

AGAhi-light

P 50, P 70, P 50S, P 70S

Powered Flue Gas Boilers.

FOR THE INSTALLING ENGINEER

These boilers have forced-draught balanced flues with facility to be connected in various directions. Aga hi-light P 50 and P 70 have multi-functional gas controls with permanent pilot while models P 50S and P 70S are fully automatic with electric ignition. All are suitable for fully-pumped, open vented systems only.

IMPORTANT - PLEASE NOTE PARTICULARLY THE FOLLOWING POINTS:-

- (1) Remakeable joints MUST be provided in the water pipes immediately outside the boiler casing.
- (2) Whilst handling the boiler, avoid standing it on its controls.
- (3) Do NOT use a reducing bush directly in the return connection of the boiler.
- (4) Before firing, check the seal of the inner flue tube (by removing top of flue turret).
- (5) To utilize the pump delay on this boiler a permanent live supply is necessary and the pump must be wired from the boiler.
- (6) A system by-pass is necessary.

GENERAL

Attention is drawn to the requirements of the current Building Regulations in England and Wales, the London Building (Amendment) Act in the area of the former L.C.C., the Scottish Building Regulations, the model bylaws in Northern Ireland, Local Authorities and local Gas Region.

LOCATION

The position chosen for the boiler should permit the provision of a satisfactory flue. It should also provide adequate space for servicing and air circulation. Where installation will be in an unusual position special procedures may be necessary. BS 5376:2 gives detailed guidance for installation in a bathroom, airing cupboard, under-stairs cupboard, garage, roof space and external compartment.

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 the essential features of compartment design are given in BS 5376: 2.

Room-sealed Boilers like the Aga hi-light P 50, P 70, etc., may be installed in any room although particular attention is drawn to the requirements of the I.E.E. Regulations with respect to bathroom installations.

FLUES (see fig. 1)

Detailed recommendations for flueing are given in CP 337. The following notes are intended to give general guidance only. The terminal should be installed on a clear expanse of wall and preferably not less than 600mm (2ft) from a corner recess or projection. Where it is impracticable to avoid close siting to a down pipe or brickwork projection it is recommended that a longer flue assembly be fitted so that the terminal grille clears the wall and projection.

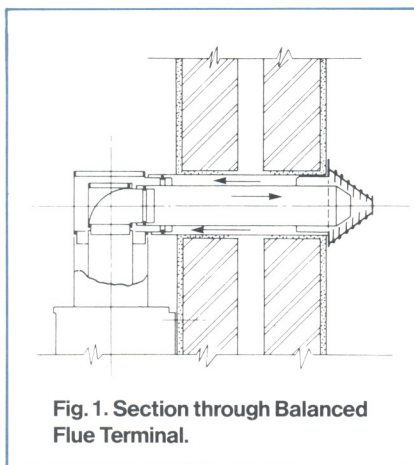


Fig. 1. Section through Balanced Flue Terminal.

The terminal must not be installed within 300mm (1ft), measured vertically, from the bottom of an openable window, air vent or any other ventilation opening. Where the terminal is less than 2m (6.6ft) above the level of any ground, balcony, flat roof etc., to which any person has access and which adjoins the wall in which the terminal is situated, the terminal must be protected by a guard of durable material.

A terminal guard of approved design is available either from AGA WORKS or direct from the manufacturers - QUINNELL, BARRETT & QUINNELL, 884 Old Kent Road, London SE15 Pattern No. 304.

Note: Terminal positions to be avoided are:

- (i) Immediately beneath eaves or a balcony.
- (ii) Less than 300mm (1ft) from ground level,
- (iii) Less than 600mm (2ft) from any surface facing the terminal.

The local Gas Region should be consulted

where any doubt arises with termination.

VENTILATION

There are no specific requirements for ventilation of the room where a balanced flue boiler is fitted.

Where such an appliance is installed in a purpose made cupboard or compartment air vents are required (for the purpose of cooling the appliance) in the cupboard or compartment at high and low level which may communicate with a room or direct to outside air. The minimum effective area of the air vents is as follows:-

	P 50	P 70
	and	and
	P 50S	P 70S
Air direct from outside	cm ² 85.5	122.5
	in ² 13.25	19
Air from room	cm ² 171	245
	in ² 26.5	38

CLEARANCE AROUND THE BOILER CASE.

The following minimum clearances must be left for installation and servicing:-

At top	50mm (2")
At sides	5mm (3/16")
At bottom	150mm (6")
At front	915mm (36")

The minimum side clearances are subject to the provision of connections in the flow and return pipes, above or below the boiler, to permit its subsequent removal should this ever become necessary.

GAS CONNECTIONS

Connect as required by CP.331 parts 2 and 3 to the isolating gas tap that is fitted to the boiler.

The gas supply and meter must be checked to ensure that they are adequate for the boiler rating and any other appliances that are, or are to be, connected. Do not use pipes of a smaller size than the boiler gas connection.

Do not connect the boiler to a pre-payment meter.

Test the complete installation for soundness as described in the above code or in consultation with the local Gas Region.

AGA

INSTALLING ENGINEERS cont...

ELECTRICAL WIRING

All site wiring must conform to current I.E.E. regulations for the electrical equipment of buildings, local Gas Region regulations, Local Authority requirements and, in Scotland, the electrical provision of Building Regulations applicable in Scotland. A 240v 50Hz AC supply, adequately earthed is near to the boiler, by means of a switched plug and socket fused 3 amp. Minimum cross sectional area of incoming cable, 0.75mm² (e.g. 24/0.2 mm 3 core PVC insulated cable). All site wiring must be clear of sharp edges and hot surfaces and be secured. The control box of the boiler, has connections for wiring to the electric supply and an external control system and it is recommended that connection is made to a system junction box as shown in figs. 2a & 2b. The boilers are suitable for use with all types of control system but it is recommended that controls are selected that isolate the boiler electrically at times of no demand.

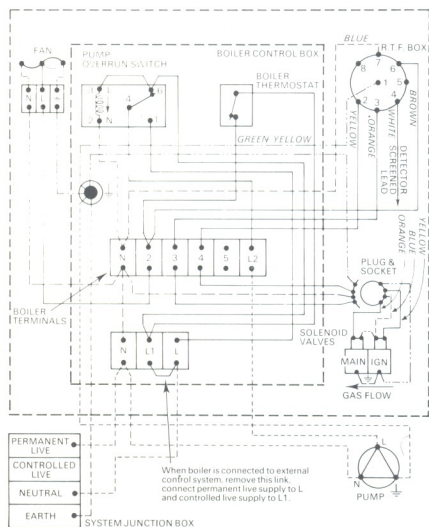


Fig. 2a Internal wiring and connections to Aga hi-light P50S and P70S.

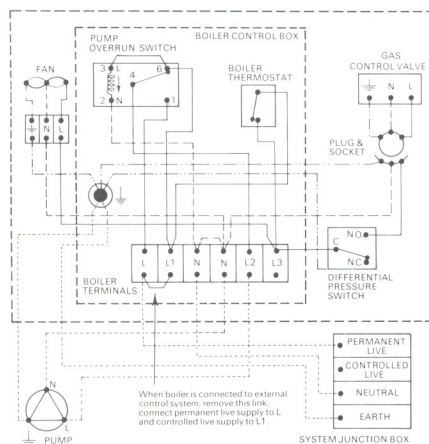


Fig. 2b Internal wiring and connections to Aga hi-light P50 and P70.

NOTE: The mains lead is to be anchored in a hole in the back of the control box with the strain relief bush supplied.

FIXING THE BOILER (ALL MODELS)

The boiler is supplied complete except for the balanced flue components which are packed separately. A template of fixing holes and flue position is printed on the carton. (See also dimensions on fig 2.) Boiler and casing are normally supplied to suit back flue outlets through a 280mm (11") cavity wall. Installation requiring LH or RH flue outlet is catered for by removable panels in the sides of the outer casing and by an adjustable boiler flue turret. Extended flue assemblies up to 2,438mm (8') long for the P 50S and P 50 boilers and 1,219mm (4') for the P 70S and P 70 boilers are permitted and are available to special order.

