



**ELJAN F**  
**CIRCULATOR WATER HEATER**  
**INSTALLATION, COMMISSIONING & SERVICING INSTRUCTIONS**  
**G.C. No 42 451 11**

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**WARNING: THIS APPLIANCE MUST BE EARTHED**

**This appliance is for use with natural gas only.**

**1. GENERAL DESCRIPTION**

- 1.1 ELJAN 6F is an open flued gas fired circulator designed for floor or wall mounting, which can generate up to 64.8 litres per hour (14.3 gal/h) of hot water. It is suitable for use in a pumped circuit comprising of up to 3 radiators and/or an INDIRECT or SELF-PRIMING water storage cylinder, and must be flued into an open-flue system. DIRECT cylinder should only be used when recommended by the local water company..
- 1.2 The gas supply to the Main Burner is controlled by a Multifunctional Control. In addition, an electrically operated solenoid valve is fitted to permit the Main Burner to be remotely switched on and off. The Main Burner operates in conjunction with a permanent pilot burner and a thermoelectric sensing device. Pilot ignition is by means of a Piezo unit.

**2. TECHNICAL DATA**

**2.1 NATURAL GAS:**

- Injector: Bray type 21/380. Diameter 1.67mm.  
Setting pressure: 17.2 mbar (6.9 in wg).  
Gas rate: 0.42 m<sup>3</sup>/h (14.85 ft<sup>3</sup>/h).  
Input: 4.4 kW (15,000 Btu/h).  
Output: 3.32 kW (11,340 Btu/h).  
Gas connection: Rc<sup>1</sup>/<sub>4</sub> (1/4 in BSP).  
Gas service cock: Rc<sup>1</sup>/<sub>4</sub> (1/4 in BSP) union gas cock (supplied loose).

**2.2 WATER:**

- Maximum output: Up to 64.8 litres/h (14.3 gal/h) with 44.5°C (80°F) rise.  
Factory set water temp. 60°C (140°F).  
User temperature control allows settings above normal.  
Maximum working head: 20m (65ft).  
Minimum circulation head: 610 mm (24in) with indirect cylinder, 356 mm (14in) with direct cylinder

**2.3 ELECTRICAL SUPPLY:**

230V 50Hz, fuse rating 3A. Connection to solenoid valve via DIN 43650 plug.

**2.4 FLUE:**

75mm (3in) to BS 567.

**2.5 OVERALL DIMENSIONS:**

- Height: 496mm (19.5in).  
Width: 123mm (4.9in).  
Length: 429mm (16.9in) including controls cover.  
353mm (13.9in) excluding controls cover.

**2.6 INSTALLATION AND SERVICING CLEARANCES:**

**IMPORTANT: Care must be taken to ensure that adequate space is available at the front and 'open' side of the heater for installation purposes.**

**2.6.1 Minimum clearance for combustion:**

Front: 25mm (1in) from controls cover.

Sides: 16mm (5/8in) from side nearest to wall, 13mm (1/2in) from open side to any cylindrical obstruction, (i.e. Hot water cylinder)

**Note:** If these minimum side clearances are to be adopted, special care must be taken in the compartment construction to permit access to appliance mountings.

Rear: 100mm (4in).

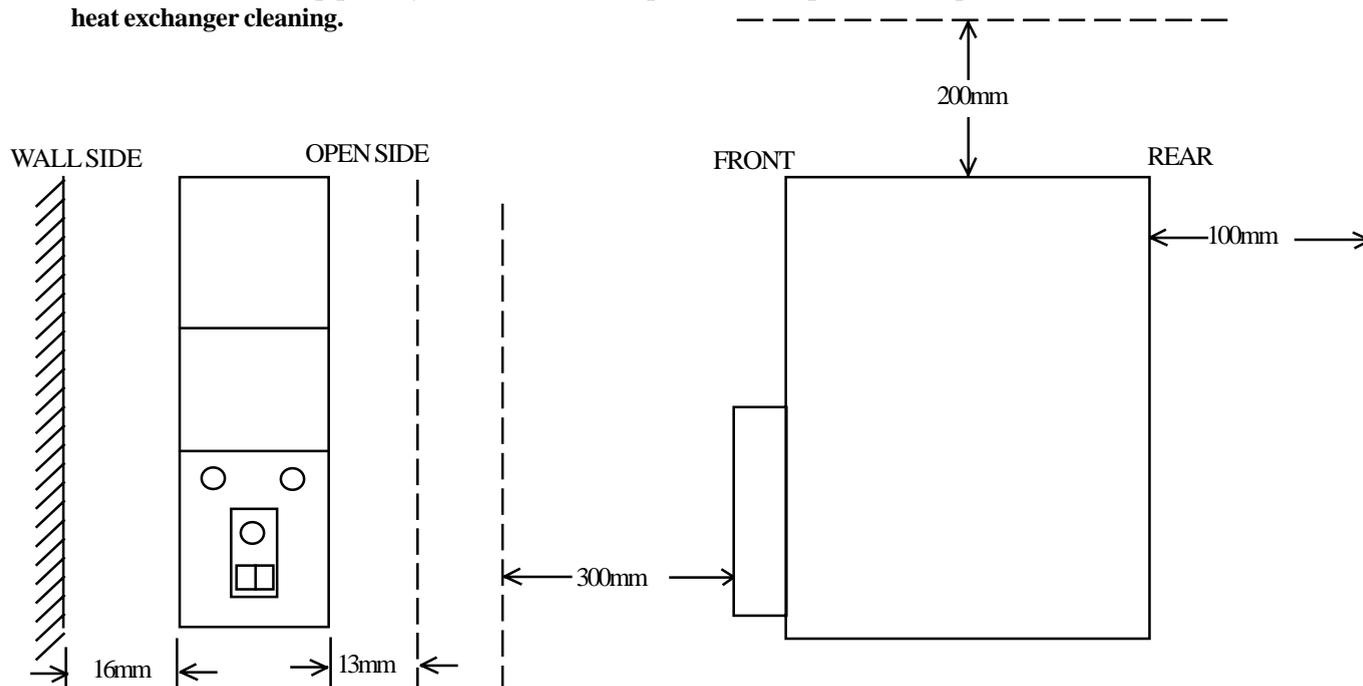
Base: Nil. The appliance may be floor mounted on noncombustible material.

