

AUS

Format

34I-34E BF



Installation and servicing instructions

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SIME COMBINATION BOILERS

Installer checklist

Please remember to carry out the following checks after installation. This will achieve complete customer satisfaction, and avoid unnecessary service calls. A charge will be made for a service visit where the fault is not due to a manufacturing defect.

- Has a correct by-pass been fitted and adjusted?
- Has the system been flushed ?
- Is the system and boiler full of water, and the correct pressure showing on the pressure gauge?
- Is the Auto Air Vent open?
- Has the pump been rotated manually?
- Is the gas supply working pressure correct?
- Is the boiler wired correctly? (See installation manual).
- Has the D.H.W. flow rate been set to the customer requirements?
- Has the customer been fully advised on the correct use of the boiler, system and controls?

1 TECHNICAL FEATURES AND DIMENSIONS

1.1 INTRODUCTION

The Sime Format series wall hung boilers are fully automatic power flued, wall mounted boilers for central heating and instantaneous production of D.H.W.

Model "34I BF" is an internally installed boiler.

Model "34E BF" is an externally installed boiler.

They are provided with direct fired ignition, and modulating temperature control, circulating pump and expansion tank. The central heating output has an adjustable output of 11.2 – 34 kW.

NOTE: The boilers must not to be used for pool or spa heating. The boilers must be installed only by an authorised person.

1.2 DIMENSIONAL DETAILS

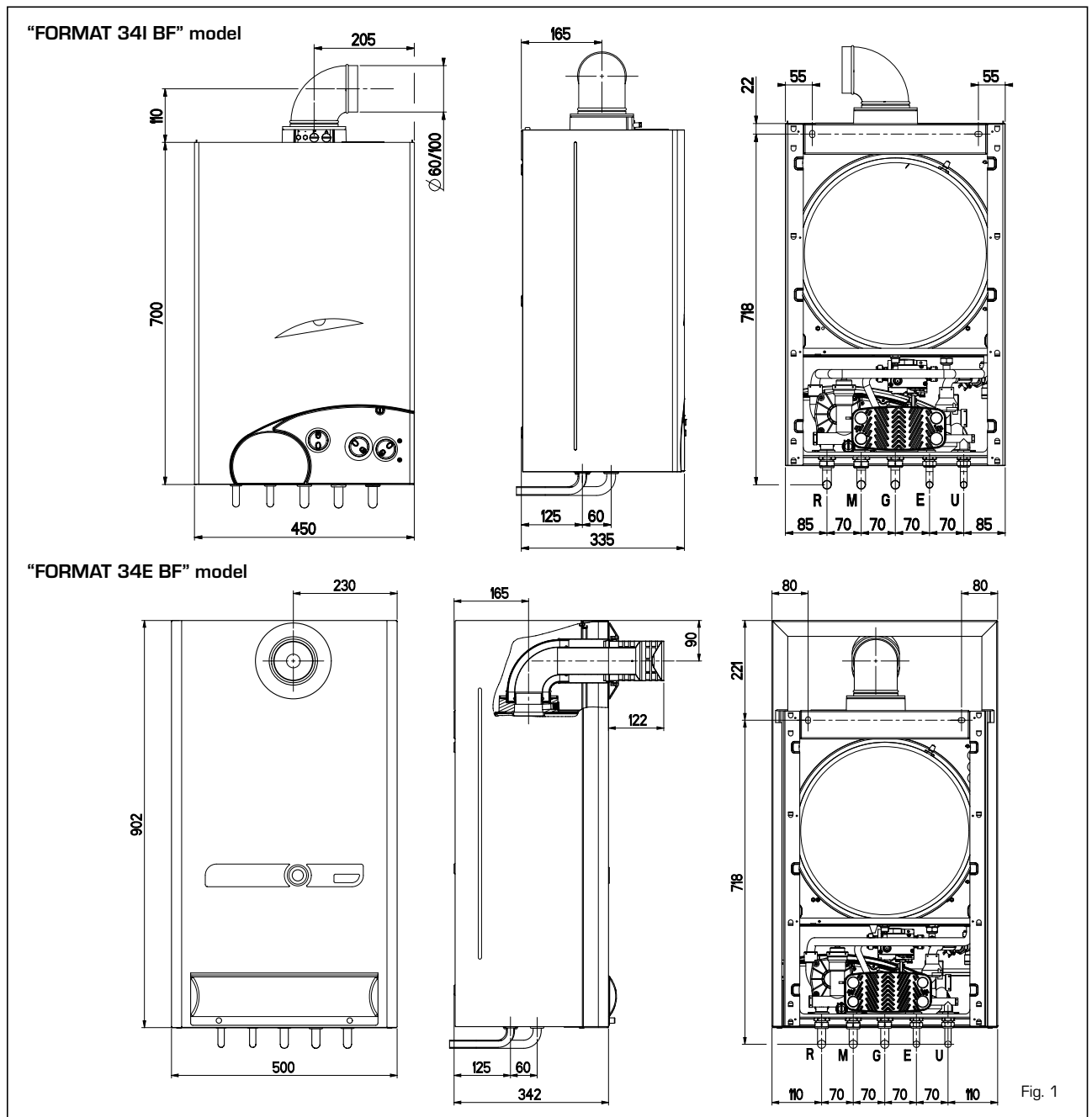


Fig. 1

TABLE 1 - Connections

R	C.H. return	3/4
M	C.H. flow	3/4
G	Gas connection	3/4
U	Hot water	1/2
E	Cold water	1/2

TABLE 2 - Minimum clearances

	For ventilation	For servicing
ABOVE THE APPLIANCE CASING	400 mm	300 mm
AT THE R.H.S.	15 mm	15 mm
AT THE L.H.S.	15 mm	15 mm
BELOW THE APPLIANCE CASING	200 mm	200 mm
IN FRONT OF THE APPLIANCE	100 mm	500 mm

1.3 GENERAL DATA

TABLE 3 - Heating data

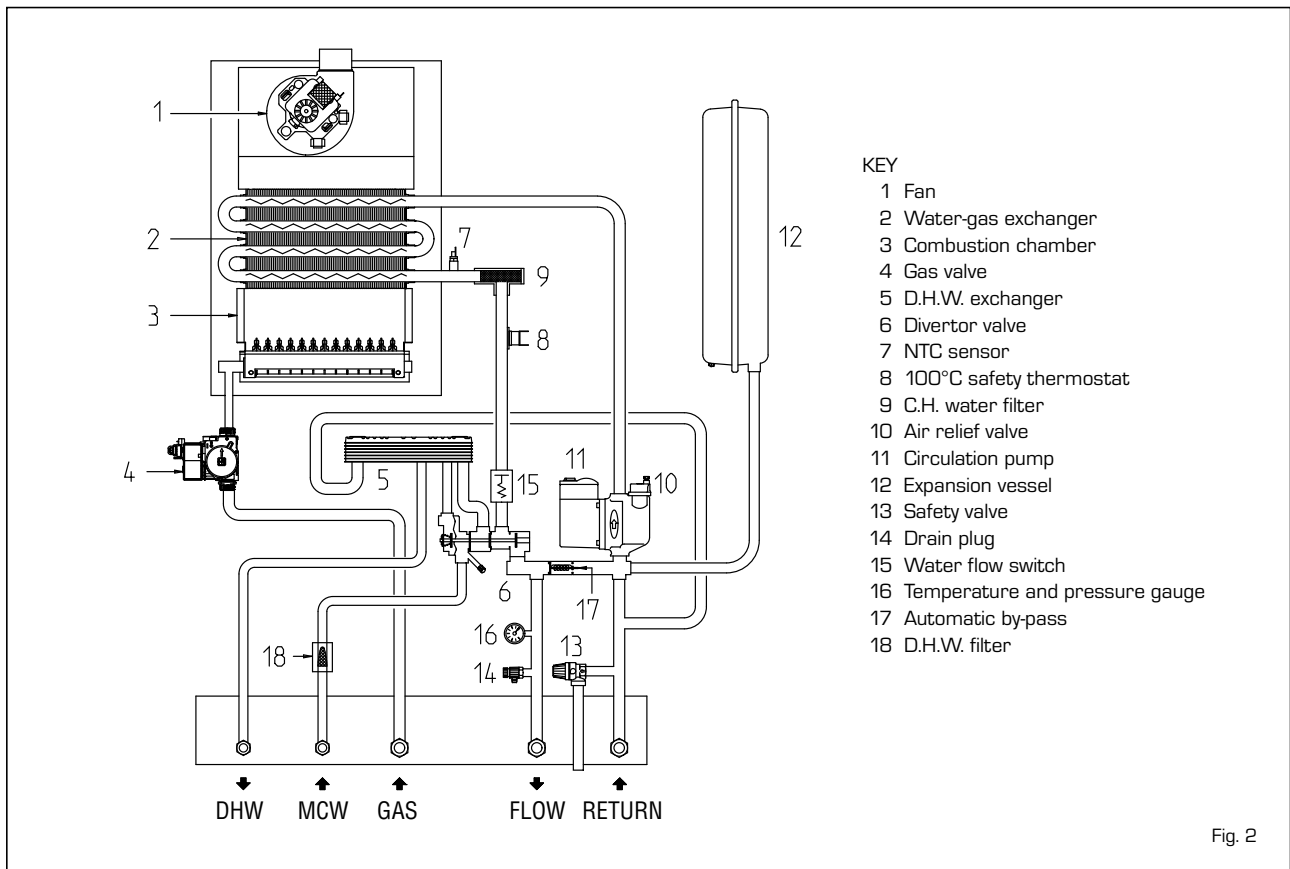
	Heat Output (Adjustable)	Input (Adjustable)
FORMAT 34I BF	11.2 - 34 kW	45 - 145 MJ/hr
FORMAT 34E BF	11.2 - 34 kW	45 - 145 MJ/hr

TABLE 4 - General specifications

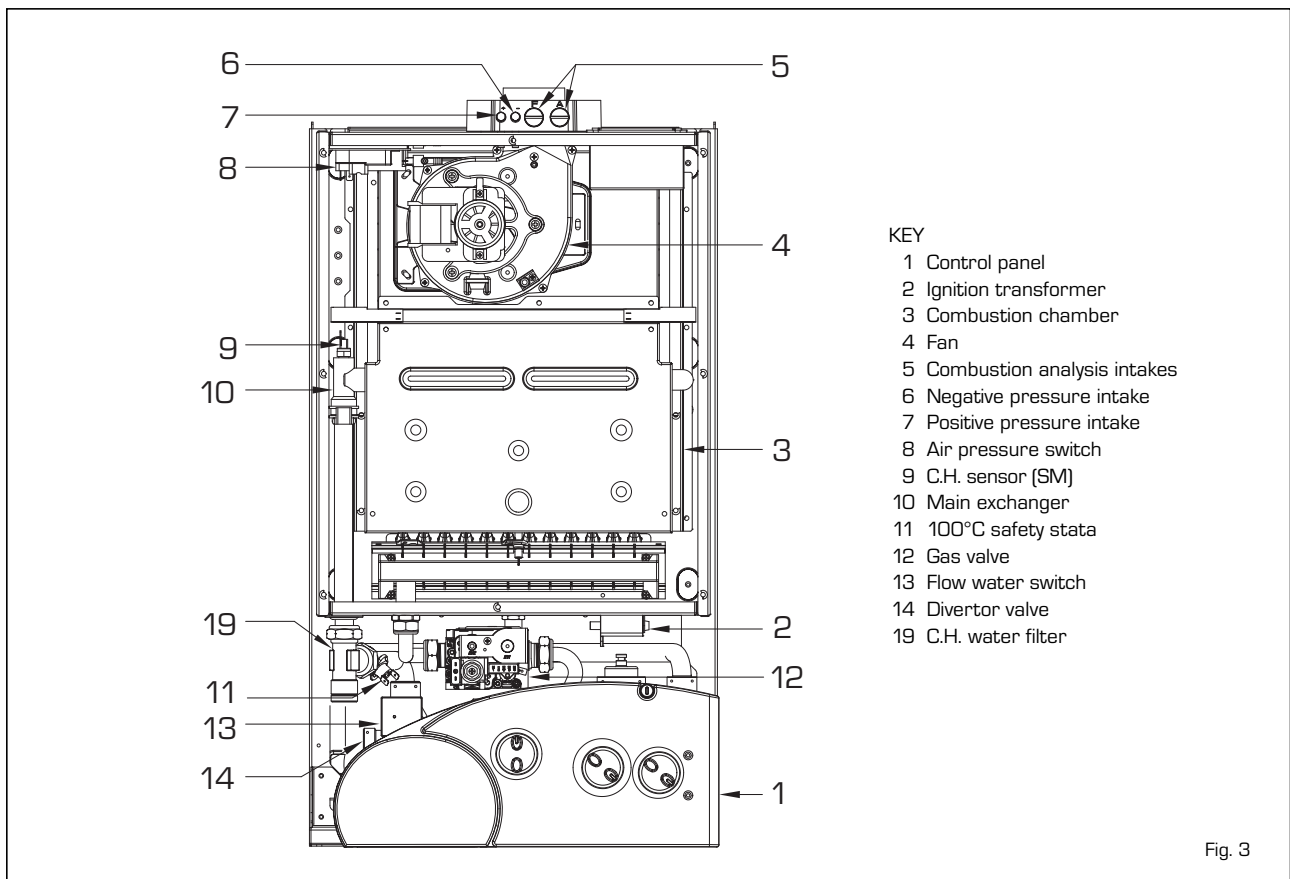
FORMAT 34I - 34E BF			
Main burner injectors	No off		15
	Dia for Natural gas	mm	1.45
	Dia for LPG	mm	0.85
Water capacity		l (gal)	4.7 (1.00)
Minimum water flow	D.H.W.	l/min (gal/min)	2 (0.5)
D.H.W. flow rate			
at a temperature rise of	30°C	l/min (gal/min)	15.1 (3.3)
	35°C	l/min (gal/min)	12.9 (2.8)
Burner pressure Natural gas	Maximum	kPa	0.71
	Minimum	kPa	0.09
Burner pressure LPG (Propane)	Maximum	kPa	2.41
	Minimum	kPa	0.5
Static head	Maximum	bar (psi)	3.0 (43.5)
	Minimum	bar (psi)	0.5 (7.3)
D.H.W. pressure	Minimum	bar (psi)	1.0 (14.6)
	Maximum	bar (psi)	6.0* (87)
Weight	Empty	kg (lb)	40 (88)
	Total (full)	kg (lb)	44.7 (98)
Electrical supply			230 V - 50 Hz, Fused at 3 A
Internal fuse			Line: F 1.6 A
Maximum power consumption		Watt	160
Maximum gas consumpt. (Natural gas)		m ³ /h	3.68
Maximum gas consumpt. (Propane)		kg/h	2.74 - 2.70
Max. working temperature		°C (F)	95 (203)
Integral exp. vessel capacity		l (gal)	8 (1.76)

