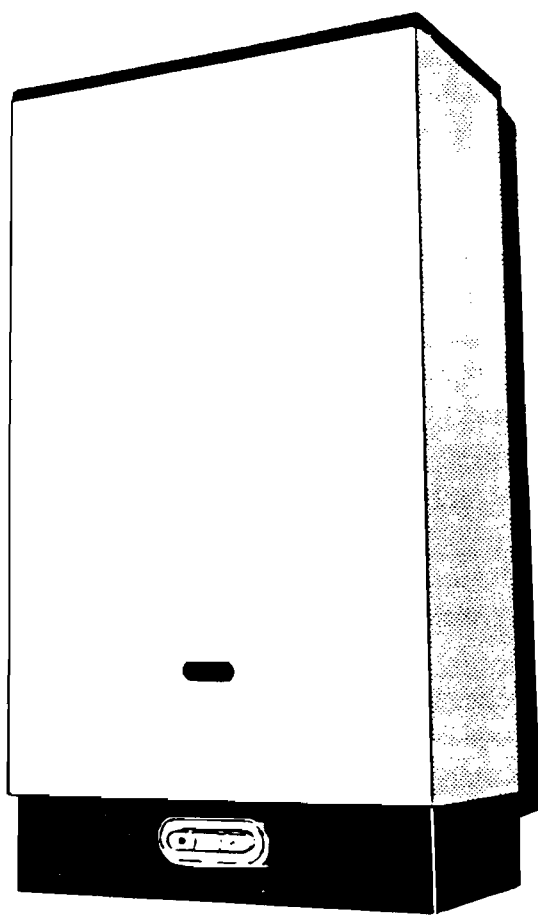


Main

MERSEY MEDWAY AUTOMATIC AVON THERMOSTATIC GAS FIRED WATER HEATERS

INSTALLATION & MAINTENANCE INSTRUCTIONS
FOR USE WITH NATURAL GAS



B.G.C. No. 52 476 24
B.G.C. No. 52 476 25
B.G.C. No. 52 476 26

NON SPOUTED MULTIPOINT MODELS

THIS DOCUMENT MUST BE LEFT WITH THE USER OR AT THE GAS SERVICE METER

" GAS SAFETY REGULATIONS 1972 "

"In your own interest, and that of safety, 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."

Follow these instructions carefully and comply with conditions set out in the current edition of the Building Regulations Local Water Authority Regulations and relevant Codes of Practice relating to installation of Domestic Water Heating Appliances.

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TECHNICAL DATA

Appliance	Height	Width	Depth	Weight Empty. Inc. Service Cocks and Copper Tails
AVON THERMOSTATIC	781mm (30 3/4in.)	422mm (16 5/8in.)	270mm (10 5/8in.)	20.7kg. (45.8 lbs)
MEDWAY AUTOMATIC	746mm (29 3/8in.)	422mm (16 5/8in.)	270mm (10 5/8in.)	18.64kg. (41.1 lbs)
MERSEY	746mm (29 3/8in.)	420mm (16 17/32in.)	270mm (10 5/8in.)	17.86kg. (39.38 lbs)

CLEARANCES

25mm (1in.) above the Case

12mm (1/2") below Bottom Cover of the Avon Thermostatic

47mm (1 7/8in.) below Bottom Cover of the Medway Automatic and Mersey

Nil clearance at the sides.

MINIMUM OPERATING HEAD

AVON THERMOSTATIC	7.62 Metres (25 ft.)
MEDWAY AUTOMATIC	2.29 Metres (7.5 ft.)
MERSEY	1.95 Metres (6.4 ft.)

Any other pressure losses incurred through the addition of external pipes and fittings must be taken into account on installation.

NOMINAL HEAT INPUT 30.3k.W. 103,400Btu/h

NOMINAL HEAT OUTPUT 22.7k.W. 77,500Btu/h

NOMINAL BURNER PRESSURE			
GAS GROUP	INJECTOR SIZE	NOMINAL BURNER PRESSURE	
		Mbar	" w.g.
N.G.	1.2	12.5	5

NOMINAL WATER RATE 12.5Lt/min (2.75GPM) Raised 25°C (45°F)

The maximum permitted water pressure through this appliance is 13bar.

GAS PRESSURES

The nominal burner pressure should be 12.5mbars (5.0"w.g.) and will only be obtained if the appliance inlet pressure is correct at 20mbars (8"w.g.)

The meter should be capable of passing 100ft³/hr. of Natural Gas (CV = 1000Btu/ft³) in addition to other requirements.

INSTALLING THE APPLIANCE

Fixing the Flue Terminal

This is described on the separate instructions packed with the flue terminal set.

Fixing the Heater to the Terminal

Using the self-adhesive discs supplied cover the six fixing holes around the flue aperture in the back of the heater.

Slide out the bottom cover. Remove the two screws securing the outer case at the lower edge. Swing out the lower edge and lift off the outer case. Fit the flue terminal sealing strip (packed separately in the heater carton) into the recess around the flue aperture at the back of the heater. Locate the flue outlet into the circular duct on the flue terminal and secure the heater with the four washers and fixing nuts.

Fixing the Heater to a Se-duct Terminal

The minimum size Se-duct required for this appliance is 228mm (9'') deep, 394mm (15½'') wide.

Refer to the flue terminal instructions if replacing the existing terminal.

Refer to the heater fixing instructions for installing the appliance.

Fixing the Heater to a Severn 3 Flue Terminal

Remove the existing appliance. Retain the two fixing nuts and washers. Leave the flue terminal in place and make good any damage to the brickwork or plaster. Cut off the existing pipework at a convenient point below the appliance.

Using the self-adhesive discs supplied cover all the fixing holes in the back of the new appliance except for the two centre holes either side of the flue aperture.

Slide out the bottom cover. Remove the two fixing screws securing the outer case at the lower edge. Swing out the lower edge and lift off the outer case. Fit the flue terminal sealing strip (packed separately in the heater carton) into the recess around the flue aperture at the back of the heater. Locate the flue outlet into the circular duct on the flue terminal and secure the heater with the two nuts and washers retained.

Gas Connection

Assemble copper tail and gas service cock (marked G) to the Gas Inlet (5) Fig. 3. 15mm Copper pipe to BS. 2871 may be used for a supply pipe not exceeding 3 metres (10 ft). Where the installation contains many bends or the length is in excess of this, the use of 22mm copper pipe is recommended to ensure the correct inlet working pressure.

