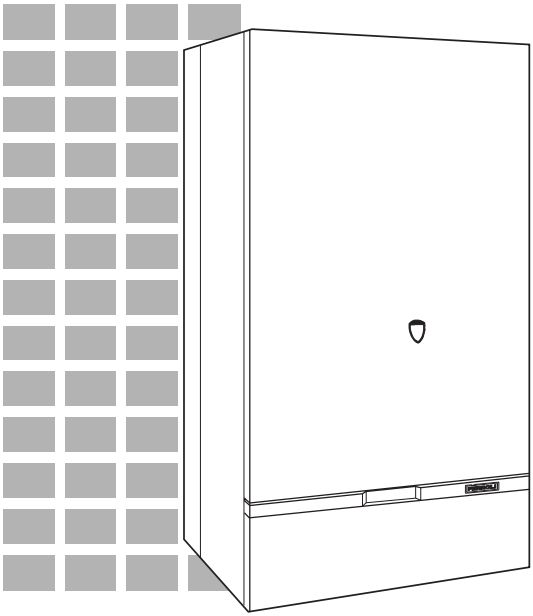
Nouvelle Elite 100

WALL MOUNTED, NATURAL DRAUGHT GAS COMBINATION BOILER



TECHNICAL INFORMATION INSTALLATION and SERVICE INSTRUCTIONS

Phone numbers:

Installer _____

Service Engineer _____

LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER

ALL SPECIFICATIONS SUBJECT TO CHANGE

NOTE - Technical details involving gas compositions refer to standard gas only.

GENERAL INFORMATION ON INSTALLATION

Gas Safety (Installation and Use) Regulations

It is law that all gas appliances are installed by competent persons, in accordance with the Regulations. Failure to install appliances correctly could lead to prosecution.
It is in your own interest, and that of safety, ensure thet the law is complied with. Manufacturers instruction must NOT be taken in any way as over-rideing statutory obligations.

NOTE - Technical details involving gas compositions refer to standard gas only.

WALL MOUNTED, NATURAL DRAUGHT
GAS COMBINATION BOILER

Technical Information

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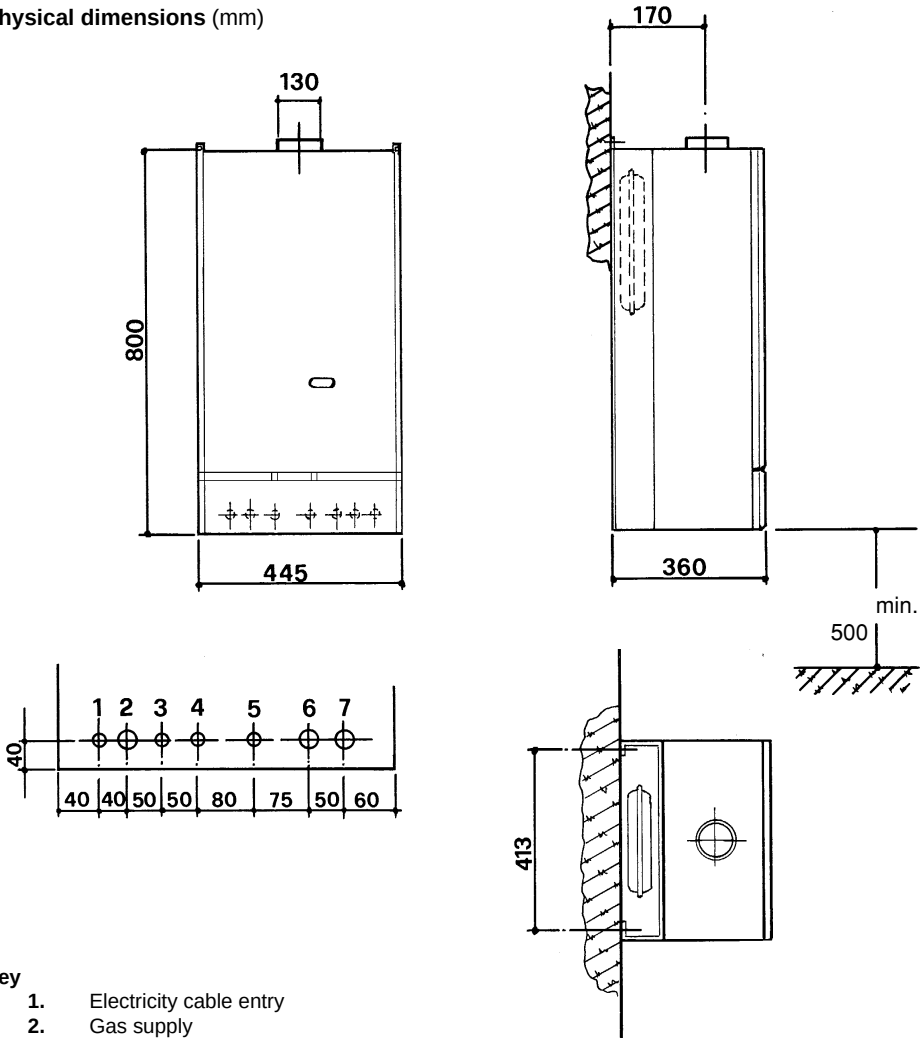
Technical data

	NATURAL GAS (G20)	LPG	PROPANE (G31)
Nominal heat input (combined C.H. & D.H.W.)	25.8 kW	25.8 kW	25.8 kW
Nominal heat output (combined C.H. & D.H.W.)	23.3 kW	23.3 kW	23.3 kW
Minimum heat out. (combined C.H. & D.H.W.)	9.3 kW	9.3 kW	9.3 kW
Gas rate (nominal)	2.73 m^3 S/h	/	1.983 kg/h
Burner setting pressure	13 mbar (max)	28 mbar (max)	36 mbar (max)
Minimum burner pressure	2.5 mbar (min.)	7 mbar (min.)	8 mbar (min.)
Main injector Ø	2.25 mm	1.20 mm	1.20 mm
Pilot injector Ø	0.51 mm	0.25 mm	0.25 mm
Dimensions (o/all)			
Height	800 mm		
Width	445 mm		
Depth	360 mm		
Weight (net)	45 kg		
Weight (gross)	47 kg		
Flue duct: nominal size	130 mm		
Electric supply:	230 V 50 - Hz		
Fuse rating:			
Mains	3 Amp. (main fuse)		
on P.C.B. in boiler	1 Amp. Fast		
Power requirement	160 Watts		
Domestic hot water flow:			
(25 ÷ 30° C rise)	13÷11 l/min.		
Safety valve pressure setting	3 bars		
Minimum incoming mains flow	2.5 l/min.		
Maximum domestic cold water			
Inlet pressure:	5.0 bars		
Expansion vessel capacity	7 litres		
Min. heating circuit pressure	0.8 bars		
Max. heating circuit pressure	3.0 bars		
Boiler water capacity:			
Heating	1.5 litres		
Domestic hot water	0.5 litres		
Pipe connections:			
Gas	3/4 in. BSP		
Domestic cold water inlet	1/2 in. BSP		
Domestic hot water outlet	1/2 in. BSP		
Central heating flow	3/4 in. BSP		
Central heating return	3/4 in. BSP		
Pressure relief valve drain	1/2 in. BSP		
Min. installation clearances. Sides:			
Left hand	20 mm		
Right hand	20 mm		
Front	50 mm		
	(plus access for service)	**NOTE -** LPG is a mixture of Propane	
and			
Min height from worktop to base	300 mm	Butane.	

Physical dimensions (mm)



Key

1. Electricity cable entry
2. Gas supply
3. Domestic hot water outlet
4. Domestic cold water inlet
5. Central heating pressure relief valve
6. Central heating flow outlet
7. Central heating return inlet

Fig. 4

Note - Without C.H. expansion vessel, the pipework can pass up the back of the boiler.

