

SPACE-RAY

Overhead Radiant Plaque Heaters

INSTALLATION, SERVICING AND OPERATING INSTRUCTIONS

ERP SERIES

MODELS:

ERP10 ERP20 ERP30 ERP40 ERP45



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Disclaimer: Valve and control assemblies will differ on European approved heaters.



INSTALLATION, SERVICING & OPERATING INSTRUCTION

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 INSTRUCTION

1. TECHNICAL DATA

Table 1.

MODEL	ERP10-N	ERP10-L
Heat Input	10.26kW (Hs) 9.24kW (Hi)	9.44kW (Hs) 8.70kW (Hi)
Appliance Type	A ₁	
Appliance Cat.	II _{2H3P}	
Gas Rate	0.98m ³ /h	0.66kg/h
Adjusted For	2H G20 20mbar	3P G31 37mbar
Setting Pressure	15.0mbar	25.0mbar
Injector	1 x No. 41	1 x No.52
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.673m W = 0.400m H = 0.197m	
Weight	9.02kg	
Gas Connection	Rc- 1/2	

Table 2.

MODEL	ERP20-N	ERP20-L
Heat Input	20.50kW (Hs) 18.48kW (Hi)	18.90kW (Hs) 17.43kW (Hi)
Appliance Type	A ₁	
Appliance Cat	II _{2H3P}	
Gas Rate	1.96m ³ /h	1.36kg/h
Adjusted For	2H G20 20mbar	3P G31 37mbar
Setting Pressure	15.0mbar	25.0mbar
Injector	2 x No.41	2 x No.52
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.673m W = 0.549m H = 0.197m	
Weight	10 83 kg	
Gas Connection	Rc - 1/2	

Table 3.

MODEL	ERP30-N	ERP30-L
Heat Input	30.78kW (Hs) 27.72kW (Hi)	28.35kW (Hs) 26.14kW (Hi)
Appliance Type	A ₁	
Appliance Cat	II _{2H3P}	
Gas Rate	2.93m ³ /h	2.03kg/h
Adjusted For	2H G20 20mbar	3P G31 37mbar
Setting Pressure	15.0mbar	25.0mbar
Injector	3 x No.41	3 x No.52
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.673m W = 0.699m H = 0.197m	
Weight	16.28kg	
Gas Connection	Rc - 1/2	

Table 4.

MODEL	ERP40-N	ERP40-L
Heat Input	41.00kW (Hs) 36.96kW (Hi)	37.88kW(Hs) 34.85kW(Hi)
Appliance Type	A ₁	
Appliance Cat.	II _{2H3P}	
Gas Rate	3.91m ³ /h	2.71m ³ /h
Adjusted For	2H G20 20mbar	3P G31 37mbar
Setting Pressure	15.0mbar	25.0mbar
Injector	4 x No. 38	4 x No.52
Pre-Injector	None	None
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.673m W = 0.848m H = 0.197m	
Weight	20.36kg	
Gas Connection	Rc- ½	

Table 5.

MODEL	ERP45-N	
Heat Input	46.89kW (Hs) 42.25kW (Hi)	
Appliance Type	A ₁	
Appliance Cat.	I _{2H}	
Gas Rate	4.47m ³ /h	
Adjusted For	2H G20 20mbar	
Setting Pressure	15.0mbar	
Injector	4 x No. 38	
Pre-Injector	None	
Electrical Supply	230V ~ 50Hz 25W	
Fuse Externally	3A	
Dimensions	L = 0.673m W = 0.848m H = 0.197m	
Weight	20.36kg	
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). Due 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 in the Side Frame Panels (as shown in Fig.1.), 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 Side Frame Panels, providing that the hooks are manually crimped closed by the installer.

3.1.3. The appliance must be suspended with its manifold axis horizontal, but may have the axis at 90° to the manifold either horizontal (10° - ERP40/45) or at an angle of up to 35° (maximum) from the horizontal, as shown in Fig. 2. below.

IMPORTANT: When suspended at an angle from the horizontal, the appliance **MUST** be positioned with the manifold along the lower horizontal side of the heater.

