

# **SPACE-RAY**

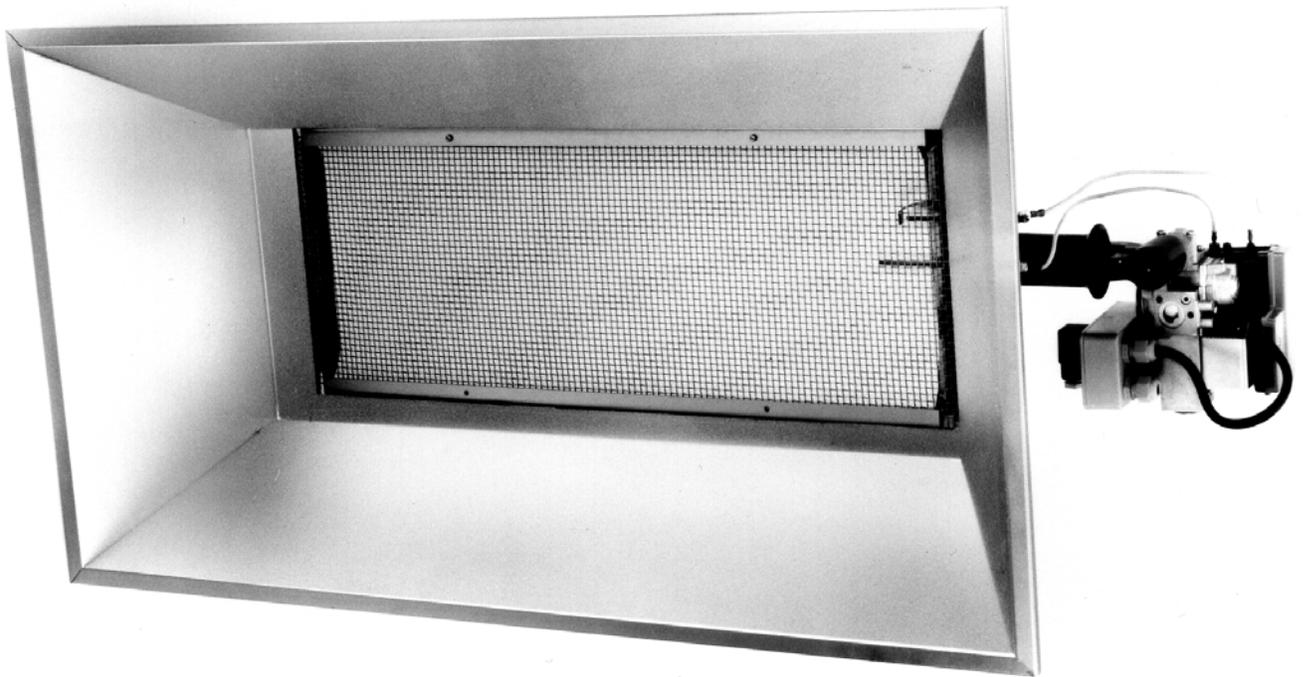
## **Overhead Radiant Plaque Heaters**

### **INSTALLATION, SERVICING AND OPERATING INSTRUCTIONS**

**SRP (DBI) SRP (PILOT) SERIES**

**MODELS:**

**SRP 08, SRP15, SRP 22, SRP30, SRP 30 Hi/Lo**



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## INSTALLATION, SERVICING AND OPERATING INSTRUCTIONS

Before installation, check that the local distribution conditions, nature of gas and pressure, and adjustment of appliance are compatible.

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# INSTALLATION, SERVICING & OPERATING INSTRUCTIONS

## 1. Technical Data

Table 1

MODEL	SRP08-N
Heat Input	7.6kW (Hs) 6.84kW (Hi)
Appliance Type	A <sub>1</sub>
Appliance Cat.	I <sub>2H</sub>
Adjusted for	2H G20 20mbar
Setting Pressure	12.0mbar
Injector	Ø2.2mm
Pre-Injector	None
Electrical Supply	230v~50Hz 25W
Fuse Externally	3A
Dimensions	L = 0.645m W = 0.428m H= 0.325m
Weight	6.0kg
Gas Connection	Rc - ½

Table 2

MODEL	SRP15-N	SRP15-L
Heat Input	15.2kW (Hs) 13.68kW (Hi)	15.0kW (Hs) 13.5kW (Hi)
Appliance Type	A <sub>1</sub>	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>	I <sub>3+</sub>
Adjusted for	2H G20 20mbar	3+ G30/G31 29/37mbar
Setting Pressure	12.0mbar	None
Injector	Ø3.1mm	Ø1.9mm
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.925m W = 0.435m H = 0.325m	
Weight	11.0kg	
Gas Connection	Rc - ½	

Table 3

MODEL	SRP22-N
Heat Input	21kW(Hs) 18.9kW (Hi)
Appliance Type	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>
Adjusted for	2H G20 20mbar
Setting Pressure	15.0mbar
Injector	Ø3.4mm
Pre-Injector	None
Electrical Supply	230V ~ 50Hz 25W
Fuse Externally	3A
Dimensions	L = 1.205m W = 0.435m H = 0.325m
Weight	14.0kg
Gas Connection	RC - ½

Table 4

MODEL	SRP30-N	SRP30-L
Heat Input	30.4kW (Hs) 27.36kW (Hi)	30.0kW (Hs) 27kW (Hi)
Appliance Type	A <sub>1</sub>	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>	I <sub>3+</sub>
Adjusted for	2H G20 20mbar	3+ G30/31 29/37mbar
Setting Pressure	12.0mbar	None
Injector	2 x Ø3.1mm	2 x Ø1.9mm
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Gas Connection	Rc - ½	
Reflector	Deep	
Dimensions	L = 1.455m W = 0.435m H = 0.325	
Weight	24.0kg	
Reflector	Parabolic	
Dimensions	L = 1.475m W = 0.540m H = 0.550m	
Weight	28kG	

Table 5

MODEL	SRP30 Hi/Lo-N	SRP30 Hi/Lo-L
Heat Input	30.4kW/15.2kW (Hs)	30.0kW/15.0kW (Hs)
Appliance Type	A <sub>1</sub>	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>	I <sub>3+</sub>
Adjusted for	2H G20 20mbar	3+ G30/G31 29/37mbar
Setting Pressure	12.0mbar	None
Injector	2 x Ø3.1mm	2 x Ø1.9mm
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Gas Connection	RC - ½	
Reflector	Deep	
Dimensions	L = 1.455m W = 0.435m H = 0.325m	
Weight	24.0kg	
Reflector	Parabolic	
Dimensions	L = 1.475m W = 0.540m H = 0.550m	
Weight	28.0kg	

Table 6

MODEL	SRP08 (PILOT)-N
Heat Input	7.6kW (Hs) 6.84kW (Hi)
Appliance Type	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>
Adjusted for	2H G20 20mbar
Setting Pressure	12.0mbar
Injector	Ø2.2mm
Pilot Injector	TJ020
Dimensions	L = 0.615m W = 0.428 H = 0.325m
Weight	6.0kg
Gas Connection	Rc - ½

Table 7

MODEL	SRP15 (PILOT)-N	SRP15 (PILOT)-L
Heat Input	15.2kW (Hs) 13.68kW (Hi)	15.0kW (Hs) 13.5kW (Hi)
Appliance Type	A <sub>1</sub>	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>	I <sub>3P</sub>
Adjusted for	2H G20 20mbar	3P G31 37mbar
Setting Pressure	12.0mbar	24.0mbar
Injector	Ø3.1mm	Ø2.1mm
Pilot Injector	TJ020	TJ012
Dimensions	L = 0.895 W = 0.435 H = 0.325	
Weight	11.0kg	
Gas Connection	RC - ½	

Table 8

MODEL	SRP22 (PILOT)-N
Heat Input	21.0kW (Hs) 18.9kW (Hi)
Appliance Type	A <sub>1</sub>
Appliance Cat	I <sub>2H</sub>
Adjusted for	2H G20 20mbar
Setting Pressure	15.0mbar
Injector	Ø3.4mm
Pilot Injector	TJ020
Dimensions	L = 1.175m W = 0.435m H = 0.325m
Weight	14.0kg
Gas Connection	Rc - ½

## 2 UN-PACKING

The appliance is supplied in a carton, assembled complete and ready for installation. Any optional equipment supplied is packed inside the carton also.