* For greater pressures it is necessary to install a pressure reducer in the inlet of D.H.W.

1.4 HYDRAULIC CIRCUIT



1.5 INTERNAL VIEW



2 GENERAL REQUIREMENTS FOR INSTALLATION

2.1 INSTALLATION

Models "34E BF" with a hermetically sealed combustion chamber and air supply circuit, may be installed outdoor.

Models "34I BF" with a hermetically sealed combustion chamber and air supply circuit, may be installed in any room in the home.

2.2 CONNECTING UP SYSTEM

Wash all system pipes well before hooking them up with the boiler to eliminate any residues which could compromise its functioning.

The discharge pipe must be connected and extend the pipe to ensure that any discharge is safely routed any.

THE BOILERS MUST BE INSTALLED STRICTLY IN ACCORDANCE WITH THESE INSTRUCTIONS AND MEET THE NATIONAL GAS INSTALLATION STANDARD AS 5601. AND ANY LOCAL WATER AND ELECTRICAL STATE AND LOCAL GOVERNMENT REGULATIONS WHICH MAY BE APPLICABLE.

For installations where the heater is connected to larger systems, the additional volume will need to be taken into account.

A temperature pressure relief valve may be needed.

An adhesive data plate is stuck inside the front panel; it contains all the technical data identifying the boiler and the type of gas for which the boiler is arranged.

2.3 CHARACTERISTICS OF FEEDWATER

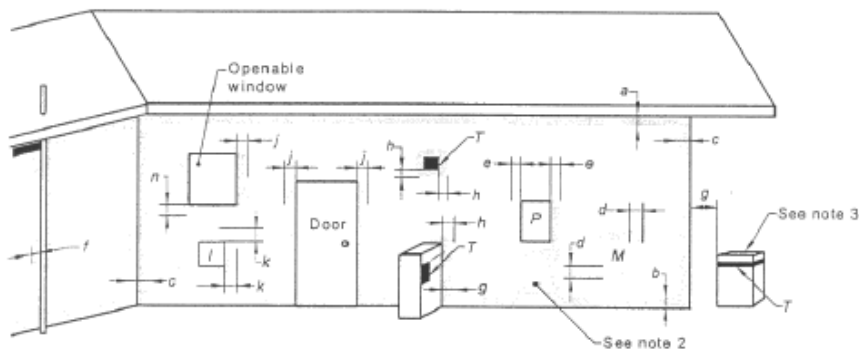
To prevent lime scale and damage to the tap water exchanger, the water supplied should have a hardness of no more than 20°F. In all cases the water used should be tested and adequate treatment devices should be installed.

2.4 FLUE TERMINAL POSITION MODEL "34I BF"

The outlet terminals for forced draught systems may be located on the outer walls of the building. Fig 4 shows approximate, non-binding minimum distances to be met for a building of the type shown in fig. 4.

Ref.	Item	Minimum clearances (mm)	
		Natural draft	Fan assisted
a	Below eaves, balconies and other projections:		
	• Appliances up to 50 MJ/h input	300	200
	• Appliances over 50 MJ/h input	500	300
b	From the ground, above a balcony or other surface †	300	300
c	From a return wall or external corner †	500	300
d	From a gas meter (M) (see 4.7.11 for vent terminal location of regulator)	1000	1000
e	From an electricity meter or fuse box (P)	500	500
f	From a drain pipe or soil pipe	150	75
g	Horizontally from any building structure † or obstruction facing a terminal	500	500
h	From any other flue terminal, cowl, or combustion air intake †	500	300
j	Horizontally from an openable window, door, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:		
	• Appliances up to 150 MJ/h input	500	300
	• Appliances over 150 MJ/h input up to 200 MJ/h input	1500	300
	• Appliances over 200 MJ/h input up to 250 MJ/h input †	1500	500
	• Appliances over 250 MJ/h input †	1500	1500
	• All fan-assisted flue appliances, in the direction of discharge	-	1500
k	From a mechanical air inlet, including a spa blower	1500	1000
n	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:		
	• Space heaters up to 50 MJ/h input	150	150
	• Other appliances up to 50 MJ/h input	500	500
	• Appliances over 50 MJ/h input and up to 150 MJ/h input	1000	1000
	• Appliances over 150 MJ/h input	1500	1500

† Unless appliance is certified for closer installation



LEGEND:

T = Flue terminal
I = Mechanical air inlet

M = Gas meter
P = Electricity meter or fuse box

Shading indicates prohibited areas for flue terminals

Fig. 4

2.5 ELECTRICITY SUPPLY

The electrical connection is made to a standard 10 amp 3 pin outlet. It is essential that a positive earth be made for the satisfactory operation of the boilers.

THIS MUST BE FITTED BY A QUALIFIED ELECTRICIAN.

2.6 WATER SYSTEMS - GENERAL

- This appliance is designed for connection to sealed central heating water systems.
- Check that the mains water pressure is sufficient to produce the required D.H.W. flow rate, but does not exceed the maximum D.H.W. pressure [Table 4].

Where mains pressure exceed 6 bar a pressure reducing valve must be fitted in the D.H.W. inlet.

2.6.1 Treatment of Water Circulating Systems

The condition of the water in the system is of great importance. Treatment such as Fernox is recommended to reduce the effect of sludge and scale on the efficiency of the heating system.

2.7 REQUIREMENTS FOR SEALED WATER SYSTEMS

The heating system design should be based on the following information:

- The available pump head is given in fig. 5.
- The appliance is equipped with an internal by-pass that operates with system heads (H) greater than 3 m. The maximum flow through the by-pass is about 300 l/h. If thermostatic radiator valves are to be installed, at least one radiator should be without a thermostatic valve (usually the bathroom radiator).
- The following paragraphs outline the specifications of the items fitted to the boiler:

2.7.1 Pump

The available head shown in fig. 5 is that in excess of the appliance hydraulic resistance, i.e. that available for the system at any given heating load up to the maximum output in C.H. mode.

Never reduce the pump speed below maximum as this will reduce D.H.W. output. The pump speed is indicated on the side of the pump speed selector switch (if fitted).

2.7.2 System volume (total water content)

The following Table gives the maximum system volume that the integral expansion vessel can sustain under different charge pressure conditions.

If the system volume exceeds that shown, an additional expansion vessel must be fitted and connected to the heating system primary return pipe as close as possible to the appliance.

If an extra vessel is required, ensure that the total capacity of both vessels is adequate.

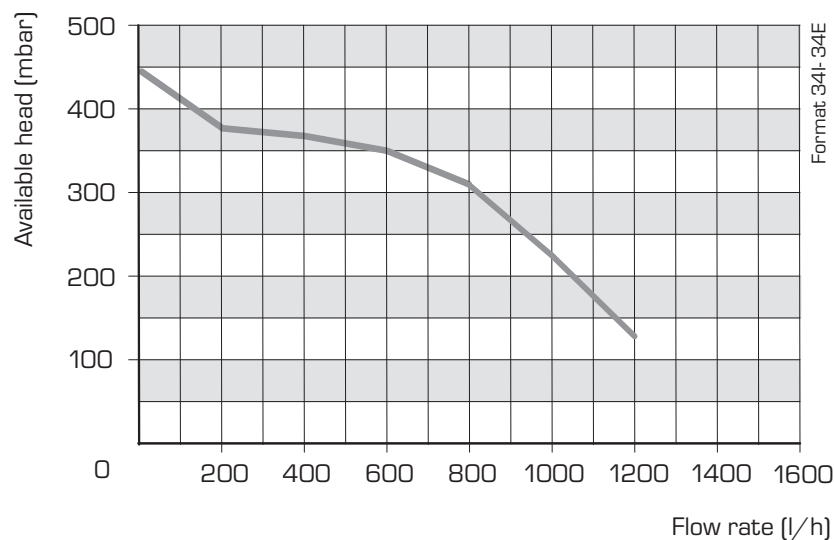


Fig. 5

NOTE: If the pressure gauge indicates 2.65 bar or greater when the appliance is at maximum temperature with all radiators in circulation an extra expansion vessel is required.

TABLE 6

Vessel charge and initial system pressure	bar psi	0.5 7.3	1.0 14.5	1.5 21.8
Total water content of system using 8 l (1.76 gal) capacity expansion vessel supplied with appliance	l gal	96 21.1	74 16.2	51 11.2
For systems having a larger capacity multiply the total system capacity in litres (gal) by the factor to obtain the total minimum expansion vessel capacity required litres (gal)		.0833	.109	.156

2.7.3 Pressure gauge

A pressure gauge is mounted on the appliance fascia panel.

2.7.4 Safety valve

A safety valve set at 3 bar (43.5 psi) is fitted to the appliance and a discharge pipe is routed to outside of the appliance. This discharge pipe should be extended to terminate safely away from the appliance and where a discharge would not cause damage to persons or property but would be detected. The pipe should be able to withstand boiling water; be a minimum of 15 mm in diameter; and installed with a continuous fall.

2.8 D.H.W. SYSTEMS

- Check that the mains supply pressure is within the pre-

scribed limits (Table 4).

If necessary, a pressure reducing valve should be fitted to the mains supply before the D.H.W. inlet connection.

- A maximum D.H.W. flow rate of: 14 l/m (3.1 gpm) is recommended. Higher flow rates will not damage the appliance but may lower the water temperature below an acceptable level.
- If the appliance is installed in an area where the temporary hardness of the water supply is high, say over 150 ppm, the fitting of an in line scale inhibitor may be an advantage. Consult the Local Water Undertaking if in doubt.
- Devices capable of preventing the flow of expansion water: e.g. non return valves and/or loose-jumpered stop cocks should not be fitted unless separate arrangements are made for expansion water.
- For specific information relating to fittings (eg. Showers, washing machines etc.) suitable for connection in the D.H.W. circuit, consult the Local Water Undertaking, however the following information is given for guidance.

2.8.1 Domestic hot/cold water supply taps and mixing taps

All equipment designed for use at mains water pressure is suitable.

2.8.2 Showers

If a shower control is supplied from the appliance it should be of the thermostatic or pressure balanced type. Thermostatic type shower valves provide the best comfort and guard against water at too high temperature. Existing controls may not be suitable, refer to the shower valve manufacturer.

3 INSTALLING THE BOILER

APPLIANCE PACKAGE:

- boiler (assembled);
- installation and servicing instructions;
- users instructions;
- wall mounting bracket;
- fixing screws with wall plugs.

3.1 FIXING THE WALL MOUNTING BRACKET

Before installing the appliance ensure that the chosen location is suitable (section 2.2) and that the requirements for flue position, (section 2.3), and minimum clearances, (Table 2) are satisfied.

These minimum clearances are essential to provide access for servicing, and are included on the wall mounting templates.