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

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 in the Side Frame Panels of the appliance by use of M8 screws and nuts.

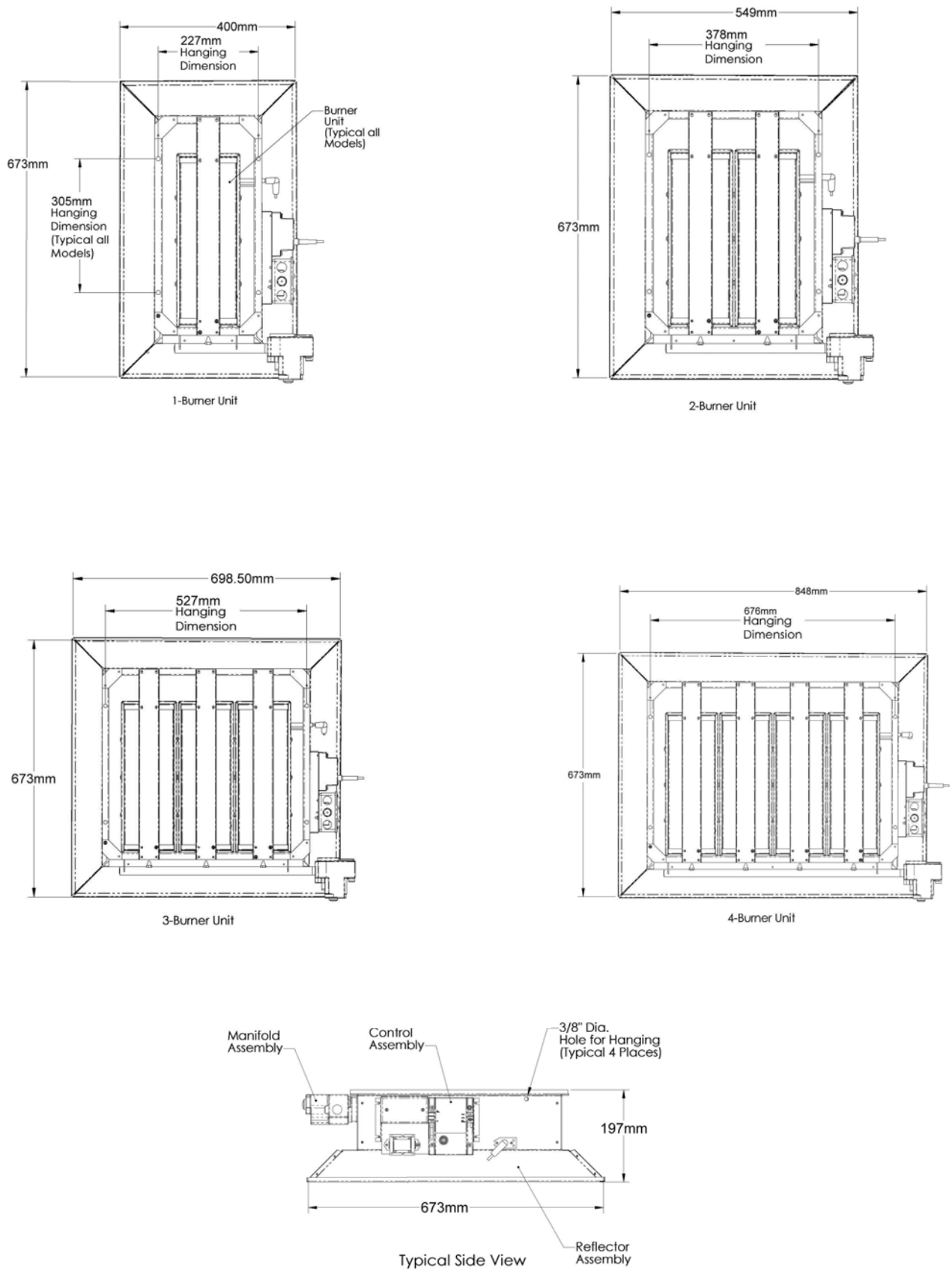


Fig. 1

Disclaimer: Valve and control assemblies will differ on European approved heaters.