## 3 INSTALLATION

Notwithstanding their limited scope, the appliance should be installed in accordance with the relevant provisions of any National Gas Safety (Installation and Use Regulations). Will account should also be taken of any obligations arising from any National Health and Safety at Work Regulations, National and Local Building Regulations and National Electrical Wiring Regulations. The appliance must be installed, and where necessary, converted for use on other gases, by a qualified installer.

### 3.1 Suspension

3.1.1 The appliance should be located with respect to building construction and other equipment, to permit access to the appliance for servicing etc.

3.1.2 For suspending the appliance, it is recommended that suitable protected welded chain ( $\varnothing 3\text{mm} \times 65$  links/m) or  $\varnothing 6\text{mm}$  (minimum) mild steel drop rods and suitable brackets are used. Attach the chains or drop rods to the 4 holes located at each corner of the appliance plenum body, by use of M8 screws and nuts. Providing at least  $\varnothing 5\text{mm}$  closed link hooks are used, chains may be attached directly to the 4 holes in the appliance plenum body.

3.1.3 The appliance must be suspended with its longitudinal axis horizontal, but may have its lateral axis either horizontal or at an angle of up to  $45^\circ$  (maximum) from the horizontal, as shown in Fig. 1. below.

**IMPORTANT:** When suspended at an angle from the horizontal, the appliance MUST be positioned with the exhaust vent (located between the plenum body and reflector) along the higher side of the appliance.

3.1.4 The appliance may be mounted off a vertical surface also in which case it is recommended that use is made of the purpose designed pair of brackets that are available as optional equipment. The brackets provide for a range of mounting angles from the horizontal ( $15^\circ$ ,  $22.5^\circ$ ,  $30^\circ$ ,  $37.5^\circ$ ,  $45^\circ$ ) by virtue of adjustable straps attached to the surface mounted brackets.

3.1.5 The brackets should first be fixed to the vertical surface by means of 4 bolts (M8 minimum) through pre-formed holes in the brackets. Attach the brackets to the 4 holes located at each corner of the appliance plenum body by use of M8 screws and nuts.

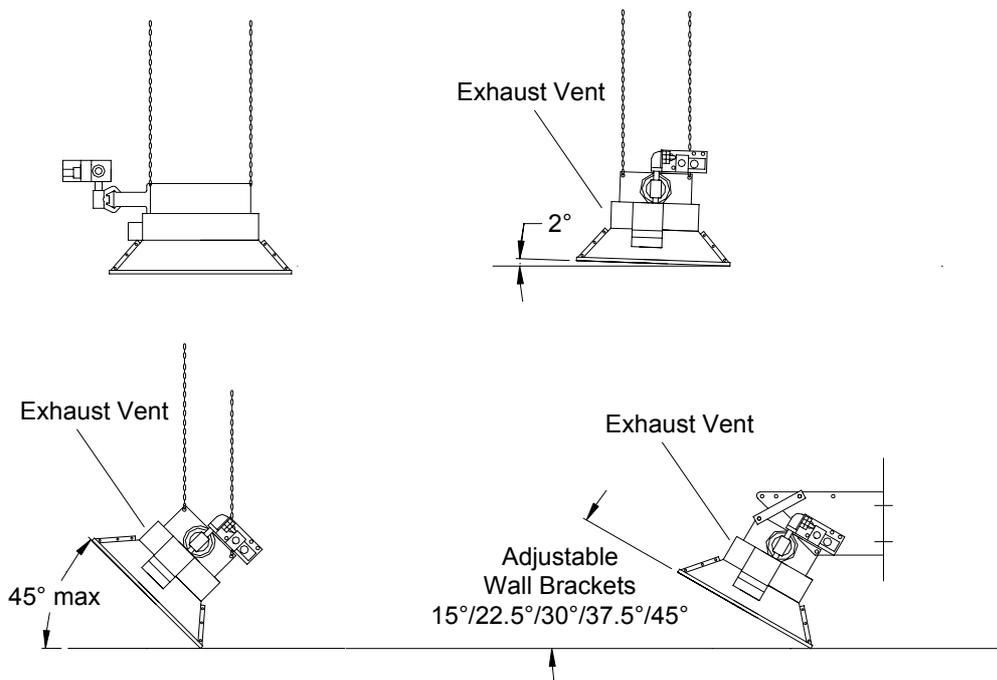


Fig. 1

3.1.6 Minimum clearance from combustibles.

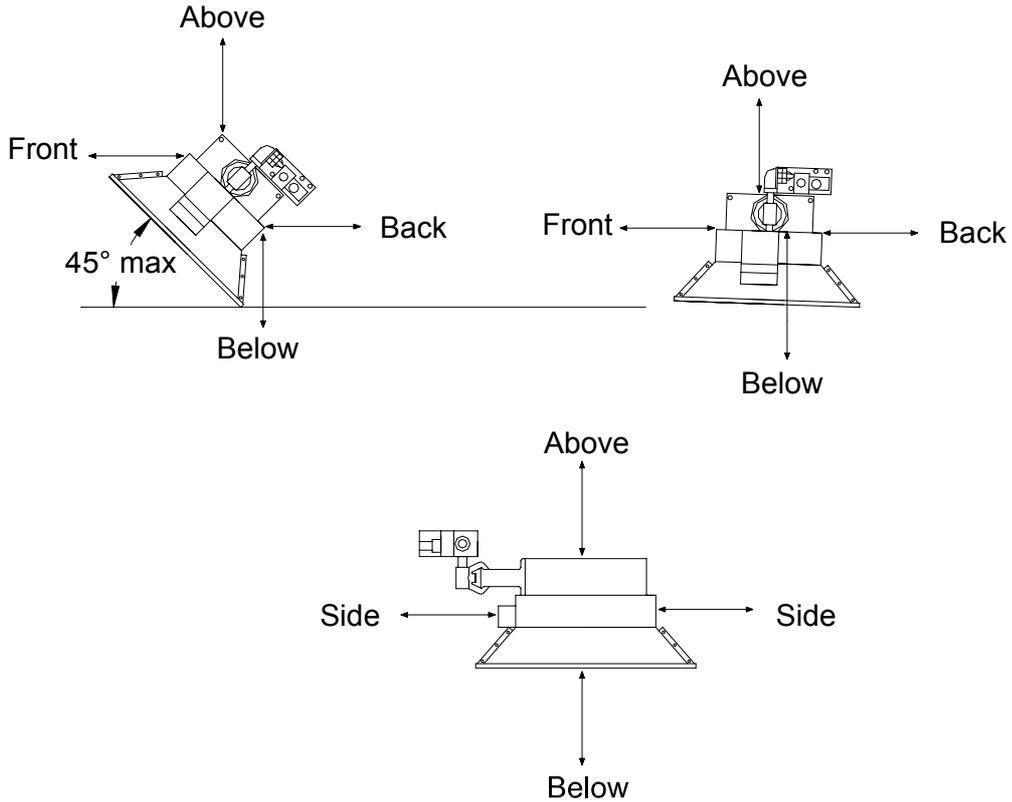


Fig. 2

MODEL	HORIZONTAL		45°		ABOVE	BELOW	SIDE
	FRONT	BACK	FRONT	BACK			
SRP08	610mm	610mm	865mm	205mm	915mm	1220mm	610mm
SRP15	915mm	915mm	1830mm	305mm	915mm	2590mm	1145mm
SRP22	1145mm	1145mm	2085mm	305mm	915mm	2975mm	1270mm
SRP30 -DEEP	1375mm	1375mm	2365mm	305mm	915mm	3355mm	1525mm
SRP30 - PARABOLIC	1880mm	1880mm	3025mm	305mm	915mm	4270mm	1905mm

3.2 Gas Supply

3.2.1 Natural Gas - G20 at 20mbar supply pressure (appliance cat 2H).

- Maximum supply pressure (Pmax)- 25mbar
- Minimum supply pressure (Pmin) - 17mbar
- Setting Pressure - 12.5mbar
- Gas Connection - Rc - ½

3.2.1.1 Installation pipes should be fitted in accordance with National and Local Regulations. Pipes of a smaller size than the appliance connection (Rc - ½) should not be used and the pipework must be designed to achieve a gas supply pressure between the maximum and minimum values stated above, measured at the appliance inlet pressure test point.

A union service cock MUST be fitted as close as practicable upstream of the appliance to enable the gas train to be removed for maintenance or repair.  
 It is essential to provide a flexible metallic hose, which must conform to National or Local Regulations, to connect the appliance to the gas supply. Minimum size to be ½" (12.7mm) bore.