- Open the paper wall mounting templates. If a rear flue is to be used, discard the side templates and secure the rear template in the desired position. For a side flue application, secure both the rear and appropriate side template in position.
- Mark the position of the two wall mounting bracket fixing holes and the flue/air duct hole on the appropriate wall(s).
- Remove the template(s) and drill the two fixing holes using a 10 mm masonry drill. Fit the plastic plugs provided.
- Cut the hole in the wall for the flue/air duct. The diameter should not be less than 100 mm (4 in) and must be horizontal. Refer to fig. 12-14.
- Accurately measure the wall thickness, and note this dimension for later use.

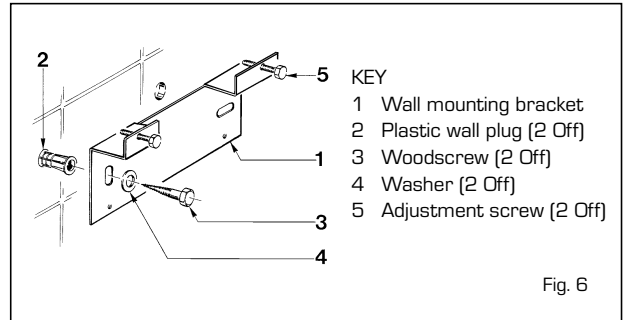


Fig. 6

- Secure the wall mounting bracket in position using the screws provided. Ensure that it is the correct way up, as indicated in fig. 6.

3.2 HANGING THE BOILER

- Lift the appliance into position. The upper cross member locates onto the wall mounting bracket.
- Screw in the wall mounting bracket adjusting screws until the appliance is secure and vertical.

3.3 FLUE DUCTS MODEL "34I BF"

The air inlet-smoke outlet assembly \varnothing 60/100 is supplied in a kit code 8084811 complete with mounting instructions.

With the curve supplied in the kit the maximum horizontal length of the flue must not exceed 3 metres.

When the extension code 8086908 is used, the end of the flue must always have a horizontal outlet.

The diagrams in fig. 7 illustrate a number of examples of different coaxial outlets.

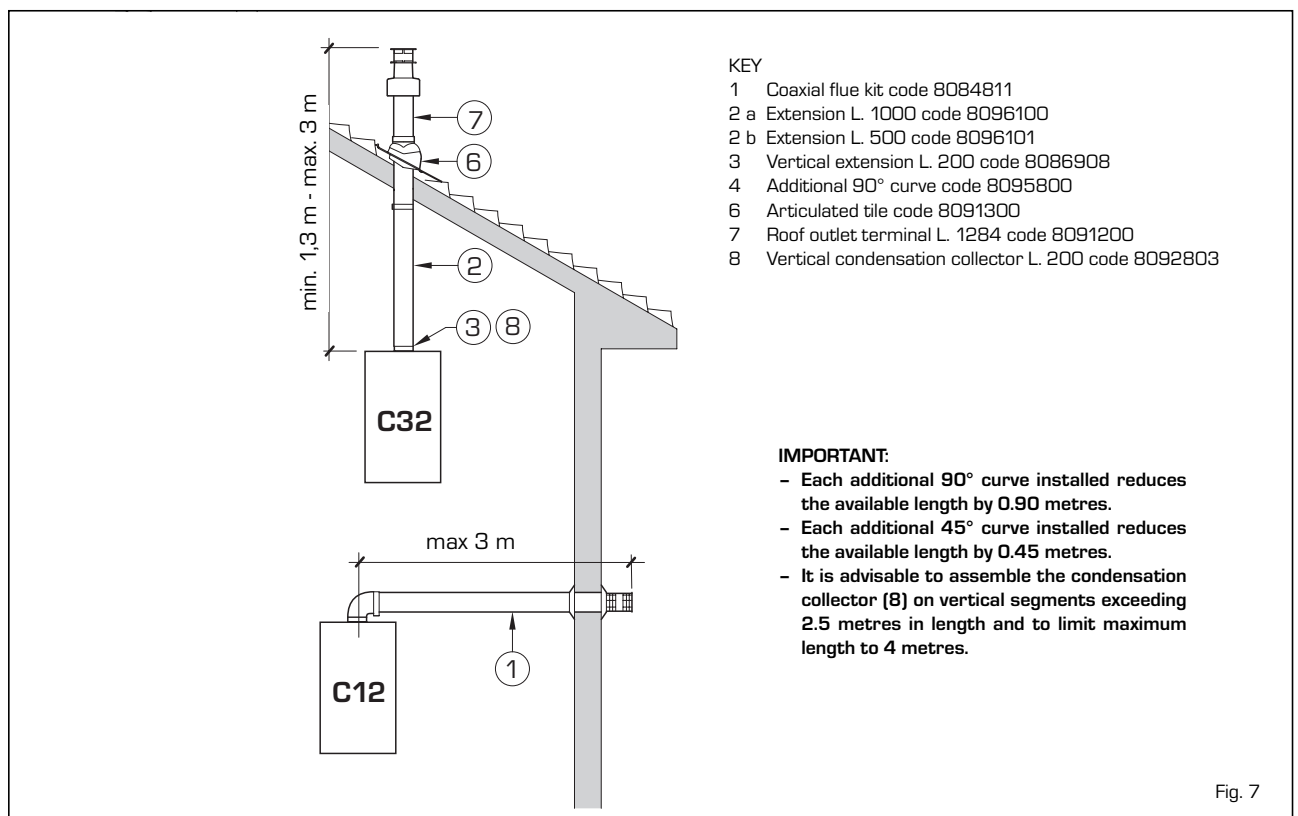


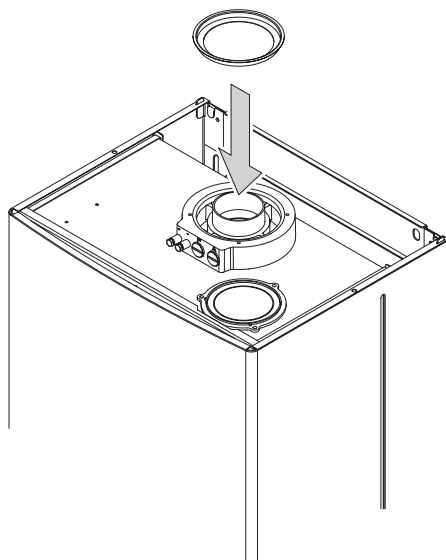
Fig. 7

3.3.1 Coaxial flue diaphragm

the diaphragm only if the length of the coaxial flue.

The boiler is normally supplied with \varnothing 87.5 diaphragm. Insert

Refer to fig. 8 for positioning.



With outlet type C12, install diaphragm \varnothing 87.5 only if the coaxial flue is less than 1.5 metres.

With outlet type C32, use the following diaphragms, depending on flue length and without any additional curves:

Installations with vertical extension L. 200 code 8086908			Installations with condensation collector code 8092803	
Optional diaphragm \varnothing 86 (cód. 6028623)	Standard diaphragm \varnothing 87,5		Standard diaphragm \varnothing 87,5	None diaphragm
L min = 1,3 m L max = 2,5 m	L min = 2,5 m L max = 3 m		L max = 2,5 m	L min = 2,5 m L max = 3 m

Fig. 8

3.6 SAFETY VALVE CONNECTION

- The appliance safety valve is located towards the R.H.S. of the boiler and the discharge pipe is supplied loose. Remove the two selftapping screws and lower the control box to improve access.
- Connect the discharge pipe to the valve outlet, and extend the pipe to ensure that any discharge from the safety valve is safely routed to a drain.
The discharge pipe should be a minimum of 15 mm copper, and must avoid sharp corners or upward pipe runs where water may be retained.

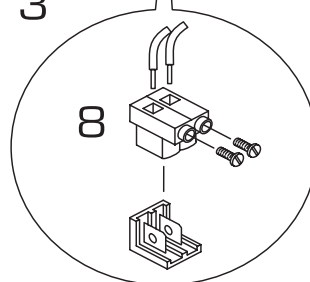
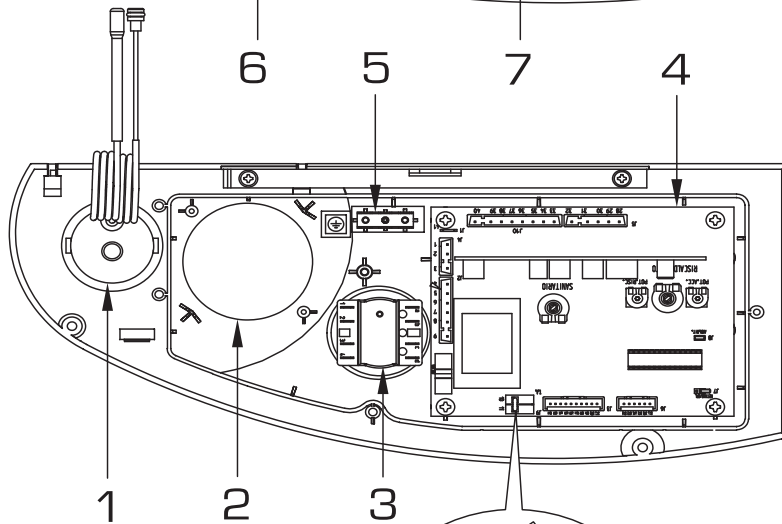
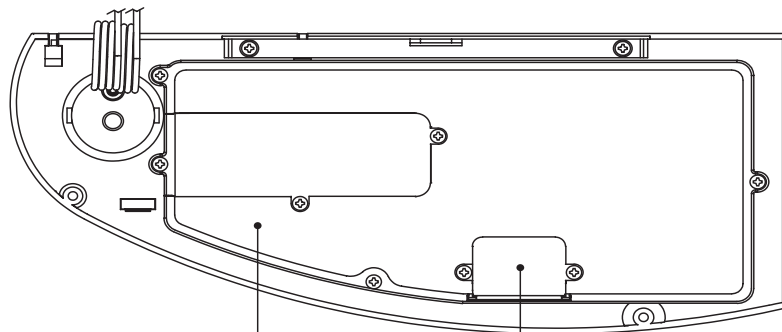
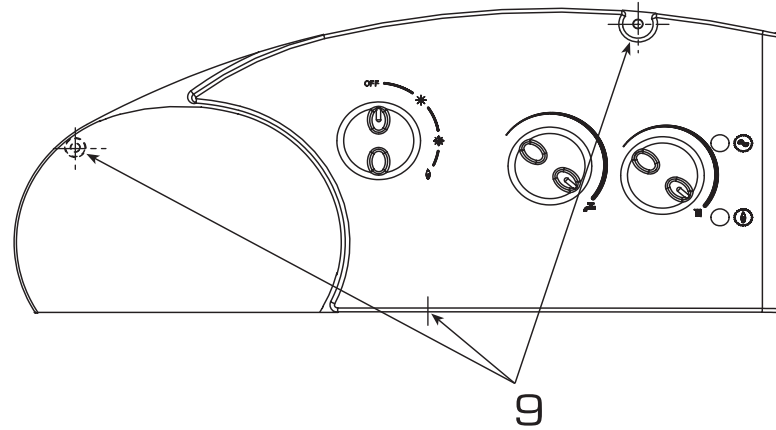
3.7 WIRING INSTRUCTIONS (fig. 12)

- Disconnect the electric power supply before performing

any work.

Warning: all components in the control panel are fed with 240V.

- Remove the three screws (7) locking the control panel in place and pull the panel forward until it can be tilted downward.
- To access the components of the electrical panel, unscrew the four screws holding the protective guard in place (5).
- To gain access to connector "TA", remove the control panel cover and connect the room stat to the terminals 2-6 after having removed the jumper (6).
- Carry out electrical system checks through a suitable test meter: earth continuity, polarity, resistance to earth and short circuit.
- Re-secure control box.
- Ensure sufficient length of cable to allow access to control panel.



- KEY
- 1 Temperature and pressure gauge
 - 2 Time programmer housing
 - 3 Rotary switch
 - 4 Main PCB
 - 5 Earth faston
 - 6 Control panel protection
 - 7 Cover [TA]
 - 8 Connector [TA]
 - 9 Fixing screw

ATTENTION: After having removed the three fixing screws, tilt the panel downward to gain access.

Fig. 12

4 COMMISSIONING AND TESTING

4.1 FILLING THE WATER SYSTEM

- Loosen the automatic air vent cap (10 fig. 2).
- Open all radiator valves and system air vents. Close all air vents. Do not close the A.A.V. the one near the pump!
- Check the system for water soundness.
- Completely drain the appliance and heating system, thoroughly flush the system, and refill the system design pressure.
- Open the D.H.W. inlet valve, open any hot tap, clear of air bubbles. Close hot tap.

4.2 COMMISSIONING THE BOILER

- Remove the screw and connect a pressure gauge to the burner pressure test point on the gas valve (fig. 13).