3.1.6 Minimum clearance from combustibles.

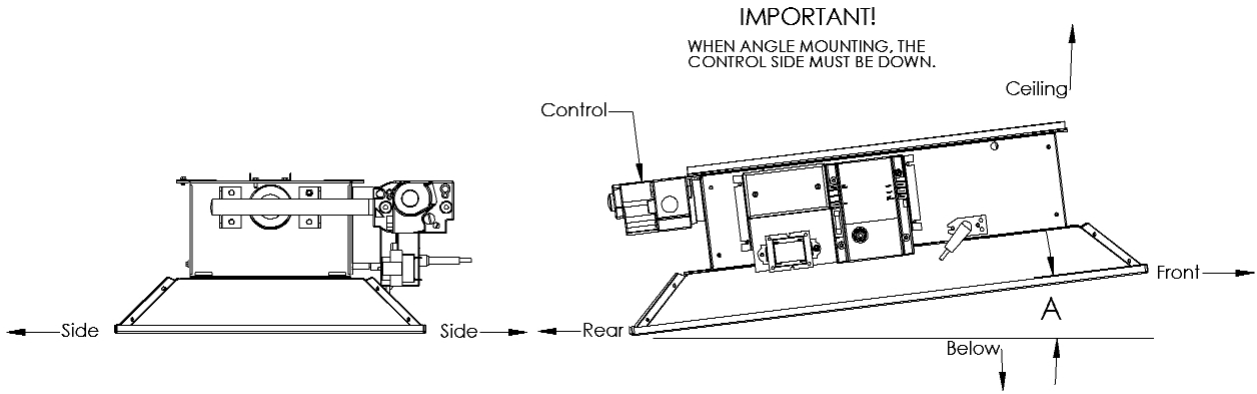


Fig. 2

Disclaimer: Valve and control assemblies will differ on European approved heaters.

MODEL	HORIZONTAL		35°		ABOVE	BELOW	SIDE
	FRONT	BACK	FRONT	BACK			
ERP 10	760mm	760mm	915mm	760mm	915mm	1830mm	760mm
ERP 20	990mm	990mm	1220mm	915mm	1220mm	2490mm	990mm
ERP 30	1220mm	1220mm	1525mm	1220mm	1525mm	3250mm	1220mm
ERP 40	1525mm	1525mm	1625mm	1300mm	1625mm	3455mm	1525mm
ERP 45	1715mm	1715mm	1680mm	1350mm	1680mm	3560mm	1715mm

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 - 15mbar
- 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 valves 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 Propane - G31 at 37mbar supply pressure (appliance cat 3P).

- Maximum supply pressure (Pmax) - 45mbar
- Minimum supply pressure (Pmin) - 25mbar
- Setting pressure - 25mbar
- 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.

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 (0.5mm² - to National or Local standard specification) must be used, with connections made as shown in Fig. 3.

