

Myson Heating

INSTALLATION

M120/150C

Floor standing gas boiler

For use with combined gravity domestic and fully pumped heating systems

For use with Natural Gas only

(Leave these instructions adjacent to the gas meter)

The pump **MUST** be connected to the boiler terminal block. See wiring diagram frame 23.

A by-pass must be fitted between the flow return at least 3m from the boiler.

General

This open-flued floor standing boiler is for use on natural gas only.

The 120/150C is rated from:

35.17 kW to 43.96 kW (120 000 Btu/h to 150 000 Btu/h).

The boiler must be installed in accordance with:

The Gas Safety Regulations.

Local Building Regulations.

By-Laws of the local Water Undertaking.

Detailed recommendations are stated in the following British Standard Codes of Practice: CP331:3, BS5376:2, BS5546, BS5440:1 and 2, BS5449:1.

Note: Gas Safety Regulations, 1972: It is the law that all gas appliances are installed by competent persons, 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.

Delivery

The boiler is supplied fitted with a draught diverter. The case parts are packed separately for assembly to the boiler during installation.

A programmer is available in kit form.

Installation

The boiler is designed for use with an open central heating system and/or an indirect domestic hot water system. **IT MUST NOT BE CONNECTED TO A DIRECT CYLINDER.** If a self-priming cylinder is used, it must be chosen and installed with the recommendations of the cylinder manufacturer.

The boiler should not be installed in a bedroom or bed-sitting room and must not be installed in a room containing a bath or shower.

Boiler sizes, space requirements and connection details are shown in frames 1 and 2.

Where the installation of the boiler will be in an unusual position, special procedures may be necessary and BS5376:2 and BS5546 give detailed guidance on this aspect.

A cupboard or compartment used to enclose the boiler must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided that it is modified for the purpose.

Details of essential features of cupboard/compartment design including airing cupboard installations are given in BS5376:2 and BS5546.

When siting the boiler, check that the flue meets the requirements set out in frame 4.

Fit one or more drain cocks to enable the water system to be fully drained.

The boiler must stand firm and level.

If the floor is of a combustible material it is recommended that it is protected by an insulating sheet. See note on frame 1.

Minimum clearances for access and servicing are required, as follows:

(a) above the boiler case—300 mm (12 in).

(b) in front of the boiler case—600 mm (24 in).

Air Supply

An open-flued boiler must have a clearance at each side, at least 60 mm (2.4 in) for the M120/150C for air movement. The boiler must not be boxed in tightly with kitchen units.

Air supply for combustion and ventilation must be provided in accordance with BS 5440:2.

1. If the boiler is installed in a room, the room must have a permanent air vent either direct to the outside air or to an adjacent room which itself has a permanent air vent direct to the outside air. The minimum effective area of the air vent(s) required is:

216 cm² (33 in²)

2. If the boiler is installed in a cupboard or compartment, permanent air vents are required in the cupboard or compartment, one at high level and one at low level, either direct to the outside air or to a room. Both high and low level air vents must communicate with the same room or must both be on the same wall to outside air.

The minimum effective area required are given in the following table:

Boiler	Vents to outside air		Vents into a room	
	High level	Low level	High level	Low level
	cm ² (in ²)	cm ² (in ²)	cm ² (in ²)	cm ² (in ²)

Where the cupboard or compartment is ventilated to a room, the room itself must have an air vent direct to outside air of minimum effective area of 216 cm² (33 in²) for the boiler.

3. If there is any type of extract fan fitted in the premises, there is a possibility that if adequate air inlet area from outside is not provided, spillage of the products from the boiler flue could occur when the fan is in operation. Where such installations occur, a spillage test with the fan running must be carried out as described in BS5440:1. The air inlet given above may have to be increased to prevent spillage.

Gas supply

The M120/150C requires 5.24 m³/h (185 ft³/h) of natural gas.

The meter and supply pipes must be capable of delivering this quantity of gas in addition to the demand from any other appliances in the house.

The complete installation must be tested for soundness as described in CP 331:3.

Electricity supply

240V 50Hz via a fused double pole switch or preferably a fused 3-pin plug and shuttered socket outlet, adjacent to the boiler. Fuse the supply at 3 amp.

Mains cable: 0.5 mm² (16 x 0.20 mm).

The external wiring between the appliance and the electricity supply shall comply with the latest IEE regulations, and any local regulations which apply.

The appliance must be earthed.

In the event of an electrical fault after installation of the appliance, preliminary electrical system checks can be carried out as described in the British Gas Multimeter instruction book.

Data

Heat inputs and outputs together with burner pressures are given in frame 20.

Boiler with case	Weight empty	Water content	Head loss*	Max. static head
M120/150C	159 kg (350 lb)	12.3 litre (2.7 gal)	0.25 m (10 in)	30 m (100 ft)

* Head loss is given for a temperature rise across the boiler of 11°C (20°F).

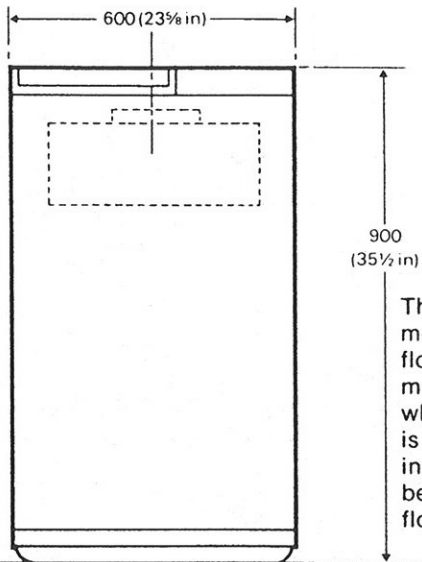
Main burners: Bray AB20000 or Furigas 175-002-000.