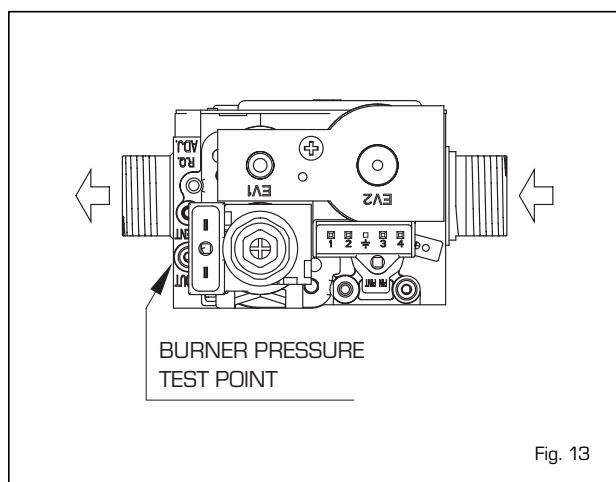


Fig. 13

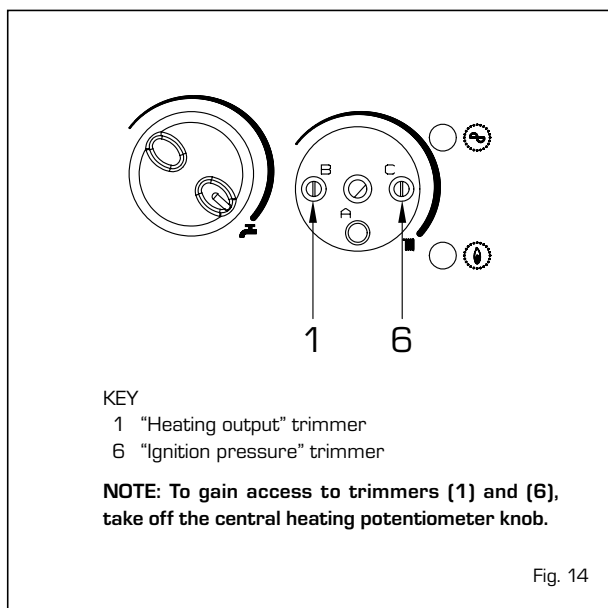
- Ensure that the rotary switch on the fascia panel is set to the SUMMER position " * " (D.H.W. Only), turn the D.H.W. thermostat to maximum (fully clockwise), and turn on the electrical supply. Fully open any D.H.W. tap and the burner will light.
- Allow the boiler to run for at least 5 minutes and check that the burner pressure is as stated in section 1.3. The D.H.W. burner pressure is factory set and should not require adjusting. If the burner pressure is low, check that the appliance has not begun to modulate (this will occur if the D.H.W. flow rate is low. If modulation is suspected, open all D.H.W. taps to maximise flow and recheck burner pressure). If it is necessary to adjust the D.H.W. burner pressure the method is described in section 8.6.
- Reduce the D.H.W. draw off rate to the minimum necessary to maintain the burner alight by carefully adjusting the D.H.W. inlet valve and check that the burner pressure decreases in response to D.H.W. temperature rise. Fully open the inlet valve.
- Close the D.H.W. tap and ensure that the burner is extinguished and the pump stops.

4.3 SETTING THE C.H. INPUT

- Turn the rotary switch to the WINTER position " ❄ " and ensure that the room thermostat (if fitted) is calling for heat. Turn the C.H. thermostat knob to maximum (fully clockwise) and the burner will light.
- Allow the boiler to run for at least 5 minutes and check

the burner pressure. The heating input is factory set as stated in *Table 4*.

- If the heating output is to be adjusted, proceed as follows:
 - refer to section 1.3 and establish the desired burner pressure;
 - remove (pull forwards) the C.H. knob protecting the potentiometer;
 - set the burner pressure as required using a small screwdriver on potentiometer (1 fig. 14). Rotate the screw anti-clockwise to reduce the burner pressure;
 - operate the rotary switch between SUMMER and WINTER position a few times and check that the correct burner pressure is maintained.
 - Replace the C.H. knob over potentiometer.
 - To set the time clock see the user instructions.



KEY

- 1 "Heating output" trimmer
- 6 "Ignition pressure" trimmer

NOTE: To gain access to trimmers (1) and (6), take off the central heating potentiometer knob.

Fig. 14

4.4 SETTING THE D.H.W. FLOWRATE

A restrictor nut is fitted into the diverting valve to reduce the D.H.W. flow to that which will give an acceptable D.H.W. temperature. To set the D.H.W. flow, proceed as follows:

- select Summer position " * " and turn the D.H.W. thermostat to max.;
- fully open the D.H.W. tap furthest from the boiler;
- check that the boiler is firing at maximum burner pressure;
- adjust the D.H.W. flowrate by turning the restrictor lever on the divertor valve until a D.H.W. temperature rise of approx 35°C is achieved. This corresponds to the flowrates shown in *Table 4*;
- turn off the tap;
- remove the pressure gauge and refit the sealing screw;

Remember that the flow rates and corresponding temperatures of use of hot water, given in *Table 4*, have been obtained by positioning the selector of the circulation pump on the maximum value. **Should there be any reduction in the D.H.W. flow rate, the filter installed on the inlet to the pressure switch valve may need cleaning.**

To gain access to the filter, first close the cold water, drain the D.H.W. circuit via the lowest tap, make provision to collect a small discharge of water, then loosen the brass swivel connection to access the filter.

4.5 FINAL CHECKS

- Re-light and test for gas soundness.
- Re-fit the casing front panel and securing brackets.
- Set the C.H. and D.H.W. potentiometers to the required settings.
- Ensure that the time clock is set at the desired time periods. Set the room thermostat (if fitted) to the required setting.

4.6 USER'S INSTRUCTIONS

Upon completion of commissioning and testing the system, the installer should:

- Give the "Users Instructions" to the householder.
- Explain and demonstrate the lighting and shutdown procedures.
- Advise the householder on the efficient use of the system, including the use and adjustment of all system controls for both D.H.W. and C.H.
- Advise the user of the precautions necessary to prevent damage to the system, and to the building, in the event of the system remaining inoperative during frost conditions.
- Explain the function of the boiler overheat thermostat, and how to reset it. Emphasise that if cut-out persists, the boiler should be turned off and the installer or service engineer consulted.
- Stress the importance of an annual service by a registered heating engineer.

5 ROUTINE SERVICING INSTRUCTIONS

To ensure continued efficient operation of the appliance, it is recommended that it is checked and serviced as necessary at regular intervals. The frequency of servicing will depend upon the particular installation conditions and usage but in general once a year should be adequate. It is the law that any service work must be carried out by registered personnel. Before commencing any service operation, ISOLATE the mains electrical supply, and TURN OFF the gas supply at the main service cock. Service the appliance by following the full procedure detailed below.

5.1 MAIN BURNER ASSEMBLY

5.1.1 Model "FORMAT 34I BF" (fig. 15)

- Remove the casing.
- Remove the 8 fixing screws securing the sealed chamber front panel then remove the panel.
- Unscrew the 7 screws securing the combustion chamber front panel and remove the panel, taking care not to damage the insulation.
- Remove the electrode by unscrewing it from the burner manifold.
- Unscrew the burner manifold union and locking nut. Lift

the front of the burner to disengage manifold thread and then lift the burner clear.

- Remove the burner manifold by disconnecting the four screws.
- Inspect and if necessary, clean the injectors, electrodes, and the main burner bars.

5.1.2 Model "FORMAT 34E BF" (fig. 15)

- Remove the rubber ring around the flue terminal.
- Remove two screws each side at the underside of the casing.
- Pull the bottom of the case forward, to disengage the lower location studs, and then lift straight up, to disengage the upper location studs, and withdraw the casing over the boiler

NOTE: Use the reverse of the above procedure to replace the casing, taking care not to trap the wiring on the R.H. side.

5.2 FAN ASSEMBLY

- Disconnect the electrical connections to the fan. Note the position of the earth conductor:

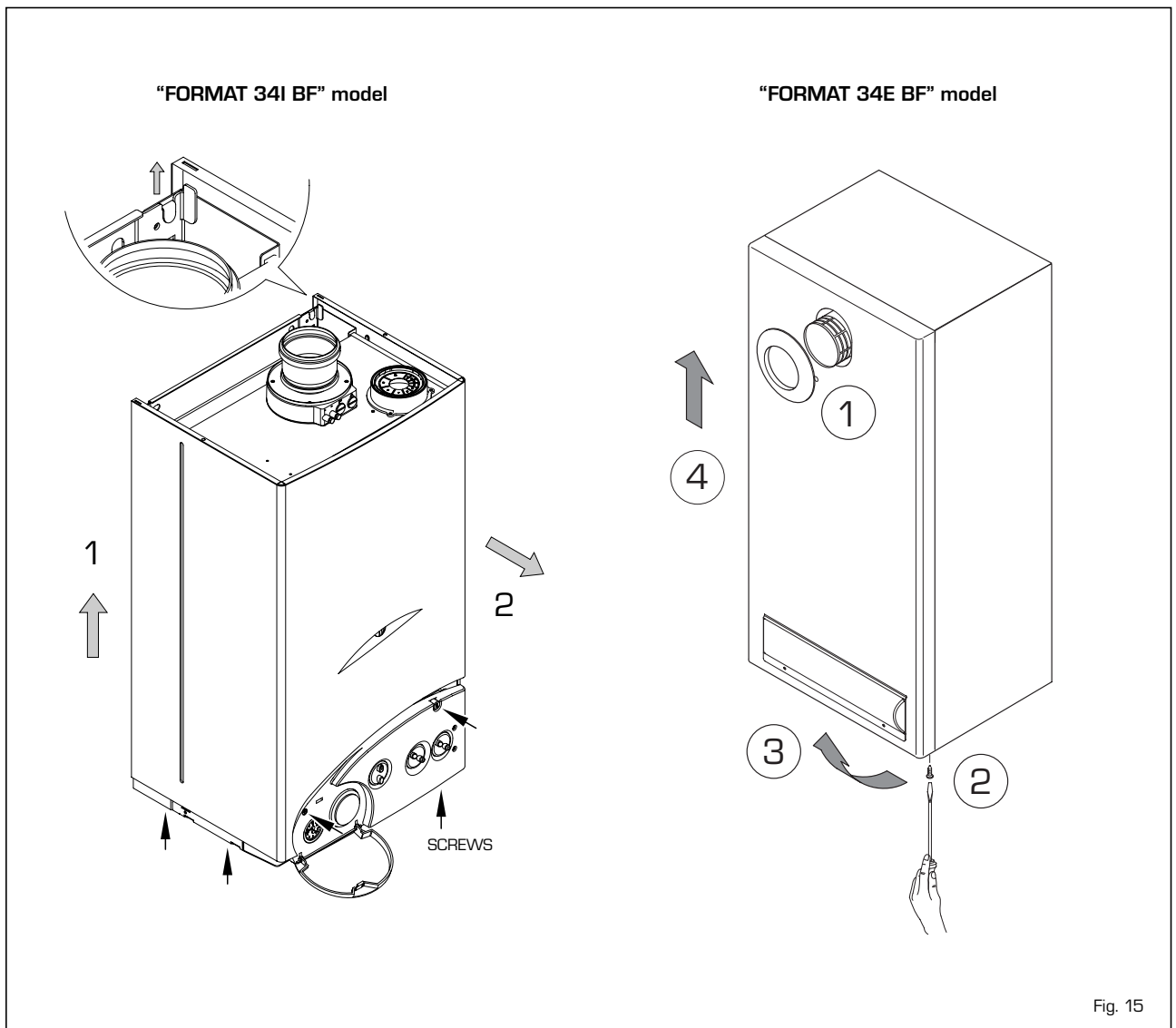


Fig. 15

- Remove the three screws securing the fan.
- Tilt the fan forwards and remove in a downwards direction.
- Inspect the fan assembly and clean if necessary.

5.3 HEAT EXCHANGER

Inspect the heat exchanger, and clean if necessary as showed in fig. 16.

5.4 WATER FLOW SWITCH

- Remove the cover from the micro assembly to gain access to the flow switch spindle.
- Ensure the spindle is free to move (see fig. 17).
- Re-assemble the cover.

5.5 CHIMNEY SWEEP FUNCTION (combustion analysis)

To carry out the verification of combustion in the boiler turn the selector and stop on the position (🔥) until the green/orange led starts to flash intermittently. From that moment the boiler will start functioning in heating mode at the maximum power, with switching off at 80°C and restarting at 70°C.

Before activating the chimney sweep function make sure that the radiator valves or eventual zone valves are open. The test may be carried out also during D.H.W. mode. To do so it is enough, after having activated the chimney sweep function, to take some hot water from one or more outlets. Even in this condition the boiler functions at the maximum temperature always with the primary controlled between 80°C and 70°C. During the entire duration of the testing the hot water taps must remain open. After verifying the combustion the boiler should be switched off by placing the selector on the **OFF** position; then return the selector to the desired function.