3.2.2 LPG - G30/G31 at 29/37mbar supply pressure (appliance cat 3+).

Maximum supply pressure (Pmax) G30 - 35mbar  
 G31 - 45mbar  
 Minimum supply pressure (Pmin) G30 - 20mbar  
 G31 - 25mbar

Note:- for appliances cat 3+, the governor is not operational.

Gas connection: Rc - ½.

3.2.2.1 The appliance should be connected to a permanent piped supply of LPG, with pipes of adequate size to achieve a gas supply pressure between the maximum and minimum valves stated above, measured at the appliance inlet pressure test point.

3.2.3 The complete installation MUST be tested for soundness in accordance with National or Local Regulations.

3.3 Electrical Supply

**WARNING:**

APPLIANCES EMPLOYING DIRECT BURNER SPARK IGNITION **MUST** BE EARTHED.  
 APPLIANCES EMPLOYING PILOT IGNITION **MUST NOT** BE CONNECTED TO ANY ELECTRICAL SUPPLY

3.3.1 Direct Burner Spark Ignition: the electrical wiring to the appliance must be installed in accordance with the latest or current National Regulations and any Local Regulations which apply.

Electrical supply 230v ~ 50Hz 25W  
 Current rating 0.11A  
 Fuse externally 3A

3.3.2 Twin core and earth PVC covered flexible supply cable (0.5mm<sup>2</sup> - to National or Local standard specification) must be used, with connections made as shown in Fig. 3.

3.3.3 SRP30 Hi/Lo models only.  
 Three core and earth PVC covered flexible supply cable (0.5mm<sup>2</sup> - to National or Local standard specification) must be used, with connections made as shown in Fig. 4.

**SRP 08, 15, 22 & 30**

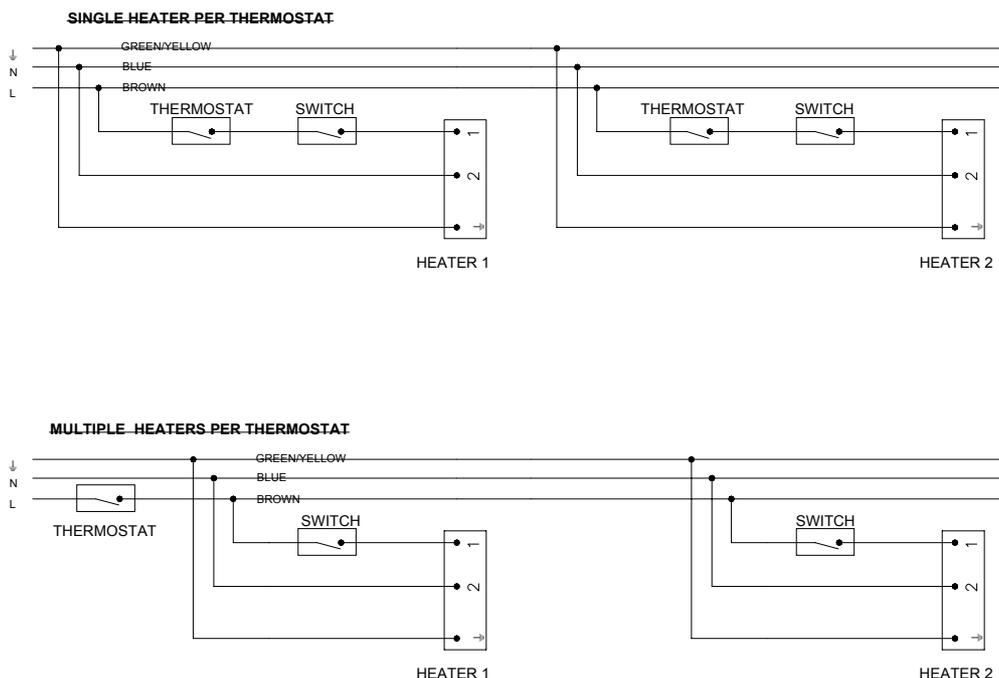


Fig.3

## SRP 30 HI/LO

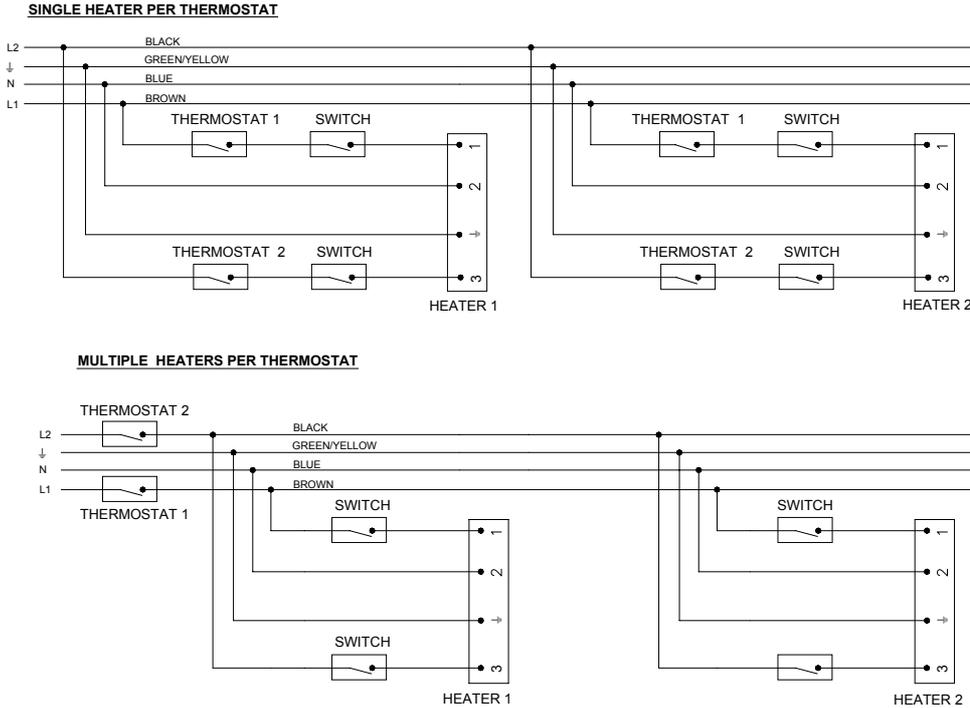


Fig. 4

Notes: -

The method of connection to the electrical supply must facilitate complete isolation and should preferably be via a fused double pole isolator having a constant separation of at least 3mm in all poles and supplying the appliance ONLY.

Alternatively connections may be made via a 3 pin plug and unswitched socket; both complying with the requirements of National or Local Regulations. Neither thermostat nor switches are supplied as standard equipment.

N.B. In the event of an electrical fault after installation of the appliance, preliminary system checks are required to be carried out, i.e. earth continuity, polarity and resistance to earth.