## 2.6.2 Minimum clearance for servicing:

Front: 300mm (12in).

Side: 200mm (8in).

**Note: Flow and return pipes may be routed over the top of the heater, provided adequate access is available for heat exchanger cleaning.**



**Fig. 1**  
**Minimum clearances for ELJAN F**

## 3.

**GENERAL REQUIREMENTS**3.1 **RELATED DOCUMENTS (refer to current issues):**

This appliance **MUST BE** installed in accordance with the relevant requirements of the Gas Safety (Installation and Use) Regulations, local Building Regulations, I.E.E Wiring regulations, and the Bye-laws of the local Water Company. It should also be in accordance with any relevant requirements of the local Gas Region and Local Authority, and the relevant recommendations of the following British Standard Codes of Practice:

BS6798: Specification for installation of gas fired hot water boilers of rated input not exceeding 60kW.

BS5449: Forced circulation hot water systems.

BS5546: Installation of gas hot water supplies for domestic purposes (2<sup>nd</sup> family gasses).

BS5440 Pt. 1: Flues.

BS5440 Pt. 2: Air supply.

BS6891: Installation of low pressure gas pipe work up to 28mm (R1) in domestic premises.

BS6700: Design, Installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

3.2 **LOCATION:**

3.2.1 The location chosen for the circulator must permit the provision of a satisfactory flue and termination, an adequate air supply for combustion purposes, and an adequate space for servicing and air circulation around the appliance. **The ELJAN F must not be installed in a room containing a bath or shower, and it is not recommended to be installed in either a bedroom or bed-sitting room.**

3.2.2 A compartment used to enclose the circulator must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used providing that it is modified for this purpose. Details of essential features of cupboard installations are given in BS6798 and BS5546.

3.3 **CUPBOARD/COMPARTMENT VENTILATION:**

3.3.1 Where ELJAN F is to be installed in a cupboard or compartment, permanent air vents are required in the enclosure at both high and low level for combustion, flue dilution, and cooling purposes. These air vents must communicate either with a room or internal space, or be direct to outside air.

3.3.2 Minimum effective areas of the permanent air vents required in the enclosure are specified below (ref. BS5440 Pt. 2, Table 2)

**Note: Both air vents must communicate with the same room or internal space, or be on the same wall to outside air.**

Position of Air vents	Air from room or internal space	Air direct from outside
High Level	40cm <sup>2</sup> (6.5in <sup>2</sup> )	22cm <sup>2</sup> (3.25in <sup>2</sup> )
Low Level	80cm <sup>2</sup> (13in <sup>2</sup> )	40cm <sup>2</sup> (6.5in <sup>2</sup> )

**Table 1**  
**Permanent Air Vents, Minimum Effective Areas**

3.3.3 There are no specific ventilation requirements if the appliance is installed in a room or space, but it should be noted that if there is a fan in the room or internal space (i.e., extractor fan or cooker hood fan), spillage of combustion products may occur if the room or internal space is not adequately ventilated to outside air. Where such installations occur, a spillage test as described in sub-para 3.5.8 must be carried out, and rectification undertaken where necessary.

#### 3.4 **GAS SUPPLY:**

Installation of pipework is to be in accordance with BS6891. Pipework from the gas meter is to be of adequate size, and pipes of a smaller diameter than the appliance are not to be used. The complete installation must be tested for gas soundness, and purged as detailed in BS6891.

#### 3.5 **FLUE SYSTEM:**

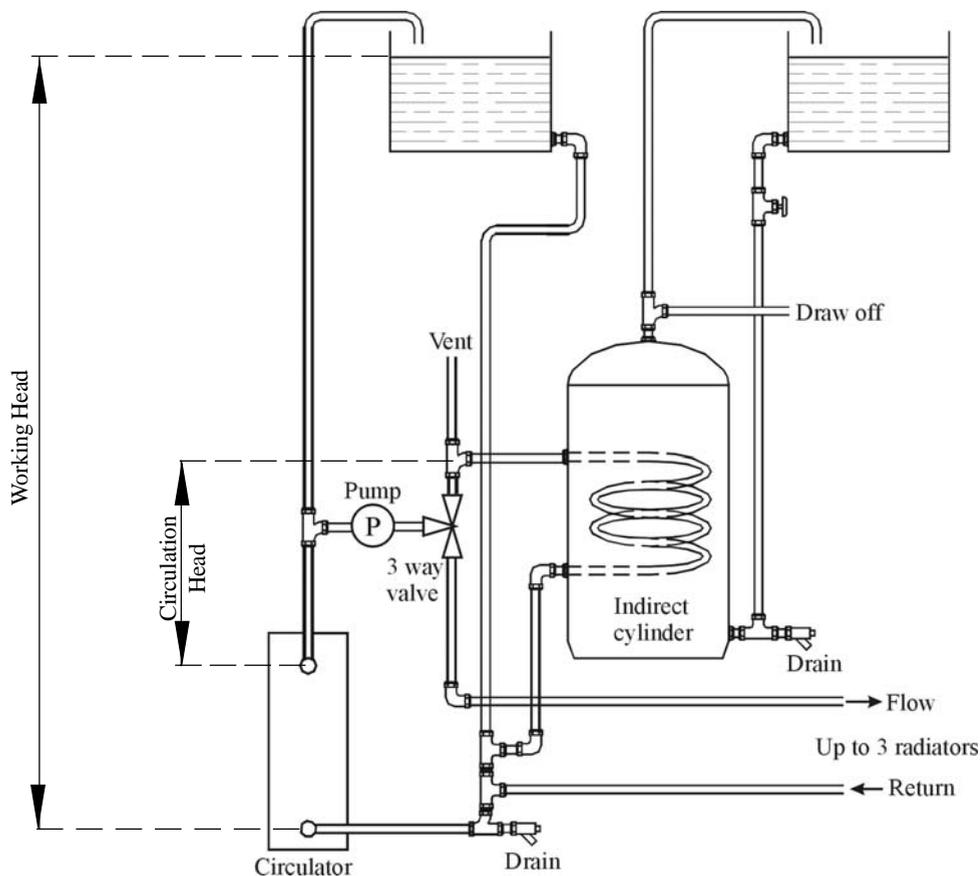
Detailed recommendations for Flues are given in BS5440 Pt 1. The following points however, are of particular importance:

