factory; it is recommended, however, that the settings listed under point 1.3 be checked, with reference to atmospheric pressure at sea level. If it is necessary to adjust the burner differently from the factory settings, this should be done by authorised personnel following the instructions provided below.

The burner adjustments allow operation up to an altitude of 1300 m above sea level.

2.5.1 Air lock adjustment (fig. 8)

To adjust the air lock, loosen the screw (1 fig. 8) and slide the graduated scale (2 fig. 8) indicating the position air lock position.

The values for adjustment of each unit are given in point 1.3.

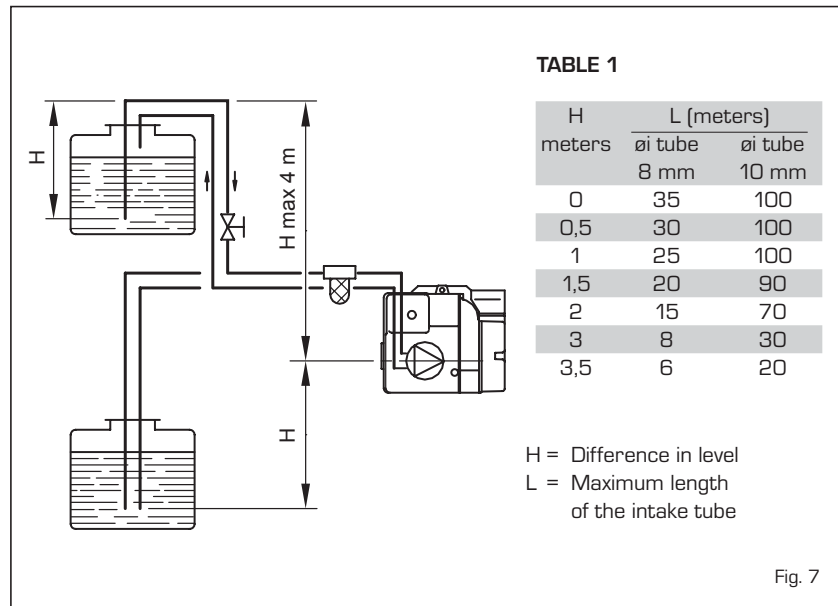


Fig. 7

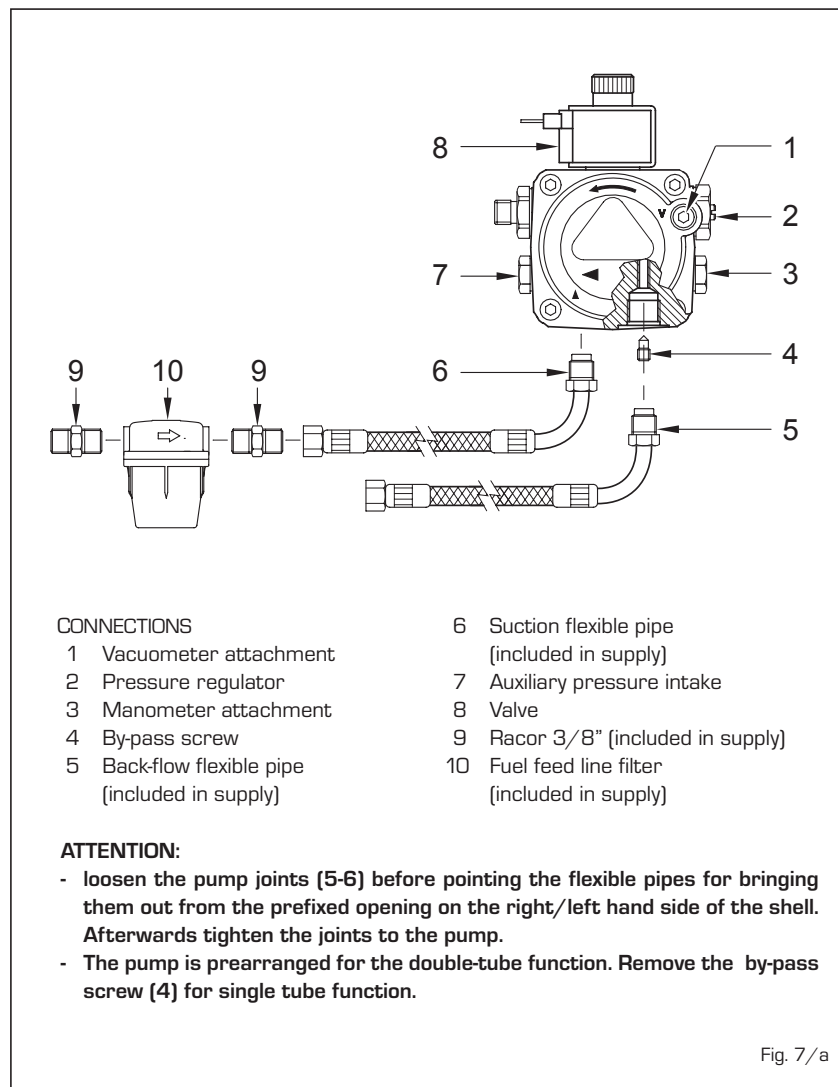


Fig. 7/a

2.5.2 Pump pressure adjustment (fig. 8/a)

To adjust gas-oil pressure, turn the

screw (3 fig. 8/a) and check pressure with a pressure gauge connected to the intake (2 fig. 8/a), making sure pressure corresponds to the value

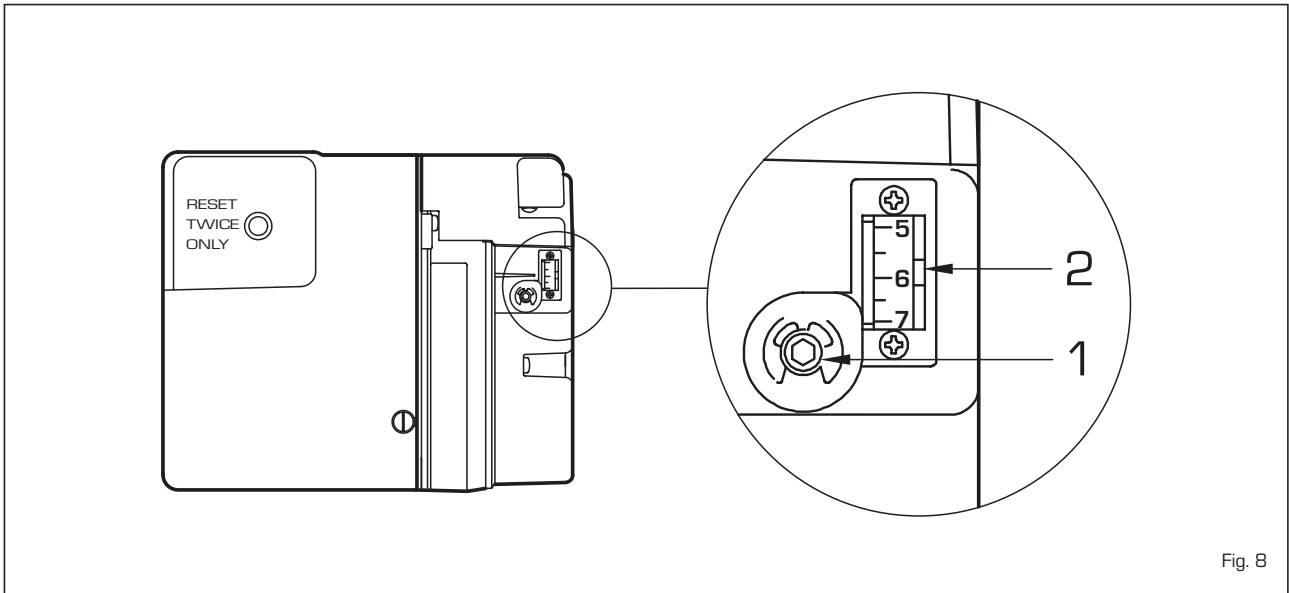


Fig. 8

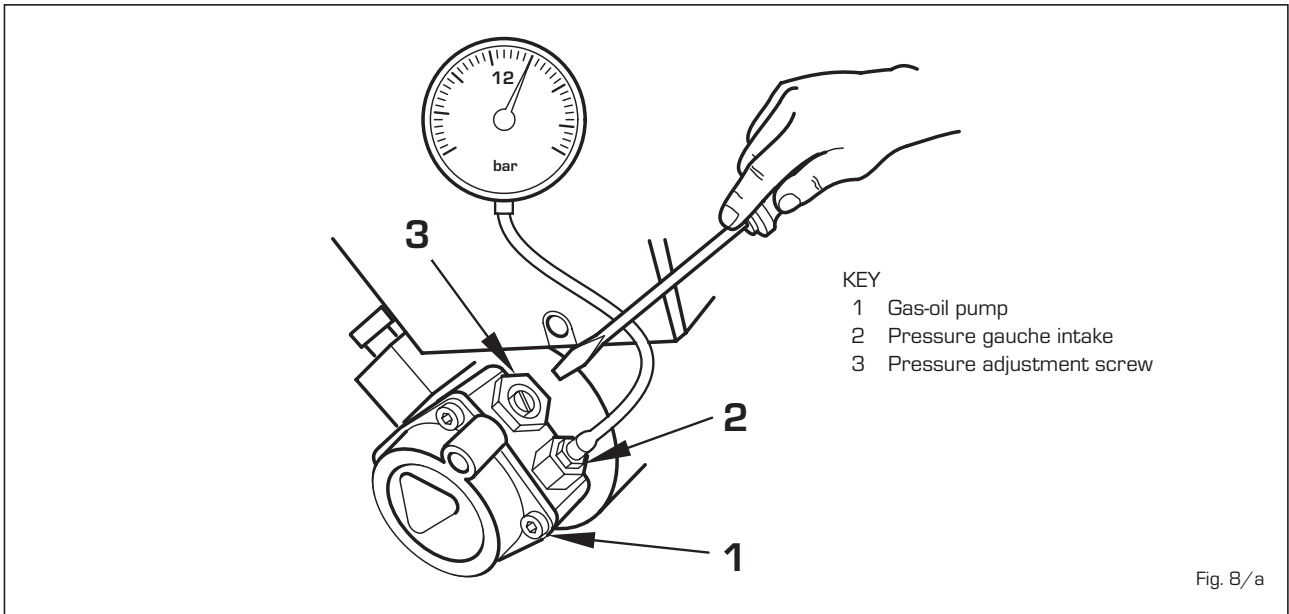


Fig. 8/a

given under point 1.3.

2.6 HEATER UNIT

In **SOLO 25 BF TSE** models, the heater unit comes on with the consensus of the burner, after a delay of a maximum of 90 seconds required to bring fuel in the nozzle holder area up to a temperature of 65°C. Once this temperature has been reached, the thermostat, which is located above the preheater (1 fig. 17/b), will give consensus for the burner to start.

The heater will remain on for as long as the burner stays on and go off when the burner goes off.

The **DUETTO 25 BF TSE** models has a

lower power heater which remains on all the time after the main switch is turned on in the control panel in winter only.

The first time it is turned on at the beginning of the season, it may be difficult for the burner to come on, and the boiler may stop working if the operating cycle is begun before the correct fuel temperature has been reached.

When it is started again, enough time will have passed (2 - 3 minutes) for the fuel to have reached the correct temperature for start-up.

2.7 ELECTRICAL CONNECTION

The boiler is supplied with an electric

cable and the electric power supply to the boiler must be 230V-50Hz single-phase through a fused main switch.

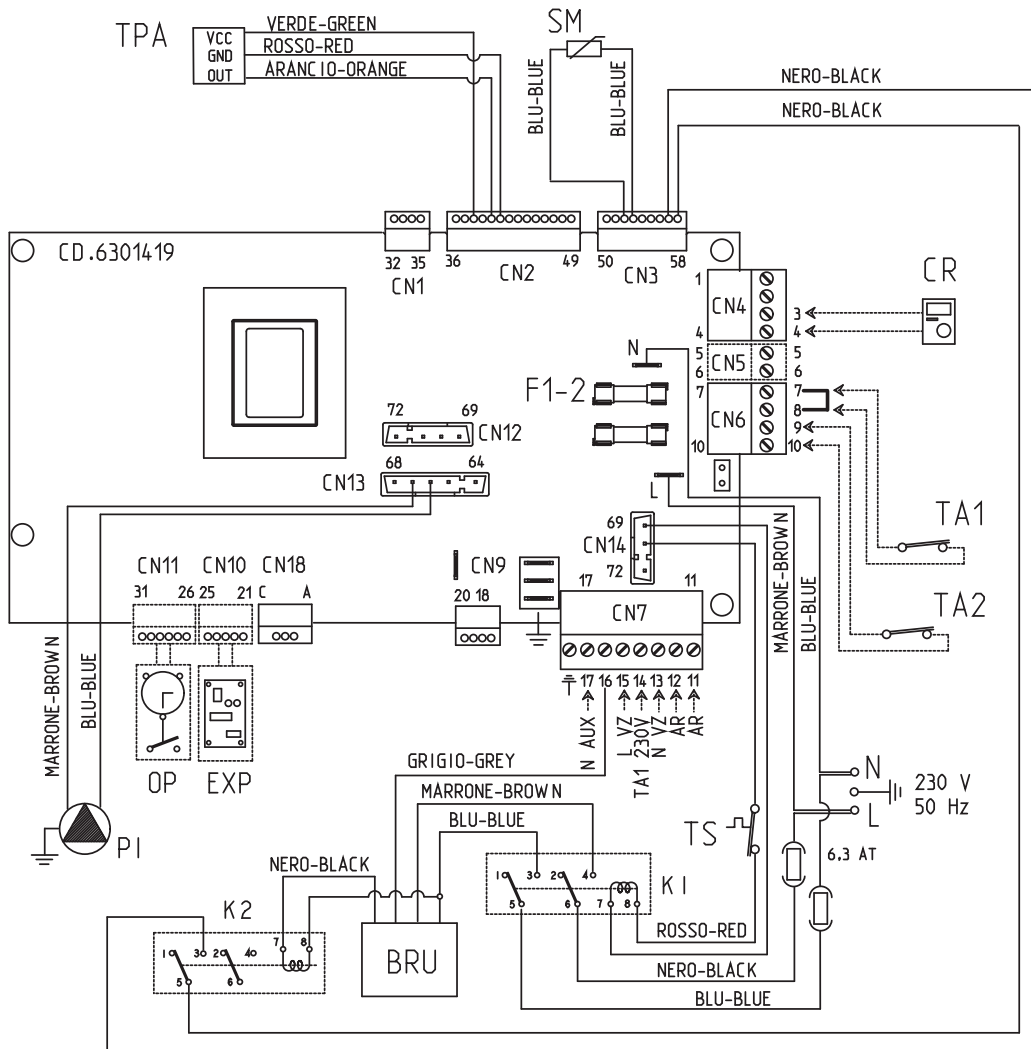
The stat cable, whose installation is compulsory for obtaining a better adjustment of the room temperature, must be connected as shown in fig. 9 - 9/a.