### 3.3.4 Internal Wiring Diagram (Honeywell Controls)

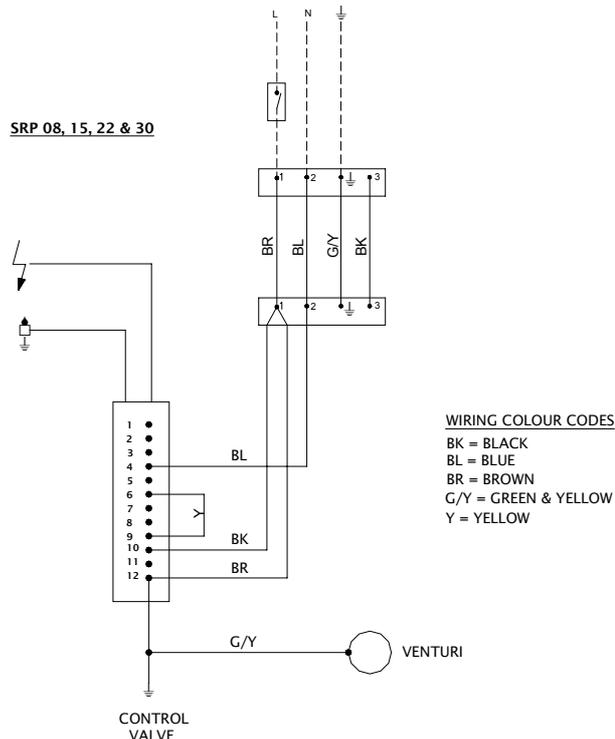


Fig. 5

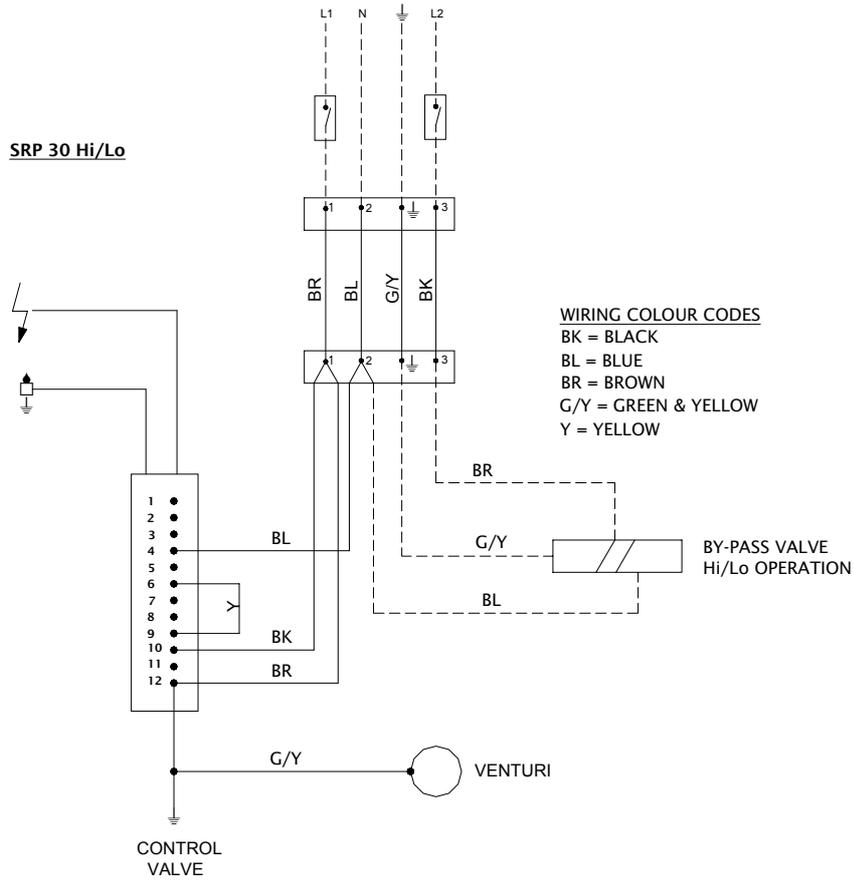


Fig. 6

3.3.5 Internal Wiring Diagram (S.I.T. Controls)

**SRP 08, 15, 22 & 30**

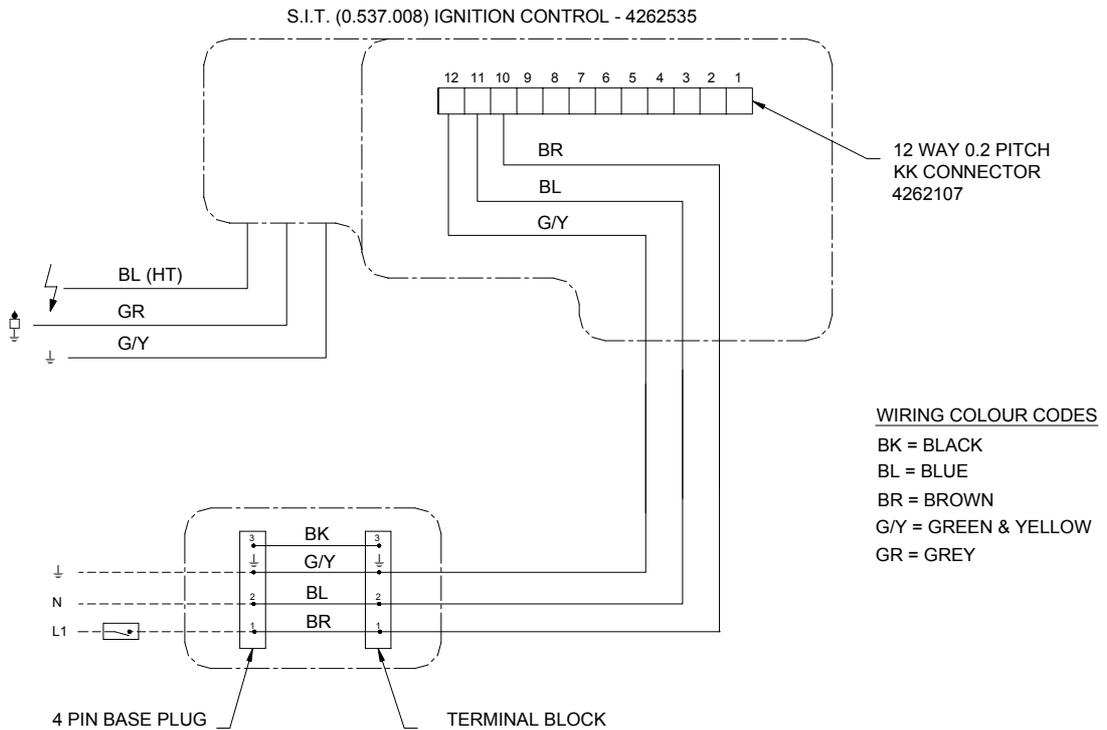
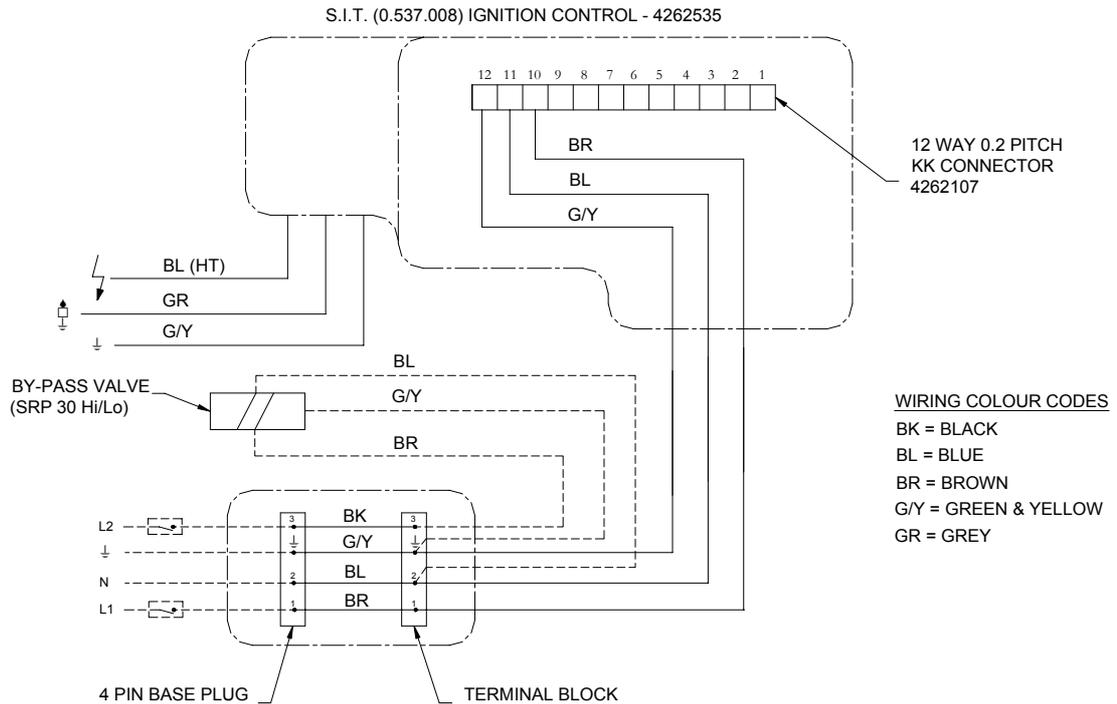


Fig. 7

## SRP 30 Hi/Lo



### 3.4 Ventilation

The installation room should have a volume of at least 10m<sup>3</sup>/kW of installed nominal heat input of the radiant heater.

The ventilation requirements and calculation methods for unflued appliances are set out in the European Standards **EN 13410:2001** and must be applied. The following is guidance to the standard:

Ventilation may be achieved by any of the three following different means:

- thermal evacuation of the products of combustion/air mixture
- mechanical evacuation of the products of combustion/air mixture
- natural air change

#### 3.4.1.1 Ventilation by Thermal Evacuation

Ventilation by thermal evacuation is sufficient if **10m<sup>3</sup>/h of exhaust air per kW of operating heat input** are ventilated out of the installation room.