Injectors: main—Bray 75-1300 pilot—Bray 968-10.

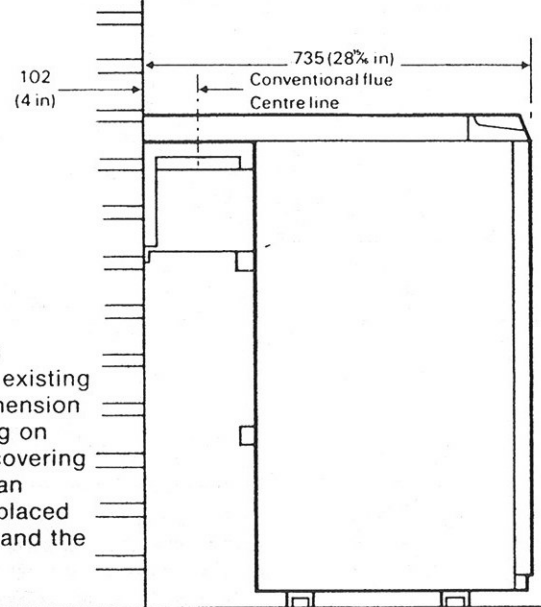
Ignition: press button piezo electric pilot ignition, Vernitron Variant 66108 or Kigass Corvette NW102344.

The pump must be capable of delivering 3410 l/h (750 gal/h) against the resistance of the boiler and system. A lower flow rate may be used if a higher temperature rise over the boiler is acceptable. In the event of any fault occurring during the commissioning of the boiler a fault finding guide is available in the Maintenance instructions.

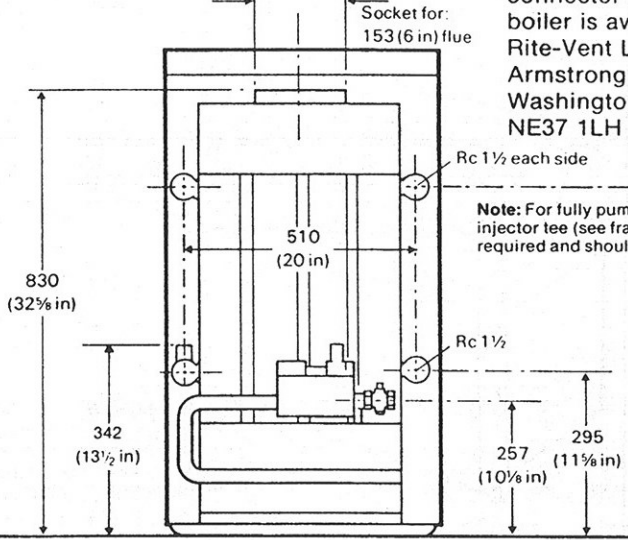
1 BOILER SIZES



The boiler height is measured from the existing floor level. This dimension may vary depending on whether any floor covering is removed and/or an insulating sheet is placed between the boiler and the floor.



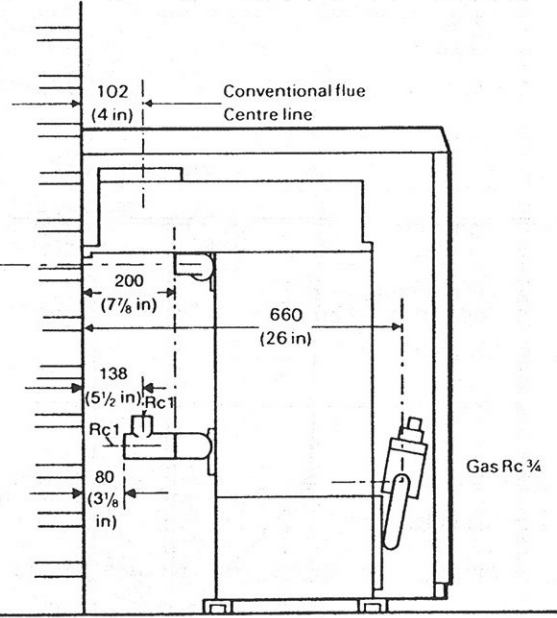
2 BOILER CONNECTIONS



If using an insulated "Rite-Vent" flue, a special connector to fit to the boiler is available from: Rite-Vent Ltd, Armstrong Industrial Estate, Washington, Tyne & Wear, NE37 1LH

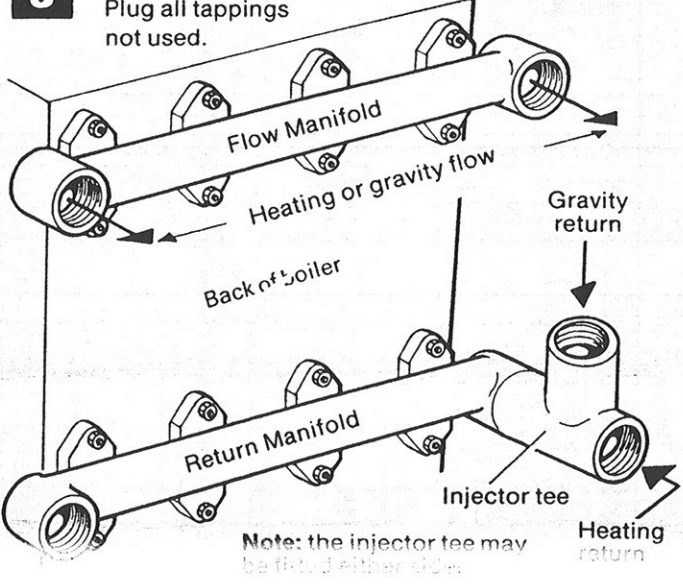
Note: For fully pumped systems the injector tee (see frame 3) is not required and should be discarded.