- 3.5.1 The cross-sectional area of the flue serving the appliance must not be less than the area of the flue outlet of the appliance.
- 3.5.2 A terminal of a type which has been tested and found satisfactory by British Gas should be fitted at the outlet.
- 3.5.3 The point of termination must not be within 600mm (2ft) of a opening window, air vent, or any other opening and should be above roof edge level.
- 3.5.4 The flue should have a length not exceeding that given in BS5440 Pt 1, Fig. 13 to avoid condensation.
- 3.5.5 The flue pipe must not be closer than 25mm (1in) to combustible material. For twin wall flue pipe, the 25mm (1in) distance should be measured from the inner pipe face.
- 3.5.6 The flue pipe must be secured by support brackets, fitted throughout its length, at intervals of not more than 1.8m (6ft).
- 3.5.7 If flueing into an existing chimney, the chimney must be swept before connecting the appliance.
- 3.5.8 The flue system must be tested prior to installation of the appliance by application of a lighted smoke match to the opening and observing whether all the smoke is pulled up the flue. In certain conditions, there may be spillage of smoke due to inversion caused by the flue being colder than the outside air. If such occurrences arise, heat is to introduced into the flue (i.e., by blowlamp) and the spillage test repeated. If either downdraught or no definite upflow is indicated, this must be investigated and corrected.

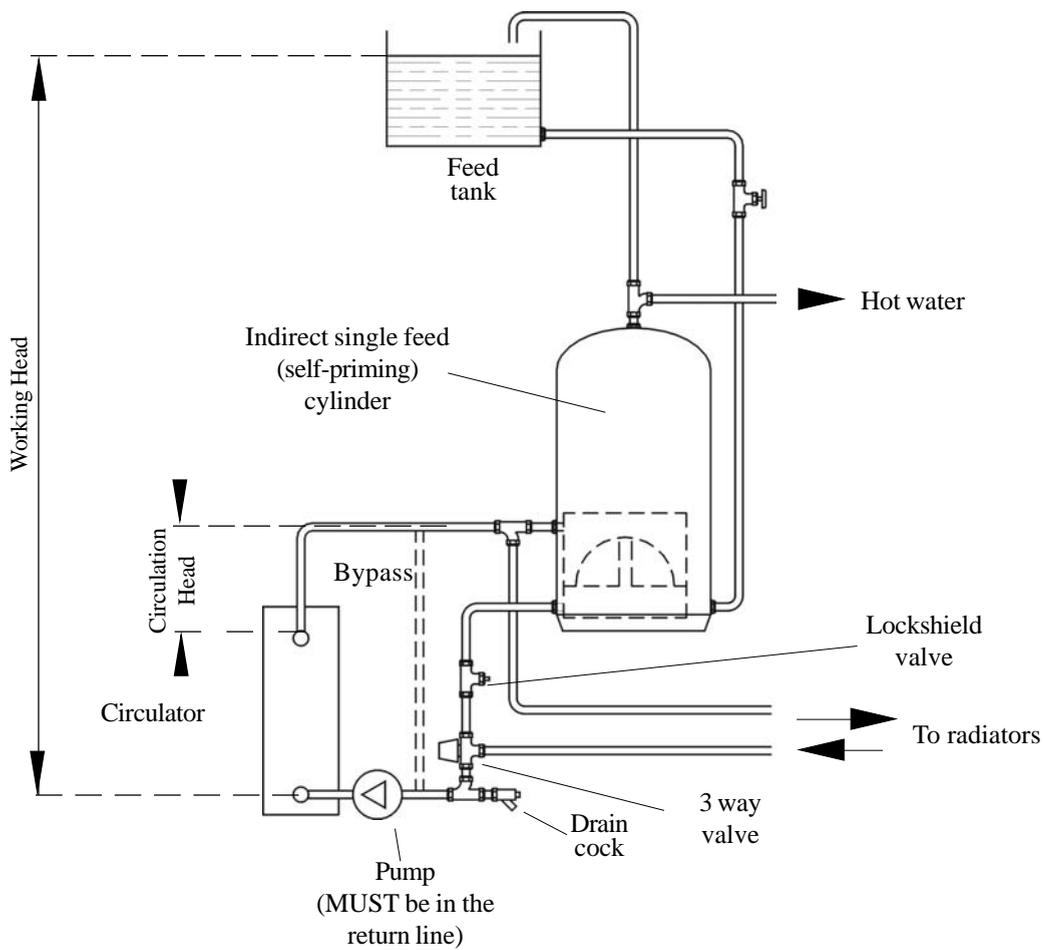
#### 3.6 **WATER CIRCULATION SYSTEM:**

Detailed recommendations for the water circulation system are given in BS6798, BS5449 for small bore and microbore central heating systems, and BS5546.

- 3.6.1 To ensure good circulation in gravity circuits, flow pipes should be designed to run vertically from the water heater before running laterally. Any lateral run should be less than 2 x the previous vertical run. Pipework should be installed with a rise towards the vent point. **Note:** For easy removal of the water heater, compression fittings are recommended.
- 3.6.2 Drain cocks must be located in accessible positions, which permit the draining of the whole system, including the appliance and hot water storage vessel. A drain cock should be fitted at the lowest point of the water heating circuit and, in the case of an indirect system, another must be fitted at the lowest point of the cold feed. Drain cocks should be at least 1/2 in nominal size, and be in accordance with BS28798.