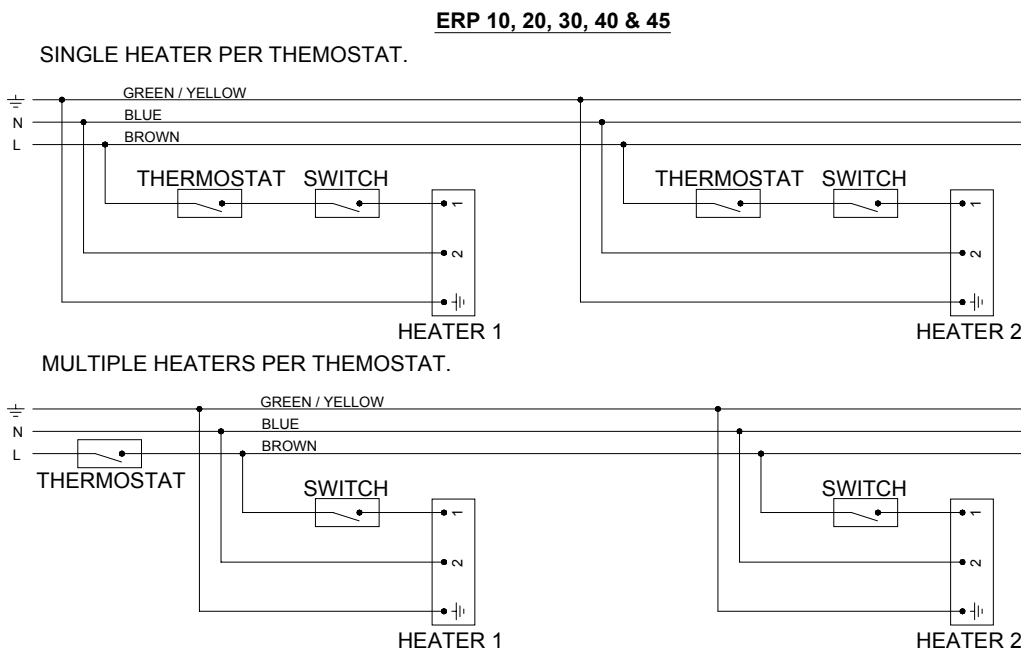


Fig. 3

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. When thermostats are included to control the temperature of the heated zone in question, they should be incorporated into the electrical circuit as shown in the diagrams above and be positioned such that their temperature sensor has an unrestricted 'view' of the appliance burner tiles.

Important: 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)