See note, frame 1.



3 WATER CONNECTIONS

Plug all tappings not used.

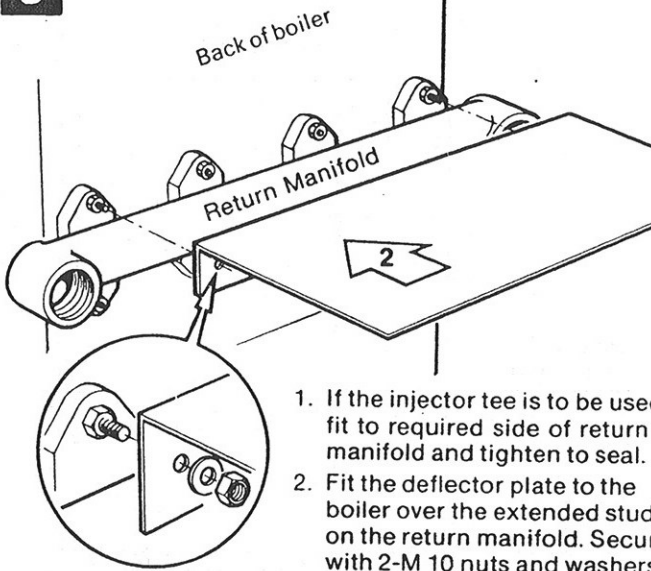


Note: the injector tee may be fitted either side

4 FLUE

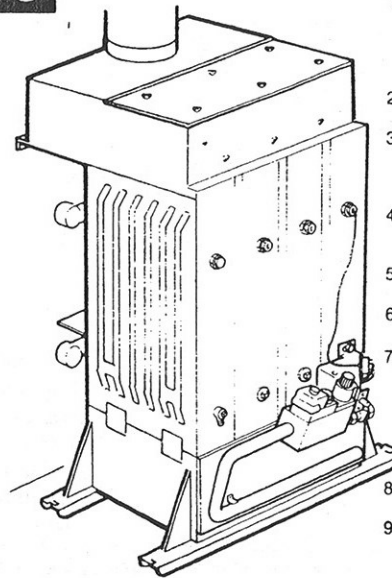
The boiler must be connected to a suitable flue which will provide a consistent updraught without undue cooling of the flue gases. The requirements of BS 5440:1 should be followed. Horizontal flue runs should be avoided and the flue should terminate in accordance with the relevant recommendations given in BS 5440:1. The flue must be fitted with a terminal, preferably one which has been tested and found satisfactory by British Gas. The terminal must not be installed within 600 mm (23 in) of an openable window, air vent or any other ventilation opening. Existing chimneys may be suitable but must be swept first and usually require an approved liner to be fitted. If in doubt regarding the suitability of a flue, consult the local Gas Region for advice. If the flue is required to be taken through the wall behind the boiler, adequate space should be allowed for a suitable flue bend to be fitted. When the flue is taken through the ceiling and into the roof space, or the room above, it must be provided with a sleeve of non-combustible material sufficient to allow an air space between the sleeve and flue of 25 mm (1 in) minimum. A suitable non-combustible plate must be fitted to centre the flue and maintain the 25 mm air gap.

5 PREPARE THE BOILER



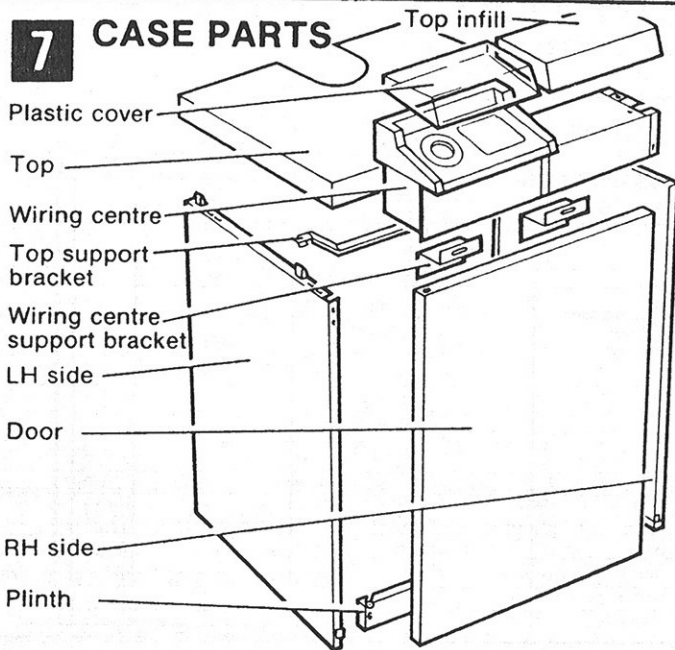
1. If the injector tee is to be used, fit to required side of return manifold and tighten to seal.
2. Fit the deflector plate to the boiler over the extended studs on the return manifold. Secure with 2-M 10 nuts and washers.