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

SIME declines all responsibility for injury or damage to persons resulting from the failure to provide for proper earthing of the appliance.

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

2.7.1 SOLO 25 BF TSE wiring diagram (fig. 9)



- KEY
- F1-2 Fuse (4 AT)
 - PI C.H. pump
 - TS Safety thermostat
 - SM C.H. sensor
 - TPA Pressure transducer water
 - TA1 Zone 1 room thermostat
 - TA2 Zone 2 room thermostat
 - CR Remote control CR73 (optional)
 - OP Programming clock (optional)
 - EXP Expansion card
 - AR Remote alarm
 - VZ Zone valve
 - AUX Auxiliary connection
 - BRU Gas-oil burner
 - K1-2 Relay

NOTE: Connect TA1 to the clamps 7-8 after having removed the bridge.

Fig. 9

2.7.2 DUETTO 25 BF TSE wiring diagram (fig. 9/a)

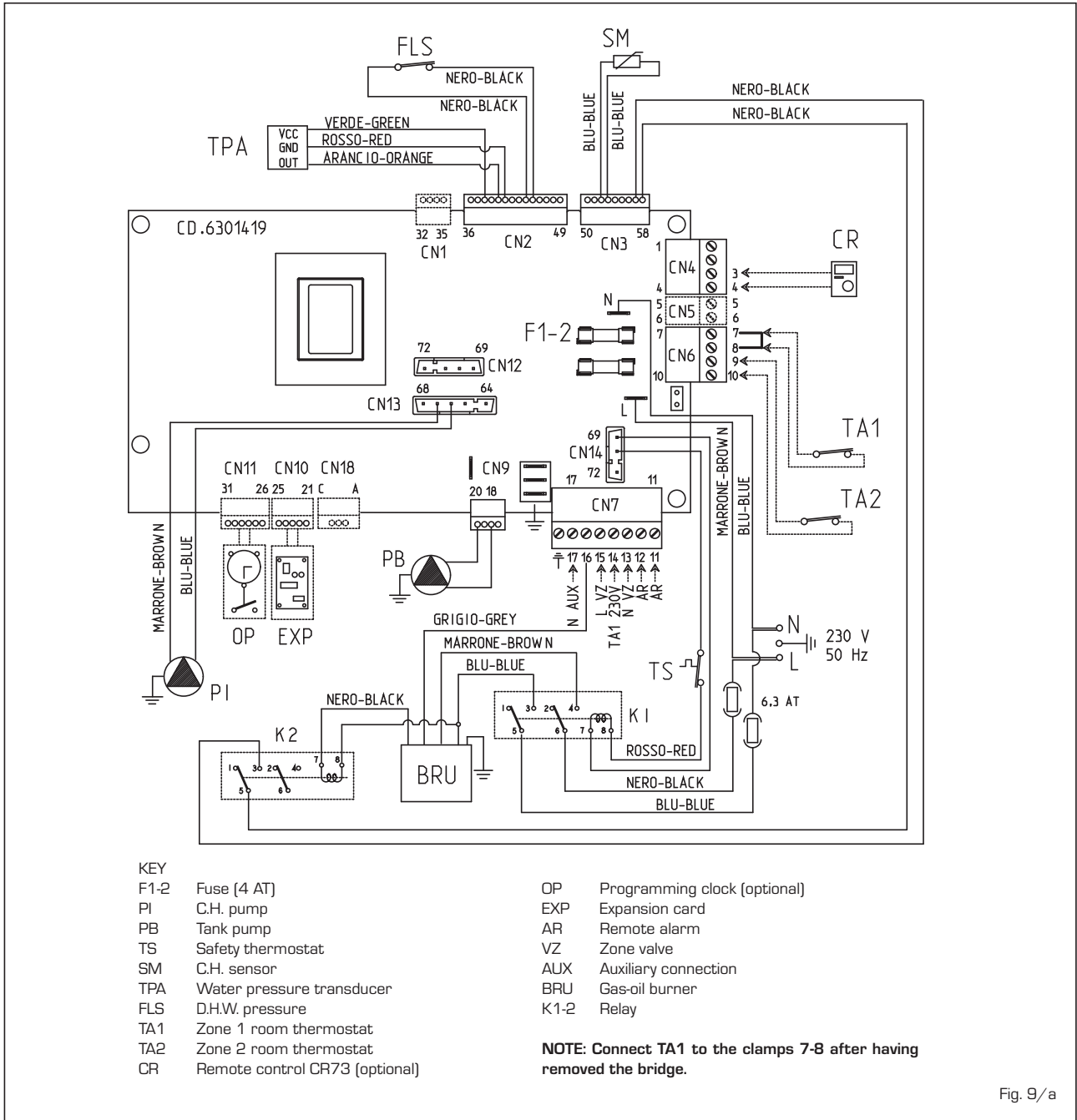
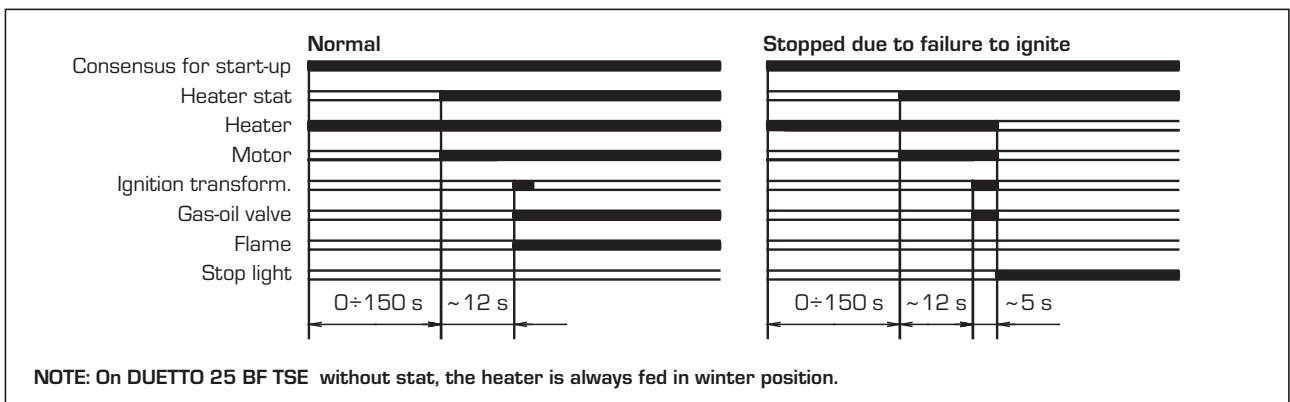


Fig. 9/a

2.7.3 SOLO 25 BF TSE / DUETTO 25 BF TSE functional diagram



2.7.4 Chronothermostat connection

Connect the chronothermostat as indicated in the boiler electrical diagram (see figs. 9 - 9/a) after having removed the existing bridge.

The chronothermostat to be used must be of a class conforming to the standard EN 607301 (clean electrical contact).

2.7.5 Climatic regulator CR 53 connection (optional)

The boiler is designed for connection to a climatic regulator, supplied on request (code 8092227), for the management of a heating circuit.

The electronic card will continue to manage information visualisation, the setting of the sanitary set and the heating of the second circuit, and the boiler parameters by means of the keys on the control panel. For installation and use of the climatic regulator, follow the instructions included in the packaging.

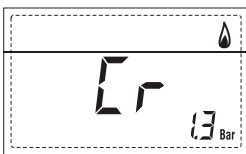
NOTE: Reset parameter 10 to 2 (PAR 10 = 2).

2.7.6 Remote control CR 73 connection (optional)

The boiler is designed for connection to a remote control unit, supplied on request (code 8092226).

The remote control unit CR 73 allows for complete remote control of the boiler, except release of the boiler:

The boiler display will show the following message:



For installation and use of the remote control, follow the instructions in the package.

NOTE: Ensure PAR 10 set to 1 (PAR 10 = 1).

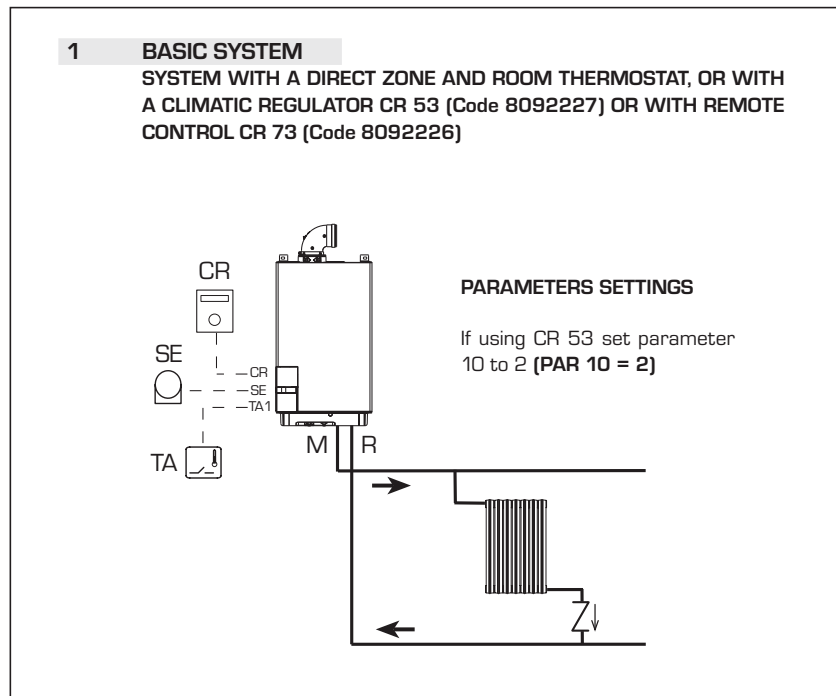
2.7.7 Use with different electronic systems

Some examples are given below of boiler systems combined with different electronic systems. Where necessary, the parameters to be set in the boiler are given. The electrical connections to the boiler refer to the wording on the diagrams (fig. 9-9/a). The zone valve control starts at every demand for heating of the zone 1 (it is from part of the TA1 or the CR).

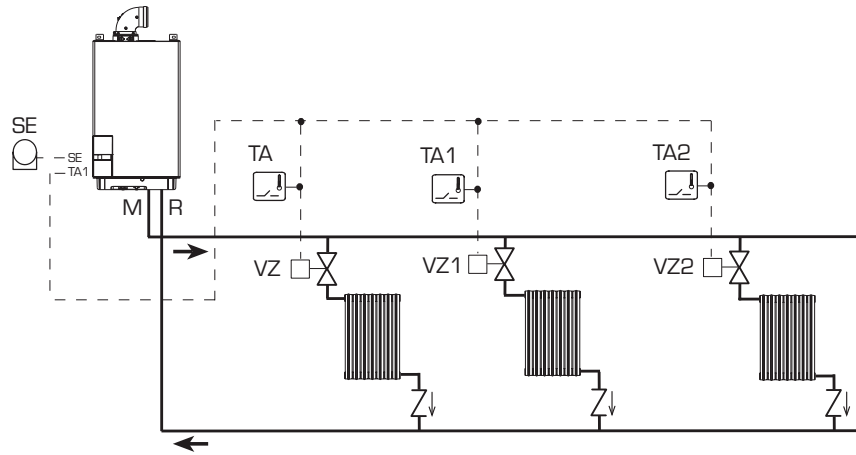
Description of the letters indicating the

components shown on the system diagrams from 1 to 8:

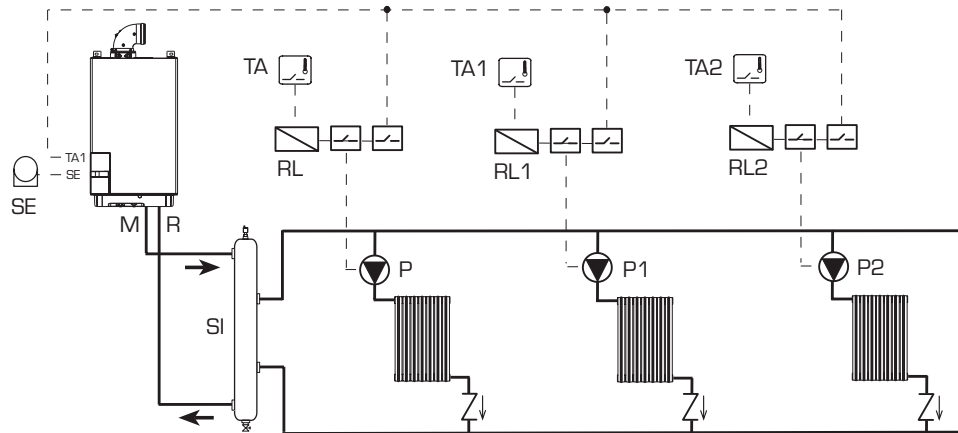
M	C.H. flow
R	C.H. return
CR	Remote control CR 73
SE	External temperature sensor (not usable)
TA 1-2	Zone room thermostat
VZ 1-2	Zone valve
CT 1-2	Zone chronothermostat
RL 1-2	Zone relay
SI	Hydraulic separator
P 1-2	Zone pump