Important components

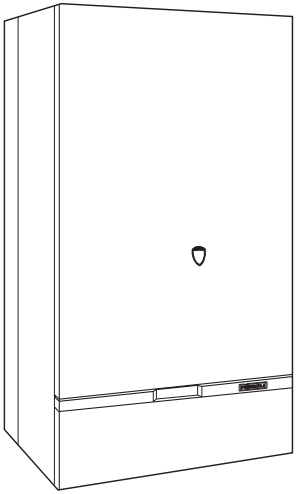


Fig. 2

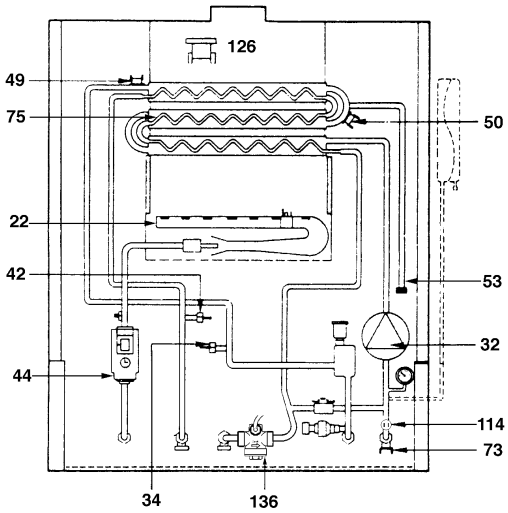


Fig. 1

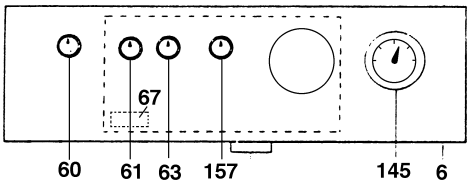
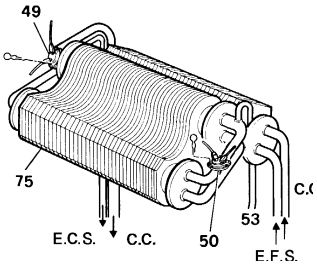


Fig. 3



On control panel **6**
60 - Extended control knob gas valve
61 - C.H./D.H.W. selector switch
63 - C.H. boiler thermostat
67 - Ignition transformer
68 - Control box with P.C.B.
145 - C.H. pressure gauges
157 - D.H.W. boiler thermostat

Inside the boiler
22 - Burner (4)
32 - Central heating pump
40 - Filling cock
44 - Combination gas valve
75 - Copper heat exchanger for C.H. + D.H.W.
114 - Water flow switch
126 - Flue gas safety thermostat
136 - Flowmeter

General description

The **Nouvelle Elite 100** is wall mounted, natural draught, combination boiler for central heating and domestic hot water. The boiler is of light weight construction and the unit provides central heating and domestic hot water from an integrally designed double heat exchanger. The appliance is suitable for sealed systems only, and is not suitable for external installation. An expansion vessel is incorporated. The wall mounting jig contains connections for the water and gas supplies. This can be fitted to the wall and provides all the necessary gas and water connections prior to the boiler being attached.

Important details

22 Stainless Steel gas burner for the complete and safe combustion of Natural Gas (and on request L.P.G.).

32 Central heating pump with 3 speed switch, perfectly adaptable to the nature of the central heating system. This avoids necessary electrical power consumption and noise problems.
The pump is switched ON/OFF by the time clock (if fitted) and/or a 24 Volt room thermostat.
The pump circuit also has a 6 minute over/run time.

40 Filling cock for to fill the central heating system from Domestic Cold Water net.

44 Combination gas valve, providing on/off and modulating control of the gas burner.

61 Selector switch with 4 positions:
- Off
- Domestic hot water only
- Domestic hot water and central heating
- Test (Lighting)

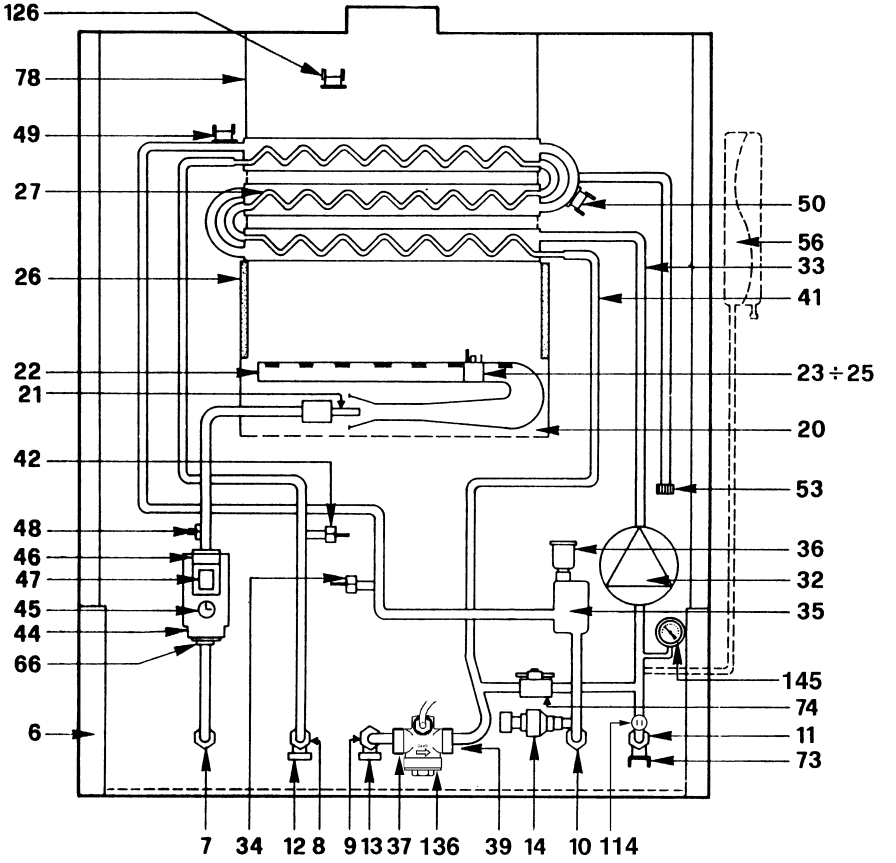
68 Control box with printed circuit board (P.C.B.). The central heating and the domestic hot water temperature is controlled by the Honeywell Modureg gas valve (**44**) in conjunction with the P.C.B. and the two sensor for C.H. (**34**) and D.H.W. (**42**). The C.H. temperature can be set with the C.H. boiler stat (**63**). The D.H.W. temperature is factory set on the P.C.B. There is a limit thermostat (**50**) on the central heating circuit which operates at 85° C. There is also on overheat cut/off thermostat (**49**) which will shut the boiler and pilot down completely at 100° C. On the P.C.B. the maximum output for central heating can be set. This does not influence the maximum output for domestic hot water!

73 Frost thermostat to protect the boiler in winter conditions. This thermostat activates the boiler as soon as the heat exchanger temperature is too low, regardless of position of the controls (optional).

75 Copper heat exchanger for C.H. and D.H.W. The central heating water and domestic water are heated up directly by the gas flame (in separatd circuits of course).
This system provides quick response (instantaneous), avoids heat losses and makes heating and domestic hot water completely independant.

126 Flue gas safety thermostat which switches off the burner (pilot included) in case of flue losses under the draft diverter (f.e. chimney blocked).

136 There is a domestic flowmeter fitted and when there is a demand for domestic hot water (flow of more than 0,5 gallon/minute, 2.5 litres/minute) the central heating pump is switched off, making available the maximum output of the gas burner for domestic hot water.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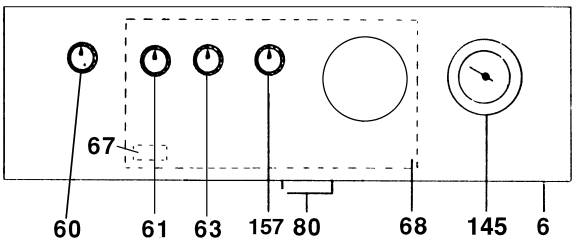
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Key to boiler flow diagram

6. Control panel
7. Gas inlet
8. Domestic hot water outlet
9. Cold water inlet
10. Central heating flow outlet
11. Central heating return inlet
12. D.H.W. draining point
13. Cold water draining point
14. Central heating safety valve
20. Burner assembly
21. Main injector
22. Burner
23. Thermocouple
24. Spark electrode
25. Pilot
26. Combustion chamber insulation
32. Central heating pump
33. C.H. waterway of the heat exchanger
34. C.H. flow temperature sensor
35. Air separator
36. Automatic air vent
37. Cold water inlet filter
39. Cold water flow limiter
40. Filling cock
41. D.H.W. waterway of the heat exchanger
42. D.H.W. temperature sensor
44. Combination gas valve
45. Knob gas valve
46. Operator gas valve
47. Modulating regulator (Modureg) gas valve
48. Burner pressure test point
49. Overheat cut-off thermostat 100° C
50. Heat exchanger limit thermostat 85° C
53. Heat exchanger venting point
56. Expansion vessel
60. Extended control knob to gas valve
61. C.H./D.H.W. selector switch
63. C.H. boiler thermostat
66. Microswitch combination gas valve
67. Ignition transformer
68. Control box with P.C.B.
73. Frost thermostat predisposition
75. Copper heat exchanger for C.H. + D.H.W.
78. Draft diverter
80. Five pole terminal block (230 V + 24 V)
114. Water flow switch
126. Flue gas safety thermostat
136. Flowmeter
145. C.H. pressure gauges
157. D.H.W. boiler thermostat