To Remove Casing.

1. After removal from carton, lay boiler on its back.
2. Pull off white front plate and remove black user access panel.
3. Remove two screws which locate bottom corners of casing assembly to its back plate.
4. Slide casing assembly towards top of back plate and lift off.

Preparing to Mount the Boiler on the Wall (All Models).

1. Using the template provided on the carton, fig. 3, mark out the positions on the wall of the four fixing holes (All Models) and flue terminal aperture. With No. 12 masonry drill, drill holes at least 2 1/4" deep to accept plugs provided for fixing screws and carefully cut brickwork as necessary.
2. Fit four wall plugs and No. 12 x 2" Csk. screws supplied, into the wall and hang the appliance on the fixing screws via the key-hole slots in its backplate (the boiler can be separated from the backplate and rehung on its hooks after the backplate is secured). Tighten the fixing screws.

Fixing of Flow and Return Pipes.

The flow and return pipes can be arranged

so as to give up or down connection on Left Hand side only.

Note: Remakeable joints must be provided in the flow and return pipes external to the casing. Fittings should be secured into the boiler connections, and primary lengths of pipe fitted, before the boiler is hung on the wall.

Fixing Boiler and making the Flue Connection.

The flue is of concentric type, with the exhaust tube inside the air inlet tube, giving the best possible results even when the terminal is subjected to adverse conditions and reducing the temperature of parts in contact with the wall so that no insulation is required.

To fit the air inlet tube, either fit the tube to the outer stub from the outside of the house, making sure that the tube is completely on to the stub, then mark off the tube flush with the surface of the wall, or measure the length of tube required from the base of the air inlet stub to the face of the wall. Cut off with hacksaw (note the length of tube) then replace into wall. The inner exhaust tube must be cut longer than the outer air inlet tube so that, when fully inserted within it, it projects 32mm (1 1/4") further toward the flue turret. In its correct position the stepped part of the fins on the air inlet tube butt against the air inlet tube leaving 5/8" of fin protruding. The tubes should be turned so that the two fins are vertical, one at the top and one at the bottom.

Remove the turret cover (located on the top) and check that the exhaust tube locates and seals on turret stub. **THIS IS MOST IMPORTANT.** Check that air inlet tube is correctly sealed to air inlet stub. **REPLACE TURRET COVER.** Make good the wall on the outside if necessary. Place the terminal over the tubes. The air inlet tube should fit inside the backplate of the

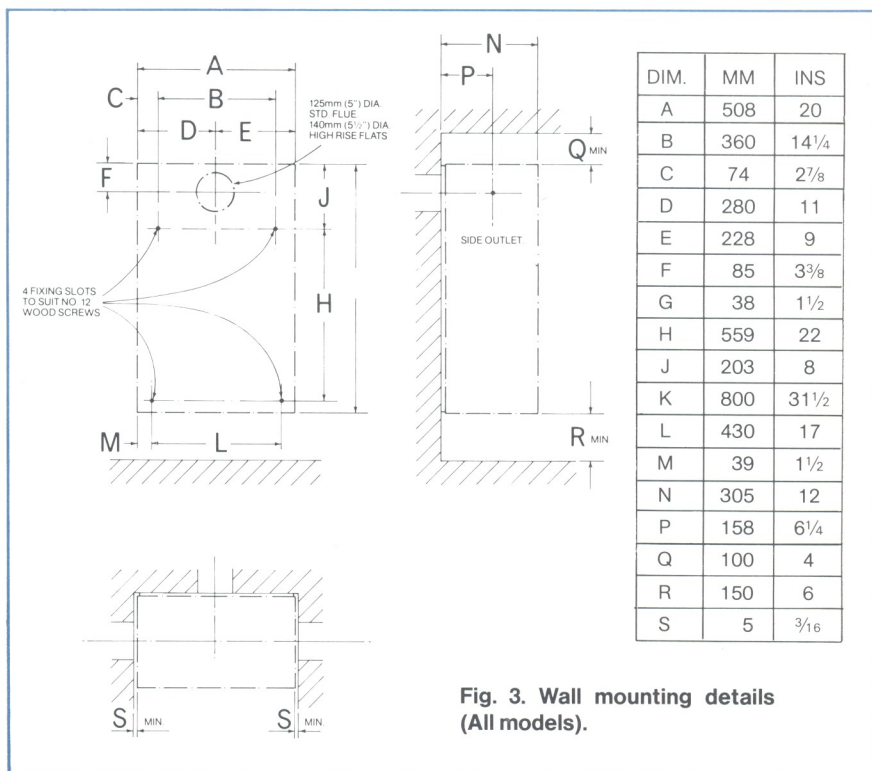


Fig. 3. Wall mounting details (All models).

terminal, and butt up to the two stops fixed to the backplate. Line the terminal up so that the top is horizontal, turning the exhaust tube should the fins foul the stops. Mark the four fixing holes, drill and fix with the plugs and 1½" x 8's Black Japanned screws provided.

Note: IMPORTANT Check that the correct flue pipe has been issued with your model boiler.

Model	Cone Size	Label Colour
P 50 & P 50S	42mm	Blue
P 70 & P 70S	47mm	Green

Extended Length Flue Assemblies

The round hole cut into the wall for the flue assembly must be level and if possible at right angles to the boiler support wall. Fit the air tube only through the wall (temporarily) on to the boiler spigot support and check by spirit level on outside face of tube at boiler end and inside face of tube at outside wall end, that the tube is level. If not, correct by packing or lowering tube to suit: cutting and assembly should then be completed as described under "Fitting the Flue Assembly."

To Connect Services (All Models).

1. Flush all water circuits after connecting to the boiler. The required pipework should be fitted to leave the boiler via the cutouts in the top and bottom of the boiler casing. Fill the system with water and flush out. Refill the system, venting the pump and radiator etc.

Note: A permanent open vent must be provided at all times from the flow connection of the boiler, as close to the boiler as possible and ensuring that it rises all the way to the expansion tank.

2. **Models P 50 and P 70 Only.** Unscrew the six M6 set-screws holding the burner tray to the Outer Burner Box assembly and check the position of the spark electrode relative to the pilot shield and that it conforms to the position shown in fig. 4a.

2a. **Models P 50S and P 70S Only.** Unscrew the six M6 set-screws holding the burner tray to the Outer Burner Box assembly and check the position of the spark and detector electrodes relative to the top of the gas burner and that the gap conforms to the position shown in figs. 4b and 4c.

3. Replace the burner tray assembly and check that the rubber gasket makes an airtight joint.

4. Remove control box cover and make electrical connections to the control box from mains and system controls—see wiring diagrams (figs. 2a and 2 b).

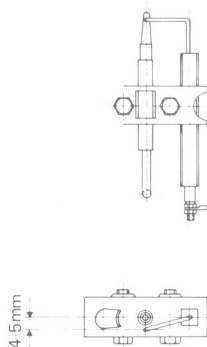


Fig. 4a. Position of spark electrode relative to pilot shield (P 50).

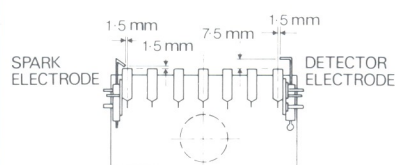


Fig. 4c. Position of spark and Detector electrodes (P 50S).

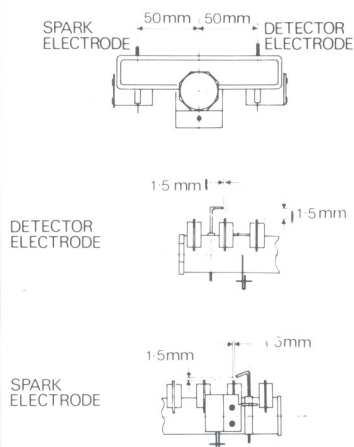


Fig. 4d. Position of spark and Detector electrodes (P 70S).