IMPORTANT Blow out all foreign matter from the gas supply pipe before connecting to the gas service cock. Check that there are no gas leaks after connection.

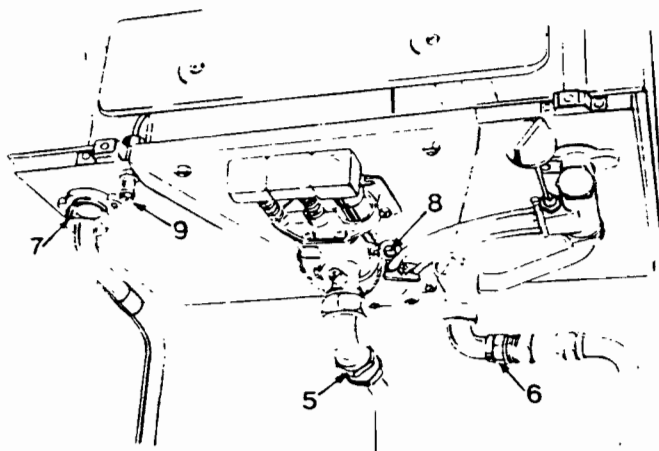


FIG. 3

WATER PRESSURES

The Mersey and Medway are both suitable for connection to a static tank or cold mains supply.

The Avon is ideally suited for connection to a cold mains supply.

The water pressures and heads required for each appliance are shown on Page 3.

PIPE SIZES (WATER)

If a static tank supply is used the pipe size should be 22mm copper to BS. 2871.

If connection is made direct to a mains supply (subject to Local Water Authority Regulations) the pipe size may be reduced to 15mm copper to BS. 2871 where reasonable pressure exists.

If connecting a Mersey or Medway to a mains supply that is subject to variation it is recommended that a water governor be fitted to the appliance supply pipe.

Water Connection

IMPORTANT Remove all 'O' Rings from connections before making any soldered joints.

It is strongly recommended that the use of loose jumper washer type cocks be avoided. Flush out all foreign matter from the supply pipe BEFORE connecting to the appliance.

Connect water service cock and copper tail to the water inlet tail at (6) Fig. 3.

Connect hot water pipes to water outlet tail at (7) Fig. 3. Check that there are no water leaks after connection.

Ensure that all the air is purged from the water system by turning on ALL hot water taps and turning them off in sequence starting with the tap at the lowest level.

COMMISSIONING THE APPLIANCE

To Light the Pilot

Turn on the gas supply. Fully depress the "gas on" button  and operate the spark igniter button  until the pilot is lit. The pilot can be observed through the viewing aperture above the control buttons.

Keep the "gas on" button  pressed in for 10 seconds then release. If the pilot goes out purge the system and repeat the above operation.

Adjustment of Burner Ignition

Turn on the water service cock. Turn on a hot draw off tap. The burner ignition should be smooth. Adjust by means of the small slotted screw in the diaphragm housing (8) Fig. 3. Turn clockwise to delay the burner ignition.

Checking the Burner Pressure (Mersey and Avon Only)

When the ignition adjustments have been completed attach a pressure gauge to the pressure test point (9) Fig. 3. after removing the screw and sealing ring. Light the pilot and open any hot draw off tap. Check the burner pressure against the table shown in the Technical Data Page 3.

Turn off the hot tap, remove the pressure gauge and replace screw and sealing ring.

Replace bottom cover.

ADJUSTING THE WATER TEMPERATURE (MERSEY ONLY)

Fully open a hot draw off tap.

Adjust the water throttle (2) Fig. 1. to give a water temperature rise of up to 44°C (80°F).

Turning the water throttle clockwise increases the water temperature.

NOTE

In hard water areas outlet temperatures in excess of 60°C (140°F) may result in scale formation and premature damage to the appliance.

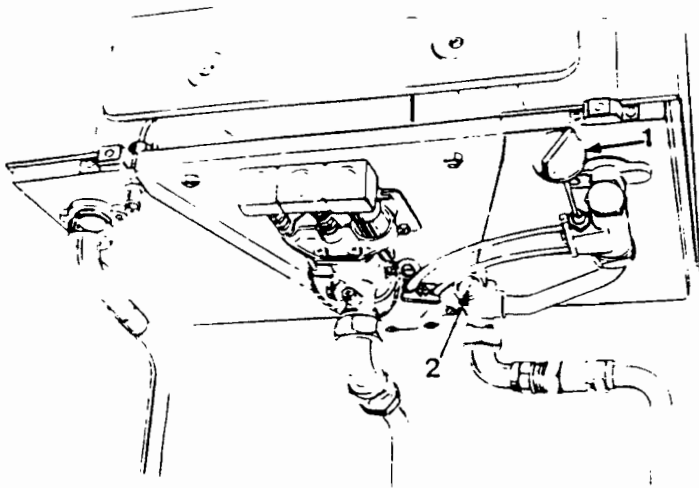


FIG. 1

ADJUSTING THE WATER TEMPERATURE AND USE OF THE WINTER/SUMMER CONTROL (MEDWAY ONLY).

Fully open the furthest HOT draw off tap from the heater. Ensure that the Winter/Summer control (1) Fig. 1. is in the Winter position. Adjust the water throttle (2) Fig. 1. to give the required water rate (turn anti-clockwise to open).

A water rate of 1.5 G.P.M. (which is 5 seconds to fill a pint milk bottle) will give a temperature rise of approx. 50°C (90°F).

At water rates below 1.5 G.P.M. the water rate will proportion the gas rate to a controlled temperature rise selected by the Winter/Summer control. In Summer months move the control to the Summer position to give approximately a 44°C (80°F) temperature rise. NOTE: It is important that during the Summer months the control is turned to the Summer position as outlet temperatures in excess of 60°C (140°F) may result in scale formation and premature damage to the appliance.

Alternatively it may be desirable to set the water to a higher flow rate which will result in lower water temperatures depending upon the actual setting (e.g. at the bath tap where temperatures of 46°C - 49°C (115°F - 120°F) are sufficient). If higher temperatures are required at the other outlets the temperature can be controlled by closing the outlet tap until a water rate of 1.5 G.P.M. is achieved. Any further reduction in the water rate will result in the temperature being controlled by the appliance.