**Fig. 2a.**  
**Typical ELJAN F Indirect System application**



**Fig. 2b**  
**Typical ELJAN F Self Priming System application**

3.6.3 The recommended water flow rate, to achieve an 11°C (20°F) temperature differential across the appliance is 5.01 litres/min, and the pump should be of at least a size to accommodate this flow rate. At this stated flow rate, the pressure drop across the appliance is 13.8mbar (5.5 in w.g.).

**Note:** ELJAN F is a low cost appliance which has been designed for use with a diverter valve which permits manual selection of the proportion of energy allocated to central heating and hot water. The valve should contain a bleed hole which always permits 10% of the flow to be diverted to the cylinder. An 8mm bypass must be fitted between the pump and the radiators if this bleed facility is not to be provided, (i.e. if the appliance is to be used for central heating only). If more sophisticated central heating controls are required, refer to the control equipment manufacturers' instructions on installation and servicing. Consult Johnson & Starley Ltd. if necessary.

3.7 **ELECTRICAL SUPPLY:**

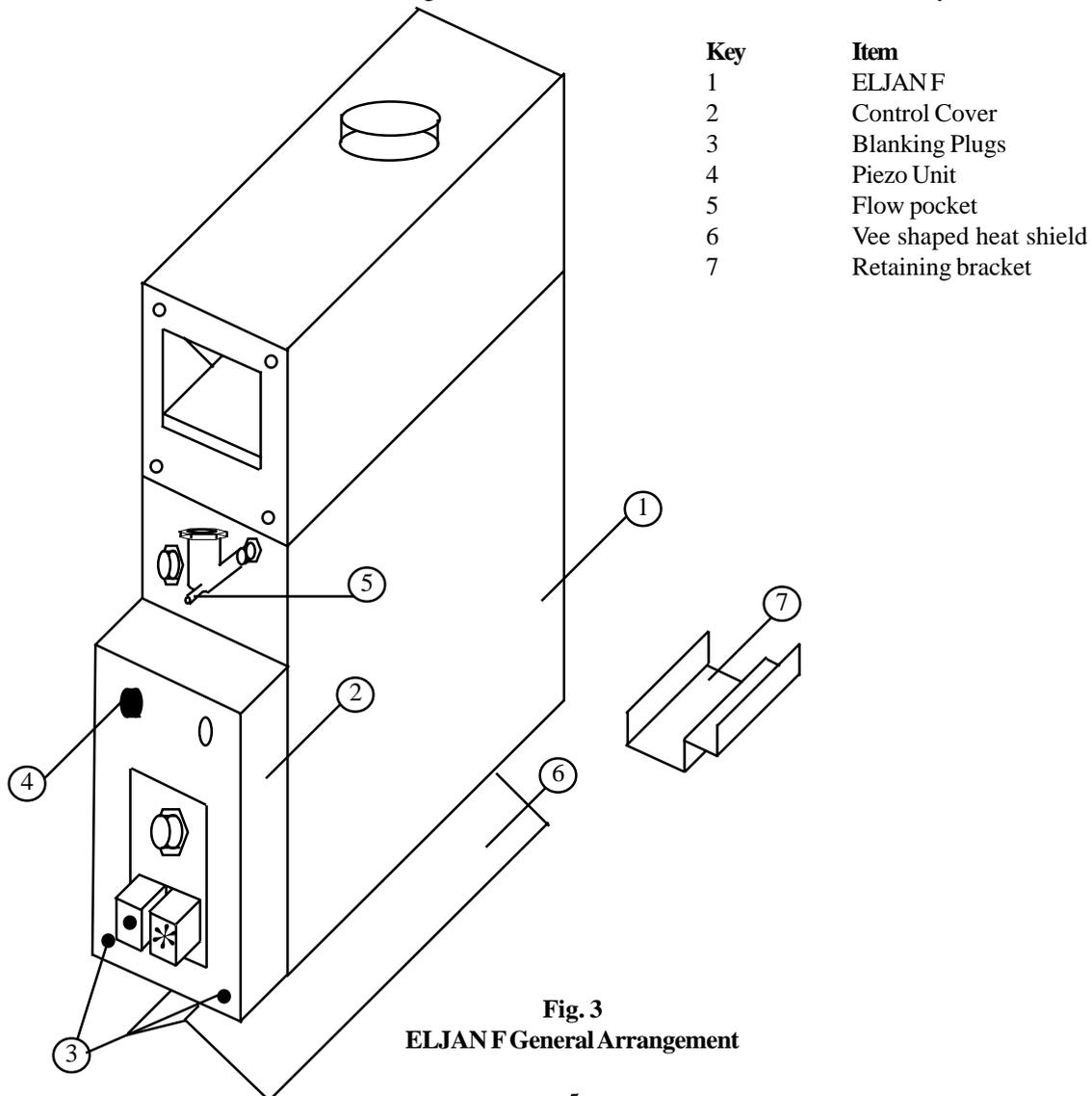
The appliance external wiring must be installed in accordance with the current edition of IEE Regulations, and any other local regulations which may apply.

4. **INSTALLATION**

4.1 **PREPARATION:**

Referring to Fig. 3 for component identification, Para 2.6 and Fig. 1 for minimum installation clearances

- 4.1.1 Remove the appliance from its packaging, and retain the loose components,
- 4.1.2 Remove and discard the transit strap.
- 4.1.3 Remove the Burner and Controls Assembly as follows:
  - a. Remove the 2 x blanking plugs (item 3) to access the securing screws.
  - b. Release the 4 x screws securing the control cover (item 2), partially withdraw the control cover and disconnect the igniter lead from the Piezo unit (item 4).
  - c. Fully remove the control cover.
  - d. Remove the thermostat retaining plug from the flow connection pocket (item 5) and withdraw the thermostat stat phial taking care to avoid causing damage to the thermostat phial.
  - e. Release the burner mounting screw and remove Burner and Controls Assembly.