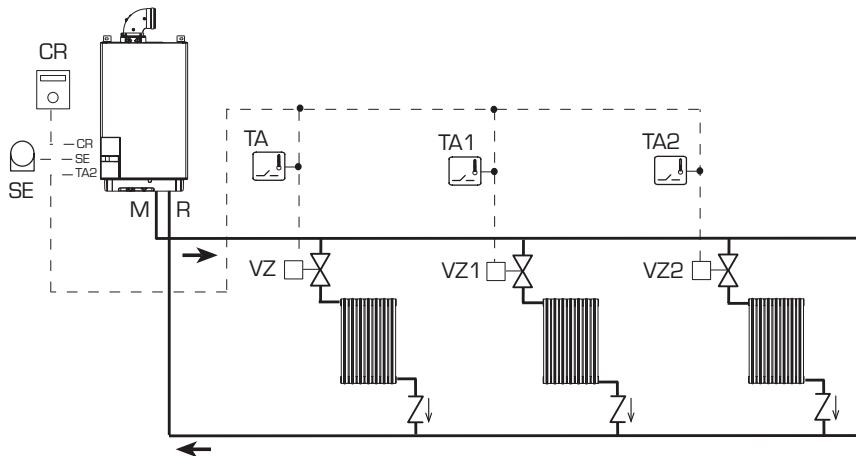
2 BASIC SYSTEM
MULTI-ZONE SYSTEM WITH PUMP AND ROOM THERMOSTAT



3 BASIC SYSTEM
MULTI-ZONE SYSTEM WITH PUMP AND ROOM THERMOSTAT



4 BASIC SYSTEM
MULTI-ZONE SYSTEM WITH VALVE, ROOM THERMOSTAT AND REMOTE CONTROL CR 73 (Code 8092226)

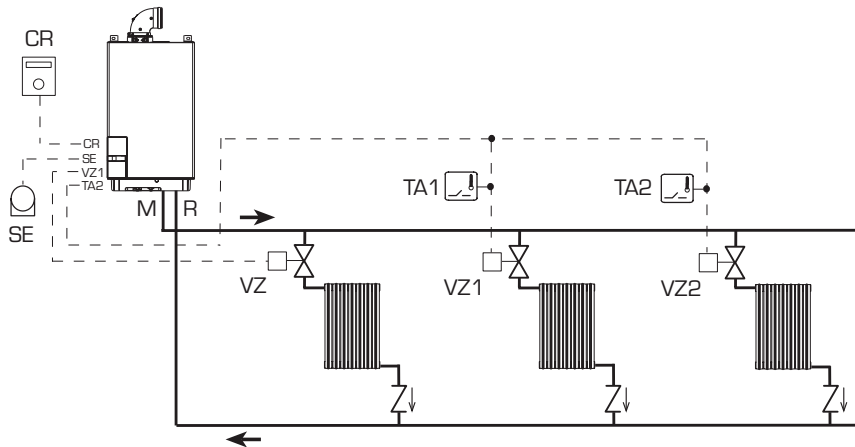


PARAMETERS SETTINGS

To use the remote control (CR) as remote control panel for the boiler rather than as room reference, set:
PAR 7 = 0

5 BASIC SYSTEM

MULTI-ZONE SYSTEM WITH VALVE, ROOM THERMOSTAT AND REMOTE CONTROL CR 73 (Code 8092226)



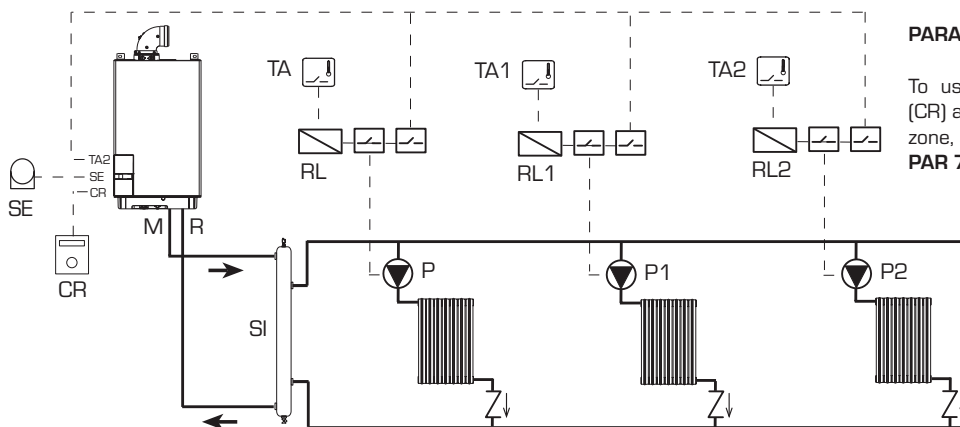
PARAMETER SETTING

To use the remote control (CR) as room reference for a zone, set: **PAR 7 = 1**

Set the opening time of the zone valve VZ:
PAR 33 = "OPENING TIME"

6 BASIC SYSTEM

MULTI-ZONE SYSTEM WITH PUMP, ROOM THERMOSTAT AND REMOTE CONTROL CR 73 (Code 8092226)

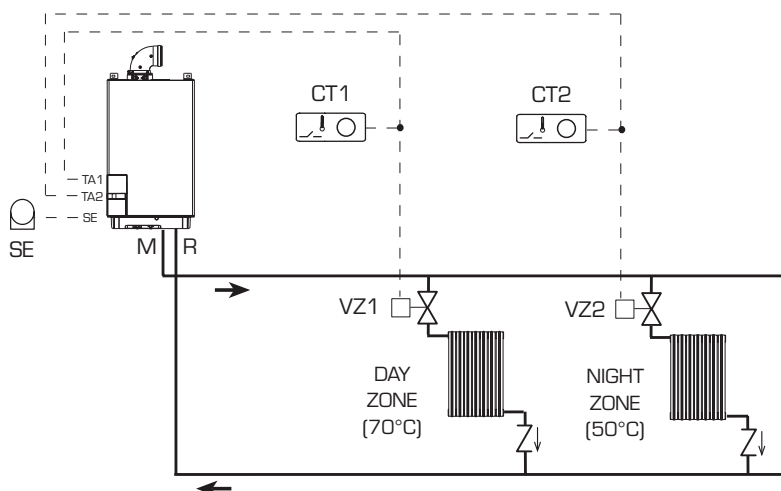


PARAMETER SETTING

To use the remote control (CR) as room reference for a zone, set:
PAR 7 = 1

7 SYSTEM WITH DOUBLE TEMPERATURE OUTPUT

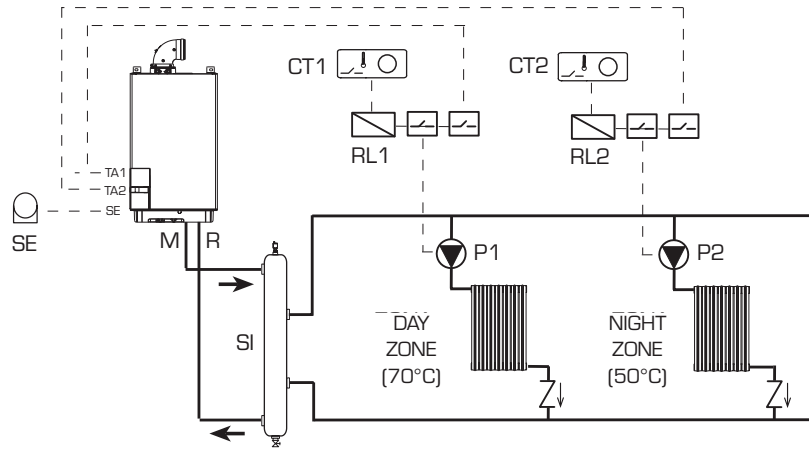
MULTI-ZONE SYSTEM WITH VALVE AND CHRONOTHERMOSTAT



DURING NIGHT TIME THE BOILER USES A LOWER OUTPUT TEMPERATURE IF DIFFERENT TIMES HAVE BEEN SET FOR DAY AND NIGHT AREAS:

gain access to setting the day zone 1 by pressing the key ∇ and change the value with the keys \oplus and \ominus . Gain access to setting the night zone by pressing the key ∇ twice and changing the value with the keys \oplus and \ominus .

**8 SYSTEM WITH DOUBLE TEMPERATURE OUTPUT
MULTI-ZONE SYSTEM WITH PUMP AND CHRONOTHERMOSTAT**



**2.8 MODBUS mode
(fig. 10 - fig. 10/a)**

This mode enables boiler MODBUS communication and can be achieved by requesting the RS-485 board supplied with the kit, code 8092244.

To install the board, proceed as follows:

- Install the RS-485 board in the relevant seat on the control panel and connect it electrically to the boiler board with the wired connector provided in the kit.

ATTENTION: Insert the wired connector with caution.

- Set the DIP SWITCH of the board in MOD-

BUS mode.

- Choose the communication configuration suited to the MODBUS network (PAR 17 INST) according to **Table PAR 17 INST**.

2.8.1 Anti-freeze function

The boilers are equipped with anti-freeze function which activates the pumps and the burner when the temperature of the water contained inside the appliance drops to below 6°C.

The anti-freeze function is ensured, however, only if:

- the boiler is correctly connected to the gas and electricity supply circuits;
- the boiler is constantly fed;
- the boiler ignition is not blocked;
- the essential components of the boiler are all in working order.

In these conditions the boiler is protected against frost down to an environmental temperature of -5°C.

ATTENTION: In the case of installation in a place where the temperature drops below 0°C, the connection pipes must be protected.

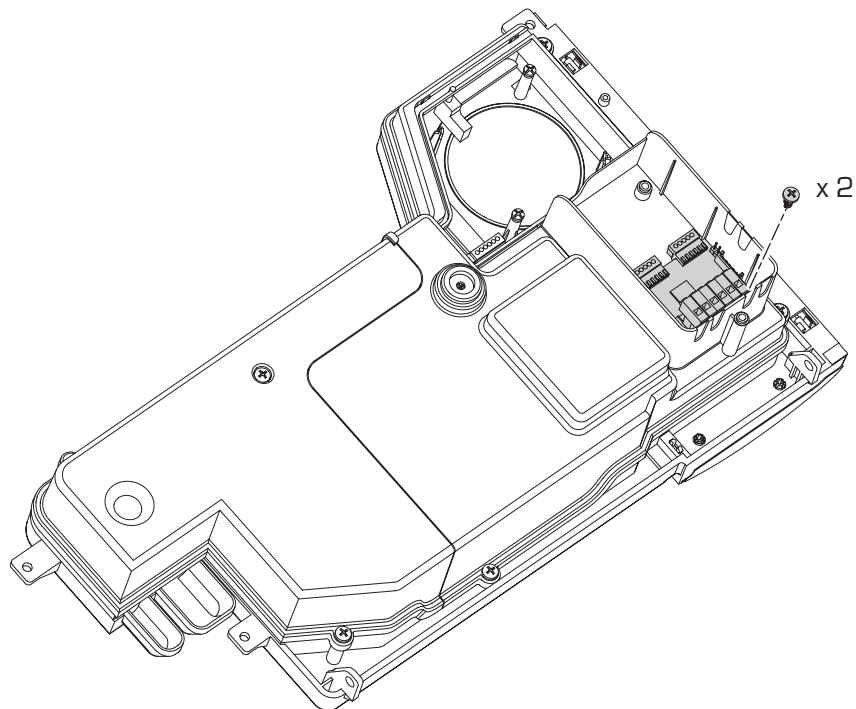
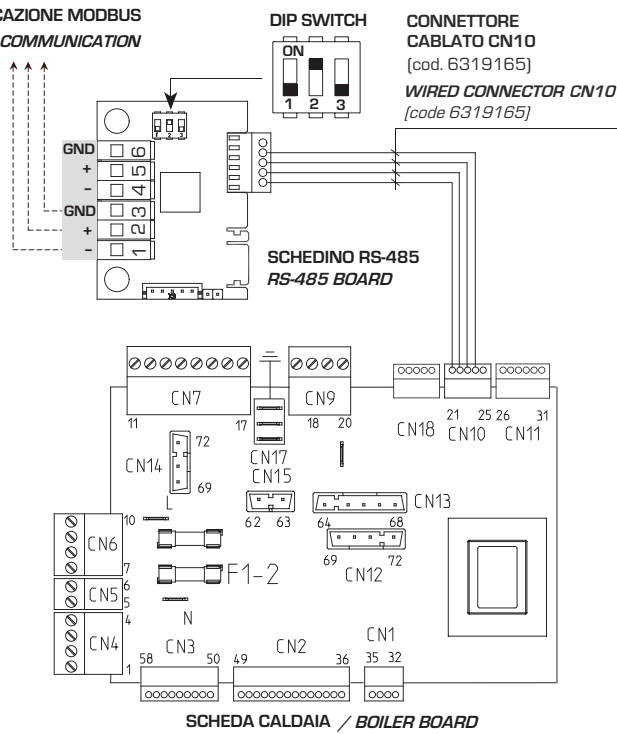


Fig. 10

COMUNICAZIONE MODBUS
MODBUS COMMUNICATION



INSTALLER PARAMETER SETTING:

PAR 16 MODBUS ADDRESS
 - = Not enabled
 1..31 = Slave from 1 to 31
(ATTENTION: Avoid calling the boiler with the same number assigned to either appliances)

PAR 17 MODBUS CONFIGURATION
 - = Not enabled
 1..30 = Default value: 25
(See Table PAR 17 INST)

ATTENTION: Upon setting the parameters, we recommend turning the boiler off and then back on again.