BOILER TEMPERATURE CONTROL

Aga hi-light boilers are designed to function efficiently and economically at all times at a constant flow temperature to suit standard system design requirements. For this reason, and to achieve maximum simplicity of use, the boiler temperature control has a fixed setting and is not adjustable by the user.

Electrical switching-off of the boiler has of course to be effected either at the main switch or at the programmer.

INITIAL LIGHTING INSTRUCTIONS AND TESTS.

Aga hi-light P 50 and P70 (see fig. 5a).

1. Isolate electricity at wall socket or spur box.

2. Purge the air from the gas supply making sure that gas is available at appliance gas tap D. **CAUTION**—No Smoking or Naked Lights. Undo the union at the appliance gas tap D, open the tap and purge all the air from the supply pipe. Close appliance gas tap, and remake union, turn gas tap on and check for gas soundness (See CP.331: Part 3).

WARNING:—Use a soap solution to locate gas leaks. NEVER use a naked flame.

3. Remove inspection window J on boiler Outer Box, place a lighted taper near the pilot light and main burner, open appliance gas tap D. No gas should be passing, burners should not light.

4. Remove the plug of the pressure test nipple K on the multi-functional valve and connect a pressure gauge.

5. Open the appliance gas tap D, push in and hold gas valve button L allowing a few seconds for gas to reach the pilot burner. Press button A of Piezo electric generator a few times until pilot burner is alight. Hold in button L for at least 30 seconds after the pilot has lit. When button L is released the pilot should remain alight and the flame should envelope the tip of the thermocouple and be about $\frac{3}{4}$ " long. If necessary, it can be adjusted on the gas valve by turning screw N. Then push M down and release.

6. Check the piping to the pilot burner for gas soundness. Replace the inspection window J on the boiler front panel.

7. Check that:

- (a) The system is full of water and all valves open.
- (b) Any room thermostat is ON.
- (c) Any programmer or time switch is ON to continuous heating.

The connect and switch on the electricity supply and check that the pump is running, and that the main burner has lit.

8. When the burner has been alight for at least 10 minutes, check the gas pressure at the burner. Adjust if necessary (see burner pressure in Technical Information on Page 1).

The governor is in the gas control valve. Remove protection cover P and turn screw clockwise to increase pressure. Replace cover P.

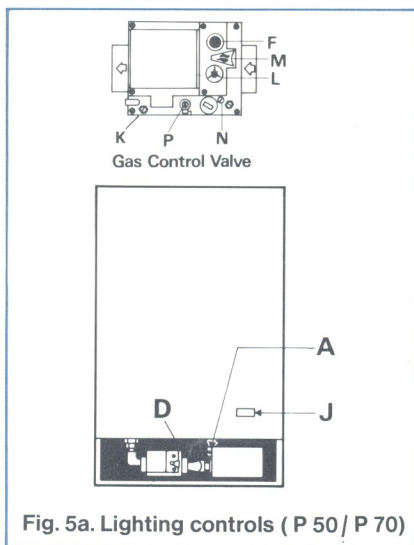


Fig. 5a. Lighting controls (P 50 / P 70)

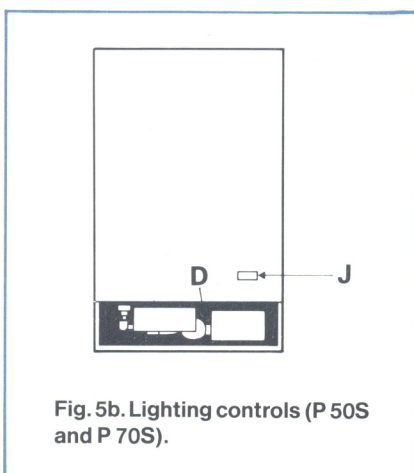


Fig. 5b. Lighting controls (P 50S and P 70S).

9. When system reaches operating temperature check for water leaks and preferably drain the system whilst it is still hot in order to make flushing more effective. Check that the gas pressure at the burner is unaffected when other gas appliances are used.

10. Re-assemble the outer casing in the reverse manner as described previously and secure firmly. Refit customer access panel.

11. To obtain the optimum performance from the boiler it is necessary to maintain a boiler 'flow' and 'return' temperature differential between 10°C (18°F) and 14°C (25°F). Check this differential after waiting for the boiler 'flow' temperature to reach equilibrium.

Note: If for any reason a gas rate check is required, turn OFF all other appliances using gas and using the meter test dial and a watch, check that the gas input to the boiler is as indicated on the date plate. (CP 332: Part 2 gives full details of method).

Aga hi-light P 50S and P 70S (see fig. 5b)

1. Isolate electricity at wall socket or spur box.

2. Purge the air from the gas supply. **CAUTION**—No smoking or naked lights. Undo the union at the appliance gas tap, open the tap and purge all the air from the supply pipe.

Close appliance gas tap. Remake the union. Turn gas tap on and check for gas soundness. (See CP.331: Part 3).

WARNING: Use soap solution to locate gas leaks. NEVER use a naked flame.

3. Check that the system is full of water, and open all valves.

4. Set any room thermostat to the required position.

5. Set the cylinder thermostat to the required position.

6. Set any programmer to the position giving constant hot water and Central Heating.

7. Switch ON the electrical supply.

To Light the Boiler.

When the electrical supply is switched ON, the boiler will light automatically whenever the system controls call for heat. The automatic ignition sequence is as follows:—The fan will start and the electronic control box will produce a continuous spark at the electrode on the burner. After 3 seconds of spark the first solenoid valve will open and allow gas to pass to the main burner at ignition rate. The main burner will ignite and when the flame has been detected on the burner by the detector electrode the second solenoid will open and give full gas rate and the spark will stop.

The burner can be observed through the sight glass in the front of the boiler.

Check the main burner gas pressure and rate after approximately 10 minutes and adjust if necessary to the data on page 4. Set programmer clock and select required programme.

Electrical Reset R.T.F./P. Control Box.

If the Lockout Neon remains alight for more than three minutes turn the electric supply OFF and then ON again.

The ignition sequence will be repeated.



Agaheat Appliances

Glynwed Domestic & Heating Appliances Limited
P.O. Box 30, Ketley, Telford, Salop TF1 1BR
Telephone: Telford 3973 (STD. 0952)

GLYNWED

M&C/10.77/5M

Address Service Enquiries to:—

Agaheat Appliances, Planet Works, P.O. Box No. 2,
Corporation Road, Audenshaw, Manchester M34 5LT.

AGA

FOR THE ARCHITECT AND DESIGNER

These are lightweight, low water content, wall-hung boilers with forced-draught balanced flues. The flue outlets are adjustable for connection to the L.H., R.H. or rear of the boiler. Outputs are adjustable between 35,000 and 50,000 Btu/h (models P 50 and P 50S) and 55,000 and 70,000 Btu/h (models P 70 and P 70S) simply by setting the burner gas pressure on commissioning (see accompanying table). Hi-light models P 50S and P 70S are fully automatic with spark ignition, while models P 50 and P 70 are fitted with multifunctional gas controls, permanent pilot and thermo-couple flame failure device. All models are designed for use only with fully-pumped, open vented systems.

THE SITE.

Details concerning such requirements as siting of flue, clearance around boiler case, gas and electricity supplies, ventilation and installation in compartments are given in appropriate sections overleaf.

TECHNICAL INFORMATION

		hi-light P 50 & P 50S		hi-light P 70 & P 70S	
Heat Output	kW	10.3	14.7	16.1	20.5
	Btu/h	35,000	50,000	55,000	70,000
Heat Input	kW	14.1	19.4	22.4	27.8
	Btu/h	48,000	66,100	76,600	95,000
	Mj/h	50.6	69.1	80.1	100.0
Burner Pressure	m bars	9.2	16.9	11.0	17.2
	in. Wg	3.7	6.8	4.4	6.9
Burner Injector		one 3.3mm (0.13ins)		two 3.05mm (0.12ins)	
Max. permitted length of flue		2440mm (8.0ft)		1220mm (4.0ft)	

Pilot Injector (P 50 & P 70 only)
0.35mm (0.014in).