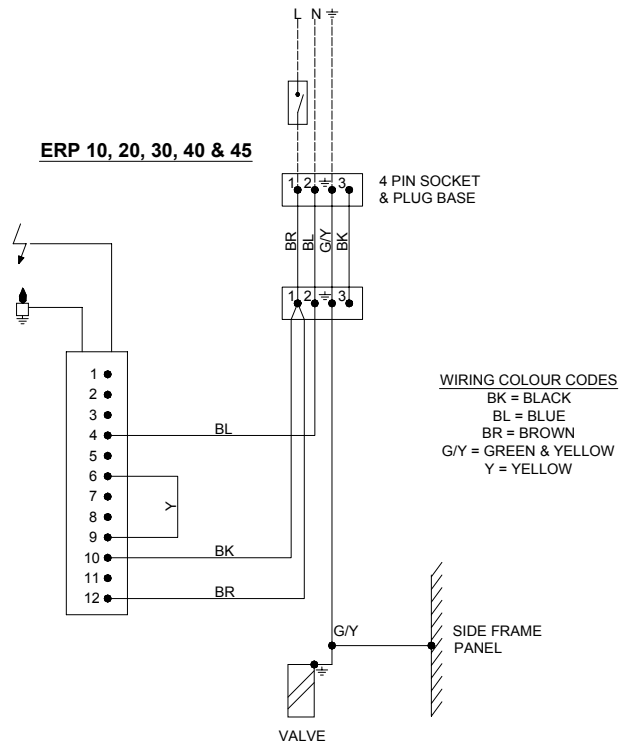


Fig. 4

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

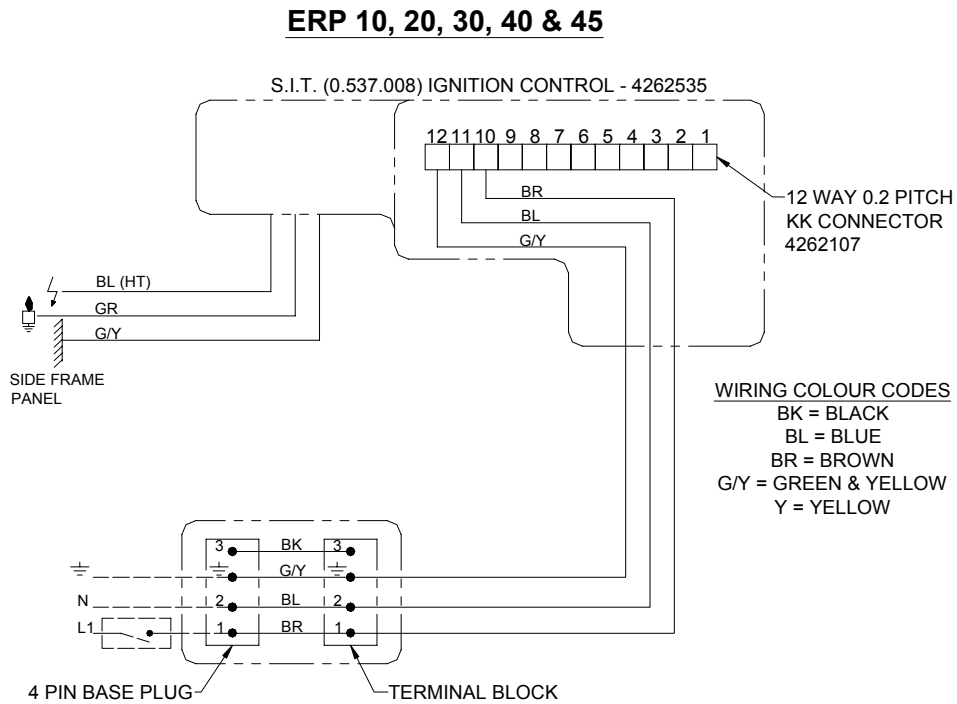


Fig. 5

3.4 Ventilation

The installation room should have a volume of at least $10\text{m}^3/\text{kW}$ of installed nominal heat input of the radiant heater.

The ventilation requirements and calculation methods for unflued appliances are set out in the European Standard **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:

- a) thermal evacuation of the products of combustion/air mixture
- b) mechanical evacuation of the products of combustion/air mixture
- c) natural air change

3.4.1.1 Ventilation by Thermal Evacuation

Ventilation by thermal evacuation is sufficient if **$10\text{m}^3/\text{h}$ 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 be 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 **$10\text{m}^3/\text{h}$ 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^3/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 $5\text{W}/\text{m}^3$

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 ERP 10/20/30/40/45

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 ↓

External fuse required - 3 A

See section 3.3 for electrical supply requirements.

5. Commissioning

It is essential that all new pipework installations are purged and tested for soundness 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. Ignition.

- 5.1.1. Turn on the gas supply to the appliance.
- 5.1.2. Switch on the electrical supply to the appliance.
- 5.1.3. If the appliance has a thermostat fitted in the electrical supply circuit, ensure that it is set high enough to demand heat.
- 5.1.4. After a waiting time of 1 second, the solenoid valves and the spark ignition electrode will be energised simultaneously.
- 5.1.5. Upon successful ignition the flame will be detected by the flame sensor and the ignition spark electrode will be de-energised.
- 5.1.6. 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.
- 5.1.7. 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.
- 5.1.8. 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.
- 5.1.9. If gas failure occurs after successful ignition the appliance ignition control will attempt one re-ignition before going to "lockout" condition.

5.2. Shut Down

- 5.2.1. To shut down the appliance for short periods of time, switch off the electrical supply to the appliance.
- 5.2.2. 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.

5.3. Checking Gas Pressure

5.3.1. To check the gas supply pressure:

5.3.1.1. Unscrew the sealing screw (2 turns) of the control valve test nipple marked 'IN' and connect a manometer to this test nipple.

5.3.1.2. 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 3P: gas type G31 (propane): supply pressure	37mbar (nom) 25mbar (min) 45mbar (max)
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5.3.1.3. Switch off the electrical supply to the appliance and remove the manometer tube from the Control Valve test nipple marked 'IN'. Screw in the test nipple sealing screw.

5.3.2. To check the burner setting pressure: -

5.3.2.1. Unscrew the sealing screw (2 turns) of the Control Valve test nipple marked 'OUT' and connect a manometer to this test nipple.

5.3.2.2. 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).

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

Category 3P: gas type G31 (propane): setting pressure - 25.0mbar.

5.3.2.3. 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.

5.3.2.4. Upon obtaining the correct burner setting pressure, switch off the electrical supply to the appliance, remove the manometer tube from the control valve test nipple marked 'OUT' and screw in the test nipple sealing screw. Replace the cap on the integral pressure governor of the control valve and seal by applying red enamel paint to the joint between cap and governor housing.

5.4. Flame Supervision.

5.4.1. 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.

5.4.2. 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).