TABELLA PAR 17 INST/ Tab. PAR 17 INST

PAR 17 INST Par 17 INST	Baud Rate Baud Rate	N° Bit Dati No. Data Bit	Parità Parity	Bit di Stop Stop Bit
1	1200	8	No	1
2	1200	8	No	2
3	1200	8	Pari / Even	1
4	1200	8	Pari / Even	2
5	1200	8	Dispari / Odd	1
6	1200	8	Dispari / Odd	2
7	2400	8	No	1
8	2400	8	No	2
9	2400	8	Pari / Even	1
10	2400	8	Pari / Even	2
11	2400	8	Dispari / Odd	1
12	2400	8	Dispari / Odd	2
13	4800	8	No	1
14	4800	8	No	2
15	4800	8	Pari / Even	1
16	4800	8	Pari / Even	2
17	4800	8	Dispari / Odd	1
18	4800	8	Dispari / Odd	2
19	9600	8	No	1
20	9600	8	No	2
21	9600	8	Pari / Even	1
22	9600	8	Pari / Even	2
23	9600	8	Dispari / Odd	1
24	9600	8	Dispari / Odd	2
25	19200	8	No	1
26	19200	8	No	2
27	19200	8	Pari / Even	1
28	19200	8	Pari / Even	2
29	19200	8	Dispari / Odd	1
30	19200	8	Dispari / Odd	2

Fig. 10/a

TABELLA DELLE VARIABILI MODBUS / MODBUS BOILER VARIABLES LIST							
Modbus address	Variable description	Type	Read / Write	U.M.	Min value	Max value	Descrizione / Function
Digital variables							
1	Boiler CH Enable/Request	D	R/W	-	0	1	Richiesta riscaldamento zona 1 <i>Request CH zone 1</i>
2	Boiler DHW Enable	D	R/W	-	0	1	Abilitazione preparazione ACS <i>Enable DHW preparation</i>
3	Boiler Water Filling Function	D	R/W	-	0	1	Non usato <i>Not used</i>
32	Boiler CH Mode	D	R	-	0	1	Stato riscaldamento zona 1 <i>State CH zone 1</i>
33	Boiler DHW Mode	D	R	-	0	1	Stato preparazione ACS <i>State preparation DHW</i>
34	Boiler Flame Status	D	R	-	0	1	Stato presenza fiamma <i>State presence flame</i>
35	Boiler Alarm Status	D	R	-	0	1	Stato presenza allarme <i>State presence alarm</i>
Analog variables							
1	Boiler CH Primary Setpoint	A	R/W	0,1°C	20,0	80,0	Setpoint riscaldamento zona 1. Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto e viene mantenuta la termoregolazione di caldaia a punto fisso o a curva climatica. <i>Setpoint CH zone 1. If you receive a value out of range so the value isn't received and the boiler temperature control is maintained of fixed point or a temperature curve.</i>
2	Boiler DHW Primary Setpoint	A	R/W	0,1°C	20,0	80,0	Setpoint circuito primario durante la preparazione ACS (al posto di PAR 66 caldaia). Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto e viene utilizzato il valore di regolazione presente in caldaia. <i>Setpoint CH during ACS preparation (for PAR 66 installer parameters) If you receive a value out of range the value isn't received and it is used the boiler value regulation.</i>
3	Boiler DHW Setpoint	A	R/W	0,1°C	10,0	80,0	Setpoint acqua calda sanitaria. Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto e viene utilizzato il valore di regolazione presente in caldaia. <i>Setpoint ACS. If you receive a value out of range the value isn't received and it is used the boiler value regulation.</i>
4	Outside Temperature MB	A	R/W	0,1°C	-55,0	95,0	Valore di temperatura esterna comunicato via ModBus. Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto. Nel caso di conflitto la caldaia dà la priorità al valore della sonda ad essa collegata. <i>External value of temperature by ModBus. If you receive a value out of range the value isn't received. In case of conflict the boiler will give priority to the value of the probe connected to it.</i>
5	Boiler CH Curve Slope	A	R/W	0,1	3,0	40,0	Pendenza della curva climatica della zona 1 (utilizzato al posto della curva impostata in caldaia). Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto e viene utilizzata la curva climatica presente in caldaia. <i>Slope of heating curve of zone 1 (it is used instead of the curve set in the boiler). If you receive a value out of range the value isn't received and it is used the boiler heating curve.</i>
6	Boiler CH Curve Displacement	A	R/W	0,1	-5,0	5,0	Valore di shift del set ambiente della zona 1 (utilizzato al posto dello shift impostato in caldaia). Se viene ricevuto un valore fuori range equivale a nessun valore ricevuto e viene utilizzato lo shift presente in caldaia. <i>Shift value of room zone 1 set (it is used instead of the shift set in the boiler). If you receive a value out of range the value isn't received and it is used the boiler heating curve.</i>
64	Boiler DHW Water Temperature	A	R	0,1°C	0,0	100,0	Temperatura Sonda Acqua calda sanitaria <i>DHW temperature sensor</i>
65	Boiler Primary Water Temperature	A	R	0,1°C	0,0	100,0	Temperatura Sonda Circuito Primario (Mandata) <i>CH temperature sensor (Delivery)</i>
66	Boiler Return Water Temperature	A	R	0,1°C	0,0	100,0	Temperatura Sonda Ritorno Circuito Primario <i>CH temperature sensor (Return)</i>
67	Boiler Flue Gas Temperature	A	R	0,1°C	0,0	200,0	Temperatura Sonda Fumi <i>Smoke temperature sensor</i>
68	Boiler Relative Modulation Level	A	R	0,1%	0,0	100,0	Livello Modulazione (0%=Minima Potenza Caldaia - 100%=Massima Potenza Caldaia) <i>Modulation level: (0%= minimum boiler power 100%= maximum boiler power)</i>
69	Boiler Primary Water Pressure	A	R	0,1 bar	0,0	6,0	Valore Pressione Acqua Circuito Primario <i>Pressure value water CH</i>
70	Boiler Outside Temperature	A	R	0,1°C	-100,0	100,0	Valore di temperatura esterna letto dalla caldaia tramite la sonda ad essa collegata. <i>Outside temperature read from the boiler through the probe connected to it</i>
Integer variables							
129	Boiler Current Minute	I	R/W	-	0	59	Non usato <i>Not used</i>
130	Boiler Current Hour	I	R/W	-	0	23	Non usato <i>Not used</i>
131	Boiler Current Day of the Week	I	R/W	-	1 = Lun 7 = Dom		Non usato <i>Not used</i>
132	Boiler Current Day of the Month	I	R/W	-	1	31	Non usato <i>Not used</i>
133	Boiler Current Month	I	R/W	-	1	12	Non usato <i>Not used</i>
134	Boiler Current Year	I	R/W	-	2000	2200	Non usato <i>Not used</i>
192	Boiler Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia (Master se in cascata). <i>Numeric code shown during boiler error (If Master is in cascade)</i>
193	Boiler Slave 1 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 1 <i>Numeric code shown during slave 01 error</i>
194	Boiler Slave 2 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 2 <i>Numeric code shown during slave 02 error</i>
195	Boiler Slave 3 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 3 <i>Numeric code shown during slave 03 error</i>
196	Boiler Slave 4 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 4 <i>Numeric code shown during slave 04 error</i>
197	Boiler Slave 5 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 5 <i>Numeric code shown during slave 05 error</i>
198	Boiler Slave 6 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 6 <i>Numeric code shown during slave 06 error</i>
199	Boiler Slave 7 Alarm Code	I	R	-	0	100	Codice numerico visualizzato durante anomalia caldaia slave 7 <i>Numeric code shown during slave 07 error</i>
200	Boiler Combustion Parameter (Par1)	I	R	-	0	199	Valore del PAR 1 in caldaia <i>PAR 1 value</i>
201	Boiler Hydraulic Parameter (Par2)	I	R	-	0	199	Valore del PAR 2 in caldaia <i>PAR 2 value</i>

3 CHARACTERISTICS

3.1 COMBUSTION CHAMBER DIMENSIONS (fig. 11)

The combustion chamber is a direct passage type and is conform to the EN 303-3 standard annex E.

The dimensions are shown in fig. 11.

An adequate protection panel is mounted on the inside wall of the rear head of all the models.

	L mm	Volume dm ³
SOLO 25 BF TSE	405	24,0
DUETTO 25 BF TSE	405	24,0

3.2 SYSTEM AVAILABLE HEAD (fig. 12)

The head available for the heating plant is shown as a function of the flow in graph in fig. 12.

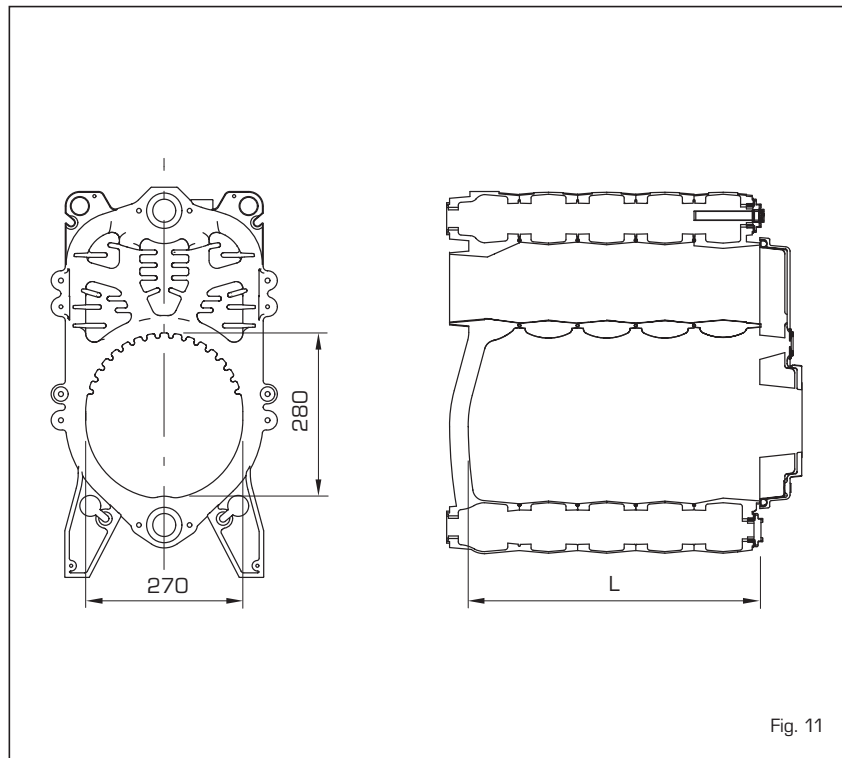


Fig. 11

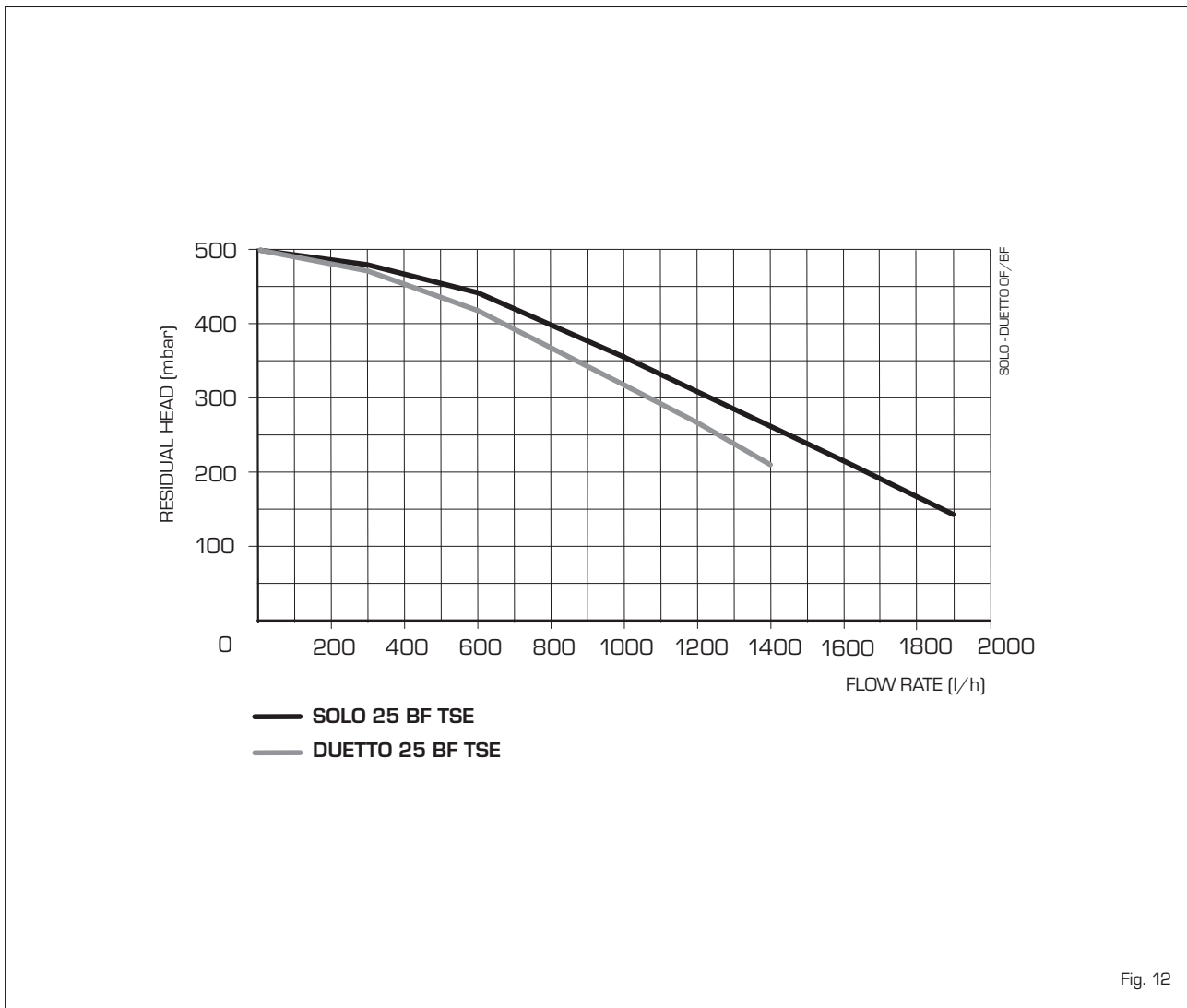


Fig. 12

3.3 CONTROL PANEL (fig. 13)

2 - DESCRIPTION OF CONTROLS

ON/OFF KEYS
ON = Electricity supply to boiler is on
OFF = Electricity supply to boiler is on but not ready for functioning. However, the protection functions are active.

SUMMER MODE KEY
When this key is pressed, the boiler functions only when D.H.W. is requested (*function not available*)

WINTER MODE KEY
When this key is pressed, the boiler provides heating and D.H.W.

D.H.W. TEMP KEY
When this key is pressed, the temperature of the D.H.W. is shown on the display (*function not available*)

HEATING TEMP KEY
The first time the key is pressed, the temperature of heating circuit 1 is shown.
The second time the key is pressed, the temperature of heating circuit 2 is shown.
The third time the key is pressed, the temperature of heating circuit 3 is shown [Three zones].

RE-SET KEY
This allows for restoring functioning after a functioning anomaly.

INCREASE AND DECREASE KEY
By pressing this key the set value increases or decreases.

DESCRIPTION OF DISPLAY ICONS

SUMMER MODE ICON

WINTER MODE ICON

D.H.W. MODE ICON

HEATING MODE ICON

GRADED POWER SCALE
The segments of the bar light up in proportion to boiler power output.