Water connection: Flow one
Rp 1 (1" BSP)

Water connection: Return one
Rp 1 (1" BSP)

Gas connection: Rp 1/2 (1/2" BSP)

Electrical supply: 200/250v,
50Hz, fused 3 amp

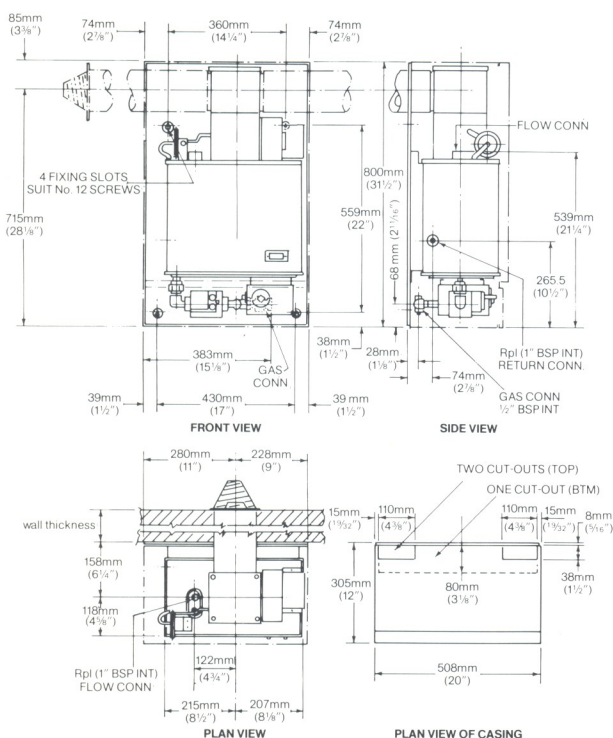
Water capacity: 2.85l (0.63 gal.)

Weight (incl. casing): 35.5kg
(76lb)

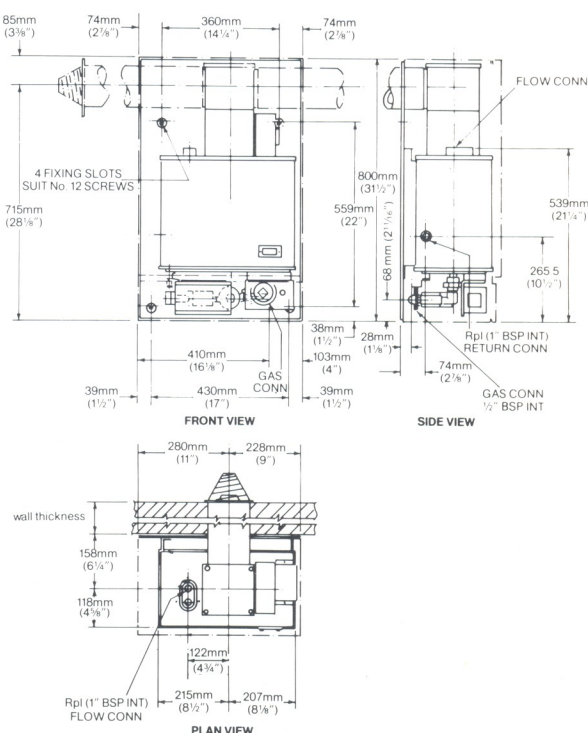
Weight of casing: 9.6kg (21lb)

Flue assembly dia: 118mm (4 5/8")

Overall dimensions: Height 800mm (31 1/2")
Width 508mm (20")
Depth 305mm (12")



Aga hi-light P 50 and P 70.



Aga hi-light P 50S and P 70S.

SYSTEM DESIGN

Aga hi-light powered flue boilers are suitable for fully pumped open vented systems only and should be installed according to the appropriate recommendations of BS 5376: Part 2: 1976. It is suggested that reference also be made to the publications:-

Guide to Good Practice for Small-bore and Micro-bore Central Heating - Part 1 (I.H.V.E. and H.V.C.A.).

Material and Installation Specifications for Central Heating and Hot Water, (British Gas Corporation).

The installation of this appliance should be carried out by a qualified installer. The installation should be in accordance with the Gas Safety Regulations, Building Regulations, I.E.E. Regulations, B.S. Codes of Practice CP 331: 3, BS 537: 2, BS 5449: 1, CP 337 and BS 5440: 2, and any relevant requirements of the local Gas Region and Local Authority.

General.

In figs. 6a and 6b are illustrated recommended fully-pumped systems, for which all models are suitable. (See also wiring diagrams in fig. 2). The circuits may be one or two pipe, small-bore or micro-bore. In particular the following points should be noted:-

(a) The boiler should be connected to a cistern water supply and subject to a maximum head of 24.4 m (80ft).

(b) A drain tap should be fitted at the lowest point of the system.

(c) Domestic Hot Water cylinders should be of the indirect type and suitably lagged.

(d) The system should be designed, and the pump selected and adjusted, to achieve a nominal temperature differential across the boiler of 18°-25°C (i.e. a flow of 200-280 gph for a boiler output of 50,000 Btu/h). Refer to boiler resistance curve. (fig. 7).

(e) The system must be fitted with a by-pass (15mm diameter for P 50 and P 50S and 22mm diameter for P 70 and P 70S)

(f) Fig. 6 illustrates recommended layouts suitable for all pumped systems—small-bore and micro-bore. They have particular advantages in that:-

Positioning the open vent and cold water feed as close as practicable on the boiler 'flow' (not more than 150mm centres) reduces the likelihood of 'pump over' and the need for excessive headroom to accommodate the height of vent pipe. This is particularly important in bungalows and flats.

Note: There must be a minimum cold feed static head of 0.25 metres (0.82') above the highest point of the system.

(g) Positioning the pump as illustrated on the flow, puts the heating circuit under pressure and so reduces the possibility of air inleakage.

(h) If a selector valve is fitted, the cylinder must have extended heat transfer surface appropriate to the rating of the boiler and the top of the boiler must be vented.

(i) The system illustrated in fig. 6a incorporates twin motorized valves. Other systems are equally applicable including 3-port diverter valve systems and non-electric

systems using thermostatic radiator valves.

Note: If the pump is positioned adjacent to the cold water feed junction and the

boiler 'flow,' there must be a minimum static head of 0.55 metres (1.8ft) above the pump suction side to prevent pump cavitation.

Fig. 6a.

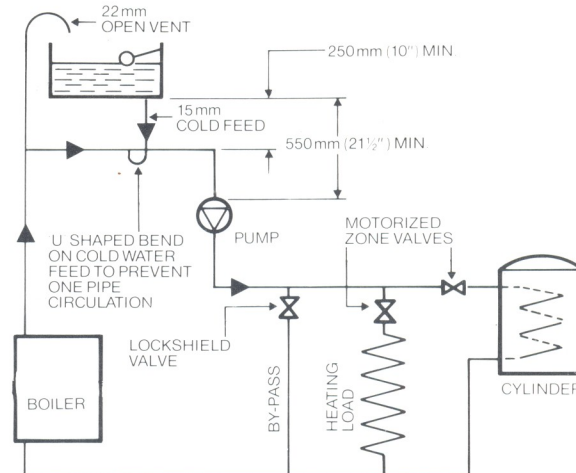


Fig. 6b.