The Winter/Summer control will still be operative below 1.5 G.P.M.

Header Tank Supply (MEDWAY ONLY)

If the water supply is from a header tank it may only be possible to obtain 1.5 G.P.M. with the throttle fully open, but the appliance will still function correctly using the Winter/Summer control but the lower water temperatures will be unobtainable.

CHECKING THE BURNER PRESSURE (MEDWAY ONLY)

When ignition adjustments have been completed attach a pressure gauge to the pressure test point 3 (Fig. 2.) after removing the screw and sealing ring.

Light the pilot and fully open the furthest HOT draw off tap from the heater and run for 7 minutes and check the burner pressure against the table shown in the Technical Data Page.

If the gas pressure is low first check that the water flow is 1.5 G.P.M. and the Winter/Summer control is in the Winter position. This will ensure that the gas valve is fully open.

Turn off the HOT water tap. Remove pressure gauge and replace screw and sealing ring. Replace bottom cover.

IMPORTANT HAND THE INSTRUCTIONS TO THE CONSUMER AND EXPLAIN FULLY HOW TO OPERATE THE APPLIANCE.

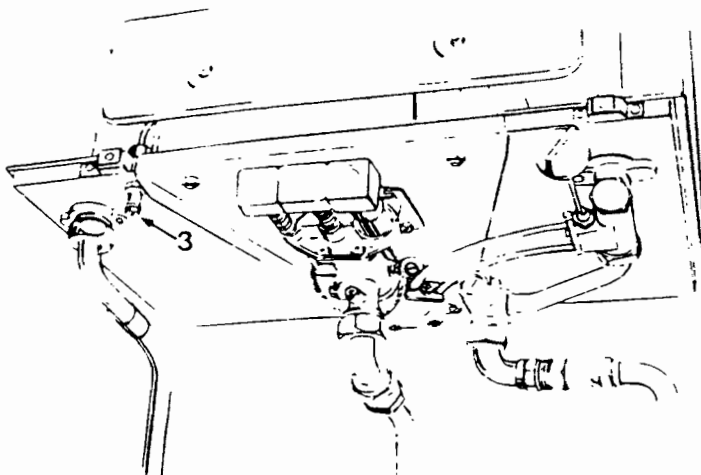


FIG. 2

FAULT FINDING CHART

'A' PILOT WILL NOT LIGHT

<u>Cause</u>	<u>Remedy</u>
1. Gas supply not connected.	Connect gas supply.
2. Gas not turned on.	Turn ON gas taps.
3. Ignitor does not spark.	Check for tracking of spark. Check spark electrode lead connections. Exchange spark electrode and/or spark generator.
4. Air in system.	Purge the system.
5. Pilot jet blocked.	Blow pilot orifice clear.
6. Pilot filter blocked.	Exchange the filter.

'B' PILOT WILL NOT REMAIN ALIGHT

<u>Cause</u>	<u>Remedy</u>
1. Pilot flame too small.	Check section 'A' 5 and 6.
2. Flue terminal seal or case seal damaged.	Exchange seal.
3. Outer case not correctly fitted.	Align case correctly and secure.
4. Pilot not striking thermocouple tip.	Check alignment of pilot and thermocouple.
5. Thermocouple tip burnt away.	Exchange thermocouple.
6. Loose connection between thermocouple and electro-magnet unit.	Tighten union connection on thermocouple.
7. Faulty thermocouple.	Exchange thermocouple.
8. Faulty magnet unit.	Exchange magnet unit.

'C' MAIN BURNER WILL NOT LIGHT

<u>Cause</u>	<u>Remedy</u>
1. Pilot not alight.	Light pilot.
2. Insufficient water flow to open gas valve.	Check points (a) to (e) below.
a) Inlet water supply restricted by stop cock.	Open all stop cocks fully.
b) Water filter blocked.	Clean or exchange filter.
c) Head of water from tank supply inadequate.	Raise tank or connect heater to main supply (subject to Local Water Authority Regulations).
d) Air lock in supply pipes.	Clear air lock.
e) Reduced water inlet working pressure due to cold draw off taps being used. Tank supply appliances will not normally be affected.	Connect to static tank if minimum pressure head is available or consult Water Authority with regard to supply pressure.
3. Transfer port in water governor blocked.	Clear blockage. AVON only.
4. Slow ignition device overadjusted.	Re-adjust slow ignition device.
5. Rubber diaphragm punctured.	Exchange diaphragm.
6. Rubber diaphragm not secured to governor valve.	Tighten locknut securing diaphragm. AVON only.
7. Scale blocking waterways.	Descale or exchange heating unit.
8. Injectors blocked.	Clear blockage.

'D' RAPID OR NOISY IGNITION OF MAIN BURNER

<u>Cause</u>	<u>Remedy</u>
1. Pilot flame too short.	Clean pilot filter.
2. Slow ignition device incorrectly adjusted.	Re-adjust slow ignition device.
3. Slow ignition ball stuck in open position.	Clean or exchange the ball. Ensure that the ball seating face is clean and check condition of water filter.
4. Water throttle stuck in open position.	Free the water throttle and check condition of water filter.
5. Water governor valve not seating correctly.	Carefully clean seating faces.
6. Main burner ports blocked.	Clean burner ports.

'E' SLOW OR INCOMPLETE IGNITION OF MAIN BURNER

<u>Cause</u>	<u>Remedy</u>
1. Gas taps partially closed.	Open all gas taps.
2. Insufficient water flowing through the appliance to fully open the gas valve.	Check section 'C' 2.
3. Transfer port partially blocked.	Clear obstruction.
4. Slow ignition device incorrectly adjusted.	Clean and re-adjust slow ignition device.
5. Excessive resistance to push rods.	Exchange push rods and seals lubricating with Dow Corning 111 silicone grease and ensure free movement.
6. Scale in heat exchanger tubes restricting water flow.	Descale or exchange heating unit.

'F' SLOW OR INCOMPLETE CLOSING OF MAIN BURNER

<u>Cause</u>	<u>Remedy</u>
1. Dirt on main valve seating face.	Clean seating face.
2. Rubber diaphragm distorted.	Exchange diaphragm.
3. Excessive resistance of push rod.	Exchange push rods and seals lubricating with Dow Corning 111 silicone grease and ensure free movement.
4. Main valve spring weak or damaged.	Exchange valve spring.
5. Transfer port partially blocked.	Clear obstruction.
6. Ball stuck in slow ignition device.	Clean or exchange slow ignition ball.
7. Dead leg in draw off pipe causing an air block.	Cut off dead leg and seal break in draw off pipe. Clear airlock.