6 INSTALL THE BOILER

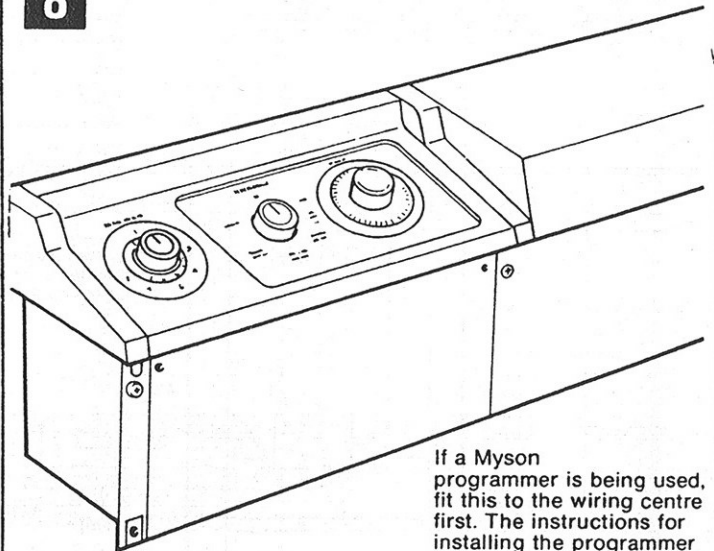


1. Stand the boiler on the floor, on an insulating sheet if required (See page 1), spacing angle on back of draught diverter touching the wall.
2. Check that the boiler is standing firm and level.
3. Connect the first flue length to the socket on top of the boiler. Pack and seal the joint.
4. Connect the water system pipes at the back of the boiler—see frames 2 and 3.
5. Connect the gas pipe to the cock on the gas valve inlet.
6. Check the gas pipework for gas soundness.
7. Thoroughly flush the whole system with cold water without the pump in position. Ensure all valves are open. Fill, vent and check for soundness, rectifying where necessary.
8. Fit the boiler case—see frames 7 to 14.
9. Connect the electric wiring to the wiring centre—see frames 15 to 17.

7 CASE PARTS

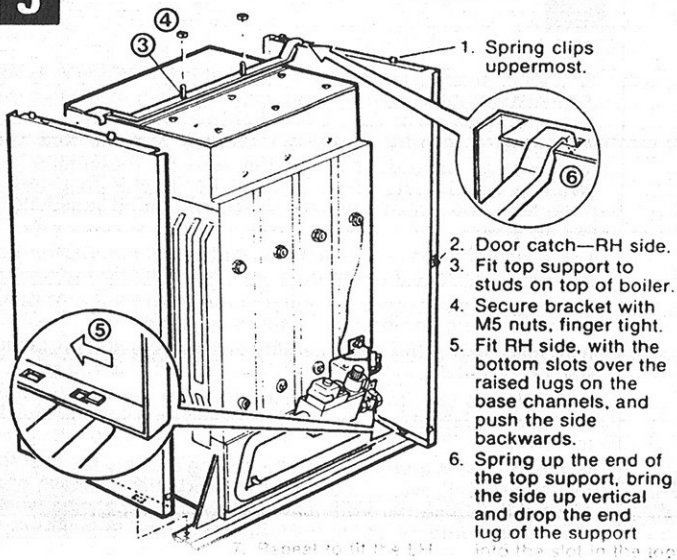


8 FIT THE PROGRAMMER

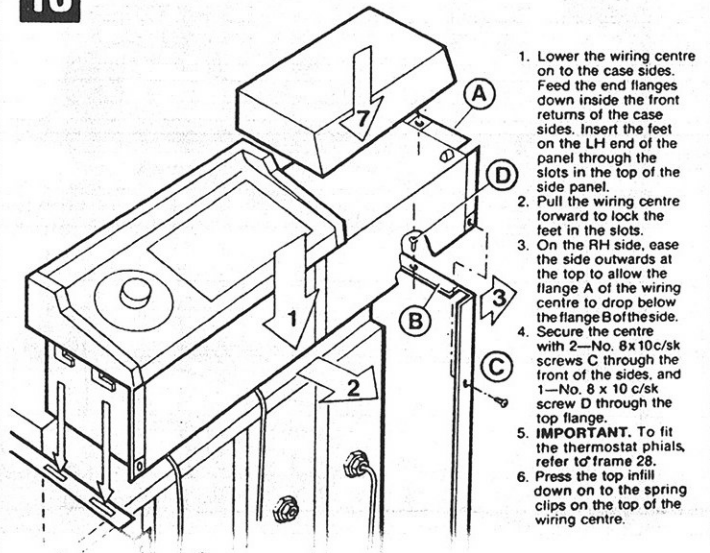


If a Myson programmer is being used, fit this to the wiring centre first. The instructions for installing the programmer are packed with the kit.