The air/products of combustion mixture must be evacuated above the radiant heaters, if possible near the ridge, by means of exhaust mixture opening(s), (vents).

Where the exhaust mixture opening(s) can be closed, it shall only possible to operate the radiant heaters when they are open.

The maximum horizontal distance between a radiant heater and a vent opening shall be:

- 6 (six) times the vent height in the case of **wall** openings
- 3 (three) times the vent height in the case of **roof** openings

### 3.4.1.2 Ventilation by Mechanical Evacuation

Ventilation by mechanical evacuation is sufficient if **10m<sup>3</sup>/h of exhaust air per kW of operating heat input** are ventilated out of the installation room.

The air/products of combustion mixture must be evacuated above the radiant heaters using fan(s).

It shall only be possible to operate the radiant heaters whilst the exhaust airflow is proven.

The maximum horizontal distance between a radiant heater and a fan shall be:

6 (six) times the fan mounting height in the case of **wall** openings

3 (three) times the fan mounting height in the case of **roof** openings

Total minimum proven ventilation airflow in **m<sup>3</sup>/h** will be:

Total installed kW input X 10

**Note:** Mechanical exhaust air openings must be positioned such that the burner stability of the nearest appliance is unaffected.

### 3.4.1.3 Ventilation by Natural Air Change

Gas-fired radiant heaters may be operated without any special exhaust system if the exhaust gases are discharged to the outside atmosphere by a sufficient natural air change in the installation room.

Furthermore, no provision for thermal or mechanical ventilation is required in the following particular cases:

Buildings with natural air change greater than 1.5 volumes per hour

Buildings with a density of operating heat input not greater than 5W/m<sup>3</sup>

### 3.4.1.4 Air Supply

Air supply openings are required to admit air and shall be located below the radiant heaters.

The total area of the unobstructed cross-sections of all the air supply openings shall not be smaller than the total area of the unobstructed cross-sections of all the exhaust openings.

Slits and gaps of **fixed** cross-section can also be used as air supply openings.

Where the air supply openings can be closed, it shall only be possible to operate the radiant heaters when they are open.

## 4. Assembly

### 4.1 SRP08/SRP15/SRP22/SRP30 (Direct Burner Spark Ignition).

4.1.1 The appliance should be raised and suspended from chains or drop rods or from brackets fixed to vertical surfaces which have been previously installed in accordance with section 3.1 - Suspension.

4.1.2 Connect the gas supply in accordance with Section 3.2. - Gas Supply, of these Installation Instructions.

4.1.3 Using twin core and earth flexible supply cable, as specified in Section 3.3.2, suitable for 230V ~ 50Hz 25W supply, connect the 4 pin electrical socket provided (fitted to junction box, attached to the Control Valve) as follows:-

Brown	-	to terminal marked 1
Blue	-	to terminal marked 2
Green/Yellow	-	to terminal marked $\perp$

External fuse required - 3 amp.

See section 3.3 for electrical supply requirements.

4.2 **SRP30 Hi/Lo (Direct Burner Spark Ignition)**

4.2.1 The appliance should be raised and suspended from chains or drop rods, or from brackets fixed to vertical surfaces that have been previously installed in accordance with Section 3.1. - Suspension.

4.2.2 Connect the gas supply in accordance with Section 3.2. - Gas supply, of these Installation Instructions.

4.2.3 Using three core and earth flexible supply cable as specified in section 3.3.3, suitable for 230v ~ 50Hz 25W supply, connect the 4 pin electrical socket provided (fitted to junction box, attached to the Control valve) as follows:-

- Brown - to terminal marked 1
- Blue - to terminal marked 2
- Black - to terminal marked 3
- Green/Yellow - to terminal marked  $\perp$

External fuse required - 3 amp  
See Section 3.3 for electrical supply requirements.

4.3 **SRP08/SRP15/SRP22 (Standing Pilot Ignition)**

4.3.1 The appliance should be raised and suspended from chains or drop rods, or from brackets fixed to a vertical surface which have been previously installed in accordance with Section 3.1 suspension.

4.3.2 Connect the gas supply in accordance with Section 3.2 - Gas Supply, of these Installation Instructions.

4.3.3 **IMPORTANT:** THIS APPLIANCE MUST NOT BE CONNECTED TO ANY ELECTRICAL SUPPLY. The appliance may be controlled via a 2 pole switch and/or a thermostat, connected by 2 core flexible supply cable (suitable for millivolt electrical supply) to the appliance control valve connections marked TH (see Fig. 9).



AUTOMATIC SHUT-OFF VALVE  
POWERED BY MILLIVOLT GENERATOR



TP = MILLIVOLT GENERATOR  
TH = SWITCH / THERMOSTAT

ROOM  
THERMOSTAT

Fig. 9

## 5. Commissioning

It is essential that all new pipework installations are purged and tested for sounding using a suitable leak detection fluid prior to attempting to ignite any appliance. This work should be carried out in accordance with National or Local Regulations.

**N.B. DO NOT TEST FOR SOUNDNESS BY USE OF NAKED FLAMES.**

### 5.1 Direct Burner Spark Ignition Models:-

#### 5.1.1 Ignition.

5.1.1.1 Turn on the gas supply to the appliance.

5.1.1.2 Switch on the electrical supply to the appliance.

5.1.1.3 If the appliance has a thermostat fitted in the electrical supply circuit, ensure that it is set high enough to demand heat. SRP30-Hi/Lo: ensure that the second thermostat (T2 - see Fig. 4) is set high enough to call for heat also.

5.1.1.4 After a waiting time of 1 second, the solenoid valves and the spark ignition electrode will be energised simultaneously.

5.1.1.5 Upon successful ignition the flame will be detected by the flame sensor and the ignition spark electrode will be de-energised.

5.1.1.6 Should the flame fail to permanently establish during the 25 seconds ignition period (Honeywell Control) or 10 seconds (S.I.T. Control) the solenoid valve and ignition spark electrode will be de-energised and the appliance Ignition Control will go to "lockout" condition.

5.1.1.7 To repeat the ignition sequence it will be necessary to switch off the electricity supply to the appliance for a period of 10 seconds to reset the ignition control. If a first reset is not successful, wait at least 15 seconds before repeating the procedure. After reset, an extended waiting time will occur.

5.1.1.8 If the burner fails to ignite following a second ignition sequence, turn off the gas supply at the gas isolation valve and investigate the fault.

5.1.1.9 If gas failure occurs after successful ignition the appliance ignition control will attempt one re-ignition before going to "lockout" condition.

5.1.1.10 SRP30-Hi/Lo only: with both burners ignited (see 5.1.3) turn down the temperature setting of the second thermostat (T2-see Fig. 4) and observe that the burner furthest from the Control Valve Assembly is extinguished. Re-ignite the burner by turning up the temperature setting of the second thermostat (T2).

**IMPORTANT:** Thermostat T1 must be set at a higher temperature than thermostat T2 to achieve the High/Low mode of operation.

#### 5.1.2 Shut Down

5.1.2.1 To shut down the appliance for short periods of time, switch off the electrical supply to the appliance.

5.1.2.2 To shut down the appliance for a period of time in excess of one week, switch off the electrical supply to the appliance and turn off the gas supply at the gas isolation valve.

Note: concise operating instructions are contained on Instruction Label (4260460), which should be affixed adjacent to a low level user control.

#### 5.1.3 Checking Gas Pressure

5.1.3.1 To check the gas supply pressure.

5.1.3.1.1 Unscrew the sealing screw (2 turns) of the LEFT (Gas IN) control valve test nipple and connect a manometer to this test nipple.

5.1.3.1.2 Ignite the appliance burner by switching on the electrical supply to the appliance and check that the manometer reading is as stated below, for the gas type the appliance is adjusted for (see Data Label affixed to the appliance reflector, below the control valve).

Category 2H: gas type G20 (natural): supply pressure	20mbar (nom) 17mbar (min) 25mbar (max)
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Category 3+: gas type G30 (butane): supply pressure	29mbar (nom) 25mbar (min) 35mbar (mx)
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Category 3+: gas type G31 (propane): supply pressure	37mbar (nom) 25mbar (min) 45mbar (max)
--	--

5.1.3.1.3 Switch off the electrical supply to the appliance and remove the manometer tube from the LEFT (Gas IN) Control Valve test nipple. Screw in the test nipple sealing screw.