**Fig. 3**  
**ELJAN F General Arrangement**

#### 4.2 **FLOOR MOUNTING:**

Referring to Fig. 3 position the appliance on the floor and mark the position for the floor fixing holes through the two front feet. Drill and plug the fixing points as necessary, and secure the appliance with suitable screws. Insert the vee-shaped heatshield (item 6) , with the apex uppermost, between the front feet and engage onto the four feet members.

#### 4.3 **WALL MOUNTING:**

Prior to wall mounting, remove the fixing template from the packaging and decide whether the appliance is to be L.H or R.H mounted. The handing of the mounting refers to the side of the heater to be affixed to the wall, utilizing the mounting bracket provided.

- 4.3.1 Replace the 2 x 13mm No 8 case/body fixing screws from the side of the heater to be affixed to the wall with 2 x 20mm No 8 screws (provided separately), ensuring that these screws are not fully tightened.
- 4.3.2 Referring to Fig. 3, fit and secure the mounting bracket to heater using screws fitted at 4.3.1, ensuring that the free slots on the mounting bracket are to the front of the heater.
- 4.3.3 Using the appropriate template, mark the position of the 4 x fixing screws on the wall where the heater is to be fitted, ensuring that the heater will be level when fitted.
- 4.3.4 Fix the retaining bracket (item 7) to the wall using suitable wall plugs and screws.
- 4.3.5 Plug and partially insert 2 x screws to accept the mounting bracket.
- 4.3.6 Locate the appliance rear foot in the retaining bracket and engage the 2 x slots in the mounting bracket onto the screws fitted at 4.3.5.
- 4.3.7 Ensuring that the appliance is level, secure the mounting bracket fixing screws.
- 4.3.8 Insert the vee-shaped heatshield (item 6) , with the apex uppermost, between the front feet and engage onto the four feet members.

#### 4.4 **FLUE INSTALLATION:**

The flue pipe is to be installed in accordance with the guidelines detailed in para 3.5.

- 4.4.1 Ensure that a minimum length of 600mm (24in) of vertical flue is fitted directly above the draught diverter wherever possible.
  - 4.4.2 Ensure that a split collar is fitted in the flue within the 600mm (24in) vertical flue, preferably at or above the mid point, to enable draught diverter removal.
- Note: If a flue pipe conforming to BS715 is used, a suitable flue adaptor ( not included) must be fitted.**

#### 4.5 **WATER CONNECTIONS:**

- 4.5.1 Connect flow and return pipes as required, in accordance with the guidelines detailed in Sect 3.6. To facilitate subsequent dismantling of the heat exchanger, use union fittings at the point of connection to the appliance. Ensure that return pipe work does not restrict access to the thermostat phial.
- 4.5.2 Prior to installation of the pump, flush the system thoroughly ensuring that all valves are open.

#### 4.6 **ELECTRICAL CONNECTIONS:**

- 4.6.1 Use 3 core PVC sheathed electrical cable rated at 5 amp (0.75mm<sup>2</sup>), high temperature resistant (85°C) to BS 6141. Means of isolation of the appliance must either be via a double pole switch with a contact separation of at least 3mm in both poles, or a 3 pin plug and shuttered socket outlet complying with BS1363.
- 4.6.2 Connect the Solenoid valve supply cable to an external switch (not supplied), which must simultaneously operate a water pump, having first fitted the running grommet.

#### 4.7 **BURNER AND CONTROL ASSEMBLY FITTING:**

- 4.7.1 Fit the Burner and Control Assembly to appliance, ensuring that the square lug to the rear of the assembly engages into the locating bracket, and secure using the mounting screw.
- 4.7.2 Insert the thermostat phial fully into the flow pocket and secure using the thermostat retaining plug.

#### 4.8 **GAS CONNECTION:**

- 4.8.1 Connect a suitable gas supply to the appliance via the union service cock supplied. Ensure that the pipe work does not cause obstruction for Burner and Control assembly removal.
- 4.8.2 Test the gas installation for gas soundness, and purge in accordance with BS6891.

4.9 **FINAL ASSEMBLY:**

- 4.9.1 Fit the solenoid valve plug grommet to the Solenoid Valve and connect the supply cable, having routed the cable to the left of the Multifunctional Control, and secure connection using the retaining screw.
- 4.9.2 Connect the ignition lead to the Piezo unit.
- 4.9.3 Fit the running grommet on the solenoid valve supply cable to the Control Cover, such that the supply cable is retained to the side of the appliance nearest the wall.
- 4.9.4 Affix the lighting instruction label to the exposed side of the appliance.

5. **COMMISSIONING**

5.1 With the pump fitted (if required), fill the water circulation system, clear any air locks and check for water soundness.

5.2 Remove Multifunctional Control Temperature/Control knob, (this is a push fit only)

5.3 Ensure the Multifunctional Control Pilot adjusting screw is fully out, (approximately 5 full turns counterclockwise from fully in) indicated by a slight restriction when turned counterclockwise.

5.4 **WATER TEMPERATURE SETTING FOR INDIRECT SYSTEMS:**

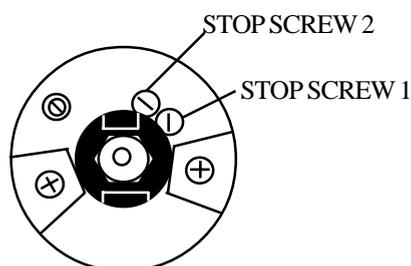
**Note: Thermostats are factory set to a temperature of 60°C (140°F), which is not to be exceeded for SELF PRIMING systems. For INDIRECT systems, removal of the stop screws situated on the temperature control mechanism allows the Temperature Control to be set beyond the 60°C limit.**

5.4.1 Referring to Fig. 4, identify stop screws 1 and 2.

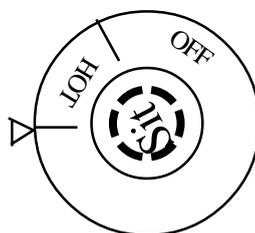
5.4.2 Dependant upon the required water temperature, remove:

- Stop screw 1 to provide a maximum temperature of 68°C (155°F), or,
- Stop screws 1 and 2 to provide a maximum temperature of 77°C (170°F).