'G' WATER NOT BEING HEATED

<u>Cause</u>	<u>Remedy</u>
1. Main burner will not ignite.	Check section 'C'.
2. Slow or incomplete ignition of main burner.	Check section 'E'.
3. Low gas rate.	Ensure correct minimum inlet pressure is available. Check main gas filter.
4. High water rate.	Turn off the gas supply and check cold water flow rate through the appliance. Check points (a) to (j) below.
a) Slow ignition device overadjusted.	Re-adjust slow ignition device.
b) Transfer port in water governor blocked.	Clear blockage.
c) Diaphragm punctured.	Exchange diaphragm.
d) Diaphragm not secured to governor valve.	Tighten locknut securing diaphragm.
e) Push rod jammed.	Exchange push rod and seals lubricating with silicone grease and ensure free movement.
f) Water governor valve not seating correctly.	Clean seating faces or exchange faulty parts. AVON only.
g) Thermostat bellows extended by excessive pressure on sensing bulb. Possible frost damage.	If 'cold' water rate reduces to correct value when thermostat bellows securing screws are released exchange the thermostat. AVON only.
h) Thermostat bellows extended by excessive pressure caused by slow closing main gas valve.	Check section 'F' and ensure that water cocks are fitted with captive jumper washers. AVON only.
i) Water throttle held open with foreign matter.	Clean throttle assembly and check condition of water filter.
5. Blockage of heat exchanger fins.	Clean heating unit thoroughly.
6. Scale deposition in heat exchanger tubes affecting efficiency.	Descale heating unit or exchange.

'H' SMELL OF COMBUSTION PRODUCTS

Cause

Remedy

- | | |
|--|---|
| 1. Damaged case or terminal seals. | Exchange seal. |
| 2. Flue terminal sited adjacent to open windows, doors or air intake fans. | Close windows and doors. Re-site air intake fan or appliance. |

MAINTENANCE INSTRUCTIONS

The following maintenance instructions should be carried out annually.

Operate the heater and check the following points:

Check List

Action

- | | |
|---|---|
| 1. Does pilot igniter function correctly? | If not check for electrical shorting. |
| 2. Is pilot flame correct? | Clean pilot filter. |
| 3. Do the push buttons slide freely? | Clean or replace if necessary. |
| 4. Does thermo-electric flame safety device open and close correctly? | Check that the pilot strikes thermocouple correctly. Replace thermocouple and/or electro-magnetic valve if necessary. |
| 5. Is water outlet temperature correct?
57.5°C ± 2.5°C (135.5°F ± 4.5°F) | See 6 and 7. Check that the thermostat throttle is closed when appliance is cold. AVON only. |
| 6. Is water flow rate correct? | Clean or replace water filter. Check 'COLD' water flow rate through the heater. |
| 7. Is burner pressure correct? | Ensure gas inlet pressure is sufficient.
Ensure main gas valve is fully open. |
| 8. Are there any water leaks? | Replace 'O' rings and/or push rod seals. |
| 9. Are there any gas leaks? | Replace sealing washers and gaskets. |
| 10. Does main burner extinguish quickly when hot water taps are turned off? | Ensure that slow ignition ball is free.
Check for 'dead legs' in water system.
Lubricate push rods with silicone grease (Dow Corning 111). |
| 11. Are main burner flames stable? | Inspect fins, flue ways and burner ports.
Clean if necessary. Check flue terminal and case front seals. Replace if damaged. |
| 12. Is heater noisy in operation? | Check for flame 'lift' on main burner see 11.
Descale the heat exchanger if necessary using a 10% solution by volume of hydrochloric acid or a proprietary brand of descalant. |

TESTING THE WINTER/SUMMER CONTROL (MEDWAY ONLY)

For a given water flow rate in the winter position the temperature rise of the water flow across the heat exchanger is 4 to 5°C higher compared with the summer position in normal operation.

The control may be tested in the following manner:—

- (1) With the control in the (W) winter position increase the water rate until the maximum gas pressure of 12.5 mbar (5" w.g.) is obtained at the manifold.
- (2) Slowly reduce the water rate until the gas pressure at the manifold just begins to fall i.e. less than 12.5 mbar (5" w.g.) and greater than 12 mbar (4.8" w.g.).
- (3) Without any further alteration to the water rate turn the control from (W) winter to (S) summer position, this should result in a drop in manifold pressure of approximately 2.5 mbar (1" w.g.) the control is working correctly, provided the inlet pressure is also correct.
- (4) Returning the control to the (W) winter position will not return the pressure to the original. To repeat the test start from (1) again.