ATTENTION: After about 15 minutes, or once the hot water request has been fulfilled, the chimney sweep function automatically deactivates.

5.6 RE-ASSEMBLY

- Re-assemble all the components in reverse order and replace all the gaskets fitted in the gas line. Ensure that all seals are correctly fitted and that the pressure sensing line is correctly fitted. Check that the fan earth connection is correctly re-fitted. Note that the fan polarity (Line and Neutral) is immaterial.
- Check for gas soundness before fitting the casing.

5.7 RE-COMMISSIONING

- Turn on the gas supply, and check for gas soundness whilst the appliance is running.
- Check the operation of the appliance in both C.H. and D.H.W. mode and ensure in both cases that the burner pressure after at least 5 minutes running is as stated on the data plate or in *Table 4*. Adjust if necessary as

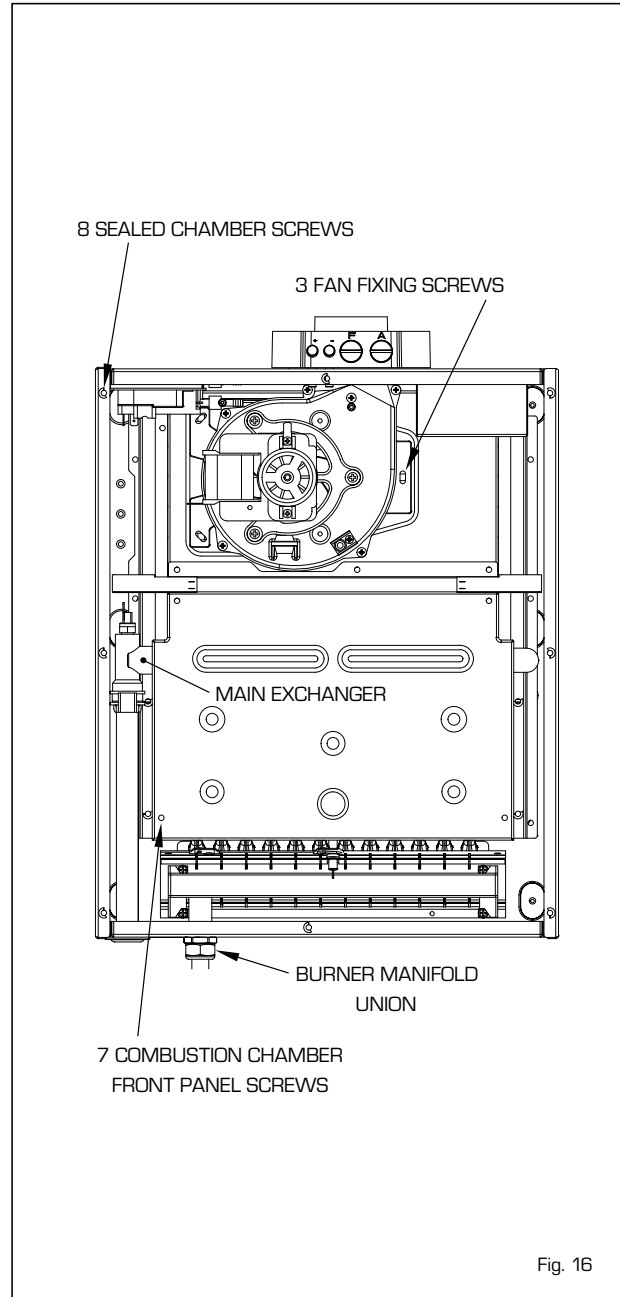


Fig. 16

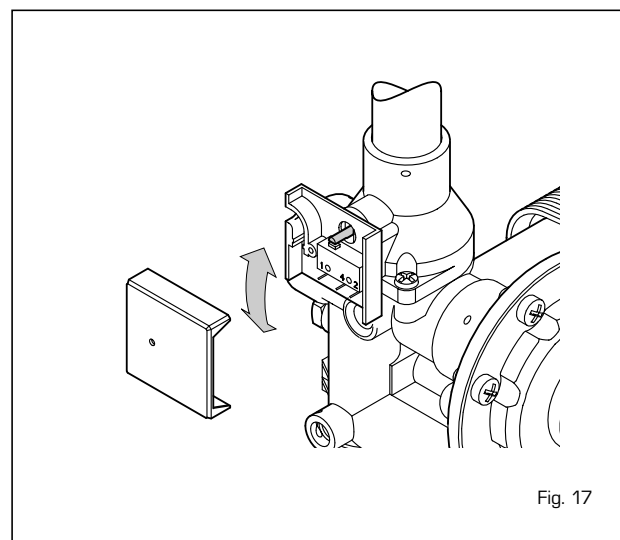


Fig. 17

described in section 8.

When any service or replacement of electrical components which has required the breaking and re-making of electrical connections has taken place, the following tests must be repeated:

- earth continuity;
- short circuit;
- polarity;
- resistance to earth.

5.8 CLEANING THE C.H. WATER FILTER (fig. 18)

To clean the filter, close the delivery/return on/off taps, turn off the power to the control panel, remove the casing and empty the boiler using the drain provided (14 fig. 2) until the hydrometer shows "zero". Place a container for collection underneath the filter, unscrew the cap and proceed to clean the filter, removing impurities and limestone deposits. Check the seal o-ring before reassembling the cap with the filter.

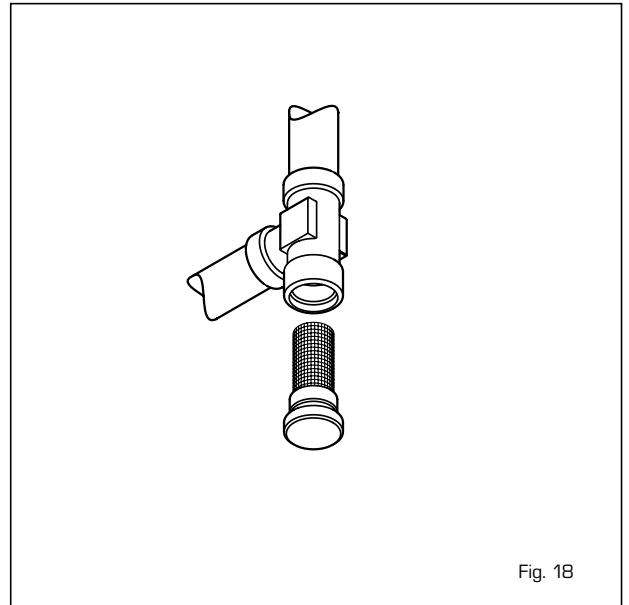


Fig. 18

6 FAULT FINDING

6.1 EARTH CONTINUITY CHECK

Appliances must be electrically disconnected, meter set on Ω (ohm) x 1 scale and adjust zero if necessary. Tests leads from any appliance earth point (e.g. inside control box) see wiring diagrams (section 7) to earth pin on plug. Resistance should be less than 1 Ω (ohm). If the resistance is greater than 1 Ω (ohm) check all earth wires for continuity and all contacts are clean and tight. If the resistance to earth is still greater than 1 Ω (ohm) then this should be investigated further.

6.2 SHORT CIRCUIT CHECK

Switches turned FULL ON - meter set on Ω (ohms) x 1 scale. Test leads from L to N on appliance terminal block, if meter reads 0 then there is a short circuit. Meter set on Ω (ohm) x 100 scale. Repeat it with leads from L to E. If meter reads less than infinity (∞) there is a fault.

NOTE: Should it be found that the fuse has failed but no fault is indicated, a detailed continuity check (i.e. by disconnecting and checking each component) is required to trace the faulty component.

It is possible that a fault could occur as a result of local burning/arcing but no fault could be found under test. However, a detailed visual inspection should reveal evidence of burning around the fault.

6.3 POLARITY CHECK

Appliance reconnected to mains supply and meter set on 300 V ac scale. Test at appliance terminal block.

- Test leads from L to N meter reads approx.: 240 V ac.
- Test leads from L to E " $\frac{1}{2}$ " meter reads approx. 240 V ac.
- Test leads from N to E " $\frac{1}{2}$ " meter reads from 0 to 15 V ac.

6.4 RESISTANCE TO EARTH CHECK

Appliance must be disconnected from main supply and meter on Ω (ohm) x 100 scale.

All switches including thermostat on test leads from L to E - if meter reads other than infinity (∞) there is a fault which should be isolated. A detailed continuity check is required to

trace the faulty component.

IMPORTANT:

These series of checks are the first electrical checks to be carried out during a fault finding procedure. On completion of the service/fault finding task which has required the breaking and remaking of electrical connections then the checks 6.1 Earth continuity, 6.3 Polarity and 6.4 Resistance to earth must be repeated.

6.5 FAULT FINDING LEDS

The indicator leds signalling irregular and/or incorrect operation of the equipment are indicated in fig. 19.

Before commencing any service operation, ISOLATE the mains electrical supply, and TURN OFF the gas supply at the main service cock. It is the law that any service work must be carried out by registered personnel.

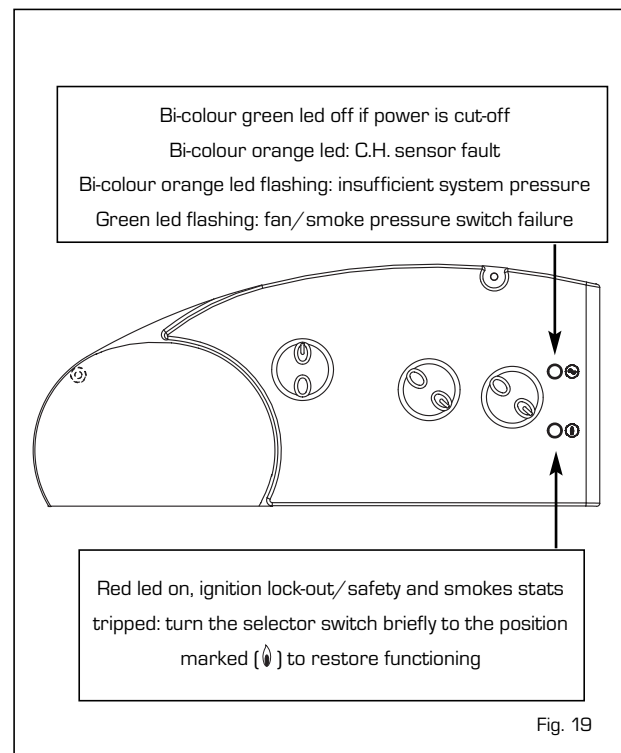
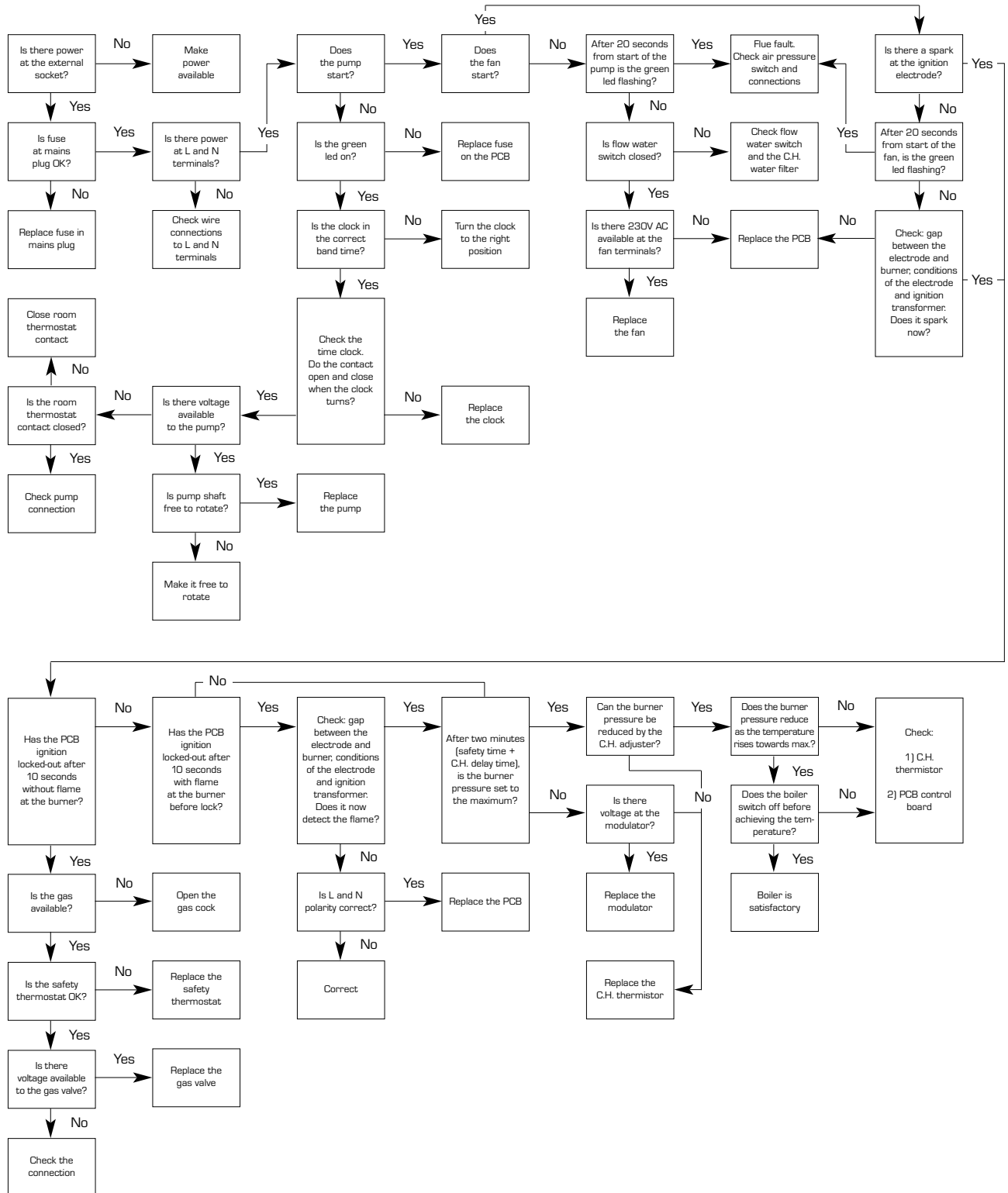


Fig. 19

6.6 C.H. MODE - FAULT FINDING

Start from cold Rotary switch set to WINTER position.
 Room thermostat (if fitted) calling for heat and all D.H.W. taps off.
 C.H. thermostat set to maximum position.
 Clock in the on position.