Domestic Hot Water Performance

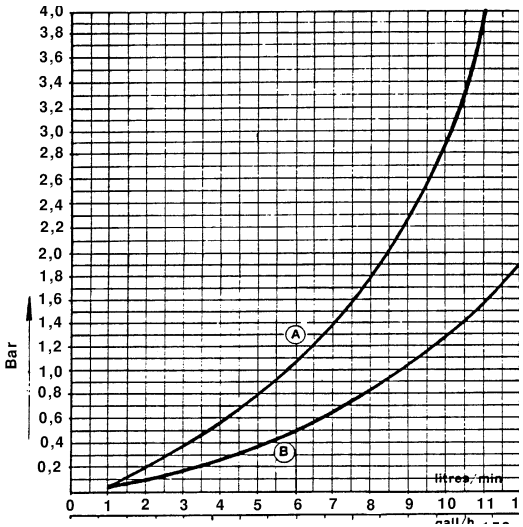


Fig. 1

Fig. 1 - D.H.W. Pressure Drop VS. flow
A = Standard with cold water Flow Restricter.
B = Cold Water Flow Restricter Removed.

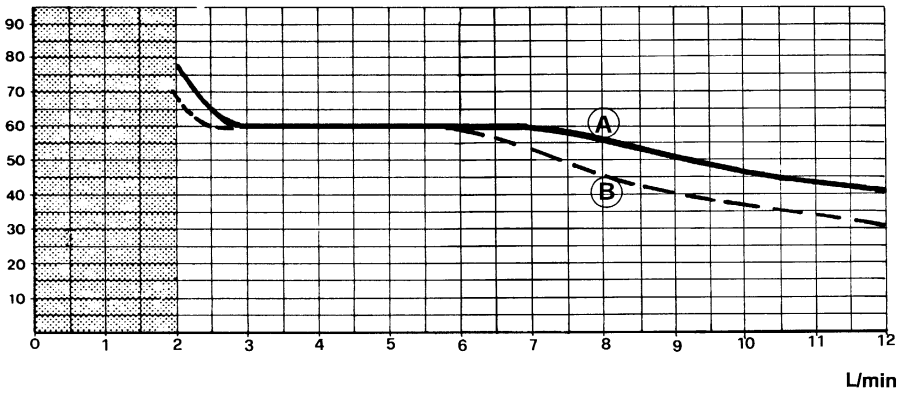


Fig. 2

Fig. 2 - D.H.W. temperature VS. flow
A = Cold Water 15° C
B = Cold Water 5° C

Pump performance curve + Bypass C.H.

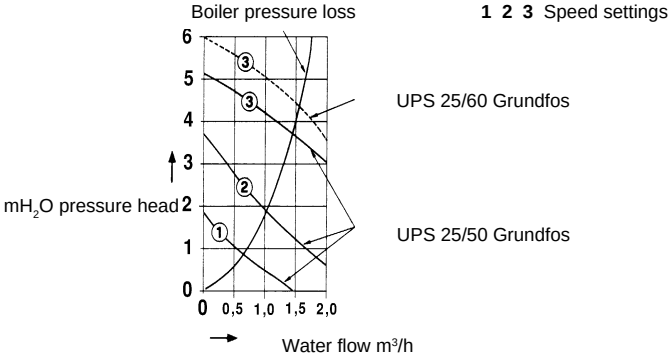


Fig. 1

NOTES:
Additional expansion vessel (if required), must be fitted to Central Heating Return Inlet (fig. 2).
A bypass as far as possible from boiler is necessary if all radiators have Thermostatic Radiator Valves (fig. 2).
Check automatic air vent (fig. 3).
Always chack if shaft of pump is not locked.
Set C.H. pressure to minimum of 1,0 bar (by preference to 1,5 bar).
Use the filling cock (fig. 3).

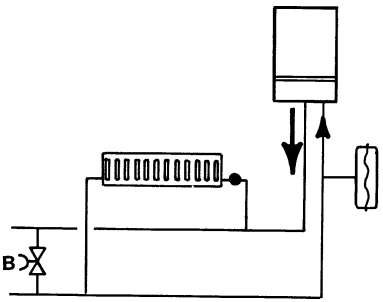


Fig. 2

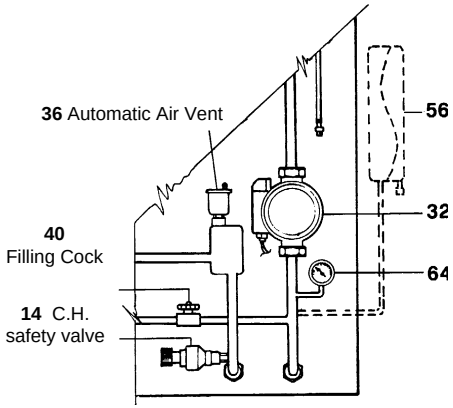
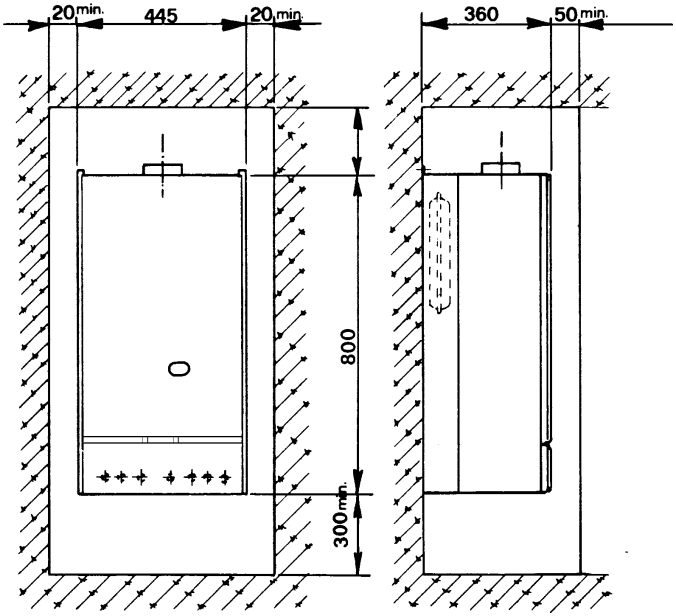


Fig. 3

Installation Details

Minimum clearances



Attention - Flue must be removable for replacement of expansion vessel.

Access to the front of the boiler must be available for maintenance!

If the boiler is installed (for example) in hair dressers premises, ventilation must not be from areas which aerosol hair spray is being used. Any spray or materials emitting volatile vapours can be a sourge of ignition from the permanent pilot of the boiler. Propellants of aerosol sprays and fumes of volatile compounds in addition to being highly flammable in many cases, will also change to corrosive hydrochloric acid when expose to the products of combustion of the boiler. The results may be hazardous, cause service problems, product failure and corrosion problems.

Effect of an extract fan
If there is any type of extract fan fitted in the premises, there is the possibility with open flued appliances, that if inadequate fresh air vents are not provided, spillage of products from the flue diverter could take place, when the fan is in operation. Where such installations are found, a test for spillage must be carried. A room sealed, fan assisted gas combination boiler will give a more safe installation.

Air supply

The following notes are intended to give guidance only.