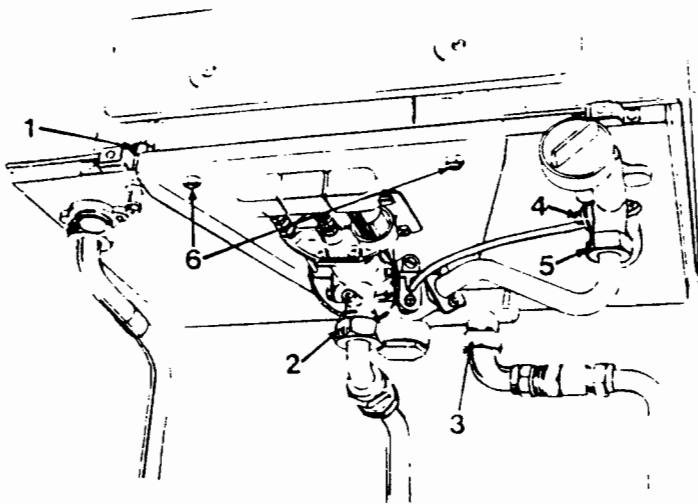


FIG. 1

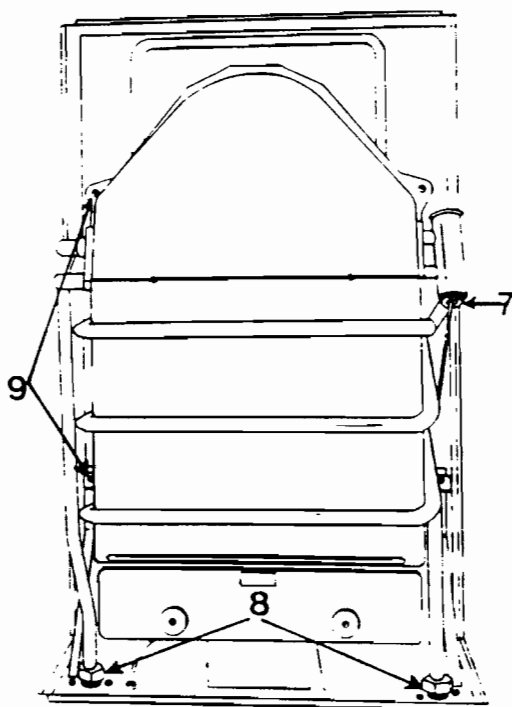


FIG. 2

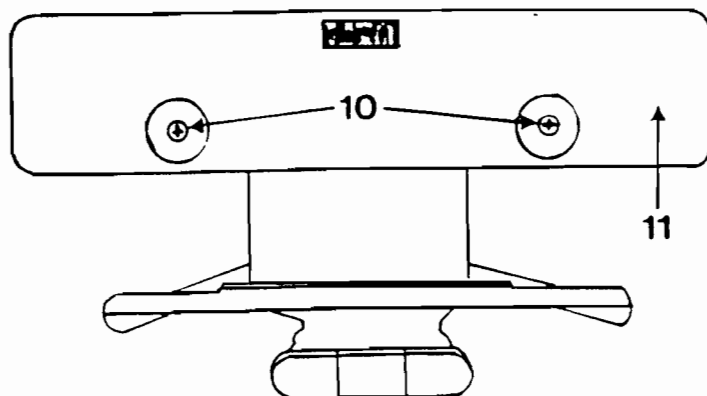


FIG. 3

IMPORTANT When replacing all parts reassemble in reverse order unless otherwise stated.

SECTION 1. TO REMOVE OUTER CASE (ALL MODELS)

Slide out the bottom cover.

Turn off the gas supply.

Turn off the water supply and drain the system by opening a hot draw off tap and the drain screw in the water service cock.

Remove the two screws securing the outer case at the lower edge. Swing out the lower edge and lift off the outer case.

2. TO REMOVE CONTROLS ASSEMBLY (ALL MODELS)

Complete section 1.

Release P.T. extension tube connection at (1) Fig. 1.

Release gas inlet connection at (2) Fig. 1.

Release water inlet connection at (3).

Release screw(s) and clip securing sensing tube(s) at (4) Fig. 1.

Release union nut securing water governor feed pipe at (5) (AVON only).

Holding the controls tray securely, release two Nuts at (6) Fig. 1. Note position of rubber washers under the screw heads. Remove controls assembly tray by carefully pulling forwards. Avoid catching the P.T. extension tube and the water governor feed pipe.

When re-fitting the controls tray ensure that the rubber washers on the screws are fitted correctly.

3. TO REMOVE HEATING UNIT FOR CLEANING (ALL MODELS)

Complete section 1.

To prevent possible damage to the heating unit release union nut (7) with a suitable spanner whilst supporting the bulb housing hexagon boss with a second spanner.

Withdraw thermostat bulb. (AVON only).

Release two union connections at (8) Fig. 2.

Remove four screws at (9) Fig. 2.

Carefully pull heat exchanger forwards from the top and lift.

Remove primary flue (secured by four screws).

Carefully clean heat exchanger fins by washing or brushing.

4. TO REMOVE BURNER BARS (ALL MODELS)

Complete section 1.

Remove two screws (10) Fig. 3. and remove heat shield (11).

Carefully remove burner bars starting from the outside edge and work inwards.

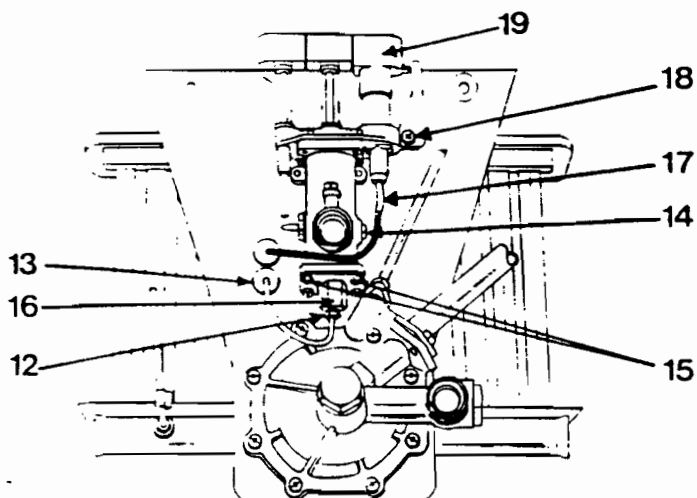


FIG. 4

5. TO REMOVE THERMOCOUPLE AND ELECTRO MAGNET UNIT (ALL MODELS)

Complete section 1.

Remove controls assembly (see section 2). Viewing the controls tray from the bottom, release thermocouple securing nut at (12) Fig. 4.

To remove thermocouple, first remove the burner bars on either side of the thermocouple probe (see section 4).

Release thermocouple split nut from below thermocouple and slide off.

Pull thermocouple downwards and carefully draw it through the rubber grommet (13).

To remove electro magnet unit remove single screw at (14) Fig. 4 and fixing screws at (15) and carefully pull mag unit (16) forwards to clear.

NOTE: To facilitate removal of screws (15) the FFD assy (push button unit) may be removed by pulling the electrode lead from spark generator at (17) Fig. 4. removing the pilot injector (see section 8) and releasing the gas feed pipe union connection and the three securing screws securing the FFD assy (push button unit) to the controls tray.

6. TO REMOVE SPARK GENERATOR (ALL MODELS)

Slide out the bottom cover.

Viewing the controls tray from the bottom, pull electrode lead from spark generator at (17) Fig. 4.

Remove spark button retainer (18).

Lift off button (19) and unscrew spark generator.