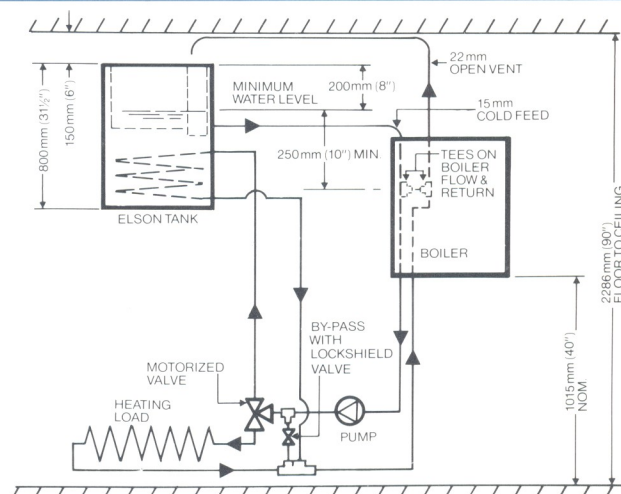
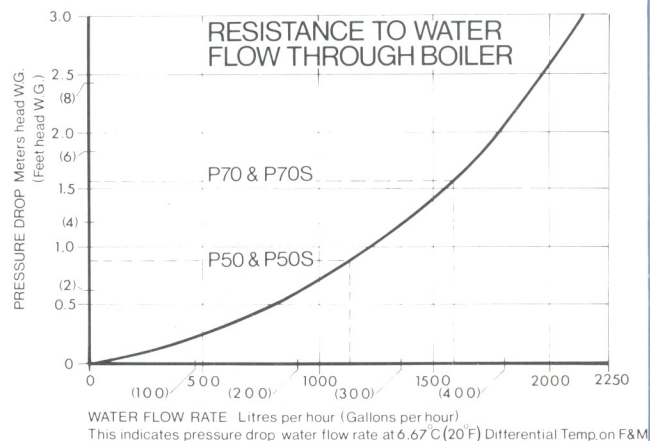


Fig. 7.
Resistance to water flow through boiler.



P50A, P50SA, P50SS, P70, P70S, P70SS Powered Flue Gas Boilers. Servicing Instructions & Components

IMPORTANT

Aga Hi-Light Powered Flue Boilers may be fitted with Burners as follows:-

Models 50A, 50SA up to Serial No. 1750	Furigas 7 blade burner (124)
Models 50SS, up to Serial No. 1100	
Model 70 up to Serial No. 03122	
Model 70S up to Serial No. 12800	Junkers 12 bar burner (126)
Model 70SS up to Serial No. 1100	

ALL MODELS WITH LATER SERIAL NOS. ARE FITTED WITH FURGAS 2-BAR BURNER (159)

All parts in these Servicing Instructions refer to the diagrams on Pages 2 and '5.

BOILER CLEANING AND BURNER MAINTENANCE - ALL MODELS

It is important that maintenance be carried out once per annum by a competent maintenance engineer, and it is recommended that a contract be made with the local Gas Region or CORGI registered installer.

With normal use a flueway cleaning and burner maintenance should be carried out immediately after the end of each heating season. Additional flueway cleaning, halfway through the heating season, may be necessary in some cases.

WARNING

Before servicing always:-

1. Disconnect the electric supply (switch OFF at wall socket and remove plug.)
2. Turn appliance gas tap OFF.

To relight the boiler, refer to the Users Instructions.

TO REMOVE CASING - ALL MODELS

1. Lift off the narrow front casing cover panel by pushing the panel upward and hinging it forwards to disengage it from two locating brackets and lower clear of the larger front panel.
2. The larger front cover is held in position by four spring catches, these can be pulled away from the side panels to disengage them.
3. The top panel is held to the side panels by a further four spring catches, these can be lifted to disengage from the casing side panels.
4. Remove the two fixing screws holding the side panels to the back plate, lift the side panels and fixed bottom assembly off the hooks on the back panel.

TO REMOVE THE PACTROL RTF/P ELECTRONIC CONTROL BOX (175) Models P50SA, P70S, P50SS & P70SS.

1. Isolate the electric supply (switch OFF and remove plug).
2. Remove outer casing (See section on removal of casing).
3. Check on servicing screws on front of outer box (see Fig 1).

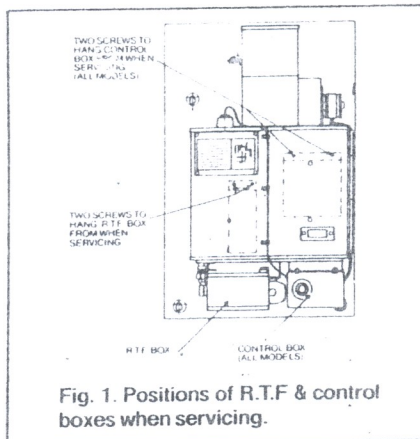


Fig. 1. Positions of R.T.F & control boxes when servicing.

4. Remove electrical connection plug from end of box.
5. Remove box from underside of tray by lifting keyhole slots from screws and hang box on servicing screws on the front of the outer box.
6. Unscrew high tension lead from control box.
7. Remove flying earth wire from control box earthing point.
8. Replace RTF/P electronic control box in reverse order.

The Pactrol RTF/P Boxes of the fully automatic P50SA, P70S, P50SS and P70SS are fitted with replaceable 100 mA fuses. For details of replacement, see following section.

TO REPLACE FUSE IN PACTROL RTF/P ELECTRONIC CONTROL BOX Models P50SA, P70S, P50SS and P70SS (only to be undertaken by a qualified electrician).

1. Remove Pactrol RTF/P electronic control box as above.
2. Remove screws retaining control box cover and lift off cover.
3. Check each of the two internal 100mm cartridge fuses for continuity. Replace either if faulty. Replacement fuses must be of 'quick blow' type, 20mm long, to BS 4265 or 100 127.
4. Re-assemble RTF/P box and reconnect to boiler.

Note:

These fuses can fail as a result of faulty solenoids. In the event of repeated failure of fuses, this should be investigated.

TO REMOVE THE BOILER CONTROL BOX ALL MODELS

1. Isolate the electric supply
2. Remove outer casing.
3. Check on servicing screws on front of outer box (see Fig. 1).
4. Unclip electrical sleeving from R.H. side of boiler.
5. Remove control box from underside of burner tray by lifting keyhole slots from screws and hang it on servicing screws on the front of the outer box.
6. Replace in reverse order.

TO REMOVE TEMPERATURE CONTROL THERMOSTAT (250 or 241) ALL MODELS.

1. Follow instructions 1-5 under Removal of Boiler Control Box.
2. Unscrew the two screws fixing the control box cover and lift away the cover.

3. Remove wiring from the back of thermostat (note terminal number).
4. Remove clips securing capillary to boiler top.
5. Remove thermostat phial from pocket on top of boiler.
6. Remove thermostat knob on front of control box.
7. Unscrew hex nut & washer securing thermostat to front of control box and withdraw thermostat.
8. Replace the thermostat in reverse order.

TO REMOVE OVERHEAT THERMOSTAT (248) P50SS & P70SS ONLY

1. Disconnect electrically and turn gas OFF (see warning on p.1).
2. Remove the two screws fixing the cover on the electrical wiring box, pull off the cover.
3. Remove the two screws fixing the cover on the electrical wiring box, pull off the cover.
4. Remove clips securing capillary to boiler body.
5. Remove the wiring from the back of the thermostat (note terminal number over thermostat terminal for each wire). See wiring diagram.
6. Remove thermostat phial from the pocket on front of boiler.
7. Remove the two screws fixing the thermostat to its bracket inside wiring box, remove thermostat.
8. Replace in reverse order.

TO REMOVE THE BURNER TRAY (161 166 or 167) MODELS P50SA, P70S, P50SS & P70SS.

1. Isolate electricity at wall socket and turn gas OFF.
2. Remove outer casing (see section on removal of casing).
3. Before the electrical control box is remounted and located on the two screws on the front of the boiler remove the solenoid valves four pin plug from its socket in the rear of the control box base.
4. Remove and relocate RTF/P electronic control on servicing screws on front of outer box as described under "to remove pactor RTF/P electronic control box."
5. Break union connection on gas train at gas tap.
6. Remove six M6 screws from perimeter of burner tray and carefully lower tray and gas controls away from outer burner box.
7. Replace in reverse order.

TO REMOVE THE BURNER TRAY (161 119 or 120) MODELS P50A and P70 only.

1. Isolate electricity at wall socket and turn gas OFF.
2. Remove outer casing panel (see section on removal of casing).
3. Remove the plug of the multifunctional gas control from the socket in the rear of the control box.
4. Remove electrical control box and locate on front of boiler outer box as described under To Remove Electrical Control Box.
5. Break union connection on gas train at gas tap.
6. Remove six M6 screws from perimeter of burner tray, and carefully lower tray gas controls away from outer burner box.
7. Replace in reverse order.