BURNER FUNCTIONING AND BLOCK ICON

DESCRIPTION OF DISPLAY ICONS

RESET

CHIMNEY SWEEP ICON

SECONDARY DIGITS
The boiler visualises the value of the pressure of the system (correct value is between 1 and 1.5 bar)

MAIN DIGITS
The boiler visualises the values set, the state of anomaly and the external temperature

INTEGRATIVE SOURCES ICON

3 - KEYS RESERVED FOR THE INSTALLER (access to INST and OEM parameters)

PC CONNECTION
To be used only with the SIME programming kit and only by authorised personnel. Do not connect other electronic devices (cameras, telephones, mp3 players, etc.) Use a tool to remove the cap and reinsert after use.
ATTENTION: Communication port sensitive to electrostatic charges.

INFORMATION KEY
This key can be pressed several times to view the parameters.

CHIMNEY SWEEP KEY
This key can be pressed several times to view the parameters.

DECREASE KEY
This key changes the default settings.

INCREASE KEY
This key changes the default settings.

4 - LUMINOUS BAR



Blue = Functioning
Red = Functioning anomaly

5 - PROGRAMMING CLOCK (optional)

Mechanical clock (code 8092228) or digital clock (code 8092229) to program heating and water supply.

Fig. 13

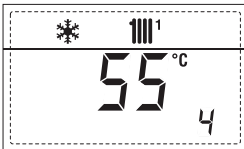
3.4 ACCESS TO INSTALLER'S INFORMATION

For access to information for the installer, press the key  (3 fig. 13). Every time the key is pressed, the display moves to the next item of information. If the key  is not pressed, the system automatically quits the function. The same information is visible from the remote control CR 73 if connected. List of information:

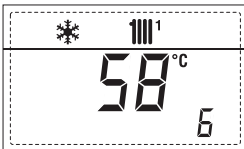
2. Visualisation of C.H. sensor (SM)



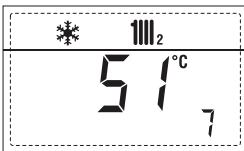
4. Visualisation of auxiliary temperature sensor or D.H.W. sensor (ST)



6. Visualisation of heating temperature of first circuit



7. Visualisation of heating temperature of second circuit



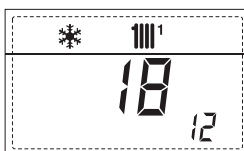
10. Visualisation of hours of functioning of the burner in h x 100 (e.g. 14000 and 10)



11. Visualisation of number of times the burner has ignited x 1000 (e.g. 97000 and 500)



12. Visualisation of total number of anomalies



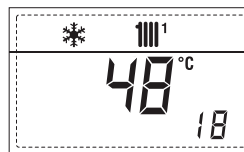
13. Parameter access counter- Installer (i.e. 140 accesses)



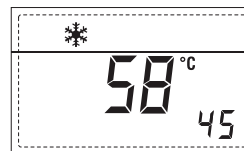
14. Parameter access counter-OEM (i.e. 48 accesses)



18. Visualisation C.H. return sensor value (SR)



45. Visualisation of heating temperature of third circuit



60. Visualisation of error code of last anomaly



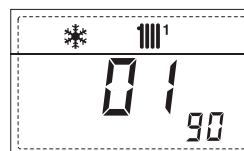
61. Visualisation of error code of penultimate anomaly





70. Code warning



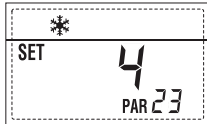
90. Software version on RS-485 (e.g. version 01)







3.5 ACCESS TO INSTALLER'S PARAMETERS

For access to the installer's parameters, press simultaneously the keys  and  or 2 seconds (3 fig. 13).

For example, the parameter PAR 23 is visualised on the display of the control panel in the following way:



The parameters scroll forwards and backwards with the key  and  and the default parameters can be changed with the keys  and .

The standard visualisation returns automatically after 60 seconds, or by pressing one of the control keys (2 fig. 13) excluded the key RESET.

3.5.1 Replacing the board or RESETTING parameters

If the electronic board is replaced or reset, it is necessary to configure PAR 2 by associating the following values to each type of boiler to be able to restart the boiler:


BOILER	PAR 2
Double pump and D.H.W. pressure (HIGH INERTIA)	1
D.H.W. tank with diverter valve and D.H.W. sensor (HIGH INERTIA)	2
D.H.W. tank with double pump and D.H.W. sensor (HIGH INERTIA)	3
D.H.W. tank with diverter valve and D.H.W. thermostat or heating only (HIGH INERTIA)	4
D.H.W. tank with double pump and D.H.W. thermostat (HIGH INERTIA)	5
Heating only and antifreeze sensor (HIGH INERTIA)	6

NOTE: the inside of the upper door of the boiler panel has a label with the values that have to be set for PAR 2 (fig. 16).

PARAMETERS INSTALLER

FAST CONFIGURATION					
PAR	DESCRIPTION	RANGE	UNIT OF MEASUREMENT	INC/DEC UNIT	DEFAULT SETTING
1					
2	Hydraulic configuration	- = ND 1 ... 6	=	=	".."
3	Timetable 2 programmer	1 = DHW + Recirc. pump 2 = DHW 3 = Recirculation pump	=	=	1
4	Pressure transducer disabler	0 = Disabled 1 = Enabled 0-4 BAR 2 = Enabled 0-6 BAR 3 = Enabled 0-4 BAR (NO ALL 09) 4 = Enabled 0-6 BAR (NO ALL 09)	=	=	1
5	Assignment of auxiliary relay AUX	1 = Remote supply 2 = Recirculation pump 3 = Automatic load. 4 = Remote alarm NC 5 = Heat pump 6 = Zone 2 valve	=	=	1
6	Luminous bar indicating presence of voltage	0 = Disabled 1 = Enabled	=	=	1
7	Allocation of CR73 channels	0 = Not assigned 1 = Circuit 1 2 = Three-zone circuit	=	=	1
8					
9					
10	Remote control option setting	1 = CR 73 2 = CR 53 3 = RVS 43.143 4 = RVS 46.530 5 = RVS 61.843	=	=	1
11	Correction values external sensor	-5 ... +5	°C	1	0
12	Backlighting duration	- = Always 0 = Never 1 ... 199	sec. x 10	1	3
13					
14	Setting second input TA	- = Contact TA 5...160 = Input 0...10VDC	-	-	-
15					
16	ModBus address	- = Not enabled 1...31 = Slaves	-	1	-
17	ModBus communication configuration	1 ... 30	-	1	25
19	Type circuit	0 = Two zones 1 = Three zones	-	-	0
D.H.W. - HEATING					
PAR	DESCRIPTION	RANGE	UNIT OF MEASUREMENT	INC/DEC UNIT	DEFAULT SETTING
20	Minimum heating temperature Zone 1	PAR 64 OEM ... PAR 21	°C	1	20
21	Maximum heating temperature Zone 1	PAR 20 ... PAR 65 OEM	°C	1	80
22	Heating curve slope Zone 1	3 ... 40	-	1	20
23	Minimum heating temperature Zone 2	PAR 64 OEM ... PAR 24	°C	1	20
24	Maximum heating temperature Zone 2	PAR 23 ... PAR 65 OEM	°C	1	80
25	Heating curve slope Zone 2	3 ... 40	-	1	20
26	Minimum heating temperature Zone 3	PAR 64 OEM ... PAR 27	°C	1	20
27	Maximum heating temperature Zone 3	PAR 26 ... PAR 65 OEM	°C	1	80
28	Heating curve slope Zone 3	3 ... 40	-	1	20
29					
30	Post-circulation heating time	0 ... 199	Sec.	10	30
31	Maximum heating capacity	30 ... 100	%	1	100
32	Zone 1 pump activation delay	0 ... 199	10 sec.	1	1
33	Start-up delay	0 ... 10	Min.	1	3
34	Additional source activation threshold	- , -10 ... 40	°C	1	".."
35	Boiler antifreeze	0 ... +20	°C	1	3
36					
37	Band saturation flowmeter modulation	- = Disabled 0 ... 100	%	1	100
38	D.H.W. post-circulation time	0 ... 199	Sec.	1	0
39	Anti-legionella (only D.H.W tank)	0 = Disabled 1 = Enabled	-	-	0

3.5.2 Warning

Should the boiler operation not be optimal but no alarm sets off, press the button  until info 70 and the warning code associated to the ongoing event are displayed.

Once optimal operation is restored, info 70 will display: "--".

Below is the table of warning codes:

CODE	DESCRIPTION
E0	
E1	
E2	Preheating function active
E3	TBD
E4	TBD
E5	TBD
E6	TBD
E7	TBD
E8	TBD
E9	TBD

PARAMETERS INSTALLER					
EXPANSION CARD					
PAR DESCRIPTION	RANGE	UNIT OF MEASUREMENT	INC/DEC UNIT	DEFAULT SETTING	
40	Number of expansion boards	0 ... 3	=	1	0
41					
42					
43					
44					
45					
46					
47					
48					
PARAMETERS RESTORATION					
PAR DESCRIPTION	RANGE	UNIT OF MEASUREMENT	INC/DEC UNIT	DEFAULT SETTING	
49 * Reset default parameters (PAR 02 = "--")	- , 1	=	=	=	
<p><i>* In case of difficulty in understanding the current setting or in case of an anomalous or incomprehensible conduct of the boiler, we suggest to restore the initial values of the parameters setting PAR 49 = 1 and the PAR 2 as specified at point 3.5.1.</i></p>					

3.6 CARD FUNCTIONING

The electronic card has the following functions:

- Antifreeze protection of the heating and sanitary water circuits (ICE).
- Ignition and flame detection system.
- Control panel setting for the power for boiler functioning.
- Anti-block for the pump which is fed for a few seconds after 24 hours of inactivity.
- Antifreeze protection for boilers with an accumulation boiling unit.
- Chimney sweep function which can be activated from the control panel.
- Management of 3 independent heating circuit systems.
- Automatic regulation of the ignition

power and maximum heating. Adjustments are managed automatically by the electronic card to guarantee maximum flexibility in use of the system.

- Interface with the following electronic systems: climatic regulator CR 53, remote control CR 73, thermal regulator RVS, connected to a management card of a mixed zone ZONA MIX, card solar INSOL and to board RS-485 for managing up to 8 boilers in cascade or implement a communication type Modbus (slave RTU-RS485, Reference Guide PI-MBUS-300 Rev. J). For configuring the devices with the boiler board, set the installer parameter **PAR 10**.
- Anti-condensing function, body pre-heat (symbol "+" before main digit) and anti-

inertia.

3.7 FUNCTIONING ANOMALIES

When there is a functioning anomaly, an alarm appears on the display **and the blue luminous bar becomes red**.

Descriptions of the anomalies with relative alarms and solutions are given below:

- LOW WATER PRESSURE ANOMALY ALARM 02 (fig. 15/1)

If the detected pressure is below 0.5 bar, the diesel fuel burner operation blocks and ALL 02 appears on the display.

Restore pressure by rotating the fill cock anticlockwise until the indicated pressu-

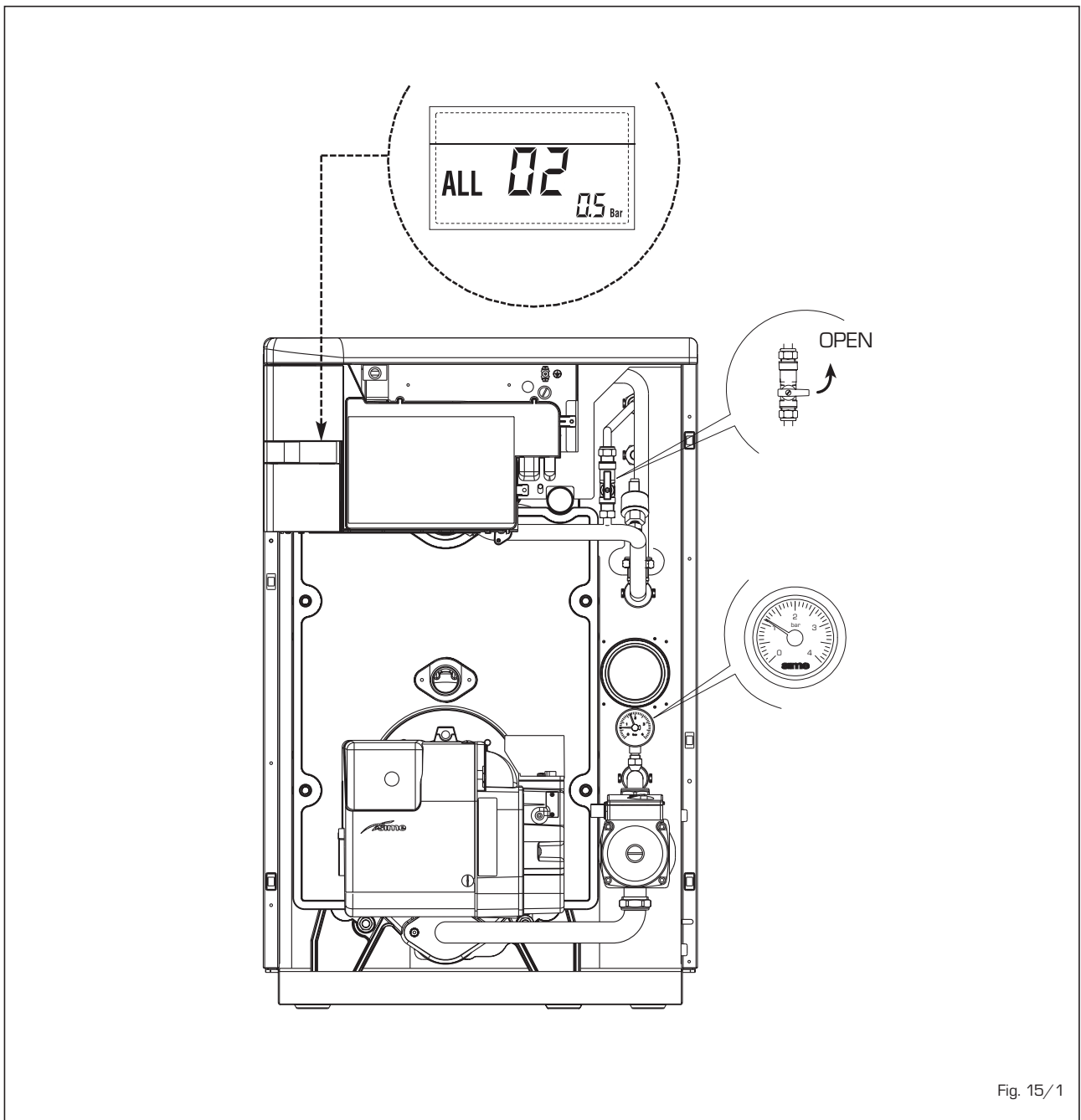


Fig. 15/1

re on the hydrometer is between 1 and 1.2 bar.