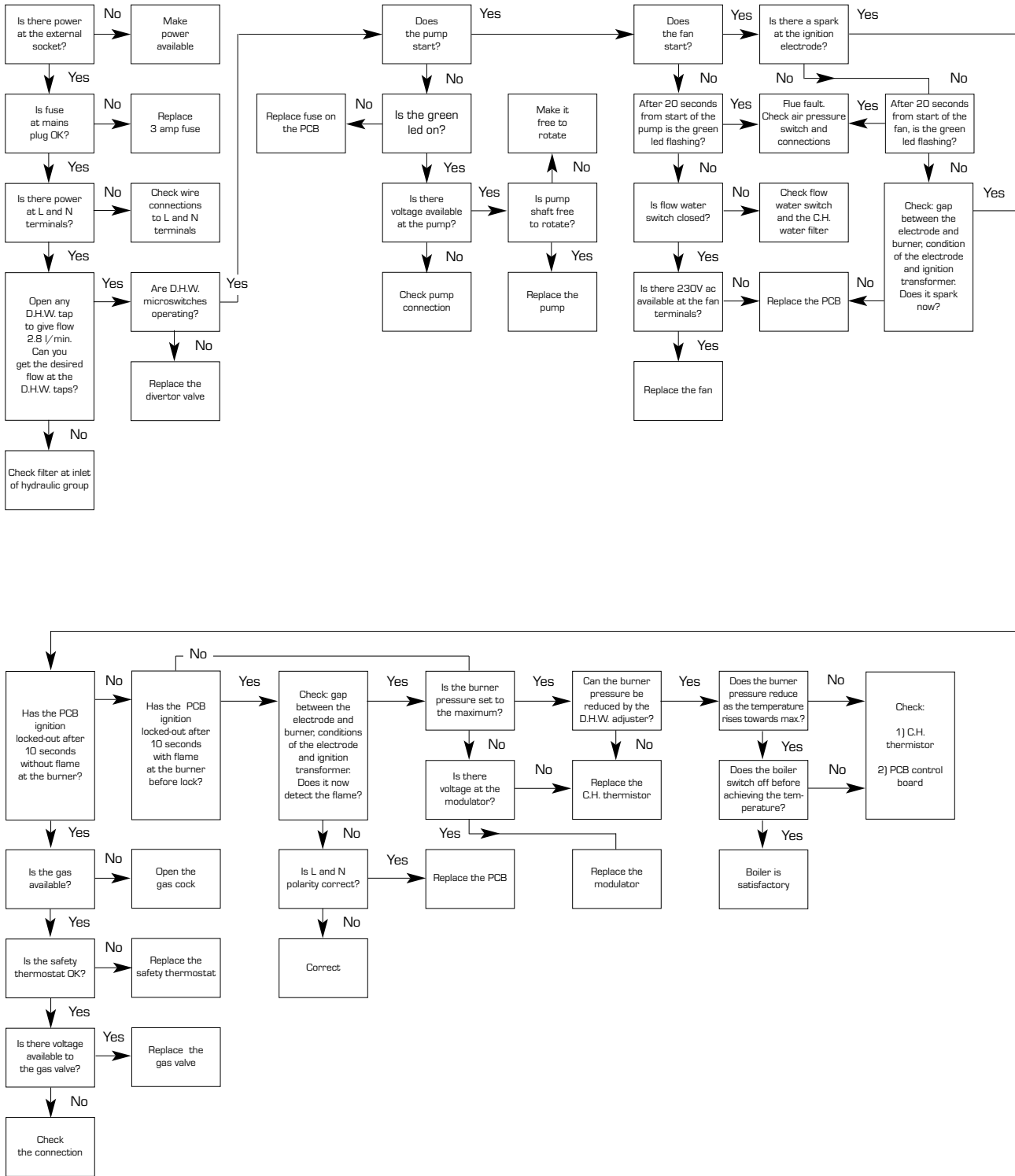


NOTE:

After completing fault finding reset the room thermostat (if fitted) to the required setting. If the appliance will not function check the wiring to the clock and if necessary, replace the clock.

6.7 D.H.W. MODE - FAULT FINDING

Start from cold - rotary switch set to SUMMER position, D.H.W. thermostat set to maximum, and all D.H.W. taps OFF.



7 WIRING & FUNCTIONAL DIAGRAMS

7.1 ILLUSTRATED FLOW WIRING DIAGRAM

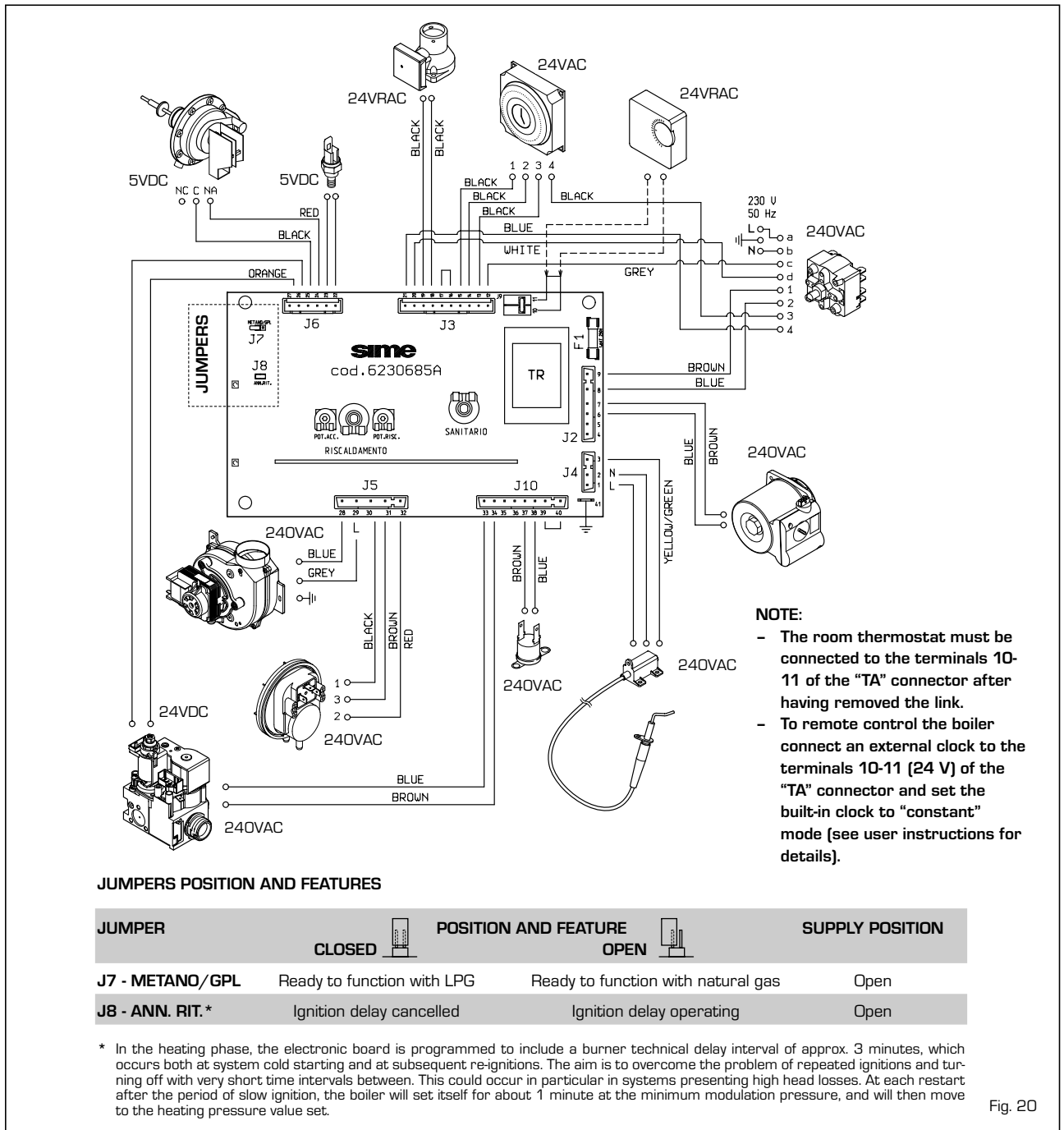


Fig. 20

7.2 TIME PROGRAMMER (optional)

The control panel is designed to allocate a timer-programmer, code 8092208, which can be supplied upon request. To fit the timer, remove the housing blanking piece from the control panel and, with the panel open, fit the timer to the panel using the screws supplied therein (see fig. 21). Connect the unit as shown in the wiring diagram (fig. 20).

7.3 KIT FOR LOW TEMPERATURE SYSTEM (optional)

This kit (SIME cod. 8089830) consists of the following components: thermostat at 50°C, connector and 2 fixing screws.

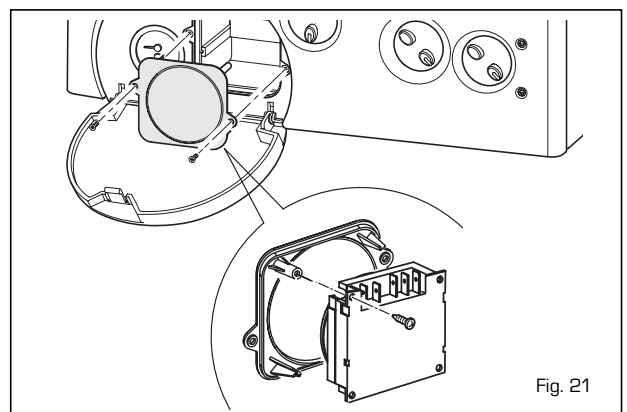


Fig. 21

8 REPLACEMENT OF PARTS

Before commencing any service operation, ISOLATE the mains electrical supply, and TURN OFF the gas supply at the main service cock. It is the law that any service work must be carried out by registered personnel.

8.1 HEAT EXCHANGER

- Remove the fan as described in section 8.3.
- Disconnect the pressure sensing pipe from the flue box, lift the collector hood assembly, tilt forwards, and remove the hood.
- Isolate the boiler from the system.
- Drain the heat exchanger using the drain cock (at the bottom RHS of the appliance)
- Unclip the heat exchanger securing clips and unscrew completely the expansion vessel nut.
- Disconnect the pipes from the exchanger and lift out the heat exchanger.
- Re-assemble in reverse order, ensuring that the heat exchanger seals and clips are correctly located and that the pressure sensing pipe is correctly re-fitted. The fan polarity is not important except the earth conductor (G/Y which is marked on the appliance).
- Refill, and re-commission the system as described in section 4.

8.2 COMBUSTION CHAMBER INSULATION

The design of this appliance is such that the rear and side insulation should not require replacement unless mechanically damaged.

IMPORTANT: When handling insulation panels, take care to avoid producing or inhaling dust particles. When removing old or damaged insulation panels, dampen with water to minimise dust.

To replace the insulation front panel, proceed as follows:

- remove the combustion chamber front panel as described in section 5.1;
- replace the front insulation panel and glue it into position on the front panel using the glue supplied. Re-assemble in reverse order.