9 FIT THE CASE SIDES

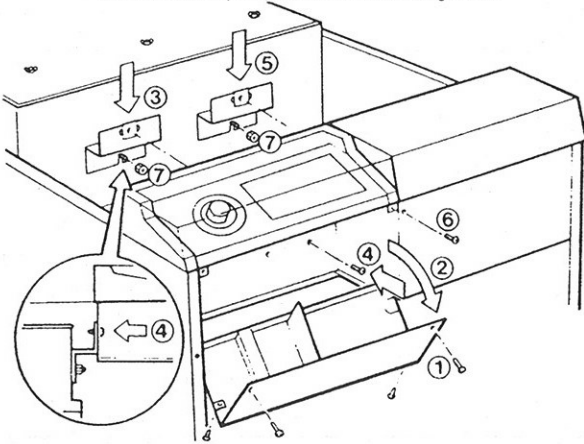


10 FIT THE WIRING CENTRE

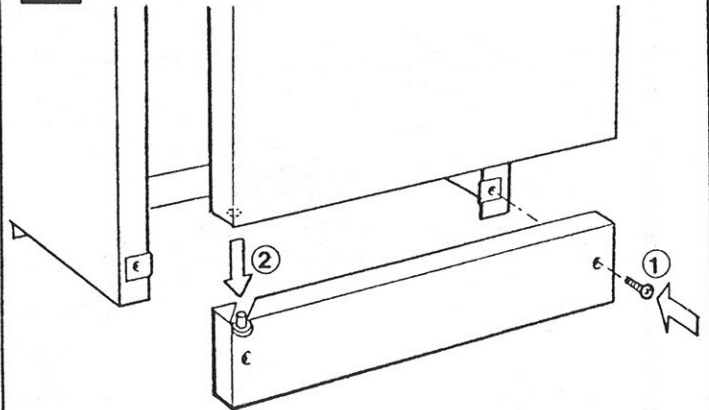


11 SECURE THE WIRING CENTRE

(1) Remove four fixing screws. (2) Pull out the wiring panel and hang it on the front of the wiring centre. (3) Fit one No. 8 captive nut to one of the support brackets, then slide the bracket over the stud on the LH side of the flue box front. (4) Insert a No. 8 x 10 long pan head screw through the RH hole in the back of the wiring centre into the captive nut on the support bracket. Do not fully tighten the screw. (5) Fit a No. 8 captive nut to the other support bracket and slide the bracket behind the wiring centre and over the stud on the RH side of the flue box front. (6) Insert a No. 8 x 10 long pan head screw through the hole in the back of the wiring panel extension (access from beneath) into the captive nut on the support bracket. (7) Add an M5 nut to each stud; nut to be finger tight. (8) Replace the wiring panel and secure with four screws. (9) Fit the plastic cover to the wiring centre.



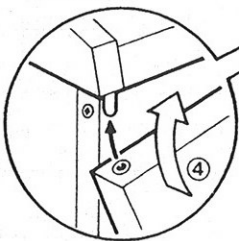
12 FIT THE PLINTH AND DOOR



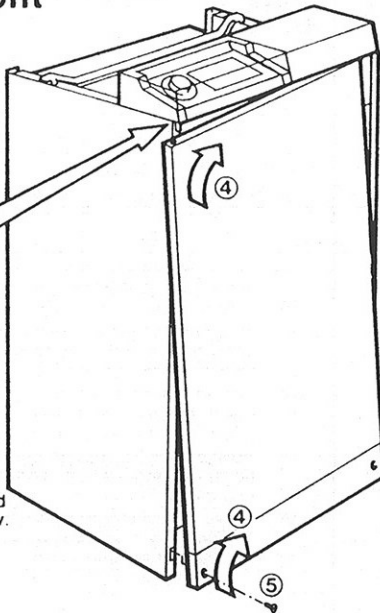
1. Loosely secure the plinth to the right hand case side with one No. 8 x 25 long pan head screw.
2. Engage the lower hinge pin on the left hand end of the plinth with the bush in the bottom of the door.
3. Continue the fitting of the door, see frame 13.

13 DOOR—cont

4. Hold door and plinth together, raise the door and engage the upper hinge pin on the control panel with the bush on top of the door.



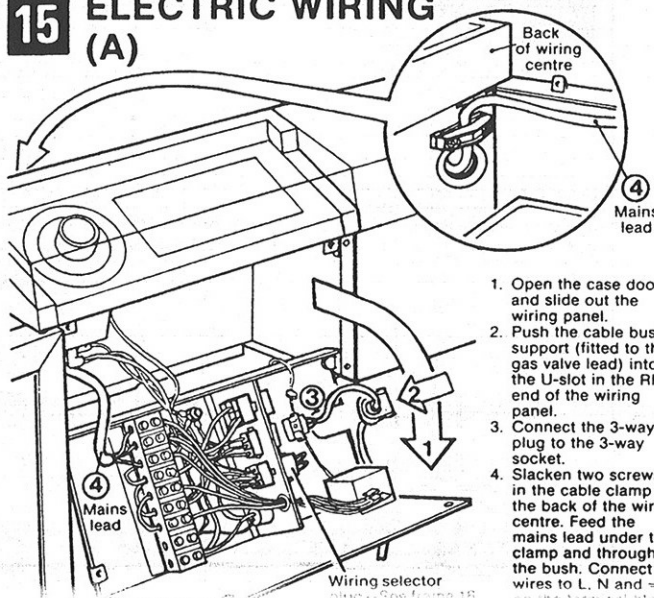
5. Secure the plinth to the left hand case side with a second No. 8 x 25 lg. pan head screw. Tighten both plinth screws.



14 SQUARE UP THE CASE

1. Square up the case, to bring the top of the door parallel to the moulded control panel.
2. Tighten nuts (4) on the top support bracket—frame 9.
3. Tighten nuts (7) fixing the wiring centre support brackets—frame 11.
4. Open door, remove four fixing screws and slide out the wiring panel—frame 11.
5. Tighten screws (4 and 6) securing the wiring centre to the flue box—frame 11.
6. Slide the wiring panel back into the wiring centre (do not fix with screws) and close the door.
7. Check squareness of case. If necessary, slacken off fastenings to make final adjustments, then retighten.

15 ELECTRIC WIRING (A)



1. Open the case door and slide out the wiring panel.
2. Push the cable bush support (fitted to the gas valve lead) into the U-slot in the RH end of the wiring panel.
3. Connect the 3-way plug to the 3-way socket.
4. Slacken two screws in the cable clamp on the back of the wiring centre. Feed the mains lead under the clamp and through the bush. Connect the wires to L, N and \perp .

16 ELECTRIC WIRING (B)

Wiring selector plugs:

The boiler is despatched with the Blue plug in position. If the boiler is connected to a fully pumped system, take out the Blue plug and replace it with the Red plug, supplied loose in the wiring centre.

BLUE for gravity hot water systems.
RED for fully pumped systems.