5.1.3.2 To check the burner setting pressure:-

5.1.3.2.1 Unscrew the sealing screw (2 turns) of the RIGHT (Gas OUT) Control Valve test nipple and connect a manometer to this test nipple.

5.1.3.2.2 Ignite the burner by switching on the electrical supply to the appliance and check that the manometer reading is as stated below, for the gas type the appliance is adjusted for (see Data Label, affixed to the appliance reflector, below the Control Valve).

SRP08/SRP15/SRP30/SRP30 Hi/Lo Category 2H: gas type G20 (natural): setting pressure - 12.0mbar.
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SRP22 Category 2H: gas type G20 (natural): setting pressure - 15.0mbar.
--

5.1.3.2.3 In the event that the burner setting pressure is incorrect remove the cap from the integral pressure governor of the control valve. Adjust the pressure (using a suitable screwdriver) by turning the pressure governor adjusting screw clockwise to increase, or anti-clockwise to decrease the burner setting pressure.

5.1.3.2.4 Upon obtaining the correct burner setting pressure, switch off the electrical supply to the appliance, remove the manometer tube from the RIGHT (Gas OUT) control valve test nipple and screw in the test nipple sealing screw. Replace the cap on the integral pressure governor of the control valve.

#### 5.1.4 **Flame Supervision.**

5.1.4.1 To check the operation of the flame supervision equipment, run the appliance normally, remove the flame sensor (grey) lead from the ignition control by gently pulling the connector using insulated pliers. Observe that the burner flame is extinguished within 1 second.

5.1.4.2 After a 'waiting time' of 1 second, the solenoid valves and the ignition spark electrode will be re-energised and with the flame sensor lead still disconnected, the Ignition Control will go to 'lockout condition' after a further 25 seconds (Honeywell Control) or 10 seconds (S.I.T. Control).

5.1.4.3 Switch off the electrical supply to the appliance and reconnect the flame sensor lead to the ignition control.

#### 5.2 **Standing Pilot Ignition Models.**

##### 5.2.1 **Ignition**

5.2.1.1 Turn on the gas supply to the appliance.

5.2.1.2 If the appliance has a thermostat fitted, ensure that it is set to the lowest temperature setting. Press slightly and turn the control knob of the millivolt valve clockwise to the OFF position and wait 5 minutes, thus allowing any gases to escape which may have accumulated in the combustion chamber.

5.2.1.3 Press slightly and turn the control knob counter clockwise to the PILOT position, depress the control knob and ignite the pilot by passing a lighted taper through the hole in the pilot housing assembly (venting of air may take place prior to flow of pilot gases). Once the pilot flame is established, hold knob depressed for approximately 60 seconds.

5.2.1.4 Release knob. If the pilot flame should become extinguished, turn the control knob to OFF position and repeat steps 5.2.1.3 and 5.2.1.4.

NOTE: this will allow reset of INTERLOCK for correct ignition of the pilot.

5.2.1.5 Press and turn the control knob counter clockwise to the ON position.

5.2.1.6 Turn the appliance thermostat to the desired temperature setting, or operate the ON/OFF switch (if no thermostat) to the ON position.

## 5.2.2 Shut Down

5.2.2.1 To shut down the appliance for short periods of time, turn the thermostat setting to the lowest temperature or operate the ON/OFF switch (if no thermostat) to the OFF position.

5.2.2.2 To shut down the appliances for a period of time in excess of one week press and turn the knob clockwise to the OFF position and turn off the gas supply at the gas isolation valve.

NOTE: concise operating instructions are contained on Instruction Label (4260461) that should be affixed adjacent to a low level user control.

## 5.2.3 Checking Gas Pressure

5.2.3.1 To check the gas supply pressure.

5.2.3.1.1 Remove the sealing screw of the control valve test nipple marked 'IN' and connect a manometer to this test nipple.

5.2.3.1.2 Ignite the appliance burner from the pilot burner flame by pressing and turning the control valve operating knob counter clockwise to the ON position. Check that the manometer reading is as stated below, for the gas type the appliance is adjusted for (see Data Label affixed to the appliance reflector, below the Control Valve).

Category 2H: gas type G20 (natural): supply pressure	20mbar (nom) 17mbar (min) 25mbar (max)
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Category 3P: gas type G31 (propane): supply pressure	37mbar (nom) 25mbar (min) 45mbar (max)
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5.2.3.1.3 Press and turn the Control Valve operating knob clockwise to the OFF position to extinguish the appliance burner and remove the manometer tube from the Control Valve test nipple marked 'IN'. Replace the test nipple sealing screw, ensuring it is tight.

5.2.3.2 To check the burner setting pressure.

5.2.3.2.1 Remove the sealing screw of the Control Valve test nipple marked 'OUT' and connect a manometer to this test nipple.

5.2.3.2.2 Ignite the appliance burner from the pilot burner flame by pressing and turning the control valve operating knob counter clockwise to the 'ON' position. Check that the manometer reading is as stated below, for the gas type the appliances is adjusted for (see Data Label, affixed to the appliance reflector, below the control valve.

SRP08/SRP15  
Category 2H: gas type G20 (natural): setting pressure 12.0mbar

SRP22  
Category 2H: gas type G20 (natural): setting pressure 15.0mbar

SRP15  
Category3P: gas type G31 (propane): setting pressure 24.0mbar

5.2.3.2.3 In the event that the burner setting pressure is incorrect, remove the cap from the integral pressure governor of the control valve. Adjust the pressure (using a suitable screwdriver) by turning the pressure governor adjusting screw clockwise to increase, or anti-clockwise to decrease the burner setting pressure.

5.2.3.2.4 Upon obtaining the correct burner setting pressure, press and turn the control valve operating knob clockwise to the OFF position to extinguish the appliance burner and remove the manometer tube from the Control Valve test nipple marked 'OUT'. Replace the test nipple sealing screw, ensuring it is tight.

## 5.2.4 Flame Supervision

5.2.4.1 To check the operation of the flame supervision equipment, run the appliance normally, unscrew the thermocouple nut and disconnect the thermocouple from the control valve. Observe that the appliance burner flame is extinguished within 60 seconds.

5.2.4.2 Re-connect the thermocouple and re-ignite the appliance burner by following the procedure in section 5.2.1 of these commissioning instructions.

## 6. Servicing

It is essential that at least once a year, preferably before the heating season, the appliance is serviced by a qualified person. In exceptionally dirty conditions, such as may occur in a foundry, more frequent servicing may be desirable.

### IMPORTANT:

1. Do not rest anything, especially ladders, against the appliance.
2. Gas and electrical supplies must be isolated before commencing servicing work or replacement of components.
3. Unless instructed to the contrary, re-assemble components in reverse order.
4. Check all joint for gas soundness after carrying out any servicing of the appliance.
5. On completion of a service/fault finding task which has required the breaking and re-making of electrical connections, the following checks, using a multimeter must be made.

5.1 Earth continuity check.

5.2 Polarity check.

5.3 Resistance to earth check.

## 6.1 Ignition Electrode

6.1.1 Disconnect the black HT ignition lead from the electrode, by gently pulling the plastic shroud from the Raja connector of the electrode.

6.1.2 Unscrew the two M4 screws securing the electrode to the flue collar assembly and withdraw the electrode.

6.1.3 Remove any foreign matter from the electrode rod and earth strap and check that the spark gap is 3.5mm. If the electrode is badly oxidised, replace the electrode (see section 7.1).

6.1.4 Upon re-assembly, ensure that the HT lead connector is securely attached to the electrode.

## 6.2 Flame Sensor Probe

- 6.2.1 Disconnect the grey flame sensor lead from the sensor probe by gently pulling the connector, using pliers.
- 6.2.2 Unscrew the two M4 screws, securing the sensor probe to the flue collar assembly and withdraw the probe.
- 6.2.3 Remove any foreign matter from the sensor rod and check the condition of the ceramic insulator. If the rod is badly oxidised or the ceramic insulator cracked, replace the sensor probe. (see section 7).
- 6.2.4 Upon re-assembly, ensure that the grey sensor lead connector is securely attached to the probe.

## 6.3 Venturi Fabrication

- 6.3.1 Check that the venturi is clean. If there is any evidence of dirt accumulating in the venturi, remove the venturi before cleaning to avoid getting dirt inside the plenum body.
- 6.3.2 To remove the venturi, first unscrew the four M4 screws securing the elbow flange connector to the control valve outlet port and remove the control valve assembly complete.
- 6.3.3 Unscrew the four M4 screws securing the Venturi casting to the plenum body end panel and carefully withdraw the venturi fabrication from the plenum body.
- 6.3.4 Clean by use of a stiff brush to remove any deposits.