Should the rear or side panels become damaged, replace them as follows.

- remove the heat exchanger as described in section 8.1;
- remove the side insulation panels followed by the rear panel;
- re-assemble in reverse order, refill, and recommission the system as described in section 4.

8.3 FAN ASSEMBLY

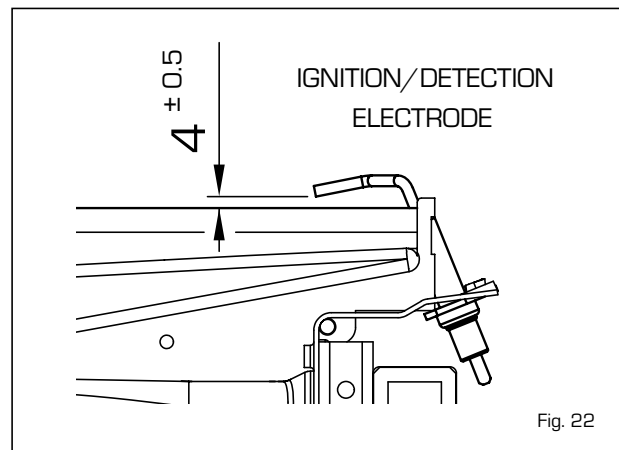
- Remove the casing front panel and sealed chamber front panel as described in section 5.1.
- Disconnect the electrical connections and the pressure sensing pipes to the fan. Note the position of the earth conductor.
- Unscrew the three screws securing the fan.
- Drop and tilt the fan forwards and remove in a downwards direction.
- Re-assemble in reverse order. Ensure that the earth connection is correctly refitted. Note that the polarity (Line and Neutral) is immaterial.

8.4 MAIN BURNER

- Remove the main burner by following section 5.1.
- Transfer the ignition electrode onto the new burner assembly.
- Re-assemble in reverse order. Check the electrode gaps (fig. 23) and test for gas soundness.
- Re-commission the appliance as described in section 4.

8.5 IGNITION/DETECTION ELECTRODE (Fig. 22)

- Remove the casing front panel and sealed chamber front panel as described in section 5.1.
- Unscrew the single screw securing the electrode in position, and release the electrode from the burner.
- Remove the electrode and disconnect its cable from the ignition transformer.
- Replace the electrode and re-assemble in reverse order.



8.6 GAS VALVE

- Remove the casing front panel as described in section 5.1.
- Disconnect the two leads from the modulating solenoid and disconnect the valve connector (one screw).
- Unscrew the nut between the inlet pipe and the valve.
- Unscrew the burner manifold nut underneath the sealed chamber, and withdraw the gas valve complete with outlet pipe.
- Transfer the outlet pipe onto the new gas valve, using a new gasket (supplied with the valve).
- Fit the new gas valve assembly into the appliance using the other new gasket supplied on the valve inlet, and re-assemble in reverse order.
- Re-light the appliance, check for gas soundness, and re-commission in accordance with section 4.

In addition it will be necessary to set the D.H.W. and C.H. heat inputs, with reference to fig. 23, as follows:

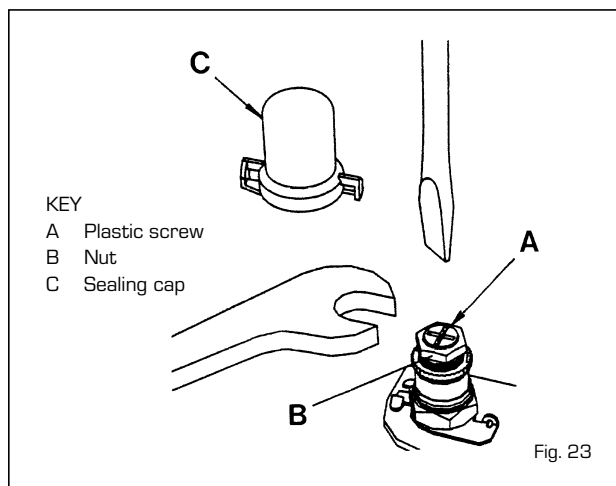
Note that it is necessary to set the MAXIMUM PRESSURE FIRST.

- Connect a pressure gauge to the burner pressure test point.
- Remove the sealing cap of the proportioning unit (C) by rotating it/turn anticlockwise.
- Adjust DHW potentiometer to maximum, then fully open any DHW tap to light the boiler.
- Using a 10 mm spanner, turn nut (B) to attain the maxi-

imum pressure in *Table 4*.

Turn the nut clockwise to increase or anti-clockwise to decrease the burner pressure.

- Turn the main selector switch on and off a few times (with the hot tap still open) and check that the pressure returns to the correct (set) maximum value (as in *Table 4*).
- Set the minimum burner pressure by first isolating the electricity supply and disconnecting one of the modulating solenoid leads, then restore the electricity supply and fully open a DHW tap to light the appliance at minimum gas rate.
- Set the minimum pressure with reference to *Tables 4* by holding nut (B) in position with a 10 mm spanner and rotating the plastic screw (A) with a screwdriver until the correct pressure is obtained. Turn the screw clockwise to increase the pressure or anti-clockwise to decrease it. It is essential that the max pressure has been set prior to adjusting the minimum pressure. Check that the minimum pressure is correctly set by turning on and off the D.H.W. inlet valve several times and ensuring that the pressure returns to that previously adjusted;
- Isolate the power supply, re-connect the modulation lead, restore the power and re-check the maximum pressure, then re-fit the plastic cover (1).
- Reduce the D.H.W. draw off rate to the minimum necessary to maintain the burner alight by carefully adjusting the D.H.W. Inlet valve and check that the burner pressure decreases in response to D.H.W. temperature rise. Fully open the inlet valve;
- Close the D.H.W. tap and ensure that the burner is extinguished and the pump stops.
- Adjust the Central Heating maximum pressure as described in section 4.1.



8.7 AIR PRESSURE SWITCH

- Remove the casing front panel and sealed chamber front panel as described in section 5.1.
- Disconnect the pressure sensing pipe from the switch.
- Remove the switch (two screws) and fit the new one.
- Transfer the electrical connections one at a time (to ensure that they are not incorrectly re-fitted) to the new switch.
- Re-assemble in reverse order referring to the wiring diagrams (section 7) if necessary. Ensure that the pressure sensing lead is correctly connected to the low pressure connection on the pressure switch (marked P2).

8.8 OVERHEAT THERMOSTAT

The overheat thermostat is situated on the flow pipe, below the sealed chamber (11 fig. 3).

- Remove the casing front panel as described in section 5.1.
- Disconnect the two overheat thermostat wires.
- Unscrew the two limit thermostat fixing screws and remove the thermostat.
- Replace the thermostat and spread heat sink compound (supplied) over the base of the new one.
- Re-assemble in reverse order (Polarity is immaterial).

8.9 THERMISTOR

The thermistor is placed over the main exchanger.

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system and drain the appliance through the drain plug (14 fig 2).
- Pull off the electric connection, and unscrew the thermistor from the exchanger.
- Replace the thermistor and re-assemble in reverse order. *Table 8* shows the resistance values (Ω) that are obtained on the sensor as the temperature varies.

TABLE 8

Temperature (°C)	Resistance (Ω)
20	12,090
30	8,313
40	5,828
50	4,161
60	3,021
70	2,229
80	1,669

8.10 DRIVER PCB

- Remove the casing front panel as described in section 5.1.
- Open the control panel protecting cover by removing the four fixing screw.
- Pull off the potentiometer knobs.
- Release the PCB (four screws), transfer all connections onto the new PCB, and re-assemble in reverse order.
- Re-set the CH burner pressure as described in section 4.3.

8.11 PUMP MOTOR

- Remove the casing front panel as described in section 5.1.
- Unplug the electrical connection plug.
- Isolate the boiler from the system and drain the appliance through the drain plug (14 fig 2).
- Unscrew the four fixing screws on the motor.
- Replace the pump motor and re-assemble in reverse order. If the new pump is fitted with a speed adjuster, ensure that the speed is set to maximum.
- Refill and commission the system as described in section 4.1.

8.12 D.H.W. HEAT EXCHANGER

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system.

- Drain the appliance through the drain point (14 fig. 2).
- Drain the D.H.W. circuit by opening any D.H.W. tap below the level of the boiler.
- Lift off the microswitch assembly.
- Remove the three screws fixing the D.H.W. heat exchanger and remove the heat exchanger.
- Fit new heat exchanger and re-assemble in reverse order using the new gaskets supplied with the heat exchanger.
- Refill and re-commission the system as described in section 4.1.

8.13 DIVERTOR VALVE - COMPLETE

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system.
- Drain the appliance through the drain point (14 fig. 2).
- Drain the D.H.W. circuit by opening any D.H.W. tap below the level of the boiler.
- Lift off the microswitch assembly.
- Remove the three screws fixing the D.H.W. heat exchanger and remove the heat exchanger.
- Pull out the divertor valve circlip and remove the valve.
- Transfer the electrical connections onto the new valve. If necessary, refer to the wiring diagrams in section 7.
- Re-assemble in reverse order, using the new gaskets supplied with the valve.
- Refill and re-commission the system as described in section 4.1.

8.14 DIVERTOR VALVE - MICROSWITCH ASSEMBLY

- Remove the casing front panel as described in section 5.1.
- Remove the two screws pivot the control box downwards.
- Lift off the microswitch assembly.
- Transfer the electrical connections onto the new microswitch assembly. If necessary refer to the wiring diagrams in section 7.
- Re-assemble in reverse order.

8.15 C.H. EXPANSION VESSEL

Replacement is not recommended if a rear flue outlet is used or if the clearance above the casing is less than 300 mm.

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system and drain the appliance through the drain plug (14 fig 2).
- Unscrew the expansion vessel union on the C.H. return pipe.
- If a rear flue outlet is used it is necessary to disengage the flue and air duct temporarily. Refer to section 3.5.
- Remove the adjusting screws on the wall mounting bracket thereby allowing the appliance to move slightly forwards at the top.
- Lift the expansion vessel out of the appliance through the top.

- Replace the expansion vessel and re-assemble in reverse order. Re-pressurise and re-commission the system as described in section 4.1.

8.16 PRESSURE/TEMPERATURE GAUGE

- Remove the casing front panel as described in section 5.1.
 - Isolate the boiler from the system.
 - Drain the appliance through the drain point (14 fig. 2).
 - Remove the circlip securing the pressure sensor to the hydraulic group and pull out the sensor.
 - Remove the fixing spring of the thermometer bulb from the C.H. flow pipe.
 - Squeeze the gauge to depress the retaining clips, then ease the gauge forwards.
 - Reassemble in reverse order.
- Refill and re-commission the system as described in section 4.1.

8.17 SAFETY VALVE

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system.
- Drain the appliance through the drain point (14 fig. 2).
- Remove the circlip securing the valve to the hydraulic group and remove the valve.
- Fit the new safety valve and re-assemble in reverse order. Refill and re-commission the system as described in section 4.1.

8.18 AUTOMATIC AIR VENT

- Remove the casing front panel as described in section 5.1.
- Isolate the boiler from the system.
- Drain the appliance through the drain point (14 fig. 2).
- Remove the circlip securing the automatic air vent to the hydraulic group.
- Fit the new automatic air vent and re-assemble in reverse order. Refill and re-commission the system as described in section 4.1.

8.19 TIME CLOCK (IF FITTED)

- Remove the casing front panel as described in section 5.1.
- Open the control panel protecting cover by removing the four fixing screws.
- Pull off the electrical connections at the back of the clock.
- Remove the two screws securing the plastic frame of the time clock to the fascia panel.
- Remove the plastic frame and pull out the time clock.
- Re-assemble in reverse order and test the operation of the new clock.
- Set it to the desired settings as described in section 4.3.

User instructions

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1.4	MINIMUM CLEARANCES	
1.5	ROUTINE SERVICING	26
1.6	GENERAL INFORMATION	
1.7	SAFETY	
1.8	TIME CLOCKS (optional)	

OPERATING INSTRUCTIONS FOR THE USER

It is the law that all gas appliances are installed by a registered person, in accordance with the above regulations. Failure to install appliances correctly could lead to prosecution. It is in your own interest, and that of safety, to ensure that the law is complied with. **It is essential that the appliance is correctly earthed. An electricity supply of 240 V - 50 Hz fused at 3 A is required.** Read these instructions carefully before attempting to operate the appliance.

1.1 INTRODUCTION

The Sime "FORMAT 34E - 34I BF" family is a fully automatic, wall mounted, room sealed, fan assisted range of combination boilers.

The appliance provides central heating as required and produces instantaneous hot water upon demand.

The heat output is automatically controlled by the fully modulating gas valve (within its pre-set limits), and there is user adjustable potentiometer to control the temperature of central heating.