ONCE THE OPERATION HAS BEEN COMPLETED, CLOSE THE COCK CORRECTLY

If the load procedure has to be repeated several times, it is advisable to check that the seal of the heating circuit is intact (check that there are no leaks).

- HIGH WATER PRESSURE ANOMALY ALARM 03 (fig. 15/2)

If the pressure detected by the transducer is more than 2.8 bar, the boiler stops and the display shows anomaly ALL 03.

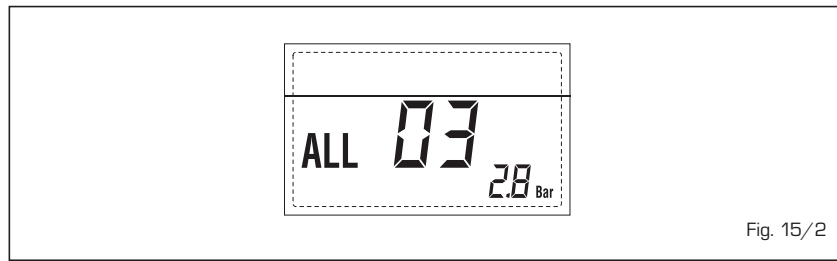


Fig. 15/2

- C.H. SENSOR ANOMALY ALARM 05 (fig. 15/4)

If the C.H. sensor (SM) is open or short circuited, the boiler will not function and the display will show the alarm ALL 05.



Fig. 15/4

- FLAME BLOCK ALARM 06 (fig. 15/5)

In case of anomalies during activation or operation, the thermal unit will lockout and ALL 06 will appear on the display. Press the diesel fuel burner RESET button to restore start-up conditions. This operation can be repeated maximum 2-3 times.

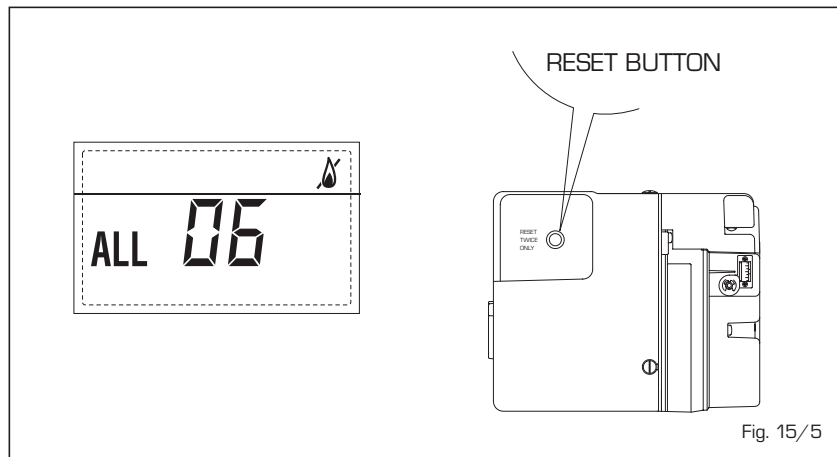


Fig. 15/5

- SAFETY THERMOSTAT ANOMALY (fig. 15/6)

The safety stat is of the manually resetting type and opens, causing the main burner to turn off immediately, whenever the temperature of 110°C is exceeded in the boiler: To restore boiler operation, unscrew the black cap and reset the button.

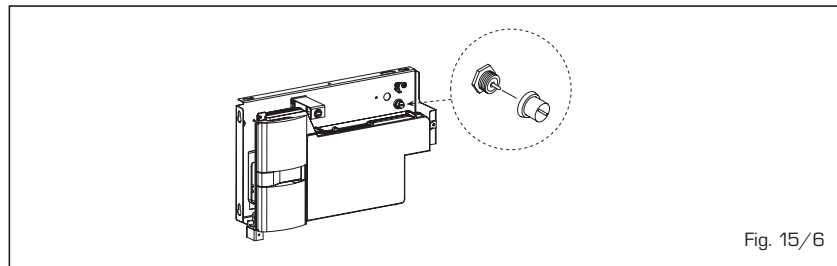



Fig. 15/6

- WATER CIRCULATION ANOMALY ALARM 09 (fig. 15/8)

There is no water circulation in the primary circuit. If the anomaly occurs upon first request, the boiler performs a maximum of three attempts to assure the presence of water inside the primary circuit; it then stops showing on the display the ALL 09 anomaly. If the anomaly occurs during normal functioning, the display immediately shows the ALL 09 anomaly, keeping the plant pump and the eventual boiler pump, switched on for 1 minute. In this case there was a sudden increase of the boiler inner temperature. Check to see if there is water circulation inside the boiler and check if the pump is operating properly.

To exit the anomaly press the  button of the controls (2). If the anomaly persists, request assistance from qualified technical personnel.

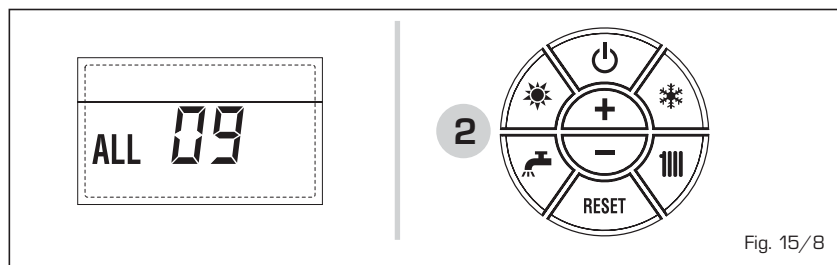


Fig. 15/8

- AUXILIARY SENSOR ANOMALY ALARM 10 (fig. 15/9)

BOILER WITH ACCUMULATION: anomaly of the D.H.W. sensor (ST). When the D.H.W. sensor is open or short circuited, the display will show anomaly ALL 10.



Fig. 15/9

The boiler will function but will not modulate power for the D.H.W.

BOILER ONLY FOR HEATING: antifreeze sensor anomaly for boilers which foresee the use of antifreeze sensors.

When the sensor is open or short circuited, the boiler loses part of its anti-freeze functions and the display will show anomaly ALL 10.

- THREE-ZONE SYSTEM CONFIGURATION ANOMALY "ALL 32" (fig. 15/26)

When the boards connected to the RS-485 are not enough and/or at least one of them it is not mixing zone board, the boiler stops and anomaly ALL 32 is displayed.

The boiler restarts when the boiler three-zone system configuration is activated.

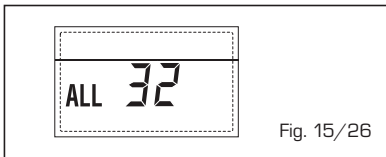


Fig. 15/26

- RS-485 BOARD COMMUNICATION ANOMALY IN MODBUS MODE "ALL 33" (fig. 15/27)

When PAR 16 is different from "-" and there is no communication between the boiler board and the RS-485 board in MODBUS mode for at least four minutes, the boiler stops and anomaly ALL 33 is displayed.

The boiler restarts when communication is restored or when PAR 16 = "-" is set.

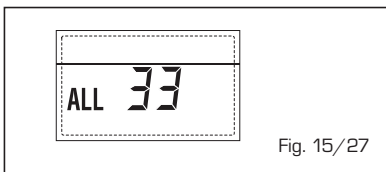


Fig. 15/27

4 USE AND MAINTENANCE

4.1 DISASSEMBLY OF OUTER CASING (fig. 16)

The shell can be completely disassembled for an easy maintenance of the boiler as shown in fig. 16.

4.2 DISASSEMBLY OF EXPANSION VESSEL

The heating expansion tank is disassembled in the following manner:

- Make sure that the boiler has been emptied of water.

- Unscrew the union which connects the expansion tank.
- Remove the expansion tank.

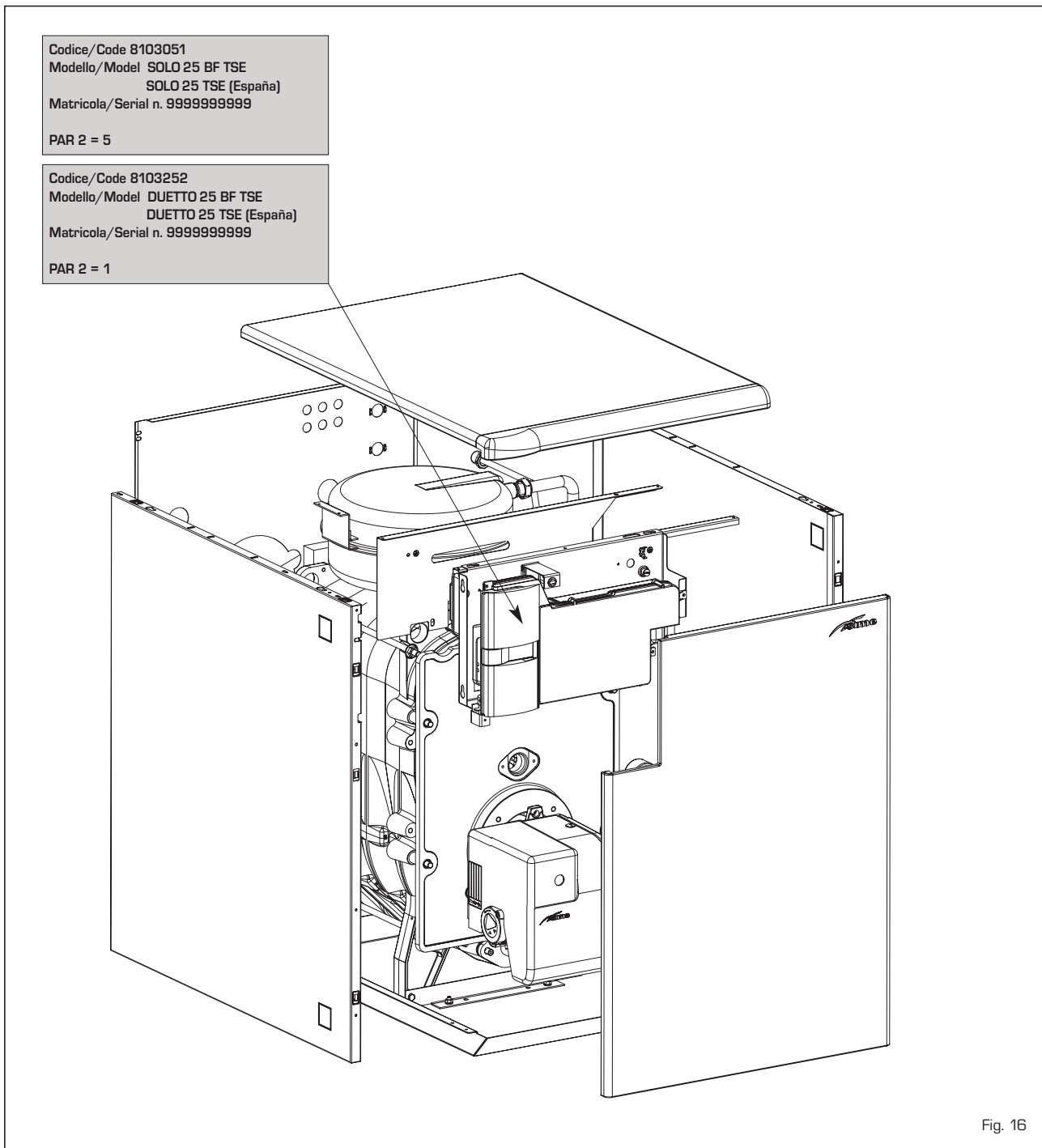
Before filling up the system make sure that the expansion tank is reloaded at the pressure of $0.8 \div 1$ bar.

4.3 BURNER MAINTENANCE (fig. 17 - fig. 17/a - fig. 17/b)

- To dismantle the burner from the boiler door, remove the nut (fig. 17).
- To access the internal part of the

burner, remove the air lock unit held in place by two screws to the sides and remove the right hand shell, which is held in place by four screws, taking care not to damage the O-ring seal. OR.

- To dismantle the nozzle holder and heater unit, proceed as follows:
 - open the cover, which is held in place by a screw, and remove the heater cables (1 fig. 17/a) protected by a heat resistant sheath; remove the fairlead and pass the cables through the hole.
 - remove the two cables from the



ignition electrodes fastened in place with a faston.

- loosen the union (2 fig. 17/a) and remove the four screws which fasten the collar (3 fig. 17/a) to the burner.
- To dismantle the eater or thermostat, refer to figure 17/b.

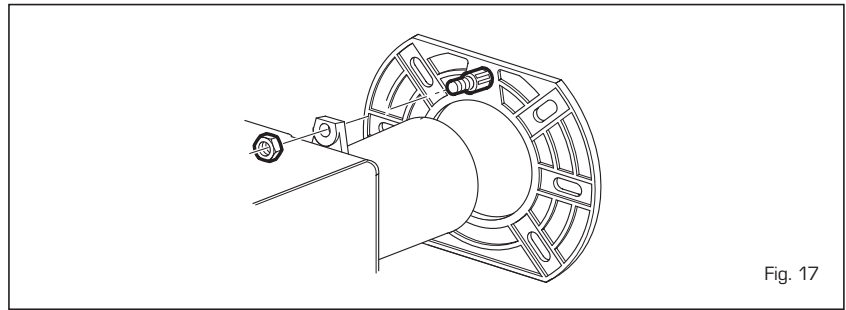


Fig. 17

4.4 CLEANING AND MAINTENANCE

Preventive maintenance and checking of the efficient operation of the equipment and safety devices must be carried out at the end of each heating season exclusively by the authorised technical staff.

4.4.1 Cleaning smoke ducts (fig. 18)

Use an adequate swab for cleaning the smoke ducts of the boiler. After cleaning, position the circulators in their original position (fig. 18).