Room or internal air space supply:

The **Nouvelle Elite 100** requires a permanent air vent for combustion air either from the room direct to outside air or to an adjacente room which must itself have a permanent air vent of the same size, direct to outside air. The minimum size of this air vent must be: 94 cm^2 free a (14 in^2). A proprietry air vent may be murked with its effective free area, if not, this information can usually be supplied by the maker. The vent should be designed to diffuse the air in windy conditions and should be sited to reduce room draughts, i.e. at top level. The aperture in the vent should not pass preferably, a 10 mm (3/8 in.) ball but allow the entry of a 5 mm (3/16 in.) ball. (Additional gauzes or screens should not be used). Existing air vents should be taken into account when accessing air vent requirements. An air vent in an internal wall should not communicate with a bedroom, toilet, bathroom or kitchen and should not be more than 450 mm (18 in.) above floor level in order to reduce the spread of smoke in the event of a fire. An air vent direct to outside air must not be located less than 600 mm (2 ft.) away from any part of an open flued terminal nor less than 300 mm (12 in.) directly above any part of a balanced flue terminal.

Cupboard or compartment air supply:

If the appliance is to be installed in a compartment or cupboard if existing, it should be of sufficient size. This compartment or cupboard must have permanent air vents for combustion air, flue dilution and cooling purposes, the vents being positioned at high and low level. The following minimum size of air vents (free area) are required:

Position of Air vent	Air from room or internal space	Air direct from outside
High	252 cm^2 (38 in^2)	126 cm^2 (19 in^2)
Low	504 cm^2 (76 in^2)	252 cm^2 (38 in^2)

Note - Bot air vents must communicate whit the same room or must be on the same outside all to outside air. Where cupboard/compartment air vents are open to a room, the room itself must have a permanent air vent(s) as previously specified.

Flue system

The following notes are intended for general guidance. The cross sectional area of flue serving the boiler must not be less than the area of the flue outlet of the appliance. The boiler has a flue spigot designed for aluminium or stainless steel flue pipe. If double walled flue pipe is used, it should be of a suitable type. Always use a split flue clip or flanged joint above the flue diverter to allow the removal of the boiler. A vertically rising flue above the diverter for a minimum length of 600 mm (2 ft.) is required before any bend is fitted, which should not be a 90° pattern. The flue pipe must be adequately supported and not be contact whit any inflammable material. If any existing chimney is to be used, it should be lined with a stainless steel flexible liner. The number of metal flue liner joints should be kept to the minimum for connecting the boiler to an existing flue, the flue must be clean of any soot or loose material. Dampers must be removed. The flue should be, as far as is practical, vertically rising with the avoidance of horizontal runs. The metal flue pipe listed above should form the initial connection from the boiler to the existing chimney (and liner).

If the boiler is installed (for example) in hair dressers premises, ventilation must not be from areas which aerosol hair spray is being used. Any spray or materials emitting volatile vapours can be a sourge of ignition from the permanent pilot of the boiler. Propellants of aerosol sprays and fumes of volatile compounds in addition to being highly flammable in many cases, will also change to corrosive hydrochloric acid when expose to the products of combustion of the boiler. The results may be hazardous, cause service problems, product failure and corrosion problems.

Typical Installation of Pipe Work, Bypass and fitting additional expansion vessel C.H.

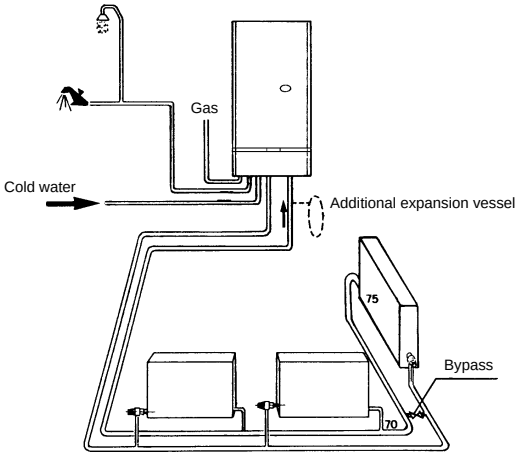


Fig. 1

Important - Fit bypass as far as possible from boiler if thermostat radiator valves are fitted.

NOTE:

1. Fill C.H. installation to min. 1,5 bar
2. Select by preference the expansion vessel for increased system pressure of 2,0 bar
3. Expansion vessel must be fitted to Central Heating Return Inlet
4. The standard 7 litres expansion vessel is charged to 1 bar

Sizing of additional expansion vessels:

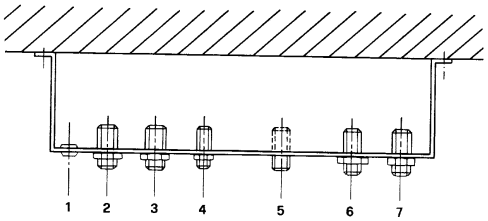
Deduct from the value given in the table the 7 litre vessel supplied.

SAFETY VALVE SETTING (bar)	3.0					
VESSEL CHARGE PRESSURE (bar)	0.5			1.0		1.5
INITIAL SYSTEM PRESSURE (bar)	1.0	1.5	2.0	1.5	2.0	2.0
TOTAL WATER CONTENT of SYSTEM	**EXPANSION VESSEL VOLUME (litres)**					
LITRES						
25	3.5	6.5	13.7	4.7	10.3	8.3
50	7.0	12.9	27.5	9.5	20.6	16.5
75	10.5	19.4	41.3	14.2	30.9	24.8
100	14.0	25.9	55.1	19.0	41.2	33.1
125	17.5	32.4	68.9	23.7	51.5	41.3
150	21.0	38.8	82.6	28.5	61.8	49.6
175	24.5	45.3	96.4	33.2	72.1	57.9
200	28.0	51.8	110.2	38.0	82.4	66.2
For syst. volumes other than those given above, mult. the syst. volume by the factor across	0.140	0.259	0.551	0.190	0.412	0.33

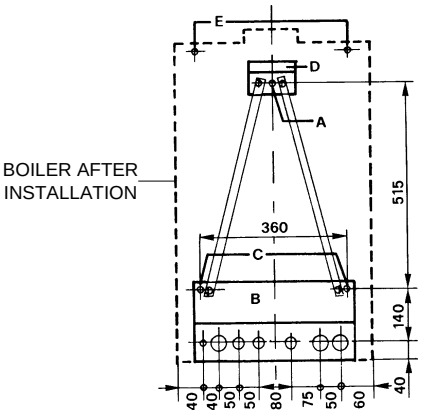
Jig assembly (optional)

Important Note - Always use two spanners to prevent twisting of soft copper pipework.

Use of the jig assembly (fig. 1)
Put in position the jig assemblying on the wall. By using a spirit level, check the bottom frame B be in horizontal position.

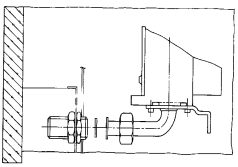


2-6-7 = 3/4" **3-4-5 = 1/2"**

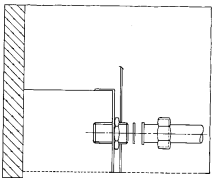


1 = Electric cable entry
2 = Gas supply 3/4"
3 = Domestic hot water outlet 1/2"
4 = Domestic cold water inlet 1/2"
5 = Outlet Central Heating safety valve 1/2"
6 = Central Heating flow outlet 3/4"
7 = Central Heating return inlet 3/4"

Fig. 2 - Example of connection to the boiler

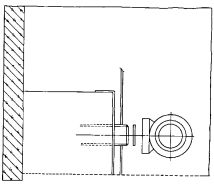


2 = Gas 3/4"
Note - Rubber seal on Gas!

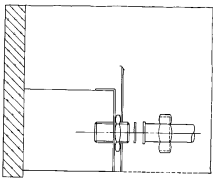


3 = Domestic Hot Water outlet 1/2"

4 = Domestic Cold Water inlet 1/2"



5 = Outlet Central Heating safety valve 1/2"

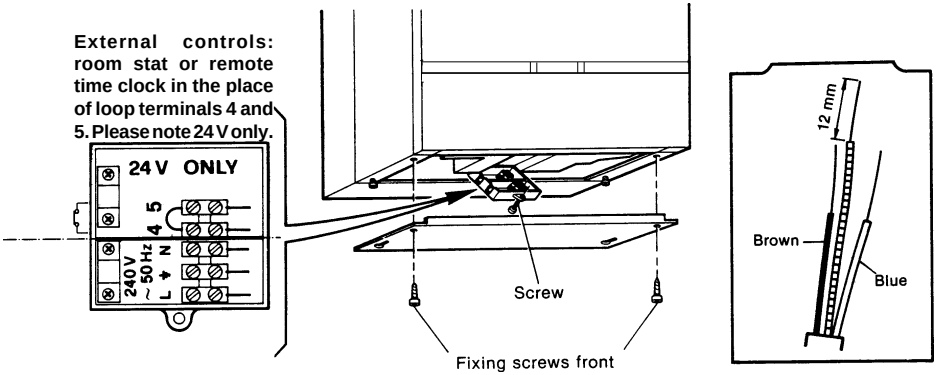


6 - 7 = Central Heating Flow and return 3/4"

Important Note - To connect the boiler to service cocks or to the pipeworks, always use two spanners to prevent twisting of soft copper pipework.
Note 1 - Without expansion vessel, the pipework can pass up the back of the boiler. C.H. expansion vessel can be fitted elsewhere in the system.
Note 2 - The central heating safety valve should be piped to discharge safety outside the property.