External controls:

Connect any external controls to the wiring centre. Run the wiring under the cable clamp, through the bush in the back of the wiring centre and wire up to the terminal block. See wiring diagram, frame 23.

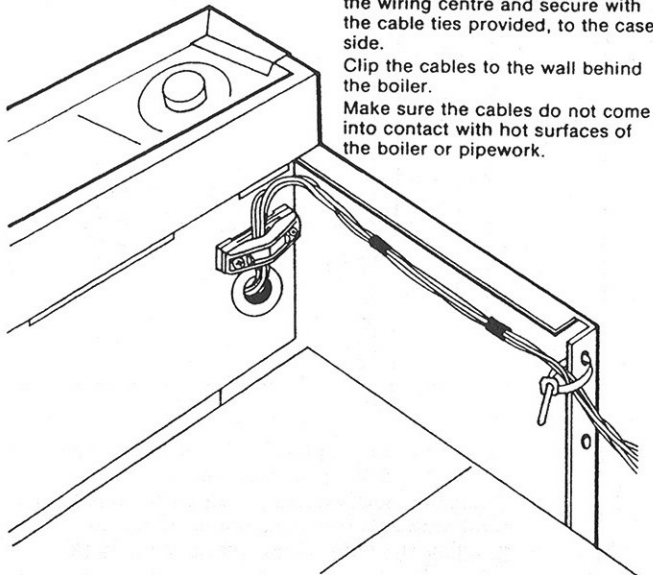
Programmer:

If a Myson programmer has been fitted, check that the 6-way plug has been inserted into the socket on the wiring panel and that the appropriate linking wire has been removed from the terminal block, in accordance with the wiring instructions.

Wiring panel:

Keeping the wiring panel in the open position, take up excess slack in the cables between the terminal block and the rear bush, then tighten the cable clamp screws. Check that the wiring panel will open and close freely, without straining the cables. Finally replace the wiring panel and secure with four screws.

17

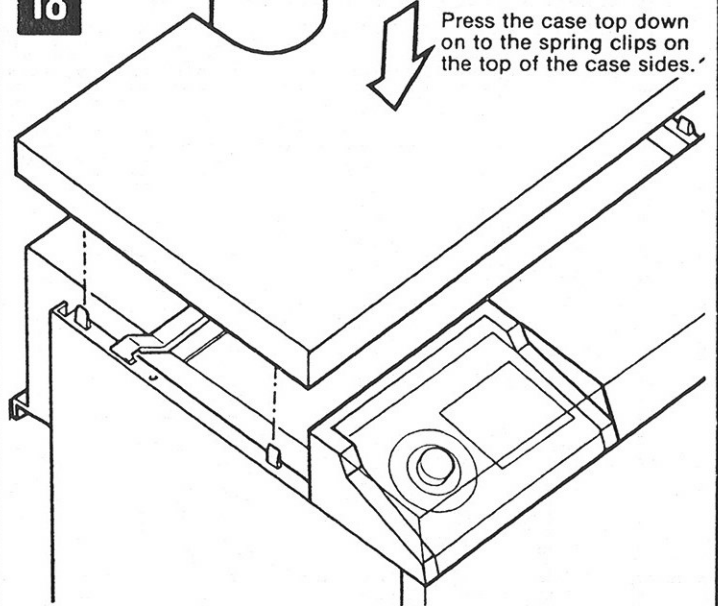
ELECTRIC WIRING (C)

Bind together all cables leading to the wiring centre and secure with the cable ties provided, to the case side.

Clip the cables to the wall behind the boiler.

Make sure the cables do not come into contact with hot surfaces of the boiler or pipework.

18

FIT THE CASE TOP

Press the case top down on to the spring clips on the top of the case sides.

19

COMMISSION THE BOILER (A)

Refer to frames 21 and 22.

1. Check that the electricity supply is OFF, boiler gas cock is OFF.
2. Turn the boiler thermostat to OFF.
3. Loosen the gas valve inlet pressure test point screw one turn.
4. Turn on the gas supply and open the boiler gas cock to purge in accordance with CP331:3.
5. Retighten the gas valve inlet pressure test point screw.
6. Push hard on the gas valve button and keep it pressed in. At the same time, push the igniter button. When it clicks, the pilot seen through the inspection window on the burner door, should light. If the pilot does not light immediately, press the igniter button repeatedly until it does. When the pilot lights, continue to hold the gas valve button in for a further 20 seconds, then release it slowly.
Caution: if the pilot does not stay alight, twist the gas valve button in the direction of the arrow. Wait for 3 minutes and repeat operation 6 until the pilot is lit. Continue to hold the gas valve button in for 30 seconds, then release it slowly.
7. Adjust the pilot throttle screw on the gas valve to the rate to envelop the thermocouple tip, (pilot flame approximately 20 mm long).
8. Check and if necessary adjust the burner pressure:
 - (a) Loosen the burner pressure test point screw one turn and connect a pressure gauge.
 - (b) Turn on the electricity supply and check that all system controls are turned on.
 - (c) Turn the boiler thermostat to position 7. The main burner will light. Allow the burner to run for 10 minutes.
 - (d) Adjust the governor on the gas valve to set the heat output required. See table of outputs and burner pressures in frame 20.