TO REMOVE THE BURNER (126, 124 or 159) ALL MODELS

1. Isolate the electricity supply at the wall socket and turn gas OFF.
2. Remove outer casing panels (see section on removal of casing).
3. Remove the burner tray (see section on Burner Tray Removal).
4. **a. (P50A & P70 only)**
Remove the two nuts holding the complete pilot/thermocouple assembly to main burner and lift pilot assembly from projecting studs.
- b. (P50SA, P70S, P50SS & P70SS)**
Remove the nuts securing the spark and detector electrodes and their brackets to the main burner and remove.

5. **a. (all models with Furigas 7 blade or 2 bar burners)**

Undo the union connection at the left hand side of the gas train.
Remove the two fixing screws holding the burner manifold to the burner tray and carefully lift burner away from its sealing gasket.

b. (Original models P70, P70S & P70SS with Junkers 12 bar burners) Unscrew union nut under centre of burner and remove burner.

6. **All Models** Replace in reverse order.

TO REMOVE THE AIR COMBUSTION FAN (40, 41) ALL MODELS

1. Disconnect electrically and turn gas OFF.
2. Remove the casing (see section on removal of casing).
3. Remove the electrical wiring box and support it on the two servicing screws located on the front of the outer burner box.
4. Remove the two screws holding the fan motor scroll to the turret.

5. Pull out the fan motor and scroll unit from the boiler.
6. If the motor needs removing, remove the cover from the wiring box and remove the wire to the motor terminals on terminal strip in wiring box. Refer to diagram.
7. Unclip the insulation sleeving on the R.H. side of the outer box and withdraw fan motor wires.
8. Replace in reverse order of removal.

Note:

The motor has been positioned so that the motor windings are towards the front of the boiler and low down near the top of the boiler. Seal around intake and discharge openings with mastic sealing compound.

TO REMOVE SOLENOID

(171 or 190 Models P50SA & P70S, 238 or 239 Models P50SS & P70SS.)

1. Disconnect electrically and turn gas OFF.
2. Remove outer casing (see section on removal of outer case).
3. Remove RTF/P electronic control box (see section on removing this item) and hang on servicing screws on the front of the outer box.
4. Remove the boiler control box (see section on removing this item) and hang on servicing screws on the front of the outer box.
5. Remove the solenoid valve four pin plugs from its socket in the rear of the electrical control box.
6. Remove the four Pozidrive headed screws securing the solenoid to the valve body. Remove the solenoid, diaphragm and plunger.
7. Replace in reverse order making sure valve seat and the plunger seat are clean and that the diaphragm is correctly positioned in the seating in the valve body. Check for gas leak after turning the appliance gas cock ON.

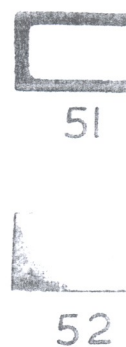
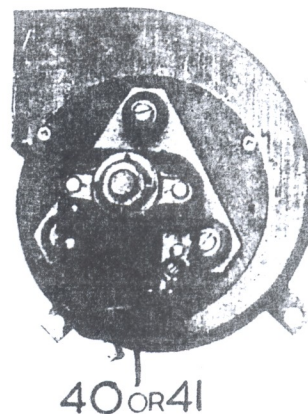
TO REMOVE SPARK ELECTRODE (176) OR DETECTOR ELECTRODE (180) MODEL P50SA, P70S, P50SS & P70SS.

1. Disconnect electrically and turn gas OFF.
2. Remove outer casing (see section on removal of casing).
3. Remove burner tray (see section on burner tray removal).
4. Remove the electrode by removing the screw fixing the electrode to its support bracket.
5. Remove electrode lead from bottom of electrode.
6. Replace in reverse order.

Components List

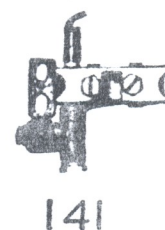
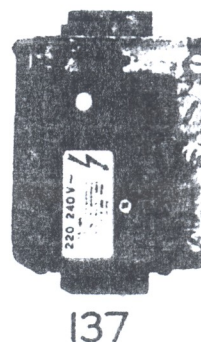
Parts Common to all Models

B.G.C.		Description	No. off	Maker's Part No.
Key No.	Part No.			
40	388 691	Airflow Fan & Motor Ref. 40BTFL alternative to 41	1	P-3-7
41	389 196	Torin Fan & Motor Ref. 2549 DSA326 alternative to 40	1	P-3-28
51	335 724	Sight Glass Gasket - C.A.F.	1	P-3-21
52	335 662	Sight Glass Pyrex	1	P-3-20
122	335 748	Burner Manifold Gasket - C.A.F.	1	P-5-3
152	335 763	Grommet Silicon Rubber C.O.W. Ref G46	1	P-5-29
159		Furigas 2-bar Burner Type SR402 - See panel marked IMPORTANT on page 1	1	P-10-2
221	382 269	Thermostat Knob	1	P-6-60
250		Thermostat Ranco C77P0106, P50A & P50SA All Models, P70 All Boilers after serial No. 02374, P70S, All Boilers after serial No. 02502	1	P-6-64A



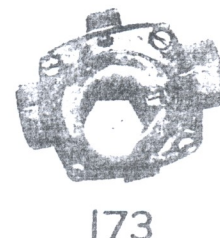
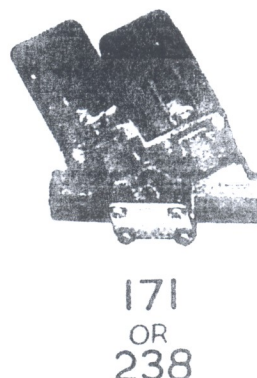
Parts only for Hi-Light P50A and P70

B.G.C.		Description	No. off	Maker's Part No.
Key No.	Part No.			
137	393 654	1/2" BSP Eleltrosit Valve Ref. 0810-033 240v three button.	1	P-5-11
141	335 593	Pilot Assembly SIT Controls Ref. 0100.048	1	P-5-15
142	393 484	Pilot Thermocouple SIT Controls Ref. 0.200.097	1	P-5-16
143	393 485	Pilot Spark Electrode SIT Controls Ref. 1215022	1	P-5-17
148	335 760	Bulkhead Coupling Gasket red fibre	1	P-5-8
146	335 597	SIT Pilot Injector 0.35 Dia. Ref. 7.177031	1	P-5-21
150	335 762	Electrode Lead PTFE coated	1	P-5-19
151	393 573	Spark Generator Kigass Mk 111 D5065A	1	P-5-20
215	393 486	Differential Pressure Switch Tamatake Type. CN 150B100.	1	P-6-19



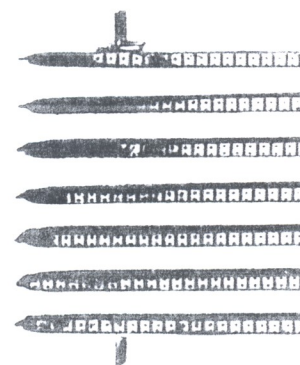
Parts only for Hi-Light P50SA, P70S, P50SS & P70SS

B.G.C.		Description	No. off	Maker's Part No.
Key No.	Part No.			
171	393 733	Double Solenoid Valve Sperryn Ref. G141200038 alt. to 190	1	P-5-12
173	381 424	Gas Governor 1/2" BSP Evered Ref. 09231/02	1	P-5-14
175	393 064	Pactrol Control Box Type P14 - 110A	1	P-5-17
178	393 574	Spark Electrode - Royal Worcester Ref. 7213BR	1	P-5-20
180	393 575	Detector Electrode - Royal Worcester Ref. 7212BR	1	P-5-22
182	335 772	Spark & Detector Lead Assembly PTFE coated	1	P-5-24
190	393 356	1/2" BSP Class II (Evered) double solenoid valve alt. to 171 ref. 09234/05028.	1	P-5-48