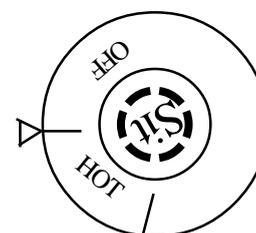
5.4.3 Refit the Multifunctional Control Temperature/Control knob, ensuring that it fully engages on the valve spindle.



**Fig. 4a**  
Stop screw positions



**Fig. 4b**  
Minimum Setting 60°C

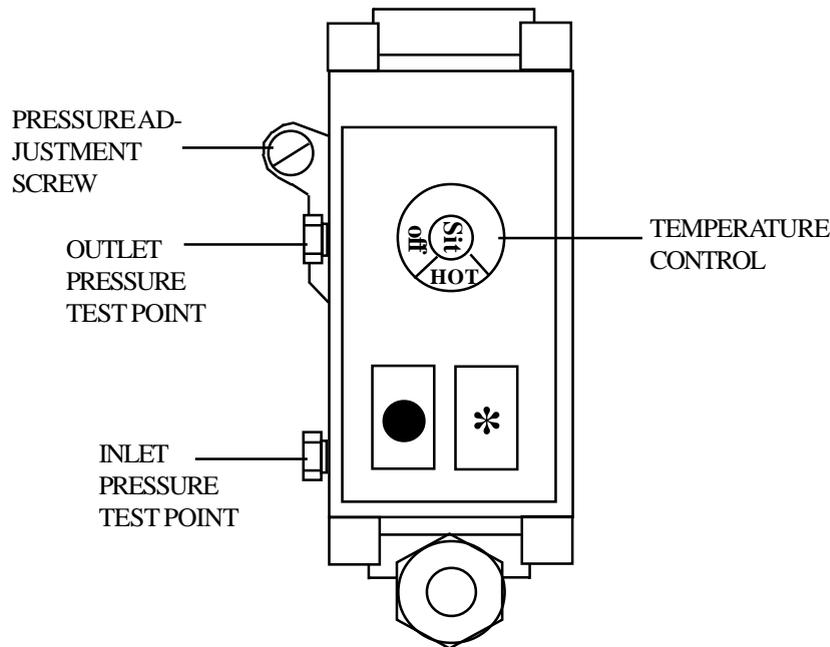


**Fig. 4c**  
Maximum Setting 77°C

**Fig. 4**  
Water Temperature Control Settings

5.5 **GAS PRESSURE SETTING:**

- 5.5.1 Referring to fig. 5, remove the Inlet Pressure Test Point cover and connect a Gas Pressure Test Gauge.
- 5.5.2 Turn the gas supply on at the gas service cock.
- 5.5.3 Referring to the lighting instruction label, ignite the Pilot Burner and ensure that the pilot flame envelopes the thermocouple tip.
- 5.5.4 Switch the electrical supply to appliance to ON.
- 5.5.5 Referring to Fig. 5, set the Pressure Adjuster to provide the setting pressure as detailed in para 2.1



**Fig. 5**  
**Multifunctional Control Component Identification**

## 5.6 SYSTEM OPERATION:

- 5.6.1 With the appliance ignited, ensure that all controls operate correctly.
- 5.6.2 Carry out a spillage test in accordance with para 3.5.8.
- 5.6.3 Allow the system to reach working temperature and switch the appliance OFF, rapidly drain and refill the system, clearing any air locks and test for water soundness.
- 5.6.4 Turn the Gas supply OFF.
- 5.6.5 At the Multifunctional Control, remove the Gas Pressure Test Gauge and refit the Inlet Pressure cover.
- 5.6.6 Refit the Control Cover.
- 5.6.7 Turn the Gas supply ON.
- 5.6.8 Relight the appliance and set the Temperature Control to the User's requirements.

## 6. INSTRUCTIONS FOR USER

- 6.1 Instruct the customer in the safe and efficient operation of both the appliance and the system.
- 6.2 Advise the customer of the necessary precautions to prevent damage to the system and building during periods of frost when the heating system is not in operation.
- 6.3 Advise the customer that it is important for adequate servicing to be carried out annually, in order to maintain safe and efficient operation of the appliance.
- 6.4 Hand the User's Instructions to the customer for retention.

## 7. ROUTINE MAINTENANCE

**IMPORTANT: Before commencing any maintenance or component replacement, ENSURE that the Gas supply is turned OFF and the Electrical supply to the appliance is ISOLATED. On completion of maintenance, ENSURE the appliance is tested for GAS SOUNDNESS.**

- 7.1 Remove and inspect the Burner and Control Assembly, cleaning the main burner, pilot burner, and injectors as required.
- 7.2 Inspect the Thermocouple and ignition lead for signs of damage, cleaning or replacing as required.
- 7.3 Inspect the Heat Exchanger flueways, clean by brushing from above and below and taking care to avoid damaging the surrounding insulation. Remove debris from the Heat Exchanger and Burner aperture using a vacuum cleaner or air duster. Clean any debris from the heat shield at the base of the appliance.
- 7.4 Ignite the appliance and test for gas soundness.
- 7.5 Ensure that the appliance and controls are operating correctly.
- 7.6 Carry out a spillage test to ensure that flue products are clearing satisfactorily.