Electricity supply and external controls

Electrical installation must be carried out by a competent electrician. The appliance is to be connected to a 230/240V ~ 50 Hz supply. The supply fuse rating is 3A. The terminals are accessible after removing the white base plate and single screw securing the terminal cover.



Procedure

The supply cable must be not be no less than 0.75 mm (24 x 0.2 mm) to BS6500 table 16.
The earth conductor must be cut longer than the live and neutral.
Connect the Supply Cable to the terminal block marked 230/240 V ~ 50 Hz, L, N, the supply cable is to be connected as follows:

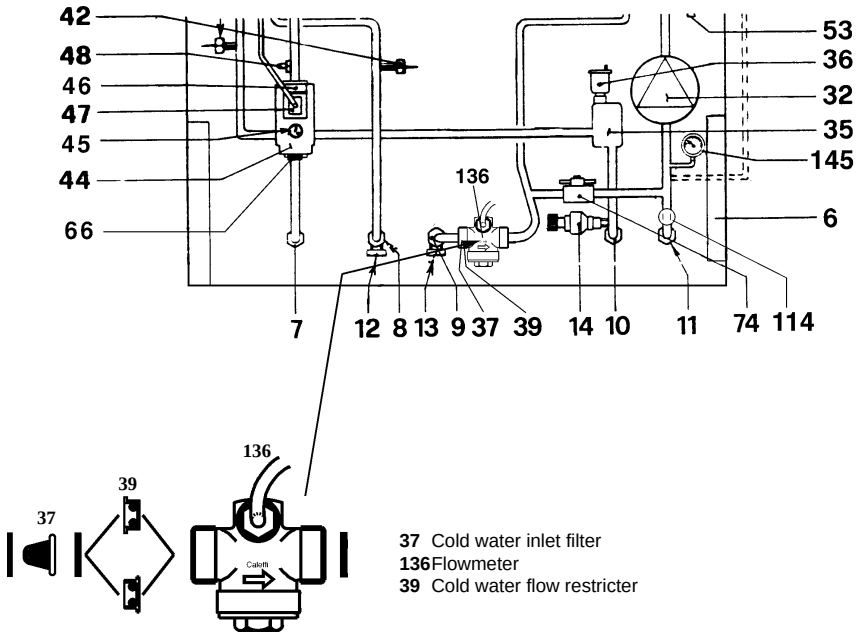
- Connect the brown wire to the L (live) terminal.
- The blue wire to the N (neutral) terminal.
- The green/yellow wire to the (earth) terminal.

Secure the cable with the cable clamp.
The supply cable can be connected to the mains supply by the use of an unswitched shuttered socket-outlet in conjunction withe the 3A fused 3 pin plug both in accordance with BS 1363. This provides complete isolation.
Alternatively, a fused double pole switch having a contact separation of at least 3 mm, in all poles and provided just for the boiler and its external controls can be used.
A wiring diagram is provided on the appliance, attached to the rear of the front panel. In addition, there is one in this manual (page 25, 26).
Attention is drawn to the requirements of the current I.E.E. Regulation and in Scotland, the electrical provisions of the Building regulations.

Room Thermostat (or remove time clock connection).
Please note that the room thermostat connection block is 24 V.
To connect mains voltage to these terminals **will seriously damage** the printed circuit board.
The room thermostat connector block is situated within the connector box. Twin core cable should be used for this connection (terminals 4 and 5).
If using a remote 230/240 Volt time clock ensure that the motor and switch connections are totally separate in the clock and that the switch connections are totally separate in the clock and that the switch connections are independent for the 24 Volt terminals (4 and 5) on the boiler.

Filling C.H. - Flushing C.H. - Descaling D.H.W.

Very important - When flushing the Domestic Hot Water part of the boiler with cleansing agent, the Flow Switch Assembly **37 - 136 - 39** must be removed.
Guarantee on the flow switch assembly **37 - 38 - 39** is void, if flushed with any cleansing agent!

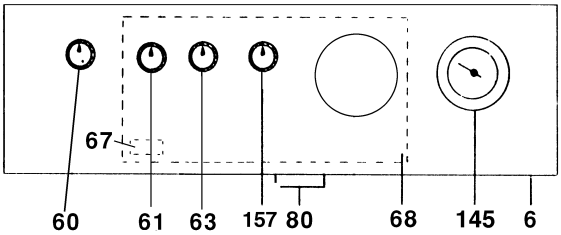


37 Cold water inlet filter
136 Flowmeter
39 Cold water flow restricter

General:

1. C.H. system should be filled with the filling cock **40** very slowly with water and prevent that air is filled within.
2. Vent radiators of C.H. regular.
3. Heat Exchanger can be vented with heat exchanger venting point **53** (do not unscrew completely).
4. Leave loose the cap of automatic air vent **36.** So air can pass!
5. Do not use the central heating safety valve **14** as a drain point.
6. It is advisable to flush and refil the C.H. system one day after the complete system has functioned at max. temperature.

General Explanation on Operation



1.0 Selector switch **61** in position **«Zero» (first position).**
• In this position the main burner remain stops, only pilot burner is alight.

2.0 Selector Switch **61** in second position **(Stand by).**
2.1 **Situation after at least 10 minutes**
• Central Heating pump is stopped.
• A frost thermostat in the boiler can activate the boiler (if fitted).
2.2 **Hot Water tap open (water flow of min. 0,5 Gallon/min. 2,5 Litres/min.).**
• At opening of a hot water tap, the burner will light
• Boiler is controlled to keep the hot water at a on the P.C.B. factory set temperature of 50° C
• Time Clock (if fitted) and Room thermostat (if fitted) will not activate the boiler.

3.0 Selector switch **61** in third position **(Domestic Hot Water and Central Heating):**
3.1 **Hot water taps closed**
3.1.1 Room stat demands for heat:
• Central heating pump will rung continuously
• Boiler thermostat **63** controls the boiler temperature in a modulating way
• Time Clock **62** if fitted influence the boiler fonctionnement.
3.1.2 If contact in Room stat breaks (Room temperature too high):
• Burner stops immediately
• Central Heating pump stops after about 5 minutes (pump overrun)
3.2 **Hot water tap open (water flow min. 0,5 Gallon/min. 2,5 Litres/min.).**
• Central heating pump stops immediately (priority to domestic hot water)
• Burner is controlled to keep the hot water at a internally factory set temperature of 50°C.

4.0 Selector switch in position **«Test».**
• In this position the burner will light even without demand for heat from the roomstat (if pilot burner is alight).

Commissioning and General Check Out

1.0 General Check before lighting.

1.1 Isolating valves open.
1.2 Central Heating system filled to min. 1,0 bar.
1.3 Central Heating pump free.
1.4 Heat exchanger vented.
1.5 Water flow D.H.W. min. 2,5 Litres/min. (0,5 Gallon/min.)
1.6 C.H. radiators vented.
1.7 Bypass C.H. open.
1.8 Gas supply purged.
1.9 Cap automatic air vent unscrewed.

2.0 Lighting

Lighting gas valve Honeywell

Before lighting, check again if central heating system is pressurised to min. 1 bar.

Ensure electric mains, gas and water are turned on.
Put selector switch in position Test.
Depress gas valve knob 60 fully, electric igniter will light pilot flame.
After lighting pilot flame: keep knob of gas valve fully depressed for 20 sec.
Release gas valve knob.
Main burner will light if hot water tap will be opened.
Set selector switch in required position.

Lighting gas valve SIT

TO LIGHT PILOT

1) Push in and turn control knob anticlockwise until symbol ✸ is in the position shown in Fig. 1

2) Fully depress control knob and hold in this position, the pilot will automatically light. (Fig. 2).