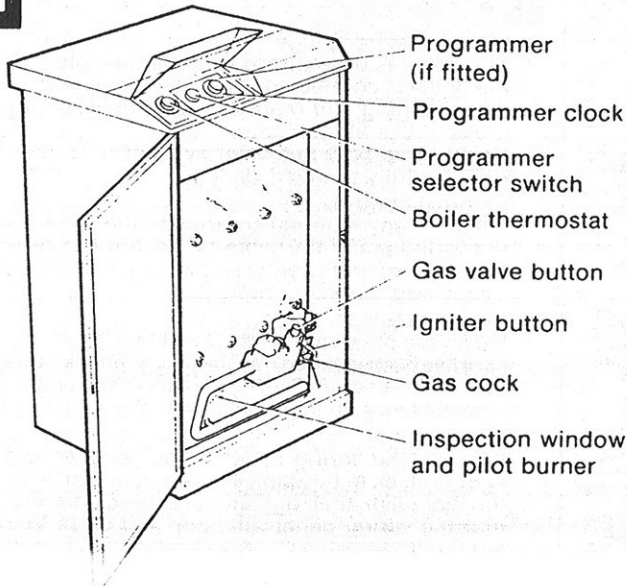
20

COMMISSION THE BOILER (B)

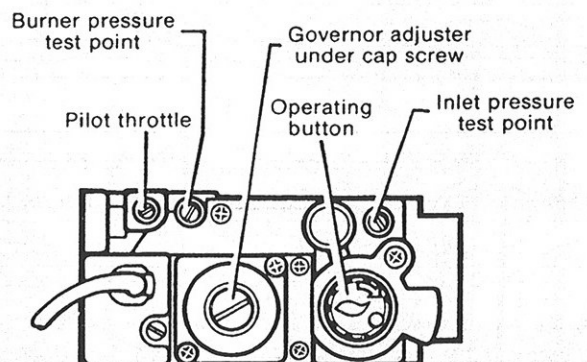
Boiler	Output to water		Heat to room		Input		Burner Pressure	
	kW	Btu/h	kW	Btu/h	kW	Btu/h	mbar	in w.g.
M120/	33.12	113 000	2.05	7000	44.76	153 000	10.8	4.3
150C	41.47	141 500	2.49	8500	54.95	187 500	16.0	6.4

9. Turn the thermostat to OFF, disconnect the pressure gauge and re-tighten the test point screw.
10. Attach arrow to data plate against the correct boiler output.
11. When the system has been tested, drain the water while it is still hot in order to complete the flushing process. Refill, vent and make a final check for water soundness.
12. Test the flue for correct operation.
13. Hand the User the USER INSTRUCTIONS and instruct in the safe operation of the boiler and controls.
14. Advise the User that for continued efficient and safe operation of the boiler it is important that adequate servicing is carried out at intervals recommended by the local Gas Region.
15. Leave a permanent card attached to the boiler giving:
 1. Name and address of installer.
 2. Date of installation.
 3. A wiring diagram of the circuit.