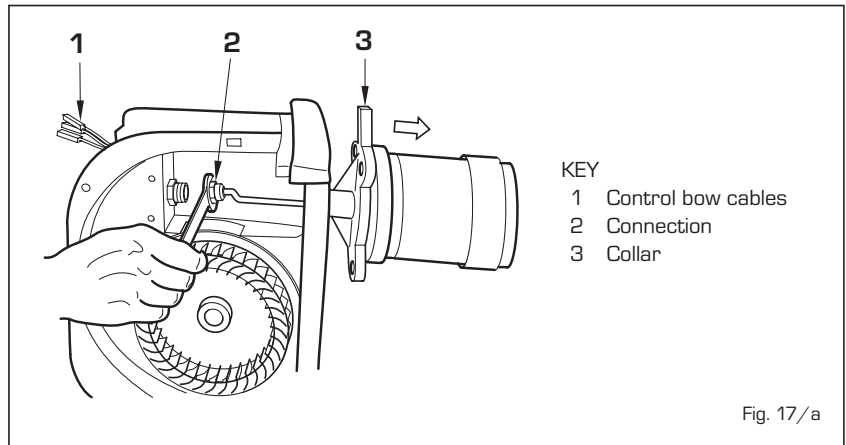


Fig. 17/a

4.4.2 Cleaning combustion head (fig. 19)

The combustion head is cleaned in the following manner (fig. 19):

- Disconnect the high tension cables from the electrodes.
- Unscrew the fixture screws of the circulator support and remove it.
- Brush the propeller delicately (turbulence disc).
- Carefully clean the photo-resistance of eventual deposits of dirt deposit-

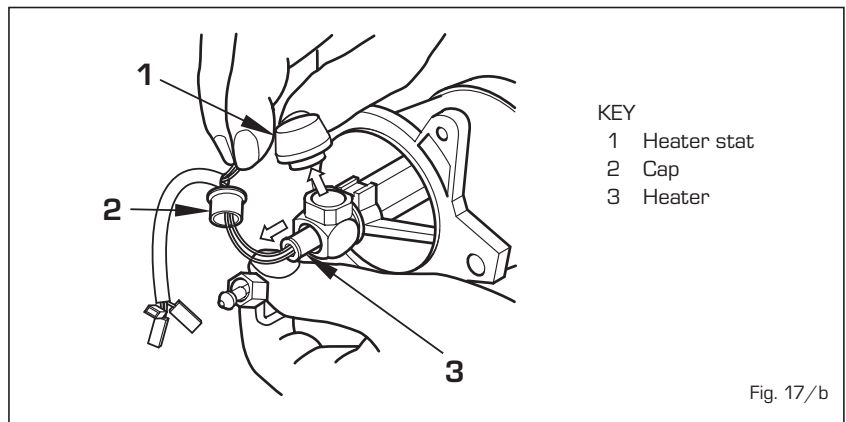


Fig. 17/b

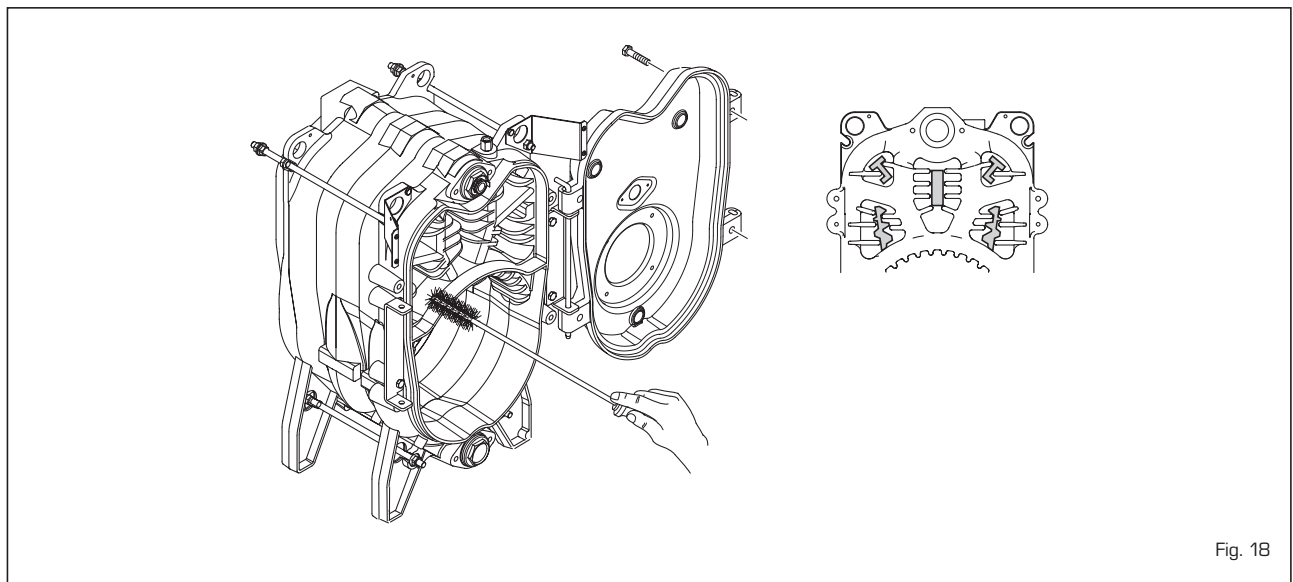


Fig. 18

ed on its surface.

- Clean the remaining components of the combustion head of eventual deposits.
- Upon completion re-assemble the unit in the opposite way as described above taking care to respect the indicated measurements.

4.4.3 Substitution of nozzle (fig. 20)

The nozzle should be substituted at the beginning of every heating system for guaranteeing the correct fuel flow and a good spray efficiency.

The nozzle is substituted in the following manner:

- Disconnect the high tension cables from the electrodes.
- Loosen the fixture screw [A fig. 19] of the electrodes support and remove it.
- Block the spray door using a n°19 spanner and unscrew the nozzle with a n°16 spanner (fig. 20).

4.5 FAULT FINDING

There follow a list of some reasons and the possible remedies for a series of faults which could happen causing a failure or an irregular function of the appliance. A function fault, in most cases, causes the "lock out" signal on the control panel to turn on. When this light turns on, the burner can only function again after the reset button has been pressed; once this has been done and a regular ignition occurs, the failure can be defined momentary and not dangerous.

On the contrary, if the "lock out" persists, then the cause of the fault as well as the remedy must be looked for in the following faults:

The burner does not ignite

- Check the electric connections.
- Check the regular fuel flow, the cleanness 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

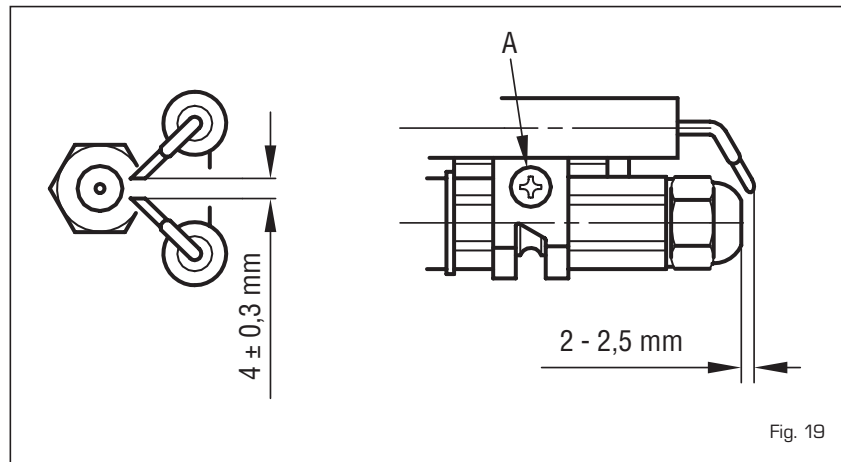


Fig. 19

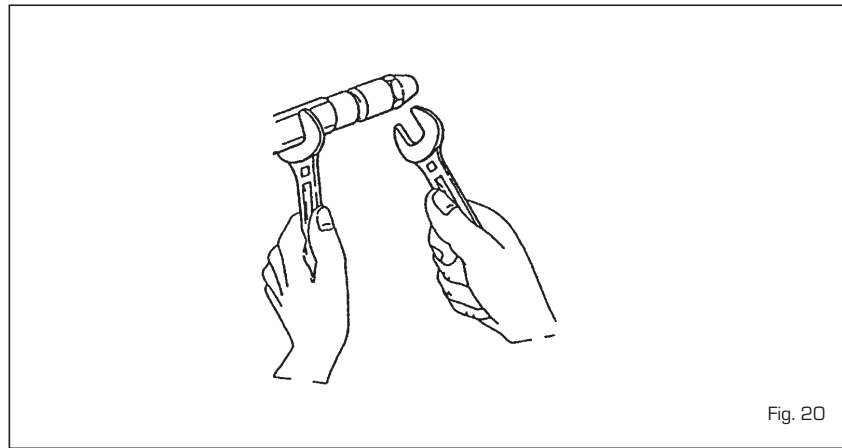


Fig. 20

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

The boiler gets dirty easily

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

The boiler does not heat up

- Control the cleanness 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.

USER INSTRUCTIONS

WARNINGS

- In case of fault and/or incorrect operation, deactivate it without making any repairs or taking any direct action. If fuel or combustion is smelt, air the room and close the fuel interception device. Contact the authorised technical staff.
- The installation of the boiler and any servicing or maintenance job must be carried out by qualified personnel.
- It is absolutely prohibited to block the intake grilles and the aeration opening of the room where the equipment is installed. The intake grilles are indispensable for a correct combustion.

IGNITION AND OPERATION

BOILER IGNITION (fig. 24)

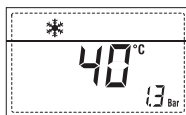
The first ignition of the boiler must be carried out by qualified technical personnel. When fuel is fed to the boiler, a sequence of checks will be carried out and the display shows the normal condition of the functioning, always indicating the pressure of the system.

If the blue luminous bar is on, this indicates the presence of voltage.

N.B.: To the first pressure the keys of the controls (2) the display is illuminated, to the successive pressure the operation modality is active.

Winter

Press the key ❄️ of the controls (pos. 2) to activate the winter mode functioning (heating and D.H.W.). The display will be as shown in the figure.



Summer

Press the key ☀️ of the controls (pos. 2) to activate the summer mode functioning (only the production D.H.W.). The display will be as shown in the figure.

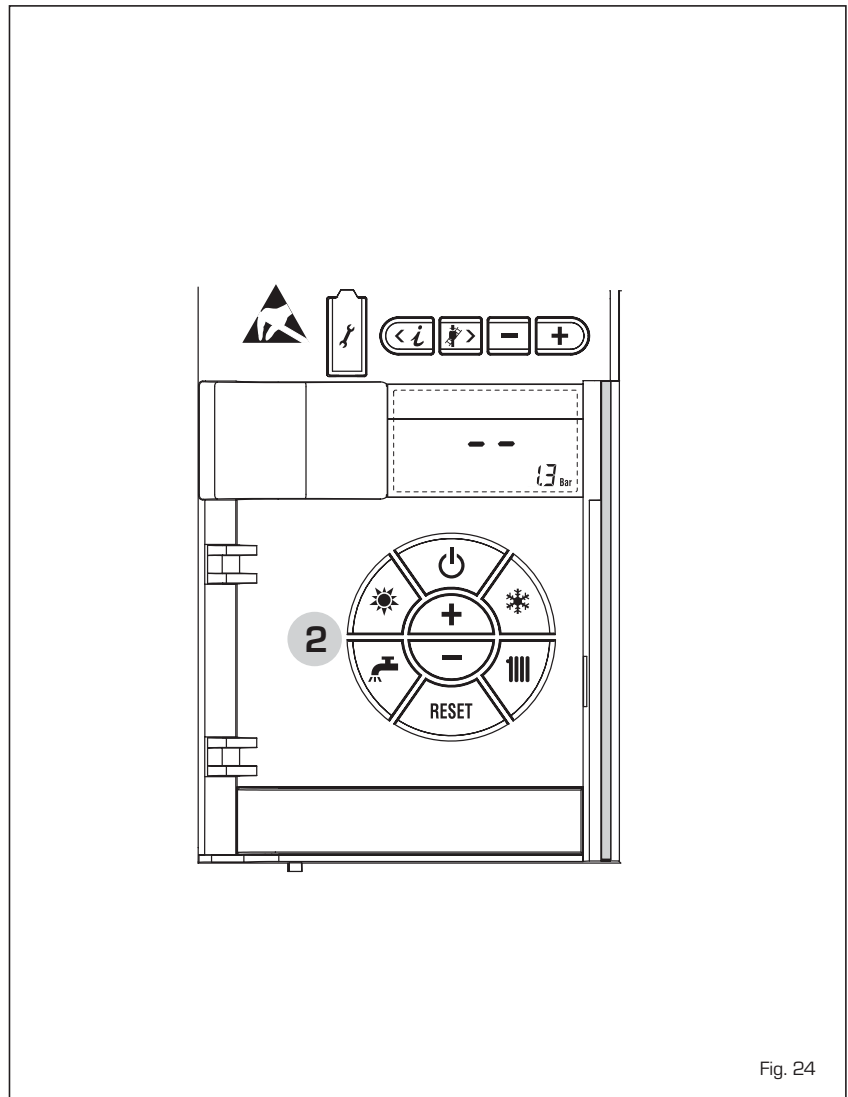
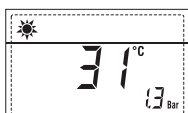






Fig. 24


REGULATION OF THE WATER TEMPERATURE FOR HEATING (fig. 25)




To set the temperature of the water for heating, press the key  of the controls (2). The first time the key is pressed, the SET of heating circuit 1 is selected. The second time it is pressed, the SET of heating circuit 2 is selected. The third time it is pressed, the SET of heating circuit 3 is selected (Three zones).

The display will be as shown in the figure. Change the values with the key  and .


Standard visualisation will return to the display by pressing the key  again, or after 10 seconds if no key is pressed.

REGULATION OF THE D.H.W. TEMPERATURE (fig. 26)

To set the desired temperature D.H.W., press the key  of the controls (pos. 2). The display will be as shown in the figure.

Change the values with the key  and . The display will return to the standard visualisation by pressing the key  again, or after 10 seconds if no key is pressed.

TO SWITCH OFF THE BOILER (fig. 24)

In the case of a short absence, press the key  of the controls (pos. 2). The display will be as shown in the fig. 24. In this way, leaving the electricity and the fuel supply connected, the boiler is protected from frost and from the pump becoming blocked.

If the boiler is not used for a prolonged period, it is advisable to disconnect the electricity supply, by switching off the main switch of the system, and to close the gas tap and, if low temperatures are expected, to completely empty the hydraulic circuits to avoid pipes being broken by the formation of ice in the pipes.