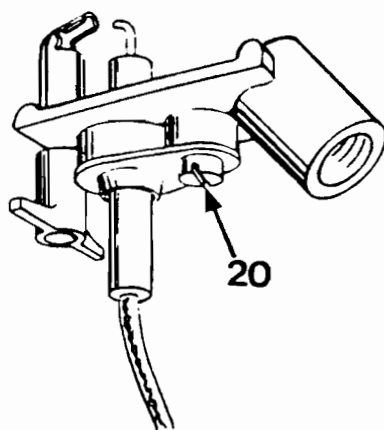


FIG. 5

7. TO REMOVE SPARK ELECTRODE (ALL MODELS)

Complete section 1.

Remove controls assembly (see section 2).

Remove burner bars at each side of pilot block assy. (see section 4).

Remove thermocouple (see section 5).

Pull electrode lead from rear of spark generator.

Lift out pilot block assy (loose fit) to clear pilot feed tube.

Release screw securing electrode at (20). Fig. 5. and pull electrode lead through rubber grommet to clear tray assembly.

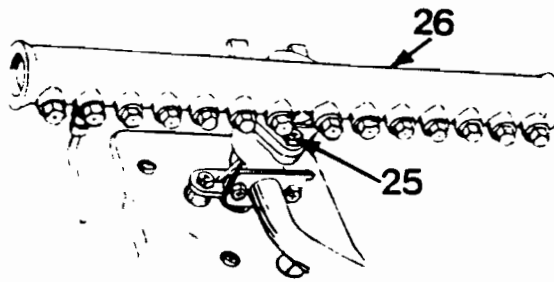


FIG. 6

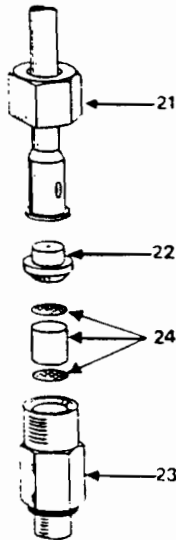


FIG. 7

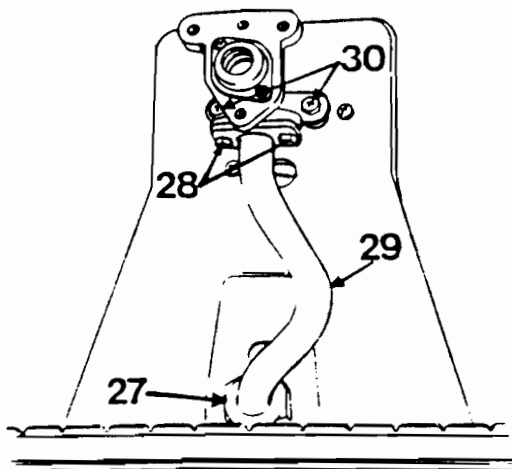


FIG. 8

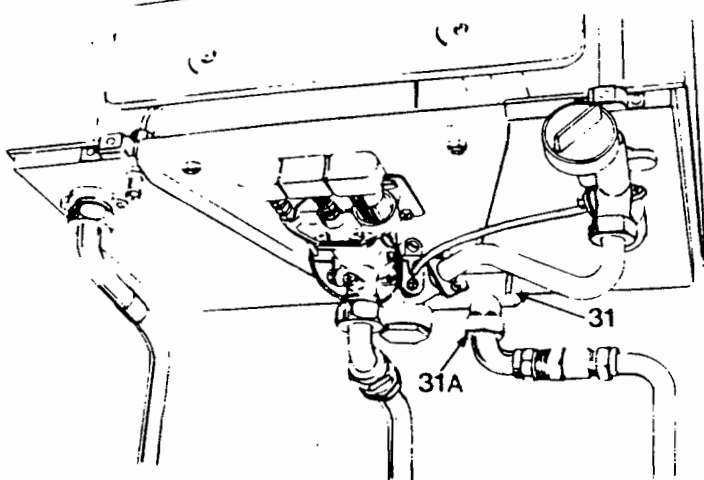


FIG. 9

8. TO REMOVE PILOT INJECTOR (ALL MODELS)

Complete section 1.

Remove controls assembly (see section 2).

Remove all burner bars (see section 4).

Remove thermocouple (see section 5).

Lift out pilot block assembly (loose fit) to clear pilot feed tube.

Release union nut (21) Fig. 7. and lift off pilot feed tube.

Remove pilot injector (22) Fig. 7. from bottom of tube.

When re-assembling ensure that the pilot injector is correctly positioned (see Fig. 7.).

9. TO REMOVE THE PILOT FILTER (ALL MODELS)

Remove pilot injector (see section 8).

Remove filter body (23) Fig. 7. and gently tap out the filters (24) Fig. 7.

10. TO REMOVE BURNER MANIFOLD (ALL MODELS)

Complete section 1.

Remove controls assembly (see section 2).

Remove all burner bars (see section 4).

Remove fixing screws at (25) Fig. 6. and lift off manifold (26).

11. TO REMOVE MAIN GAS VALVE ASSY. (ALL MODELS)

Complete section 1.

Remove control assembly (see section 2).

Remove all burner bars (see section 4).

Remove burner manifold (see section 10).

Release union connection (27) Fig. 8.

Remove two screws at (28) and remove gas feed pipe (29).

Remove two screws (30) and lift away main gas valve assy.

NOTE: When re-assembling, the feed pipe (29) must be fitted AFTER the A/V assy. so as to avoid bending the valve stem.

12. TO CLEAN WATER FILTER (ALL MODELS)

Pull off the bottom cover.

Turn off the water supply and drain the system by opening a hot water draw off tap and the drain screw in the water service cock.

Remove capping nut (31) Fig. 9. and withdraw the filter (Avon only).

Release union nut (31A) Fig. 9. and withdraw the filter (Medway and Mersey only).

Wash the filter clean and re-fit.