3) Keep the control knob fully depressed for 20 seconds after the pilot has lit and then slowly release.

NOTE: IF THE PILOT DOES NOT LIGHT OR GOES OUT UPON RELEASING THE ONTROL KNOB REPEAT THE ABOVE PROCEDURE

MAIN BURNER IGNITION

4) Turn control knob anti-clockwise until the symbol is in the position shown in Fig. 3, main burner will light if controls are calling for heat.

TO TURN OFF MAIN BURNER AND PILOT

5) Slightly push in control knob and turn clockwise until symbol ● is in the position shown in Fig. 4.

ATTENTION:

AFTER TURNING OFF THE MAIN BURNER AND PILOT THESE CANNOT BE RELIT FOR APPROXIMATELY 60 SECONDS.


Fig. 1

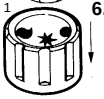


Fig. 2


Fig. 3


Fig. 4

3.0 General check.

3.1 Close hot water tap.
Main burner will extinguish.
3.2 Selector switch boiler in position:
Hot water and central heating.
Room stat at maximum (if fitted).
Boiler stat at higher position.
3.3 Circulating pump will run.
Main burner LIGHTS.
3.4 Boiler stat at min. position. Main burner extinguishes. C.H. pump keeps running.
3.5 Hot water tap open.
Water flow minimum 2,5 Liter/min.
C.H. pump stops. Main burner lights.
3.6 Hot water tap closed. Main burner extinguishes. C.H. pump starts running again.
3.7 Room stat at minimum C.H. pump stops after about 5 minutes.

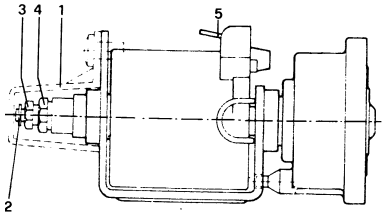
4.0 Adjustment C.H.

4.1 Adjust Central Heating Output of boiler according C.H. Installation requirement see page: C.H. output adjustment.

5.0 Explain and demonstrate the lighting and shutting down procedure to the user.

6.0 It is advisable to flush and refill the Central Heating system 1 day after the complete system has functioned at max. temperature.

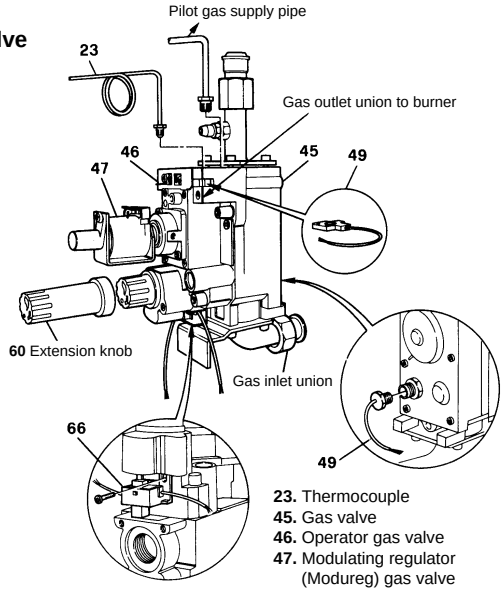
47. Modulating regulator (Modureg) gas valve



Key
1. Cap
2. Shaft
3. Adjustment screw for maximum pressure setting
4. Adjustment screw for maximum pressure setting
5. 6,3 mm AMP terminals

If necessary replace complete MODUREG

Pressure settings	Minimum		Maximum	
	mbar	inch WG	mbar	inch WG
Natural Gas	2.5	1.0	13.0	5.2
L.P.G.	8.0	3.2	36.0	14.2



23. Thermocouple
45. Gas valve
46. Operator gas valve
47. Modulating regulator (Modureg) gas valve
49. Eco Connector to overheat cut-off thermostat
66. Microswitch combination gas valve for ignition

ADJUSTMENTS AND CHECKOUT GAS VALVE HONEYWELL

Important

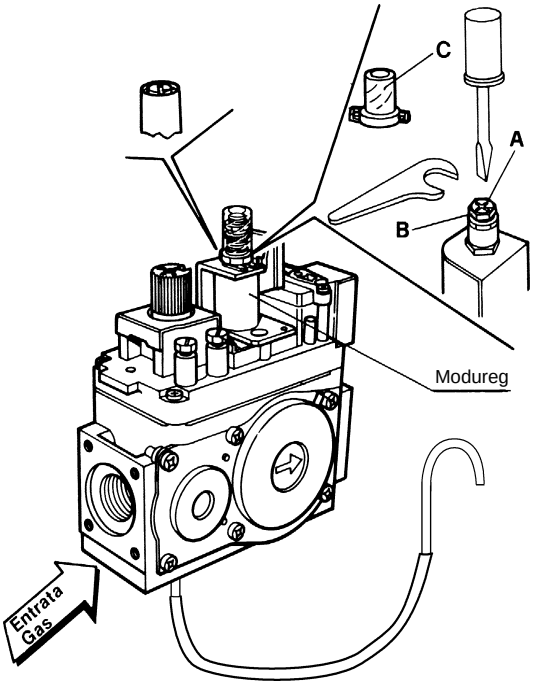
1. Adjustments should be made by qualified personal only.
2. Allow time for pressure to stabilize before making adjustments.
3. It is recommended that the Modureg is operated a few times to ensure correct setting.
4. Cap has to be removed before adjustment can be made.
5. The minimum pressure setting must first be adjusted to ensure that burner will safety light up, then the maximum pressure setting can be adjusted.
6. Any adjustment of minimum pressure setting influences maximum pressure setting.

ADJUSTING MINIMUM and MAXIMUM PRESSURE SETTINGS

Important: for the Gas Valve Honeywell first the minimum pressure should be set and then the max. pressure

1. Connect a suitable pressure gauge to burner pressure (test point).
2. Disconnect one electrical connectin of Modureg.
3. Wait until minimum pressure is stable.
4. If minimum rate pressure needs adjustment then use a 9 mm wrench to turn the brass nut clock wise to increase or counter-clockwise to decrease pressure, until the desired minimum outlet pressure is obtained.
5. Check several times if main burner lights easily and reliable at minimum pressure (with cap replaced).
6. Push top of the shaft gently downwards to the red nut and check pressure.
7. If maximum rate pressure needs adjustments then use a 7 mm wrench to turn the red nut clockwise to increase and counter- clockwise to decrease pressure.
8. Check minimum and maximum setting several times by releasing and pushing the top of shaft gently.
9. Replace cap.
10. If minimum and maximum pressures are set, wire Modureg into the circuit.

ADJUSTING MINIMUM AND MAXIMUM PRESSURE GAS VALVE SIT



Important: for the gas valve SIT first the maximum pressure should be set and the minimum pressure.

1- Connect a suitable pressure gauge to the burner pressure test point.
2- Remove protection cap C
3- The max pressure should be set with the max. current through the modulating soil (for example full open hot water tap).
4- Use a 10 mm wrench to set the max pressure with nut B
5- The minimum pressure should be adjusted without electrical connection on the modulating coil (disconnect one faston).
   Nut B should remain locked with a wrench and with screw A the minimum pressure can be adjusted.
6- Check several times the maximum and minimum pressure (connecting-disconnecting the modulating coil)
7- Replace cap C
8- Wire the modulating coil into the circuit

C.H. output adjustment

C.H. output is factory set at min. output (8.8 kW)

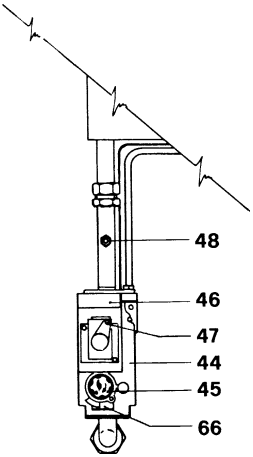


Fig. 1 - Gas valve

44 - Combination gas valve
45 - Knob gas valve
46 - Operator gas valve
47 - Modulating regulator (Modureg)
48 - Burner pressure test point
66 - Microswitch

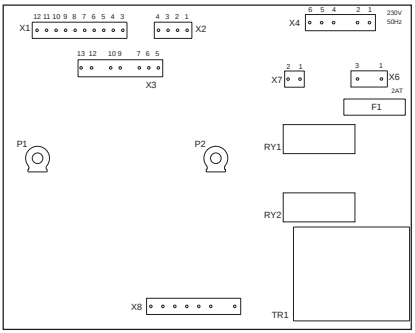


Fig. 2 - Front view P.C.B. in control box

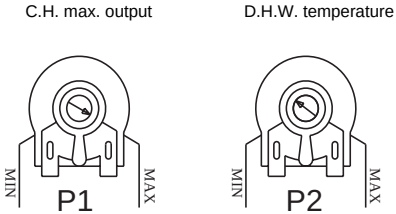


Fig. 3 - Potentiometres settings

Operations
1. Check if all hot water taps are closed.
2. Disconnect **ONE** electrical connection from operator **46** of gas valve **44.**

Note - Don't pull the wire, use pliers and pull the faston insulation to the front.