## 8. REMOVAL OF COMPONENTS

### 8.1 **BURNER AND CONTROLS ASSEMBLY**

- 8.1.1 Ensure that the electrical supply to the appliance is isolated and that the gas supply is OFF.
- 8.1.2 Disconnect the gas supply to appliance.
- 8.1.3 Remove the 2 x lower blanking plugs.
- 8.1.4 Release the 4 x Control Cover retaining screws, and withdraw the Control Cover allowing access to the ignition lead.
- 8.1.5 Disconnect the ignition lead from the Piezo unit and remove the Control Cover.
- 8.1.6 Withdraw the retaining plug from the thermostat pocket and remove the thermostat phial, taking care to avoid damage to the thermostat.
- 8.1.7 Release the Burner Mounting Screw and withdraw the Burner and Control Assembly.
- 8.1.8 Refitment or replacement is in reverse order, ensuring that:
  - a. The lug on rear of main burner engages into the bracket at the rear of the appliance body.
  - b. When refitting thermostat phial care is taken to avoid damaging the phial.

### 8.2 **PILOT ASSEMBLY**

- 8.2.1 Remove the Burner and Controls Assembly as detailed in para 8.1
- 8.2.2 Disconnect the ignition lead from the electrode.
- 8.2.3 Release the thermocouple connection and Pilot Feed Pipe from the Multifunctional Control.
- 8.2.4 Release the screws securing the Pilot Assembly, and withdraw the Pilot Assembly from the main burner mounting bracket.
- 8.2.4 Remove the Thermocouple and electrode from the Pilot Assembly.
- 8.2.5 Release the Pilot Feed Pipe from the Pilot Assembly, and withdraw the Pilot Injector
- 8.2.6 Refitment or replacement is in reverse order, ensuring that the thermocouple connection at the Multifunctional control is not overtightened, (finger tight + ¼ turn only).

### 8.3 **MAIN INJECTOR**

- 8.3.1 Remove the Burner and Controls Assembly as detailed in para 8.1
- 8.3.2 Remove the Pilot Assembly as detailed in para 8.2
- 8.3.3 Release the main burner lock nut, and unscrew the Main Burner from injector.
- 8.3.4 Unscrew the main injector from injector housing.
- 8.3.5 Refitment or replacement is in reverse order, ensuring that the main burner is screwed in as close as possible to the injector shoulder. **NOTE:** If burner is not vertically aligned, the Burner and Control Assembly will not fit into the water body for re-assembly.

### 8.4 **DRAUGHT DIVERTER**

- 8.4.1 Release the flue split collar.
- 8.4.2 Release the 4 x screws securing the upper front plate to the top cover and withdraw the upper front plate.
- 8.4.3 Release the screw securing the draught diverter to the appliance and withdraw the draught diverter and top cover.
- 8.4.4 Release the 4 x screws securing the top cover to the draught diverter at the flue spigot and withdraw the draught diverter. (This is only necessary should the draught diverter require replacement.)

### 8.5 **HEAT EXCHANGER ASSEMBLY**

- 8.5.1 Remove the Burner and Controls Assembly as detailed in para 8.1
- 8.5.2 Remove the Draught Diverter as detailed in para 8.4
- 8.5.3 Drain the heating system.
- 8.5.4 Disconnect the water body at flow and return connections.
- 8.5.5 Remove the appliance from wall or floor fixing.
- 8.5.6 Release the 4 x screws securing the heat exchanger to the appliance casing and withdraw the heat exchanger.
- 8.5.7 Refitment or replacement is in reverse order.

## 8.6 MULTIFUNCTIONAL CONTROL

- 8.6.1 Remove the Burner and Controls Assembly as detailed in para 8.1
- 8.6.2 Remove the Pilot Assembly as detailed in para 8.2
- 8.6.3 Release the 4 x screws securing Solenoid valve to the outlet flange and withdraw the Solenoid valve, discarding the 'O' ring seal.
- 8.6.4 Refitment or replacement is in reverse order, ensuring replacement of the 'O' ring seal.

## 8.7 SOLENOID VALVE ASSEMBLY

- 8.7.1 Remove the Burner and Controls Assembly as detailed in para 8.1
- 8.7.2 Remove the Pilot Assembly as detailed in para 8.2
- 8.7.3 Release the main burner lock nut and withdraw the Solenoid valve and main injector from the injector housing.
- 8.7.4 Release the support bracket lock nut and withdraw the bracket from the Solenoid valve and main injector.
- 8.7.5 Remove the main injector from the Solenoid valve and discard copper washer.
- 8.7.6 Disconnect the Solenoid valve from Multifunctional Control and discard the 'O' ring seal.
- 8.7.7 Refitment or replacement is in reverse order, ensuring replacement of the 'O' ring seal and copper washer.