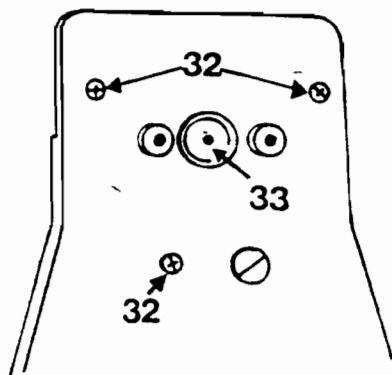


FIG. 10

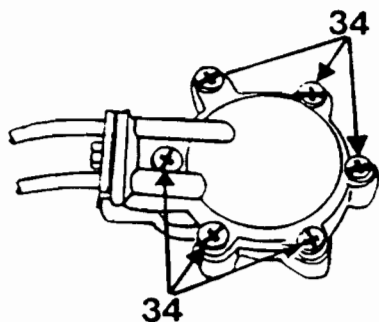


FIG. 11

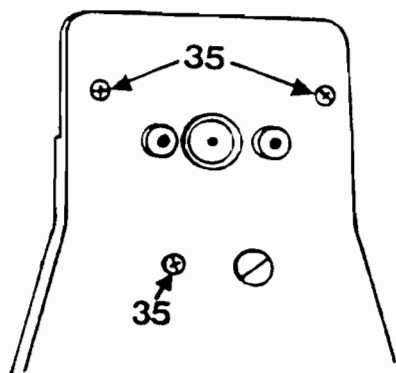


FIG. 12

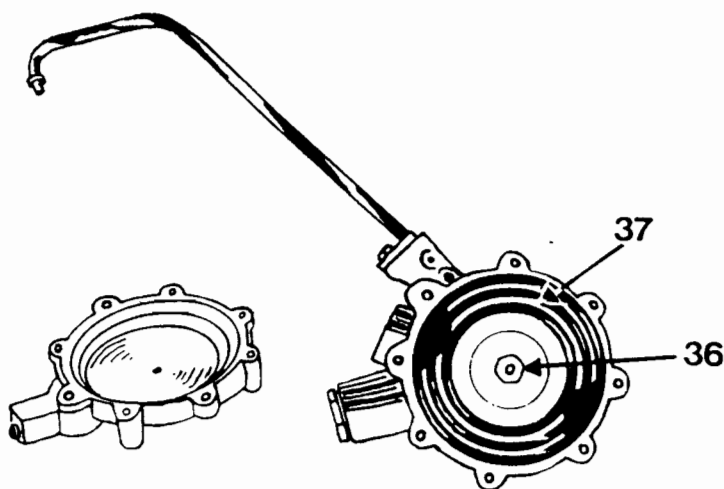
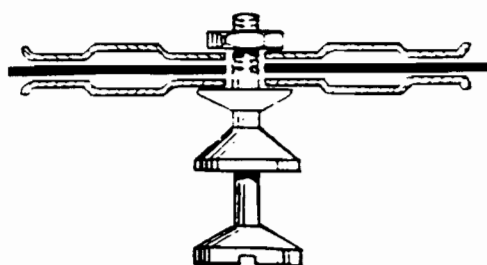


FIG. 13



13. TO REPLACE WATER DIAPHRAGM (MERSEY AND MEDWAY ONLY)

Complete section 1.

Remove controls assembly (see section 2).

Remove three screws at (32) Fig. 10.

Remove screws at (34) Fig. 11. (Mersey 6 screws, Medway 8 screws).

Separate the two halves and remove diaphragm.

When replacing the diaphragm, ensure that the high pressure side is facing downwards.

14. TO REPLACE PUSH ROD SEAL (MERSEY AND MEDWAY ONLY)

Complete section 1.

Remove main gas valve assembly (see section 11).

Remove brass washer (33) Fig. 10. to expose seal. Carefully prise out the push rod seal and replace with new seal.

Lubricate with Dow Corning 111 silicone grease.

15. TO REPLACE WATER GOVERNOR DIAPHRAGM (AVON ONLY)

Complete section 1.

Remove control assy. (see section 2).

Remove three screws at (35) Fig. 12.

Remove 8 slotted screws securing water governor top and bottom covers.

Remove nut (36) Fig. 13. and lift out diaphragm (37).

When fitting the new diaphragm, (see Fig. 14), ensure that the diaphragm plates are in position on both sides of the diaphragm. The diaphragm is marked 'High Pressure Side' and should be fitted with this face downwards.

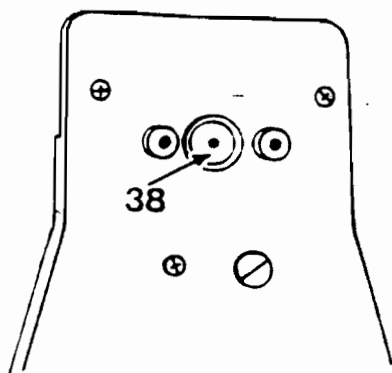


FIG. 15

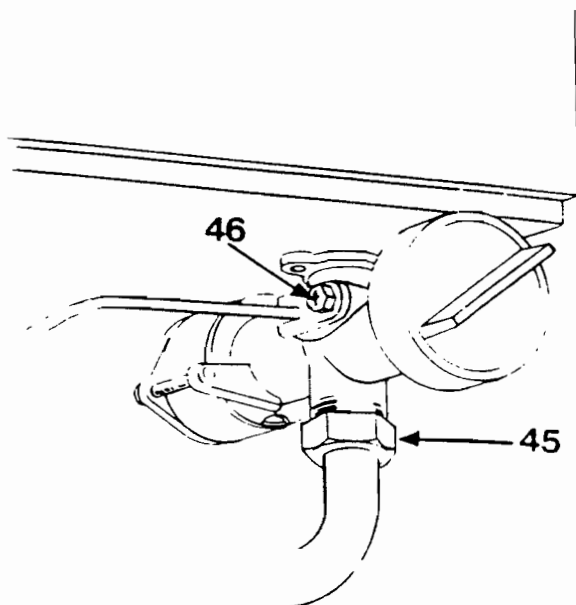


FIG. 16

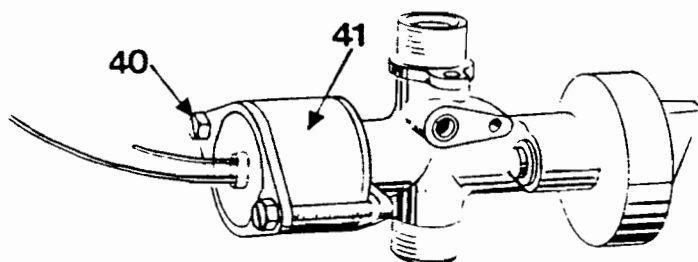


FIG. 17

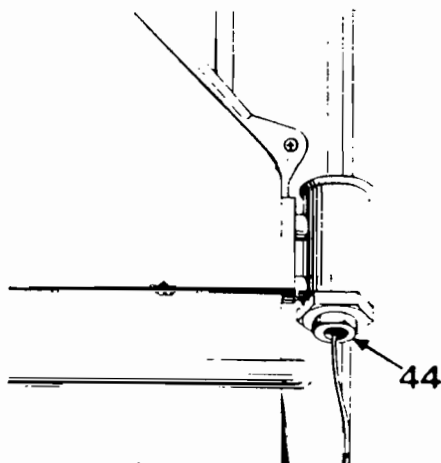


FIG. 18

16. TO REPLACE WATER GOVERNOR PUSH ROD SEAL (AVON ONLY)

Complete section 1.