## 6.4 Injector

- 6.4.1 Remove the injector from the venturi casting, inspect and clean as necessary with a soft bristle brush.

DO NOT DAMAGE THE INJECTOR ORIFICE BY USE OF SOLID OBJECTS.

## 6.5 Electrical Wiring

- 6.5.1 With the control valve assembly removed from the venturi casting, (see section 6.3.2) inspect the wiring and connections inside the junction box (attached to the control valve). To open the junction box, first slacken the gland nut (2 gland nuts on SRP30 Hi/Lo) located in the junction box below the control valve, then unscrew the four screws securing the cover of the junction box. Carefully lift away the cover. Replace any damaged wiring as necessary.
- 6.5.2 Unscrew the fastener securing the cover of the ignition control and lift off the cover. Check that the electrical connections are sound and the wiring undamaged. Replace any damaged wiring as necessary.

## 6.6 Reflector

- 6.6.1 Dirt accumulated on the outer surfaces of the reflector should be brushed off and the reflective surfaces cleaned with a soft cloth and detergent in water. A mild non-abrasive metal polish may be used where extra discolouration has occurred.

## 6.7 Emitter Assembly (ceramic plaque)

- 6.7.1 Ignite the appliance and observe the colour of the emitter surface. If there are pronounced dark areas on the surface, it probably indicates an accumulation of dirt on the inside surface of the ceramic plaque.

**IMPORTANT:** DO NOT DIRECT AN AIR LINE AT THE CERAMIC PLAQUE SURFACE AS IT MAY DAMAGE THE CERAMIC TILES OR DISLODGE THE HIGH TEMPERATURE GASKET MATERIAL FROM AROUND THE TILES.

- 6.7.2 To remove any dirt accumulated on the inside surface of the ceramic plaque or to replace the emitter assembly in the case of cracked tiles, it will be necessary to disconnect the appliance and carry out the work at low level.
- 6.7.3 Disconnect the electrical supply to the appliance by unscrewing the M3 screw securing the electrical supply socket to the 4 pin plug attached, to the junction box. (secured to the control valve). Disconnect the gas supply pipe from the control valve by unscrewing the four M4 screws securing the straight flange to the control valve inlet port. Ensure that the 'O' ring in the flange is secure.

- 6.7.4 The appliance may now be disconnected from the suspension means and carefully lowered to the ground. See section 7.15 for detailed instructions concerning replacement of the emitter assembly.
- 6.7.5 Carefully brush any foreign material from the back of the emitter (ceramic tile) assembly, using a soft brush. Clean the inside of the plenum body also.

## 6.8 Pilot Burner Frame (Standing Pilot Ignition)

- 6.8.1 Disconnect the gas supply tube from the pilot burner injector (at base of pilot burner frame).
- 6.8.2 Release the spring latch securing the thermopile in the pilot frame and pull the thermopile from the bottom of the pilot frame.
- 6.8.3 Unscrew the two screws securing the thermocouple bracket and pilot burner frame to the pilot housing assembly and remove the pilot burner assembly. Unscrew the pilot injector from the base of the pilot burner frame.
- 6.8.4 Unscrew the screw securing the side plate to the pilot burner frame and remove the side plate.
- 6.8.5 Clean the pilot burner frame using an air line. Ensure that all the internal airways are free from dust or debris.

## 6.9 Pilot Injector (Standing Pilot Injector)

- 6.9.1 With the pilot injector removed from the pilot frame (see 6.8.3 above) inspect and clean as necessary with a soft brush and/or air line.

DO NOT DAMAGE THE INJECTOR ORIFICE BY USE OF SOLID OBJECTS.

## 6.10 Re-assemble and Commission

- 6.10.1 Re-assemble the appliance in reverse order and commission in accordance with the instructions contained in section 5.

## 6.11 Auxiliary Controls

- 6.11.1 Room thermostats, time switches, frost thermostats, etc should be checked to ensure correct functioning and are set to the users requirements.

## 7. Replacing Components

**IMPORTANT:** Disconnect gas and electrical supplies to the appliance before carrying out any repair work. This work can be carried out at high level using a purpose designed access tower, but it is preferable that this work should be carried out at ground level.

### 7.1 Ignition Electrode

- 7.1.1 Disconnect the black HT ignition lead from the ignition (spark) electrode by gently pulling the plastic shroud from the Raja connector of the electrode.
- 7.1.2 Unscrew the two M4 screws securing the electrode to the flue collar assembly and withdraw the electrode.
- 7.1.3 Before assembling a replacement electrode, check that the spark gap is 3.5mm. Insert the re-placement electrode into flue collar assembly and secure in position with the two M4 screws.

### 7.2 Flame Sensor

- 7.2.1 Disconnect the grey flame sensor lead from the flame sensor probe by gently pulling the connector, using pliers.
- 7.2.2 Unscrew the two M4 screws securing the flame probe to the flue collar assembly and withdraw the flame probe.
- 7.2.3 After assembling a replacement flame sensor and securing it to the flue collar assembly with the two M4 screws, replace the grey flame sensor lead, ensuring that the connector is securely attached to the flame sensor.

### 7.3 **Ignition Control (Honeywell S4565P 2024)**

- 7.3.1 Disconnect both the grey flame sensor lead and black HT ignition lead from the ignition control.
- 7.3.2 Unscrew the screw securing the red cover to the ignition control and remove the cover.
- 7.3.3 Unscrew the two screws securing the cable clamp to the ignition control and remove the cable clamp.
- 7.3.4 Disconnect the 10 way Molex electrical connector from the ignition control and gently pull the ignition control from the gas control valve.

### 7.4 **Ignition Control (S.I.T. 0.537.008)**

- 7.4.1 Disconnect the grey flame sensor lead, the black H.T. ignition lead and the green/yellow earth lead from the ignition control.
- 7.4.2 Unscrew the two screws securing the cover to the ignition control and remove the cover.
- 7.4.3 Disconnect the 12 way Molex connector from the ignition control and gently pull the ignition control from the gas control valve.

### 7.5 **Injector**

- 7.5.1 Using a ½" A/F spanner, unscrew the injector from the venturi casting.

### 7.6 **Pre-injector**

- 7.6.1 For appliances adjusted for category 2E+ only, there is a pre-injector fitted into the pre-injector fitting, located between the venturi casting and the control valve elbow flange. In the unlikely event that it is necessary to replace the pre-injector, first unscrew the four screws securing the control valve to the elbow flange and unscrew the pre-injector fitting from the venturi casting. Unscrew the pre-injector from the pre-injector fitting using a spanner, whilst retaining the pre-injector fitting with a second spanner or by holding in a vice.

### 7.7 **Venturi Fabrication**

- 7.7.1 First unscrew the four M4 screws securing the elbow flange connector to the control valve outlet port and remove the control valve assembly complete.
- 7.7.2 Unscrew the four M4 screws securing the venturi casting to the plenum body end panel and carefully withdraw the venturi fabrication from the plenum body.
- 7.7.3 When assembling a replacement venturi fabrication replace the venturi gasket between the venturi casting and plenum body, also.

### 7.8 **Twin Solenoid Control Valve (Direct Burner Spark Ignition)**

- 7.8.1 Remove the ignition control (see section 7.3 & 7.4) and disconnect the gas supply pipe from the control valve by unscrewing the four M4 screws securing the straight flange connector to the control valve inlet port.
- 7.8.2 Disconnect the electrical supply to the appliance by unscrewing the M3 screw securing the electrical supply socket to the 4 pin plug attached to the junction box (secured to the control valve).
- 7.8.3 Unscrew the four M4 screws securing the elbow flange connector to the control valve outlet port and lift off the control valve.
- 7.8.4 To remove the electrical junction box from the control valve first slacken the gland nut (2 gland nuts on SRP30 Hi/Lo) located in the junction box, below the control valve. Unscrew the four screws securing the cover of the junction box and carefully lift away the cover. Unscrew the two screws securing the junction box to the control valve and remove the junction box complete.
- 7.8.5 When assembling a replacement control valve, ensure that the 'O' rings, located in the elbow flange and straight flange connectors are in sound condition and correctly positioned in the 'O' ring grooves of the connectors.