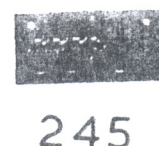
Parts only for Hi-Light P50A, P50SA & P50SS

B.G.C.		Description	No. off	Maker's Part No.
Key No.	Part No.			
158		Furigas burner injector 2.5 dia. (Only with Key No. 159)	2	P-10-3
124	393 352	Furigas 7-blade type 'R' Gas Burner See panel marked IMPORTANT on page 1	1	P-5-5
125	393 237	Furigas Burner Injector 3.3 mm dia. (Alt. to Key No. 158).	1	P-5-6
153	335 764	Injector Gasket, Red Fibre (Only with Key No. 124 and 125).	1	P-5-41



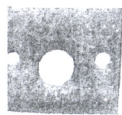
Parts only for Hi-Light P50SS & P70SS

B.G.C.		Description	No. off	Maker's Part No.
Key No.	Part No.			
238		1/2" BSP Sperryn G1413/01 double solenoid valve. Alt. to 239	1	P-9-1
239		1/2" BSP Evered 09234/05028 SS double solenoid valve. Alt. to 238.	1	P-9-2
240		Overheat stat. Ranco LM5 110° 1m Cap	1	P-9-3
241		Ranco C77P0107 Thermostat. 1.3m Cap	1	P-9-4
245		AC to DC rectifier Ref. No. GR100 special	1	P-9-8

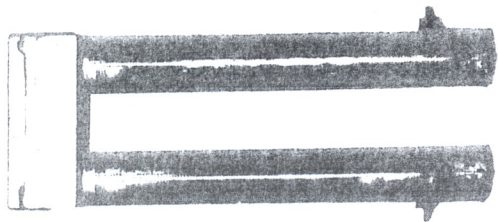


Parts o

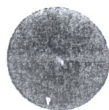
Key No.
160
126
128



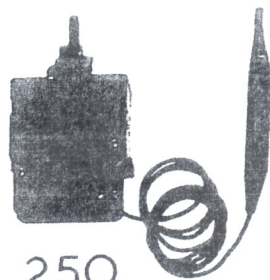
122



159



221



250
OR
241



143



146

148
OR
153



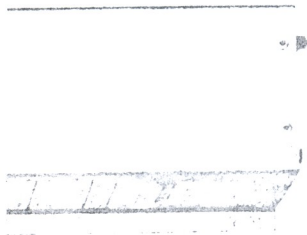
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151



215



175



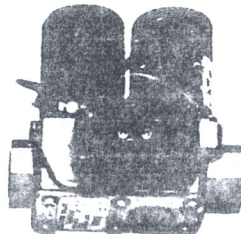
178



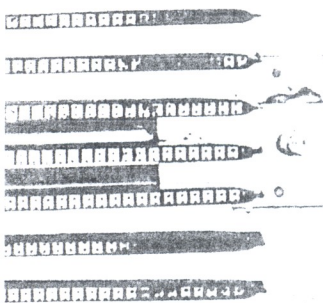
180



182



190
OR
239



124

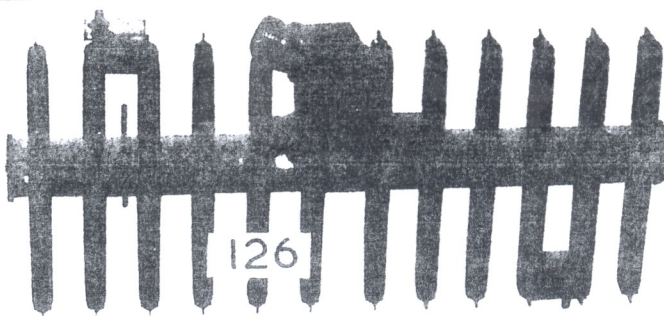


125
OR
158

Light P70, P70S and P70SS

Description
gas Burner Injector 2.95 dia.
ly with Key No. 159).
ker 12 Bar Ref. BR100 Gas Burner
panel marked IMPORTANT
age 1
kers Burner Injector 3.00 mm dia.
to Key No. 160)