Remove control assembly (see section 2).

Remove all burner bars (see section 4).

Remove two screws (28) Fig. 8.

Remove two screws (30) Fig. 8. and lift out main gas valve.

Remove push rod and washer, then carefully prise out 'O' ring seal at (38) Fig. 15.

IMPORTANT: Ensure that push rod is free from surface imperfections and is lubricated with silicone grease (Dow Corning 111) when fitting new seal.

17. TO REMOVE THERMOSTAT (AVON ONLY)

(a) Turn off the gas supply.

Run water through the appliance to cool the thermostat.

Remove the outer case (see section 1).

Turn off the water supply and drain the system by opening a hot draw off tap and the drain screw in the water service cock.

Release the union connection (45) Fig. 16.

Release the screw and clip securing the sensing tube (46) Fig. 16.

Release the union connection above the thermostat/throttle assembly.

Remove the two fixing screws above the thermostat/throttle assembly.

Carefully pull the thermostat/throttle assembly down and forwards to clear the appliance.

Remove the two long screws (40) and the spacer (41) Fig. 17.

(b) To prevent possible damage to the heating unit release the union nut (44) Fig. 18. with a suitable spanner whilst supporting the bulb housing with a second spanner.

Withdraw the thermostat bulb.

Remove the rubber grommet clear of the capillary tube and base of case.

When re-fitting the thermostat, ensure that the 'O' ring is in position at the heat exchanger connection (44) Fig. 18. and that the spacer is correctly located between the thermostat flange and the retaining plate.

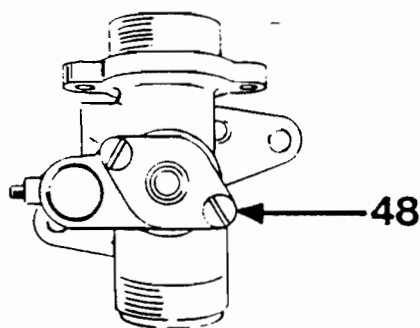


FIG. 19

18. TO REPLACE THE TEMPERATURE ADJUSTER SEAL (AVON ONLY)

Complete Section 17 (a).

Pull the retaining clip from the temperature control knob shaft.

Withdraw the control knob assembly.

Remove the two fixing screws (48) and the retaining plate located behind the control knob (Fig. 19.).

Remove the bearing and 'O' ring seal.

IMPORTANT. Ensure that the rod is free from surface imperfections and is lubricated with a silicone grease (Dow Corning 111) when fitting a new seal.

19. TO REPLACE THE THERMOSTAT PUSH ROD SEAL (AVON ONLY)

Complete section 17 (a).

Remove the two screws (42) and remove the retaining plate (43) Fig. 20. to expose the push rod seal.

IMPORTANT. Ensure that the push rod is free from surface imperfections and is lubricated with a silicone grease (Dow Corning 111) when fitting a new seal.

20. TO REMOVE THE WINTER/SUMMER CONTROL ASSEMBLY (MEDWAY ONLY)

Pull the Winter/Summer knob from the shaft. Release connection (47) Fig. 21. and carefully withdraw the Winter/Summer assembly.

When re-assembling, replace the Winter/Summer assembly and correctly align the shaft and the knob before pushing the knob into position.

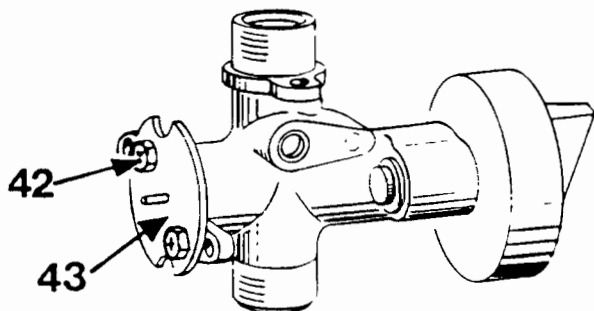


FIG. 20

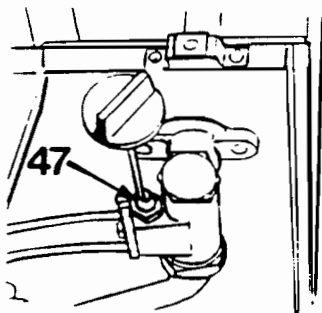


FIG. 21

SHORT SPARE PARTS LIST

Key No.	B.G.C. Pt. No.	Description	No. Off	Makers Part No.
2	284 957	Seal Pack — Chassis to Flue Terminal	1	31-12299
5	285 672	Case Assy. (Key Nos. 6, 7 & 8 inc.) Avon & Medway only	1	10-13472
5A	285 673	Case Assy. (Key Nos. 6, 7 & 8 inc.) Mersey only	1	10-13473
6	284 538	Case Seal Self Adhesive Rubber	1	10-10075
7	284 537	Viewing Aperture Seal	1	10-10147
8	284 535	Viewing Aperture Glass	1	10-10145
19	285 513	Injector N.G. 1.2mm	14	19-12196
22	391 677	Thermocouple CF-7749-101-102-Junkers	1	10-12416
23	393 673	Electrode Assembly RV 14021	1	10-12259
30	284 996	Electro-Mag. Unit	1	10-12410
33	285 679	Pilot Injector	1	19-12690
37	393 492	Spark Igniter RV 1174	1	10-11935
38	285 681	Igniter Button (Avon only)	1	10-13469
38A	285 682	Igniter Button (Medway & Mersey only)	1	10-13466
39	285 683	Starter Button (Avon only)	1	10-13481
39A	285 684	Starter Button (Medway & Mersey only)	1	10-13480
40	285 685	Stop Button (Avon only)	1	10-13482
40A	285 686	Stop Button (Medway & Mersey only)	1	10-13483
57	285 691	Thermostat Assembly (Avon only)	1	10-13486