### 7.9 **Millivolt Control Valve (Standing Pilot Ignition)**

- 7.9.1 Disconnect the thermopile leads and any ON/OFF switch/room thermostat leads from the millivolt controller of the gas control valve (connections marked TH and TP - see Fig. 9).
- 7.9.2 Unscrew the thermocouple nut securing the thermocouple to the control valve and remove the thermocouple.
- 7.9.3 Disconnect the gas supply pipe from the control valve inlet port.
- 7.9.4 Unscrew the four M4 screws securing the elbow flange to the control valve and lift off the control valve.
- 7.9.5 When assembling a replacement control valve, ensure that the 'O' ring located in the elbow flange is in sound condition and correctly positioned in the 'O' ring groove of the connector.
- 7.10 **Thermocouple (Standing Pilot Ignition)**
  - 7.10.1 Unscrew the thermocouple nut securing the thermocouple to the control valve and remove the thermocouple.
  - 7.10.2 Unscrew the two screws securing the thermocouple bracket to the pilot housing and remove the thermocouple and bracket complete.
  - 7.10.3 Unscrew the brass locknuts securing the thermocouple to the bracket.
  - 7.10.4 When assembling a replacement thermocouple, ensure that the thermocouple protrudes above the bracket by 27mm before locking in position with the two brass locknuts.
- 7.11 **Thermopile (Standing Pilot Ignition)**
  - 7.11.1 Disconnect the two thermopile leads from the millivolt controller connections (marked TP) of the gas control valve.
  - 7.11.2 Release the spring latch securing the thermopile in the pilot frame and pull the thermopile from the bottom of the pilot frame.
  - 7.11.3 When fitting a replacement thermopile ensure that the electrical leads are securely attached to the connections marked TP.
- 7.12 **Pilot Injector (Standing Pilot Ignition)**
  - 7.12.1 Unscrew the tube nut securing the gas supply tube to the pilot assembly and remove the tube.
  - 7.12.2 Unscrew the pilot injector from the base of the pilot frame.
  - 7.12.3 When fitting a replacement pilot injector, ensure that the correct size injector is fitted, relative to the gas type the appliance is adjusted for (see Data Label affixed to the appliance reflector, below the control valve.  
  
Natural Gas - Injector marked TJ020      LPG - Injector marked TJ012
- 7.13 **Pilot Burner Frame (Standing Pilot Ignition)**
  - 7.13.1 Disconnect the gas supply tube from the pilot frame. (see 7.11).
  - 7.13.2 Unscrew the two screws securing the thermocouple bracket and pilot frame to the pilot housing assembly and remove the pilot assembly. Unscrew the pilot injector from the base of the pilot frame.
  - 7.13.3 When assembling a replacement pilot frame, ensure that the correct pilot injector relative to the gas type used, is fitted. (see 7.11.3 above).
- 7.14 **Reverberatory Screen**
  - 7.14.1 At the opposite end of the appliance to the controls, remove the two screws securing the reflector end panel to the flue collar.
  - 7.14.2 Unscrew the two M4 screws securing the flue collar to the plenum body end panel and remove the flue collar.
  - 7.14.3 Carefully slide out the reverberatory screen along the side retaining rails.

7.14.4 When assembling a replacement reverberatory screen, ensure that it is positioned on the cross support, at the controls end to prevent shorting of the flame sensor.

#### 7.15 Emitter Assembly

7.15.1 Having disconnected the electrical and gas supplies from the appliance and lowered the appliance to the ground, (see sections 6.7.3 and 6.7.4) place the appliance on a work bench and carry out the following instructions.

7.15.2 Disconnect the grey flame sensor lead from the flame probe by gently pulling the connector, using pliers.

7.15.3 Disconnect the black HT ignition lead from the ignition spark electrode by gently pulling the plastic shroud from the Raja connector of the electrode.

7.15.4 Remove the screws securing the reflector assembly to the flue collar panels and remove the reflector assembly.

7.15.5 Place the appliance with the emitter surface facing upwards. Remove the M4 screws securing the flue collar panels to the plenum body and remove the flue collar panels. Care should be taken to avoid damage to the spark electrode and flame probe.

7.15.6 Slide out the reverberatory screen.

7.15.7 Remove the 1/4" UNC nuts and setscrews retaining the emitter assembly and reverberatory screen side rails and end baffles to the plenum body. Lift off the reverberatory screen side rails and end baffles and carefully lift our the emitter assembly.

7.15.8 Clean off any ceramic paper gasket material from the plenum body flanges and emitter assembly.

7.15.9 When assembling a replacement emitter assembly, new ceramic paper gasket material must be used to provide a complete seal between the plenum body flanges and the emitter assembly.

#### 7.16 Replacement Parts List

The following is a list of replacement parts that may be required during the life of the appliance.

Part	Part Number	Part	Part Number
Pilot Frame	1790	Control Valve (Spark)-Honeywell	4262240
Thermopile	1801	Control Valve (Spark)-S.I.T	4262585
Pilot Injector (LPG)	1901	Control Valve (Pilot)	4262241
Pilot Injector (NG)	1902	Emitter Assy SRP08	4262306
Pilot Reverb. Screen SRP08	4250567	Emitter Assy SRP15	4262307
Pilot Reverb. Screen SRP15	4250568	Emitter Assy SRP22	4262308
Pilot Reverb. screen SRP22	4250569	Emitter Assy SRP30	4262309
Reverb. Screen SRP08	4250589	Venturi Gasket	4262420
Reverb. Screen SRP15	4250590	Ceramic Paper Gasket	4262421
Reverb. Screen SRP22	4250591	Thermocouple	4262
Reverb. Screen SRP30	4250592	1/4" UNC Hex Nut s/s	4267925
Ignition Control (Honeywell)	4262196	1/4" UNC x 5/8" Setscrew S/S	4267926
Ignition Control (S.I.T.)	4262535		
Spark Electrode	4262205		
Flame Sensor	4262206		

## 8. Operating Instructions

### 8.1 Direct Burner Spark Ignition Models.

8.1.1 Turn on the gas supply to the appliance.

8.1.2 Set any time switch or thermostats to demand heat.

8.1.3 Switch on the electrical supply to the appliance.

8.1.4 The burner should ignite within 25 seconds (Honeywell Control) or 10 seconds (S.I.T Control).

- 8.1.5 Failure to ignite will result in the ignition controller going to "Lockout" condition.
- 8.1.6 If 'Lockout' occurs, switch off the electrical supply to the appliance, wait for 10 seconds before switching on the electrical supply to the appliance to repeat the ignition sequence.
- 8.1.7 If the appliance fails to ignite after a second sequence, switch off the electricity supply to the appliance and call the service engineer.
- 8.1.8 If gas failure occurs after successful ignition, the appliance will attempt one re-ignition before going to "Lockout" conditions.
- 8.1.9 To shut down the appliance for short periods of time, switch off the electrical supply to the appliance.
- 8.1.10 To shut down the appliance for longer periods of time switch off the electrical supply to the appliance and turn off the gas supply at the gas isolation valve.

## 8.2 **Standing Pilot Ignition Models**

- 8.2.1 Turn on the gas supply to the appliance.
- 8.2.2 If the appliance has a thermostat fitted, ensure that it is set to the lowest temperature setting. Press slightly and turn the control knob of the millivolt valve clockwise to the OFF position and wait 5minutes thus allowing any gases to escape, which may have accumulated in the combustion chamber.
- 8.2.3 Press slightly and turn the control knob counter clockwise to the PILOT position, depress the control knob and ignite the pilot by passing a lighted tapes through the hole in the side of the pilot housing (venting of air may take place prior to flow of pilot gases). Once the pilot flame is established hold the knob depressed for approximately 60 seconds.
- 8.2.4 Release the knob. If the pilot flame should become extinguished, turn the control knob to OFF position and repeat steps 8.2.3 and 8.2.4.

Note: this will allow reset of INTERLOCK for correct ignition of the pilot.

- 8.2.5 Press and turn the control knob counter clockwise to the ON position.
- 8.2.6 Turn the appliance thermostat to the desired temperature setting, or operate the ON/OFF switch (if no thermostat) to the ON position.
- 8.2.7 To shut down the appliance for short periods of time, turn the thermostat setting to the lowest temperature or operate the ON/OFF switch (if no thermostat) to the OFF position.
- 8.2.8 To shut down the appliance for a period of time in excess of one week, press and turn the control knob clockwise to the OFF position and turn off the gas supply at the gas isolation valve.

**NOTES:**

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