ANOMALIES AND SOLUTIONS

When there is a functioning anomaly, the display shows an alarm and the blue luminous bar becomes red.

Descriptions of the anomalies with the relative alarms and solutions are given below:

- ALARM 02 (fig. 27/a)

If the detected pressure is below 0.5 bar, the diesel fuel burner operation blocks and ALL 02 appears on the display. Restore pressure by rotating the fill cock anticlockwise until the indicated pressure on the hydrometer is between 1 and 1.2 bar:

ONCE THE OPERATION HAS BEEN COMPLETED, CLOSE THE COCK CORRECTLY.

If it is necessary to repeat the system loading procedure, it is advisable to

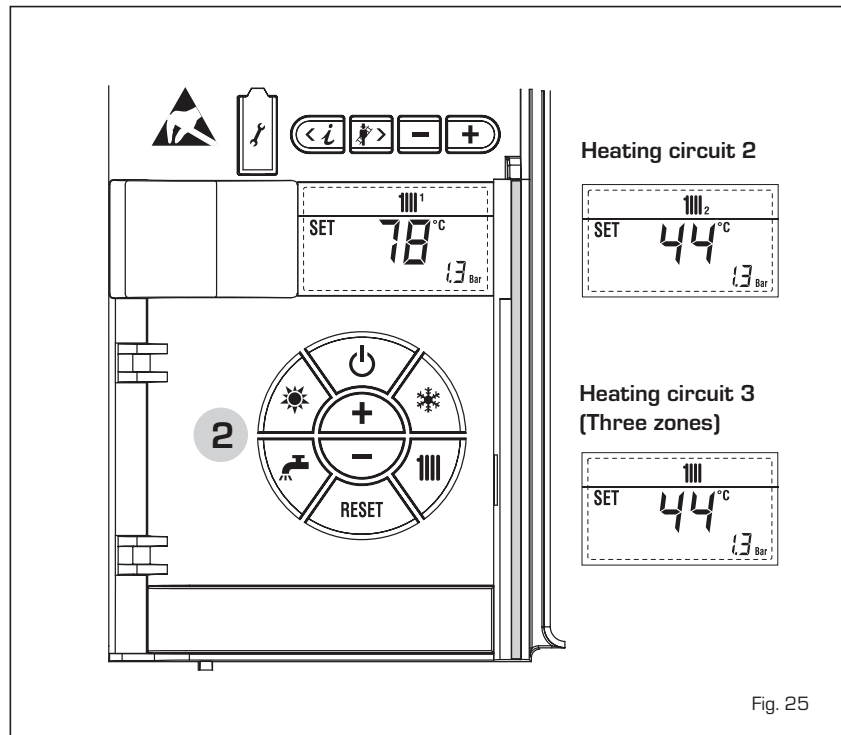


Fig. 25

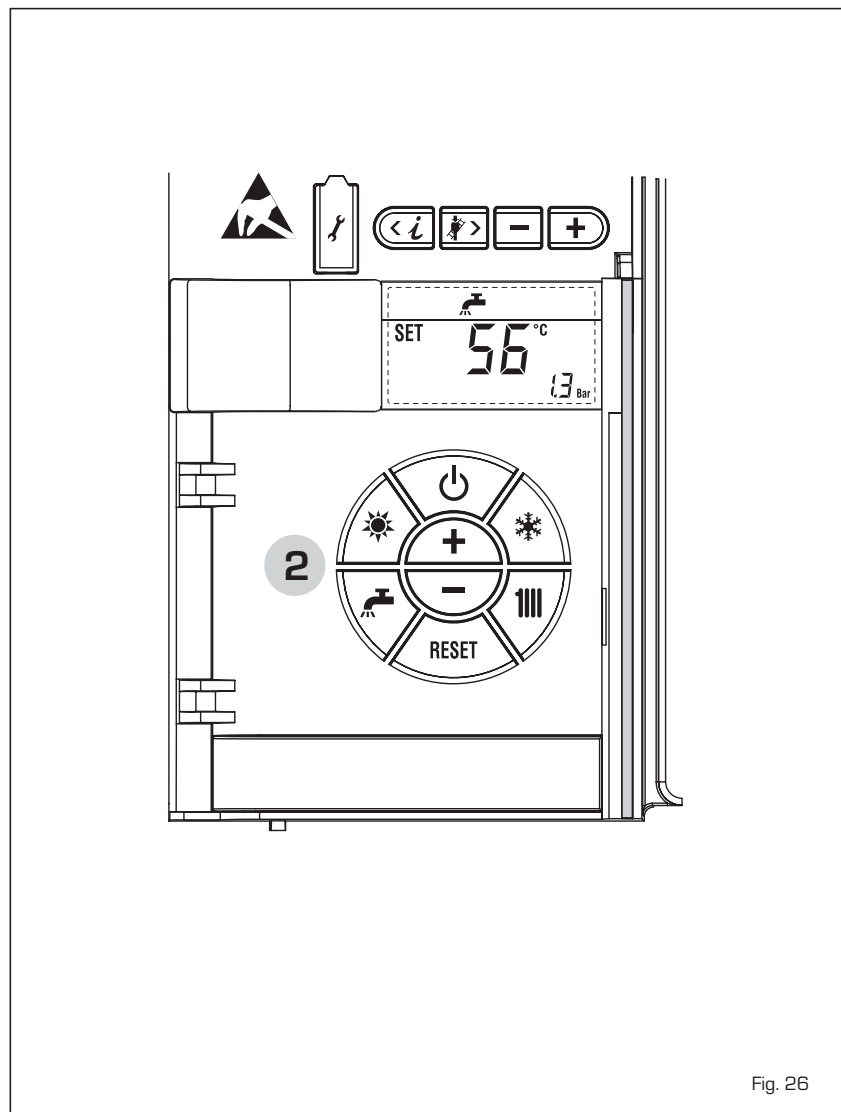


Fig. 26

contact qualified technical personnel to check the seal of the heating system (to check whether there are any leaks).

- **ALL 03**
Request assistance from qualified technical personnel.
- **ALL 05**
Request assistance from qualified technical personnel.
- **ALL 06 (fig. 27/c)**
In case of anomalies during activation or operation, the thermal unit will lockout and ALL 06 will appear on the display. Press the diesel fuel burner RESET button to restore start-up conditions. This operation can be repeated maximum 2-3 times. In the event of failure, contact qualified technical personnel.
ATTENTION: ensure that diesel is available in the tank and that the cocks are open. Once the tank has been filled, we recommend stopping the operation of the thermal unit for about one hour.
- **SAFETY THERMOSTAT (fig. 27/d)**
The safety stat is of the manually resetting type and opens, causing the main burner to turn off immediately, whenever the temperature of 110°C is exceeded in the boiler. To restore boiler operation, unscrew the black cap and reset the button.
If the anomaly persists, request assistance from qualified technical personnel.
- **ALL 09**
Request assistance from qualified technical personnel.
- **ALL 10**
Request assistance from qualified technical personnel.
- **ALL 32**
Request assistance from qualified technical personnel.
- **ALL 33**
Request assistance from qualified technical personnel.

MAINTENANCE

Annual maintenance of the appliance should be planned sufficiently in advance, requesting the assistance of authorised technical personnel.

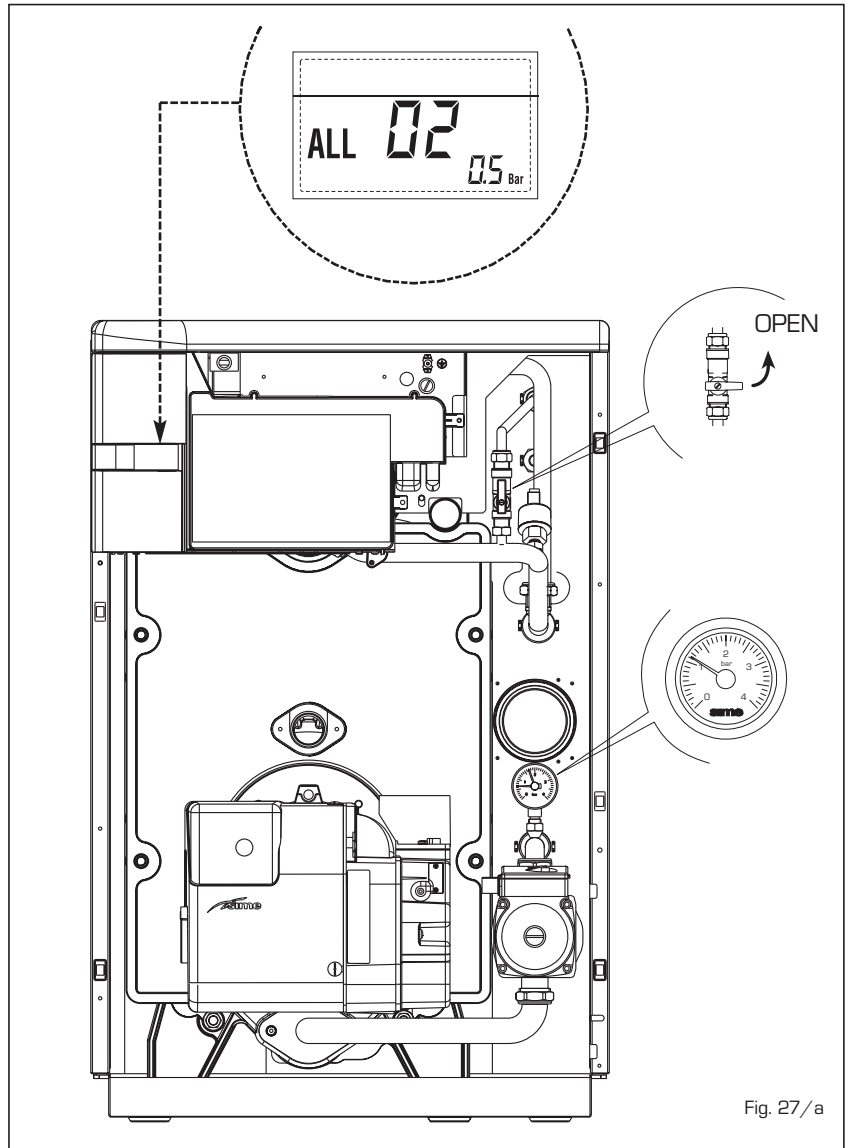


Fig. 27/a

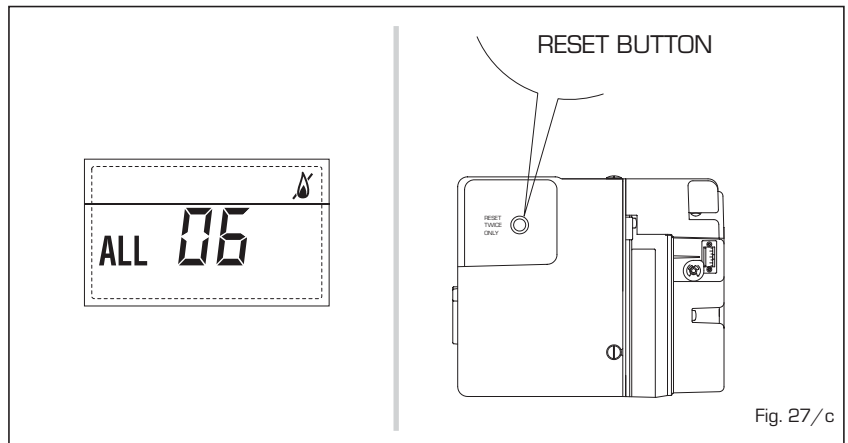


Fig. 27/c

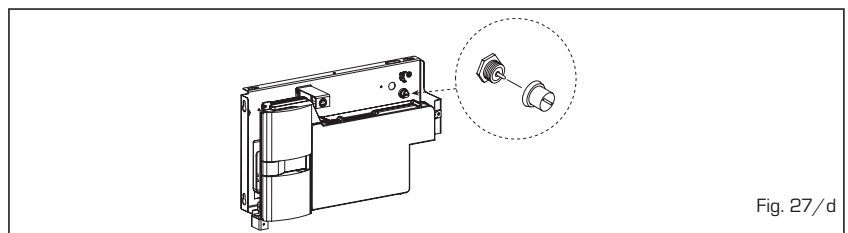


Fig. 27/d

DICHIARAZIONE DI CONFORMITA' CALDAIE A COMBUSTIBILE LIQUIDO

La **FONDERIE SIME SpA**, con riferimento all'art. 5 DPR n°447 del 6/12/1991 "Regolamento di attuazione della legge 5 marzo 1990 n°46", dichiara che le proprie caldaie a combustibile liquido serie:

AR - ARB

1R - 1R OF - 2R - 2R OF/OF S/GT OF *

1R SUPERIOR - 2R SUPERIOR *

SOLO - SOLO OF - SOLO BF TS - SOLO BF TSE

DUETTO - DUETTO OFi/BFi - DUETTO BF TS - DUETTO BF TSE

AQUA - AQUA OF/BF - AQUA BF TS - AQUA INOX BF TS - AQUA INOX BF TSE

RONDO' - RONDO' B

ESTELLE - ESTELLE OF - ESTELLE B INOX

ESTELLE BF TS/OF TS - ESTELLE B INOX BF TS

ESTELLE HE - ESTELLE HE B INOX

sono complete di tutti gli organi di sicurezza e di controllo previsti dalle norme vigenti in materia e rispondono, per caratteristiche tecniche e funzionali, alle prescrizioni delle norme:

UNI 7936 (dicembre 1979), FA130-84, FA168-87

EN 303-1994

DIRETTIVA RENDIMENTI 92/42 CE.

D.M. 174 del 06-04-2004 materiali a contatto con acqua destinata al consumo umano.

La ghisa grigia utilizzata è del tipo EN-GJL 150 secondo la norma europea **UNI EN 1561**.

Il sistema qualità aziendale è certificato secondo la norma **UNI EN ISO 9001: 2000**.

Le caldaie a gasolio e gas (*) sono conformi alla:

DIRETTIVA GAS 2009/142/CE per la conformità CE di tipo

DIRETTIVA BASSA TENSIONE 2006/95/CE

DIRETTIVA COMPATIBILITÀ ELETTROMAGNETICA 2004/108/CE

Legnago, 30 gennaio 2013

Il Direttore Tecnico
FRANCO MACCHI





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