No. off	Maker's Part No.
2	P-10-4
1	P-5-31
2	P-5-7



126

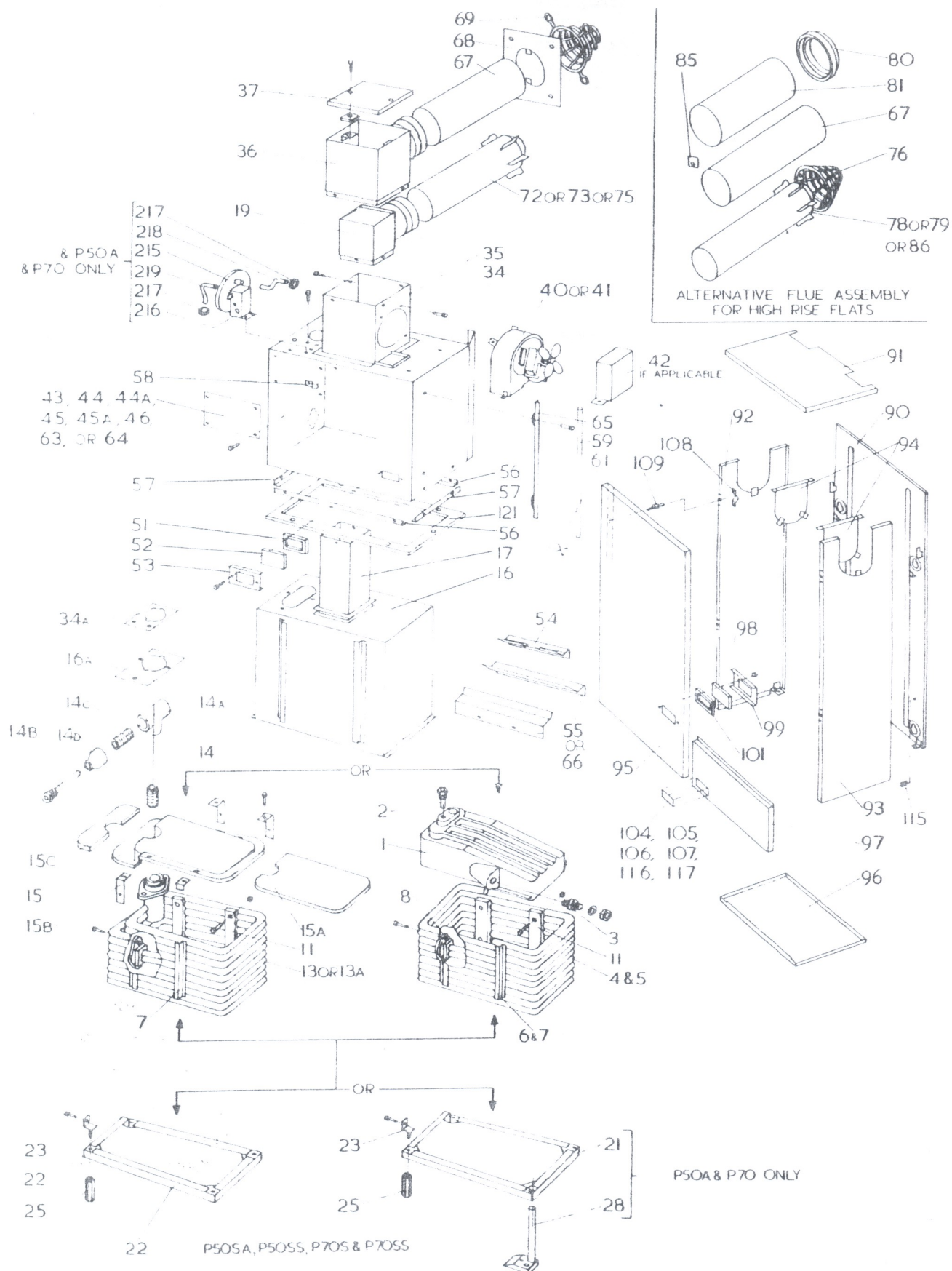


128

Aga Hi-Light Gas Boilers

P50A, P50SA, P50SS, P70, P70S, P70SS

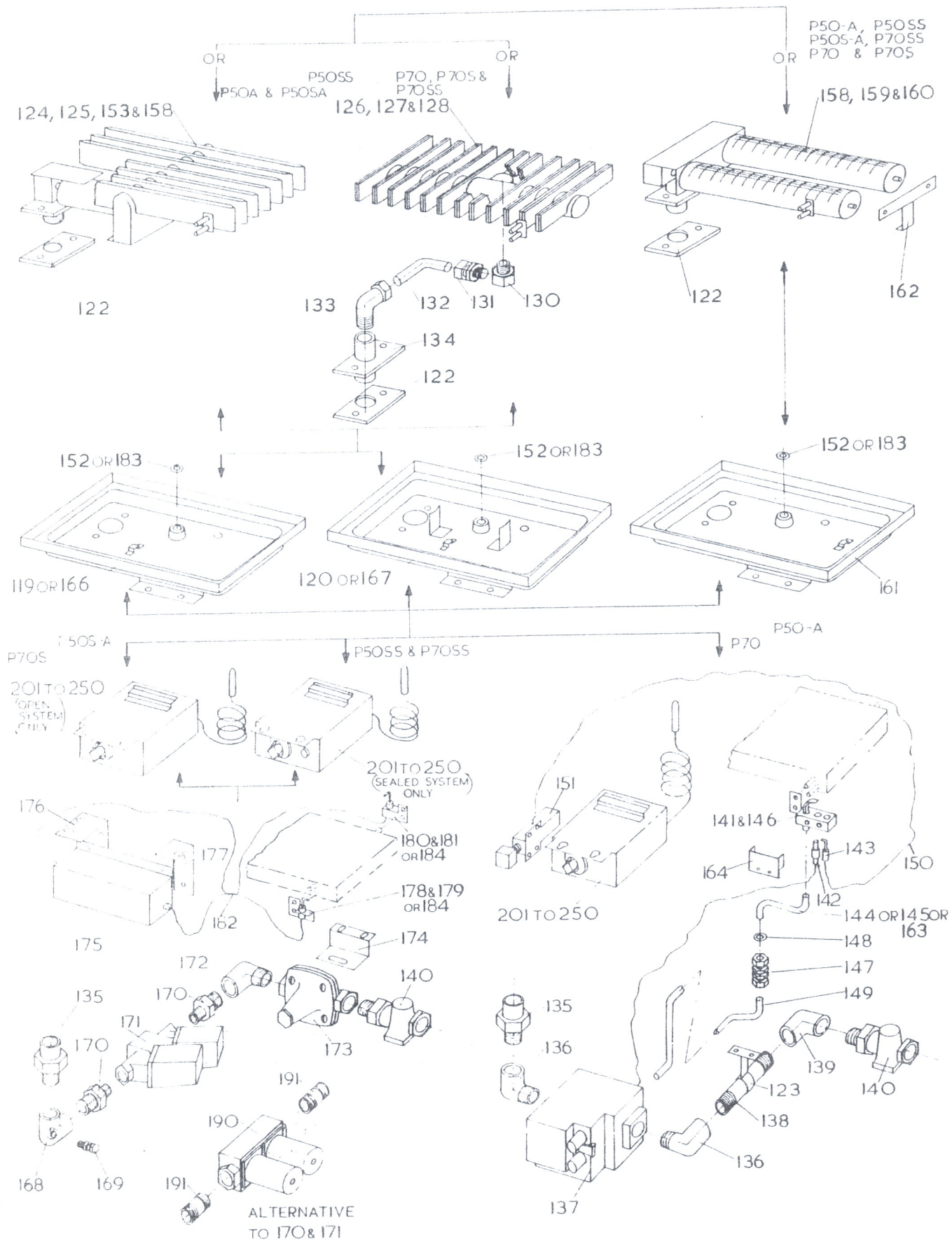
Boiler and Casing Details



Aga Hi-Light Gas Boilers

P50A, P50SA, P50SS, P70, P70S, P70SS

Burners & Gas Controls.



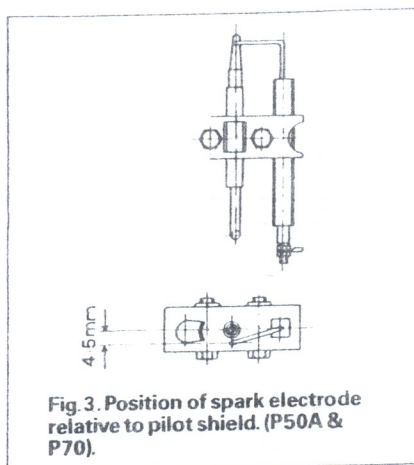
TO REMOVE THE PILOT BURNER (141) MODEL P50A & P70 ONLY.

1. Disconnect electrically and turn appliance gas tap OFF.
2. Remove the outer casing (see section on removal of casing).
3. Remove the electrical control box and hang on servicing screws on front of outer box (see section on removal of boiler control box).
4. Remove the burner tray and gas control complete (see section on removal of burner tray).
5. Remove the pilot feed tube from the pilot burner.
6. Remove the two Hex. Head screws holding the two halves of the pilot bracket together.
7. Remove pilot burner.
8. Replace pilot burner in reverse order of removal.

TO REMOVE THERMOCOUPLE (142) MODELS P50A & P70 ONLY

1. Disconnect electricity and turn appliance gas cock OFF.
2. Remove the outer casing (see section on removal of casing).
3. Remove the electrical control box and hang on servicing screws on the front of the outer box (see section on removal of boiler control box).
4. Remove the burner tray and gas controls complete (see section on removal of burner tray).
5. Remove the pilot feed tube from the pilot burner.
6. Remove the two Hex. Head screws holding two halves of the pilot bracket together.
7. Disconnect thermocouple from the gas valve.

8. Remove the thermocouple from the burner tray grommet.
9. Replace in reverse order of removal.



TO REMOVE SPARK ELECTRODE (143) MODEL P50A & P70 ONLY

1. Disconnect electricity and turn appliance gas cock off.
2. Remove the outer casing (see section on removal of casing).
3. Remove the electrical control box and hang on servicing screws on the front of the outer box (see section on removal of boiler control box).
4. Remove the burner tray and gas controls complete (see section on removal of burner tray).
5. Remove the nut, in bottom of electrode securing lead.
6. Remove the two Hex. Head screws holding the two halves of the pilot bracket together.
7. Remove electrode.
8. Replace in reverse order of removal.

Note:

Check the position of electrode relative to the pilot shield (see fig. 3).

TO REMOVE SPARK GENERATOR (151) MODEL P50A & P70 ONLY

1. Disconnect electrically and turn appliance gas cock off.

2. Remove the outer casing (see section on removal of casing) instructions.
3. Remove electrode lead plug from generator.
4. Remove the electrical control box and hang on servicing screws on front of boiler.
5. Remove two screws securing generator to bracket.
6. Replace in reverse order of removal.

TO REMOVE THE PRINTED CIRCUIT BOARD (245) P50SS & P70SS ONLY

1. Follow instructions 1-5 under removal of boiler control box.
2. Unscrew the control box cover and lift away the cover.
3. Disconnect wires from printed circuit board.
4. Remove the screws holding the board to control box and lift out.
5. Replace in reverse order.

B.G.C. Nos.

P50A - 41 327 56
P50SA - 41 327 57
P50SS - 41 327 50
P70 - 41 327 41
P70S - 41 327 42
P70SS - 41 327 51



Agaheat Appliances

Glynwed Domestic & Heating Appliances Limited
P.O. Box 30, Ketley, Telford, Salop TF1 1BR
Telephone: Telford 3973 (STD. 0952)

GLYNWED

Address Service Enquiries to:-

Agaheat Appliances, Planet Works, P.O. Box No. 2,
Corporation Road, Audenshaw, Manchester M34 5LT. Tel: 061-320 8