3. Start boiler on C.H., cool down C.H. system.
4. Connect a suitable pressure gauge to bur ner pressure test point **48.**
5. Check required burner pressure in fig. 4.
6. Rewire operator **46** of gas valve, burner will light.
7. Set outlet pressure of gas valve **44** with potentiometer K2 on P.C.B. in control box.

Note - For min. pressure see also «Technical data» page.

Burner Pressures C.H.

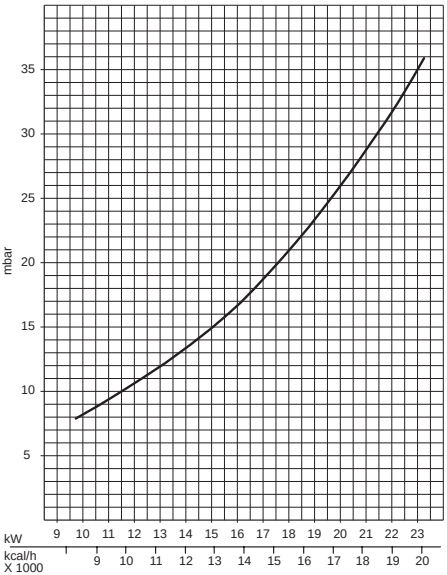


Fig. 4 - Burner pressure VS C.H. load with L.P.G. and G31

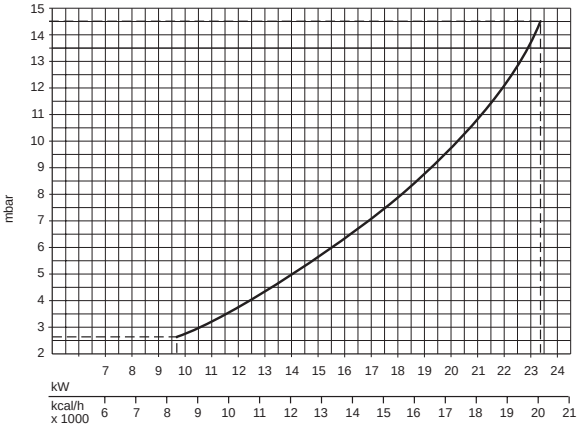
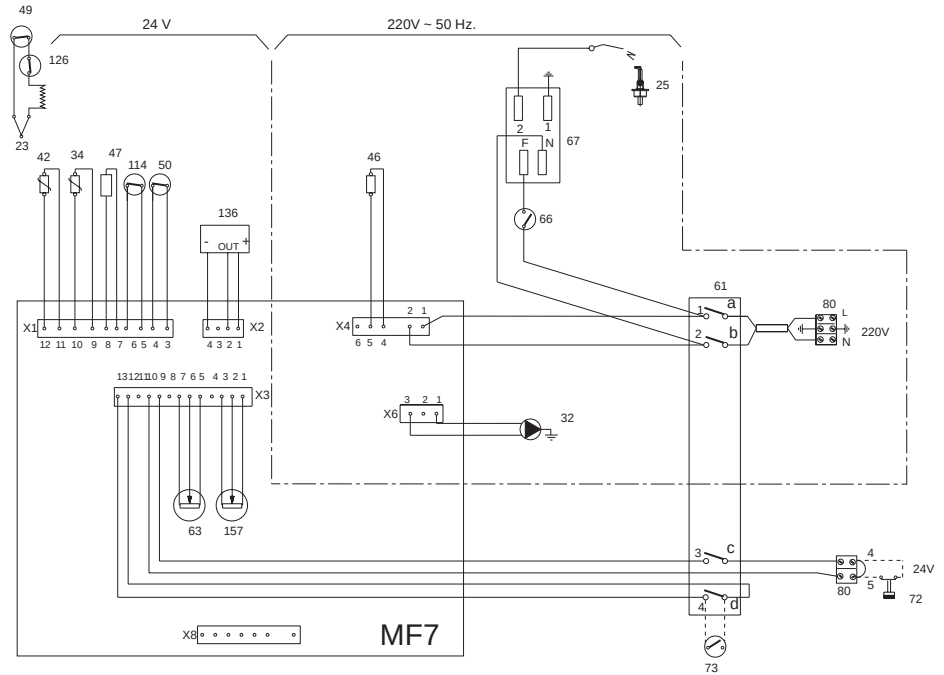


Fig. 5 - Burner pressure VS C.H. load with natural gas (G20)

NOTE - For gases not mentioned please ask for details to FERROLI technical Dpt.

Wiring diagram



••••• remove if time clock is fitted

o o o o to connect if time clock or frost thermostat are fitted

Key

23. Thermocouple
24. Spark electrode
32. Central heating pump
34. C.H. flow temperature sensor
42. D.H.W. temperature sensor
46. Operator gas valve
47. Modulating regulator (Modureg) gas valve
49. Overheat cut-off thermostat 100° C
50. Heat exchanger limit thermostat 85° C
61. C.H./D.H.W. selector switch
63. C.H. boiler thermostat
66. Microswitch combination gas valve
67. Ignition transformer
72. Room thermostat (not fitted)
73. Frost thermostat predisposition
80. Five pole terminal block (230/240 V - 24 V)
114. Water flow switch
126. Flue gas safety thermostat
136. Flowmeter
157. D.H.W. boiler thermostat

Selector switch on TEST position:

- Boiler starts for C.H.
- Waiting time is excluded
- Max burner pression C.H. can be checked/set with P1

Warning - Any external voltage (230 V or low voltage) applied to the block 1-2 of the terminal block 80 or internal wiring of the boiler, will damage the P.C.B. in the control box.

Mounting Details

Thermostat - Pilot - Gas Valve

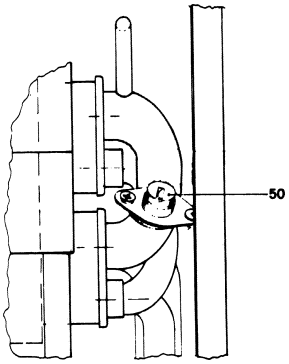


Fig. 1

50. Heat exchanger limit thermostat

73. Frost thermostat (if fitted)

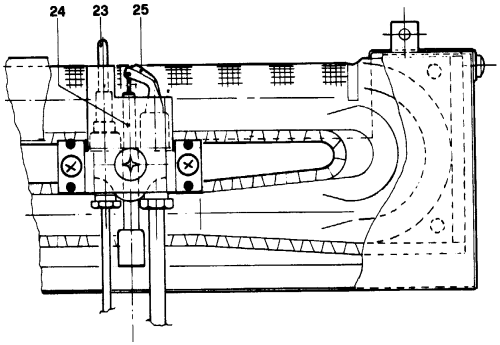
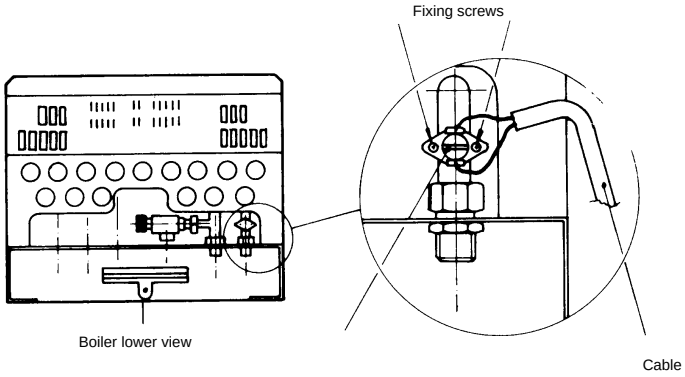


Fig. 2

Pilot assembly (for replacement: unscrew central screw and pull pilot assembly to bottom)
22. Burner
23. Thermocouple
24. Spark electrode (for replacement: pull to bottom)
25. Pilot



General fault finding

To the User/Installer

Check before calling service engineer:

1. Gas available (check kitchen and gascocks).
2. Electrical mains (test with other electrical equipment).
3. Water pressure Central Heating System (min. 1 bar on pressure gauge).
4. Water flow domestic hot water (min. 0,5 Gall./min. - 2,5 L/min.) (fills a 1 pint milk bottle in max. 15 sec.).
5. Flue outlet free from obstacles.
6. Are all service cocks open?
7. Is at least one radiator valve or bypass in Central Heating system open?