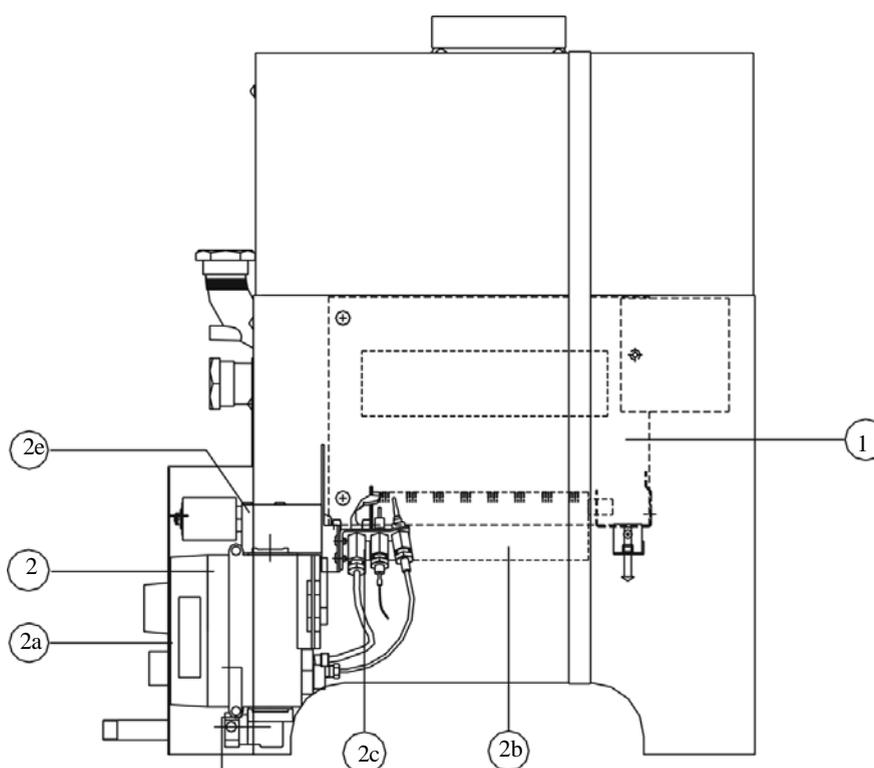
## 9. DEFECT DIAGNOSIS

**IMPORTANT: If an electrical defect occurs after installation of this appliance, preliminary checks should be carried out using a British Gas Multimeter. Upon completion of any maintenance tasks or defect diagnostic tasks which requires electrical disconnection and reconnection; continuity, polarity and resistance to earth checks must be carried out.**

**NOTE: When purging or checking gas supplies ensure that, there is adequate ventilation to the room or cupboard, and all naked lights are extinguished.**

SYMPTOM	POSSIBLE CAUSE	RECTIFICATION
a. Pilot fails to light.	<ul style="list-style-type: none"> <li>i No gas supply to water heater.</li> <li>ii Gas supply not purged.</li> <li>iii Pilot injector orifice restricted.</li> <li>iv Piezo faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Check for gas at inlet pressure test point on Multifunctional Control.</li> <li>Purge gas supply pipe in accordance with BS6891.</li> <li>Clean or replace pilot injector.</li> <li>Check/replace Piezo unit, lead or Pilot Assembly.</li> </ul>
b. Pilot fails to remain lit.	<ul style="list-style-type: none"> <li>i Thermocouple defective.</li> <li>ii Pilot flame out of adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>Replace Pilot Assembly.</li> <li>Adjust pilot flame adjusting screw to provide pilot flame of approximately 15mm long and just enveloping thermocouple tip.</li> </ul>
c. Main burner fails to light	<ul style="list-style-type: none"> <li>i. OFF button accidentally depressed.</li> <li>ii Solenoid valve not opening.</li> <li>iii Thermostat overheat.</li> <li>iv Thermostat defective.</li> </ul>	<ul style="list-style-type: none"> <li>Press 'OFF' button, wait for loud click (approx. 3 minutes) and repeat lighting procedure.</li> <li>Prove electrical supply to solenoid valve, replace solenoid valve.</li> <li>Draw off hot water from system to allow thermostat to cool, and ensure burner lights.</li> <li>Replace Multifunctional Control..</li> </ul>
d. Thermostat noisy.	<ul style="list-style-type: none"> <li>i. Thermostat coil loose.</li> <li>ii. Solenoid coil defective.</li> </ul>	<ul style="list-style-type: none"> <li>Secure coil the solenoid valve.</li> <li>Replace coil.</li> </ul>
e. Insufficient hot water.	<ul style="list-style-type: none"> <li>i. Burner operation cycle too short due to incorrect plumbing.</li> </ul>	<ul style="list-style-type: none"> <li>Check plumbing, in particular lateral runs.</li> </ul>
f. Water temperature outside usable range.	<ul style="list-style-type: none"> <li>i. Thermostat out of calibration.</li> <li>ii. Gas rate incorrect.</li> <li>iii Thermostat phial or capillary damaged.</li> </ul>	<ul style="list-style-type: none"> <li>Set thermostat for required water temperature or replace Gas valve.</li> <li>Check burner pressure, main injector for blockage, replace main injector if faulty.</li> <li>Replace Multifunctional Control.</li> </ul>

**IMPORTANT: If a faulty heater control may have resulted in excessively high water temperatures, (above 85°C, 185°F), the hot water cylinder should be checked to establish whether it is a SELF-PRIMING type. If so, the circuit should be drained and refilled to ensure that the air seal between the primary and secondary circuits in the cylinder is properly established.**



## 10.

**SHORT LIST OF SPARES**

Key	G.C. No	J&S Part No	Description	Qty
1	242 279	S00102	Main Body Assembly	1
2		S00555	Burner and Controls Assembly (comprising of)	1
2a	244 878	1000-0704840	Gas Control Valve Kit	1
2b	384 615	BOS 00562	Burner Arm	1
2c	244 880	BOS 02397/1	Pilot Burner Assembly (comprising)	1
	392 935	S00254	Pilot Injector	1
	381 671	BOS 02401	Thermocouple	1
2d	244 894	BOS 00549	Copper Washer	2
2e	244 882	S00257	Solenoid Valve Assembly	1
2f	381 681	S00258	Solenoid Valve Coil	1
2g	244 895	S00259	DIN 43650 plug with PG9 cable clamp	1
2h	244 891	S000296	Main Injector Assembly	1
2j	244 883	S00303	Pilot Feed Kit	1
2k	381 6070	S00260	'O' Ring Seal	1
2l	244 989	BOS 01546	Igniter Lead	1
3	395 945	1000-0700570	Piezo Unit	1
4	230 328	1000-2500075	Phial Retaining Plug	1

**Johnson and Starley prides itself on its ability to supply spare parts quickly and efficiently. If your service engineer indicates a problem in obtaining a spare part, advise him to contact Johnson and Starley Spares Department at the address below.**

**Telephone: 01604 762881**

**Fax: 01604 767408**

**JOHNSON AND STARLEY Ltd.,  
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Brackmills,  
Northampton NN4 7LZ**