A pressure gauge is fitted and an overheat thermostat is incorporated to protect against fault conditions.

1.3 OPERATING INSTRUCTIONS

1.3.1 To light the appliance (see fig. 24)

- Check that the electricity supply is off and that the D.H.W. isolation valve is in the open position (lever vertical). Check that the gas supply is on.
- Turn the selector switch summer/winter (C) to SUMMER (water only) position "☀".
- Switch on the electricity supply and full open any D.H.W. tap. The burner will light.

Check that the burner has lit by looking through the viewing window (F). If the burner fails to light, turn the selector switch summer/winter to "🔥" position and release it immediately; then turn it to the SUMMER position: the burner should now light. Turn off the tap.

- Check that the room thermostat and time clock are call-

ing for heat. Turn the heating potentiometer (D) to maximum (fully clockwise).

- Turn the selector switch summer/winter to the WINTER position "❄" and the burner will light to serve the heating load. Set the required temperature for the C.H. and D.H.W. by rotating the potentiometers (D - E) clockwise to increase or anticlockwise to decrease the temperature.

NOTE: when operating in winter mode, priority is automatically given to providing hot water when the demand arises.

1.3.2 To turn the appliance off (see fig. 24)

- **For short periods:**
Set the selector switch summer/winter (C) to OFF position. When required restore the switch to the SUMMER or WINTER position and turn on the D.H.W. isolation valve.
- **For longer periods:**
Set the selector switch summer/winter (C) to OFF position and isolate the gas service cock. When required restore the switch to the WINTER or SUMMER position and turn on the D.H.W. isolation valve. Do not isolate the mains electricity or gas supply if frost protection is required.

NOTE: when gas and electrical supplies must be turned off, the entire system should be drained, including the domestic water system.

1.4 MINIMUM CLEARANCES MODEL "34I BF"

The following MINIMUM CLEARANCES must be available for servicing the appliance:

	For ventilation	For servicing
ABOVE THE APPLIANCE CASING	400 mm	300 mm
AT THE R.H.S.	15 mm	15 mm
AT THE L.H.S.	15 mm	15 mm
BELOW THE APPLIANCE CASING	200 mm	200 mm
IN FRONT OF THE APPLIANCE	100 mm	500 mm

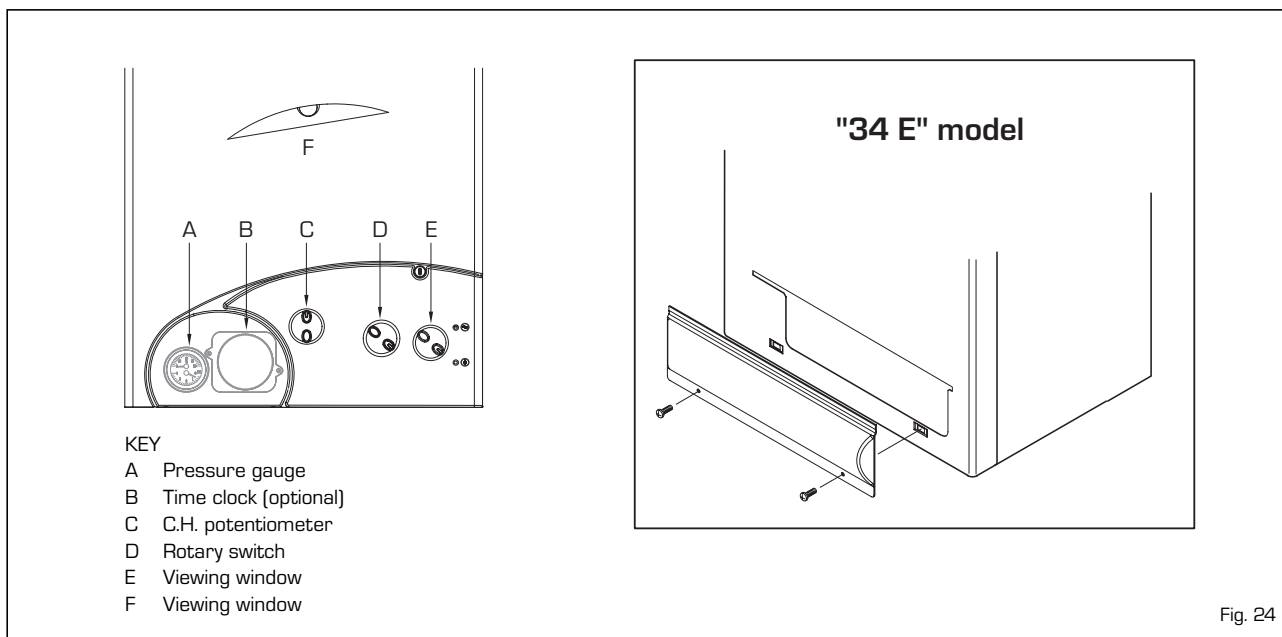


Fig. 24

1.5 ROUTINE SERVICING

To ensure continued efficient operation of the appliance, it is recommended that it is checked and serviced as necessary at regular intervals.

The frequency of servicing will depend upon the particular installation conditions and usage but in general once a year should be adequate. It is the law that any service work must be carried out by a registered person.

1.6 GENERAL INFORMATION

1.6.1 Fault finding indicators (LEDS)

The appliance is fitted with a safety cut-out thermostat. In the event of overheating this will interrupt the power supply and prevent the appliance from functioning.

If this occurs, allow the appliance to cool, turn the selector switch summer/winter to "🔥" position and release it immediately, then turn it back to the previous position (see fig. 25). If the cut-out condition is repeated, turn off the electrical supply and consult your installer or service engineer.

1.6.2 Temperature/pressure gauge

The gauge (A fig. 24) on the fascia panel indicates the approximate system pressure. If the normal running pressure is seen to decrease over a period of time there is a water leak and you should consult your installer or service engineer.

1.6.3 Electrical supply

The mains plug used must be a 3 pin type to BS1363, and fused at 3 A. THIS APPLIANCE MUST BE EARTHED.

NOTE: an interruption in the electricity supply whilst the burner is alight may cause the overheat thermostat to operate. If this is suspected, turn the rotary switch to "🔥" position and release it immediately, then turn it back to the previous position.

TO CONNECT A PLUG

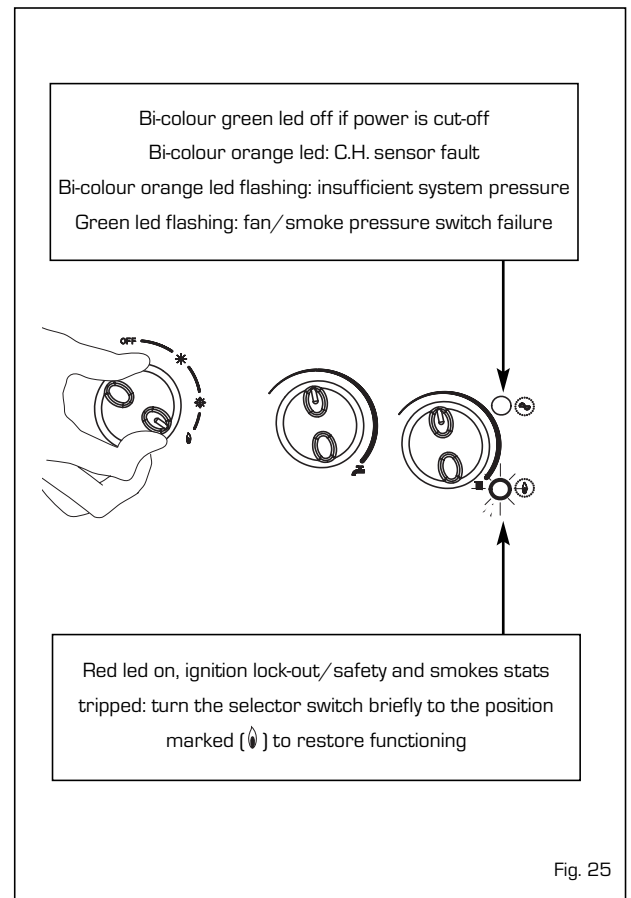
As the colour of wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

the wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol - or coloured green and yellow; the wire which is coloured blue must be connected to the terminal marked with the letter N or coloured black; the wire which is coloured brown must be connected to the terminal marked with the letter L or coloured red.

1.6.5 Ventilation

If the appliance is installed in a cabinet, the latter MUST NOT be used for storage purposes. Any ventilation provided for the appliance during installation

MUST NOT be blocked and a periodic check must be made to ensure that the vents are free from obstructions.



1.6.6 Cleaning

Use only a damp cloth and mild detergent to clean the appliance outer casing. DO NOT use abrasive cleaners.

1.7 SAFETY

It is essential that the instructions in this booklet are strictly followed for the safe and economical operation of this appliance.

The appliance functions as a fan assisted balanced flue unit.

The flue terminal MUST NOT BE OBSTRUCTED under any circumstances.

If damaged, turn off the appliance and consult the installer, service engineer, or gas supplier. If it is known or suspected that a fault exists on the appliance it MUST NOT be used until the fault has been rectified by a competent person.

WARNING:

IF A GAS LEAK IS SUSPECTED OR EXISTS, TURN OFF THE GAS SUPPLY TO THE APPLIANCE AT THE GAS SERVICE COCK. DO NOT OPERATE ANY ELECTRICAL SWITCHES. DO NOT OPERATE ANY ELECTRICAL APPLIANCE. OPEN ALL WINDOWS AND DOORS. DO NOT SMOKE. EXTINGUISH ALL NAKED LIGHTS. CONTACT THE GAS SUPPLIER IMMEDIATELY.

1.8 TIME CLOCK OPTIONAL (fig. 26)

Setting the time

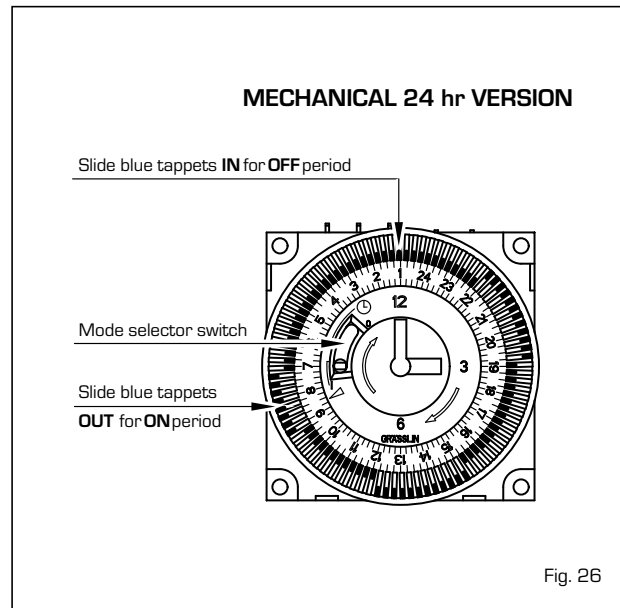
The time of day can be set by grasping the outer edge of the black dial and turning it in a clockwise direction until the correct time is in line with the white pointer.

Setting the "switching time"

The "ON" periods are set by sliding the blue tappets, adjacent to the time periods required, to the outer edge of the dial. The tappets that remain at the centre of the dial will be the "OFF" periods.

N.B.: The smallest switching time (ON or OFF) is 15 minutes.

- To select "**Timed**" mode move the selector switch in the middle of the clock face to the "⊕" position.
- To select "**Constant**" mode move the selector switch in the middle of the clock face to the "I" position.
- To select "**OFF**" mode move the selector switch in the middle of the clock face to the "O" position.



WARRANTY - SIME CENTRAL HEATING BOILERS

This Warranty is granted to you by Hunt Heating A.C.N. 000 013 927, in respect of your acquisition of a Sime Central Heating Boiler within the Commonwealth of Australia. This Warranty does not in any way affect your rights under any Trade Practices Act, and is in addition to your implied legal rights.

Provided that the installation of the boiler is in accordance with the specifications provided to you or your licensed instal-

ler, the boiler is warranted by Hunt Heating against defects caused by the manufacturers faulty materials and/or workmanship, in respect to parts and labour, for a period of twelve months commencing from the date of commissioning of the boiler.

The Licensed Installer must complete the following information. Failure to do so may cause the above Warranty to become null and void.

MODEL NO.: _____

SERIAL NO.: _____

GAS TYPE: _____

DATE OF INSTALLATION: _____

INSTALLER NAME & ADDRESS: _____

FOR WARRANTY AND SERVICE:

Ring: 9 558 7077
HUNT HEATING
10 Garden Boulevard
DINGLEY - VICTORIA - 3172

HUNT HEATING

HYDRONIC SYSTEMS (Australia) PTY. Ltd.
11 Fiveways Boulevard, Keysborough, Victoria 3173
Telephone 1300 00 1800 - Facsimile 9798 5133
www.huntheat.com.au