Important - See also page Filling C.H. - Flushing C.H. - Descaling D.H.W.

To the Service Engineer:

Never pull on the wires in the Fastons. To disconnect the Fastons pull on the insolation of the Fastons with pliers, keep the terminal pushed back with a screwdriver.

For fault finding see also pages 36 - 37

Cleaning and Maintenance

The following operations must be performed only by qualified technicians.

Seasonal boiler and flue system check

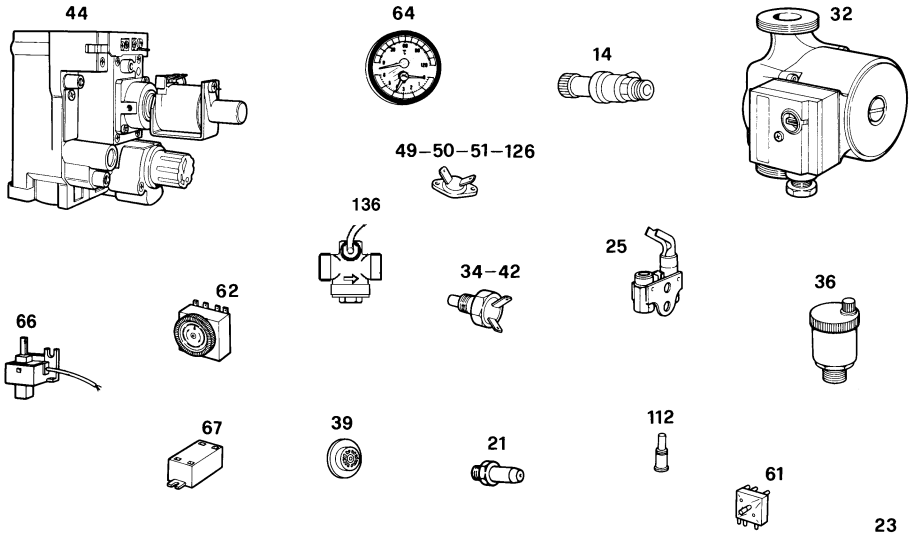
It is advised to submit the system and least once a year to the following controls.
The system water pressure when hat in operation has to be between 1 and 1.5 bar if not it has to be brought inside the required level. The boiler safety and requlating controls have to work properly.
The burner and the copper heat exchanger have to be cleaned by mean of soft brushes, do not use cheminal products. The expansion tank has to be under pressure.
The gas and water circuits have to be tightened. The chimney and the boiler flue have to be free of any obstruction and without any leaking. The thermocouple has not to present deposits on it and has to be envelopped correctly by the pilot flame. The gas flow pressure has to be in accordance to the technical data.
The circulating pump has to run freely.

NOTE - In the draft diverter is installed a flue gas safety thermostat.
This thermostat switches off the thermostat pilot if the temperature of the thermostat becomes to high (flue gas leakage).

Faults finding causes and remedies

Electronic ignition does not spark	Faulty electronic ignition transformer Replace the transformer Electrode broken or not in right position *Replace the electrode or places it in right position* False contact between electrode and wire *Screw better the terminal on the wire* Faulty microswitch on the gas valve *Replace the microswitch*
Pilot does not turn on	No gas flow *Open the gas tap* Air in supply pipeline *Vent the pipeline as explained under the para boiler lighting* Pilot nozzle obstructed *Clean the nozzle by mean of compressed air* Poor gas flow rate *Set the right flow by mean of the screw on gas valve*
Pilot burner shuts off	Faulty thermocouple *Replace thermocouple* Flame does not envelop thermocouple *Regulate the flame by the screw on gas valve* Poor electrical connection with solenoid on gas valve *Thight the nut on the gas valve*
Main burner does not ignite	No electricity supply on gas valve *Wait for electricity supply* Main nozzles occluded *Clean the nozzles* *Faulty gas valve* *Repair or replace gas valve*
Bursting at the main	Pilot flame too distant from main burner *Place the pilot flame closer to the main burner* Dirty heat exchanger *Clean the heat exchanger* Gas flow to low *Set correct gas pressure at the main burner* Dirty burners *Clean burners*

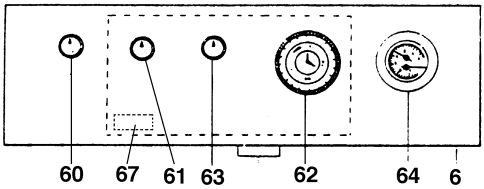
Smell of combustion gases	Dirty heat exchanger *Clean th heat exchanger* Inadequate draft at the chimney *Ceck the chimney draft* Not enough fresh air *Increase fresh air supply* Wrong burner flame *Ceck gas flow at the gas meter and set right pressure at main burners*
Boiler function but temperature does not increase	Wrong burne flame *Ceck gas consumption* Dirty heat exchanger boiler output to low *Ceck heat requirement* Thermostat probe not properly located in its pocket *Place the probe properly in the pocket* Wrong setting of the requlating thermostat *See chapter controls adjustment*
Condensate product in the boiler	To low temperature in the system *Set thermostat at higher temperature* Wrong flame setting Ceck flame setting Low gas consumption Ceck gas consumption
Boiler becomes dirty easily	Wrong flame setting *Ceck flame setting and gas consumption according to the boiler output*
Cold radiator in winter	Switch on summer position *Turn on winter position* Room thermostat set at too low temperature or faulty *Set the room thermostat at higher or replace it* The pump does not run as it is jammed *Remove the pump impeller plug and by a screw driver turn the impeller till can rotate freely* The pump does not run but impeller is not jammed *Replace pump capacitor or pump*
Domestic hot water temperature not constant	Hot water flow to low *Increase flow to a minimum of 2.5 l/min*
Low delivery of hot water	Low pressure from the mains



Spare Parts List

Item No.	Makers Part No.	No. Off	DESCRIPTION
14	3980013/0	1	C.H. safety valve
21	3400951/0	4	Main injector (Natural Gas)
21	3400950/0	4	Main injector (L.P.G.)
23	3980149/0	1	Thermocouple
24	3980164/0	1	Spark electrode
25	3980151/0	1	Pilot
32	3980060/0	1	Central heating pump
36	3980116/0	1	Automatic air vent
39	3980122/0	1	Cold water flow limiter 10 l/min.
42	3980031/0	1	Temperature sensor
44	3980228/0	1	Combination gas valve
49	3980017/0	1	Overheat cut-off thermostat 100°C
50	3980016/0	1	Heat exchanger limit thermostat 85°C
51	3980018/0	1	Heat exchanger from thermostat
61	3980155/0	1	C.H. selector switch
62	3980215/0	1	Time clock
63	3980229/0	1	C.H. boiler thermostat
64	3980030/0	1	C.H. temperature/pressure gauge
66	3980127/0	1	Microswitch combination gas valve
67	3980115/0	1	Ignition transformer
112	3370081/0	1	Pilot injector (Natural Gas)
112	3370084/0	1	Pilot injector (L.P.G.)
101	3980004/0	1	P.C.B.
126	3980168/0	1	Kit flue gas safety thermostat
136		1	Flowmeter

FERROLI NOUVELLE ELITE 100



To Light the Boiler:

1. Before lighting, check again if central heating system **64** is pressurised to min. 1 bar.
2. Ensure electric mains, gas and water are turned.
3. Put selector switch **61** in position Hot Water Only.
4. Depress gas valve knob **60** fully, electric igniter will light pilot flame.
5. After lighting pilot flame: keep knob of gas valve fully depressed for 20 sec.
6. Release gas valve knob.
7. Main burner will light if hot water tap will be opened.

Phone numbers:

Installer _____

Service Engineer _____

Cod. 3541737/3 - 04/97

FERROLI S.p.A.

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