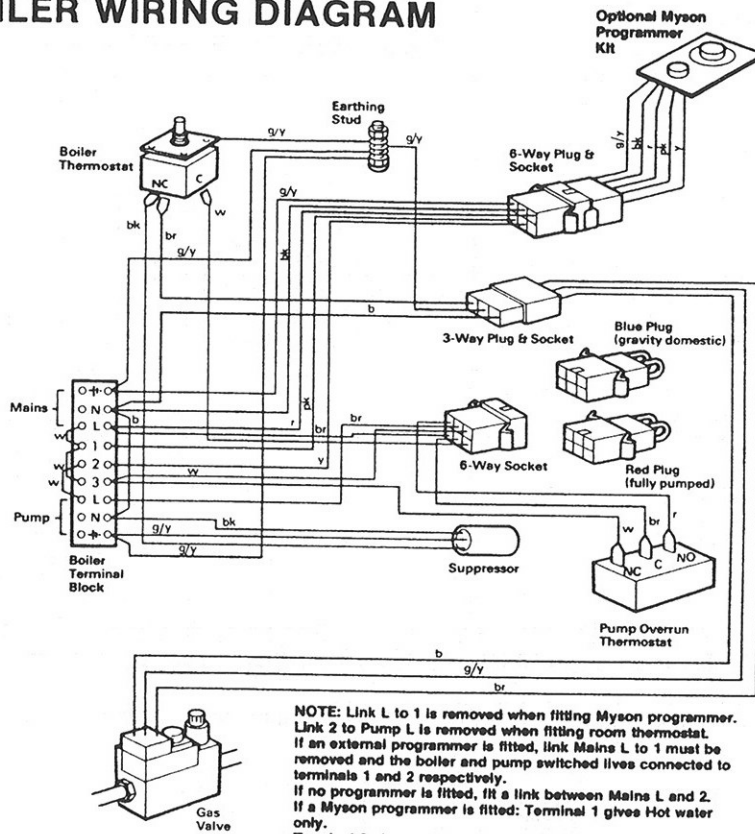
21

BOILER CONTROLS

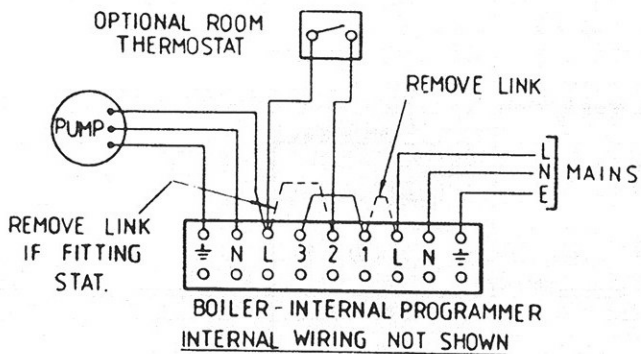
22

GAS CONTROL VALVE

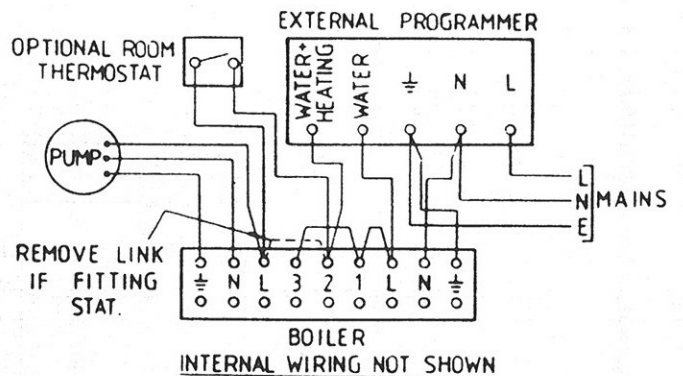
23 BOILER WIRING DIAGRAM



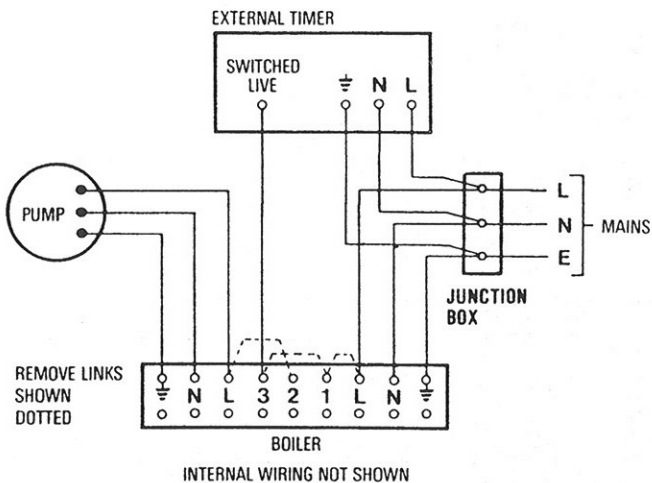
24 GRAVITY SYSTEM MYSON PROGRAMMER OPTIONAL ROOM THERMOSTAT



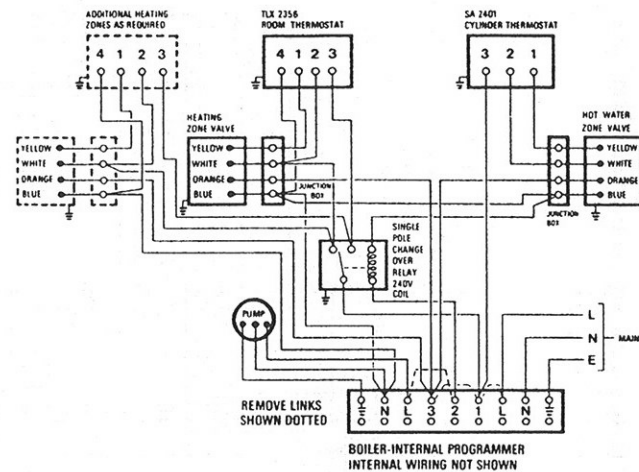
25 GRAVITY SYSTEM EXTERNAL PROGRAMMER OPTIONAL ROOM THERMOSTAT



**26 FULLY PUMPED SYSTEM
EXTERNAL TIME CLOCK
THERMOSTATIC RADIATOR VALVES**

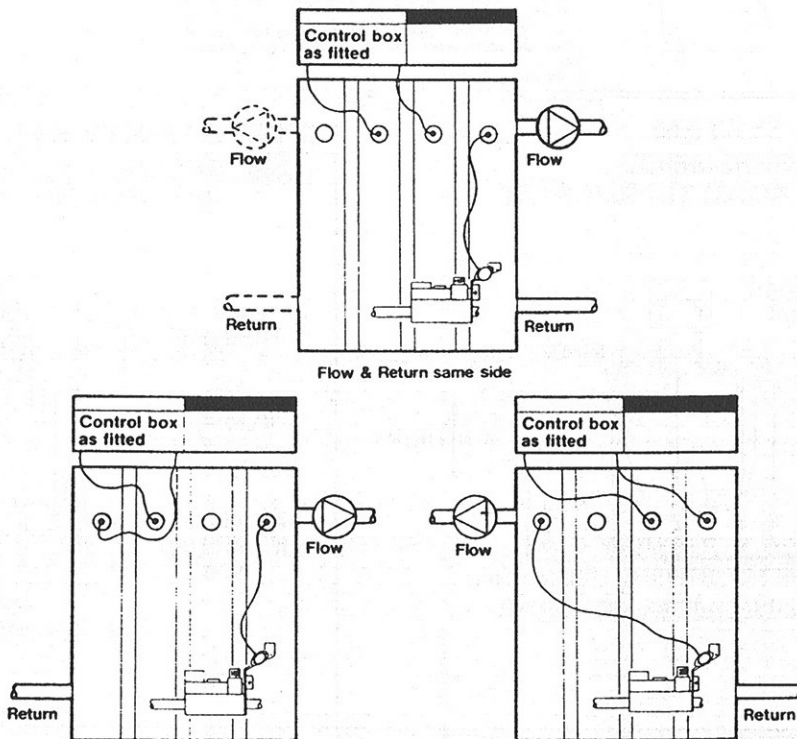


**27 FULLY PUMPED SYSTEM
MYSON PROGRAMMER—
SATCHWELL 1" BODY MINIVALS**



28

It is **important** that the boiler thermostat phials are located in the correct pockets to suit the pipework connections. The diagram below shows the four methods of connection to the boiler, along with the relevant positions of the thermostat phials.



Myson Heating

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MYSON

This leaflet is accurate at the date of printing but will be superseded and should be disregarded if specifications and/or appearances are changed in the interests of continued improvement.

All goods sold are subject to our official Conditions of Sale, copy of which may be obtained on application.