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 joints 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. Following any or all servicing operations, the service engineer responsible shall re commission the appliance in accordance with the instructions provided. (see section 5. of this manual)

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

- 6.3.1 Check the venturi opening to be sure it is clean. If there is any evidence of dirt accumulation in the venturi, it should be removed.

6.4 Injector

- 6.4.1 Remove the injector(s) from the manifold, 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 appliance manifold, inspect the wiring and connections inside the junction box (attached to the control valve). To open the junction box, first slacken the gland nut 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.

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 Side Frame Panel-RH 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 Side Frame Panel-RH 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 Side Frame Panel-RH and withdraw the flame probe.
- 7.2.3 After assembling a replacement flame sensor and securing it to the Side Frame Panel-RH 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 S4565PD 2004)**

- 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 the ignitor control is the control valve 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 7/16" A/F spanner, unscrew the injector(s) from the manifold

7.6 **Twin Solenoid Control Valve (Direct Burner Spark Ignition)**

7.6.1 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.

7.6.2 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).

7.6.3 Unscrew the four M4 screws securing the elbow flange connector to the control valve outlet port and lift off the control valve.

7.6.4 To remove the electrical junction box from the control valve first slacken the gland 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.

7.6.5 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.

7.7 **Reverberatory Screen**

7.7.1 Remove the wire ties from the Centre Screen Support (ERP20/30/40/45 only).

7.7.2. Remove the split pins from the Screen Retaining Rails.

7.7.3. Slide the Reverb. Screen Assembly away from the manifold until the Screen Retaining Rails are free of the slots in the Frame Side Panel at the manifold end.

7.7.4. Drop the Reverb. Screen Assembly at the manifold end and slide the Screen Retaining Rails out of the slots in the Frame Side Panel furthest from the manifold.

7.7.5. Remove the wire ties from the Screen Retaining Rails and remove the rails from the screen.

7.8. **Burner Assembly**

7.8.1. Remove the Ignition Electrode and Flame Sensor from the Side Frame Panel-RH (see sections 7.1. and 7.2. above).

7.8.2. Unscrew the qty. 4 self tapping screws securing the burner Hanger Bracket to the top of the Side Frame Panels and slide the Burner Assembly away from the manifold to disengage the Venturi from the Side Frame Panels. Lift the Burner Assembly clear of the frame.

7.8.3. **Important:** when assembling new burner assemblies, the Burner Assembly - Ignition Unit (Part No. 4) **must** be positioned adjacent to the Side Frame Panel-RH, containing the Spark Electrode and Flame Sensor.

7.9 Replacement Parts List

The following is a list of replacement parts that may be required during the life of the appliance. If it is found necessary to replace parts other than those listed below, Gas Fired Products (UK) Ltd. must first be consulted. Address details may be found on the front cover of this manual.

Part	Part Number
Control Valve (Spark)-Honeywell	4262240
Control Valve (Spark)-S.I.T	4262585
Ignition Control (Honeywell)	4262534
Ignition Control(S.I.T.)	4262535
Burner Assembly - Ignition Unit - (1 x ERP10/20/30/40/45)	4262
Burner Assembly – (1xERP20 – 2xERP30 – 3xERP40/45)	4262
Manifold – ERP10	4262
Manifold – ERP20	4262
Manifold – ERP30	4262
Manifold – ERP40/45	4262
Reflector Assembly – ERP10	4262
Reflector Assembly – ERP20	4262
Reflector Assembly – ERP30	4262
Reflector Assembly – ERP40/45	4262
Reverb. Screen ERP10	4262
Reverb. Screen ERP20	4262
Reverb. Screen ERP30	4262
Reverb. Screen ERP40/45	4262
Spark Electrode	4262205
Flame Sensor	4262206
Injector No. 41 – Nat.Gas	4262
Injector No. 52 – LPG	4262

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.

9. CONVERSION INSTRUCTIONS

9.1. Conversion from cat. 2H (Natural Gas) to cat. 3P (LPG) - Appliances without reverberatory screen.

- 9.1.1. Remove the injector(s) from the appliance manifold and replace it (them) with the alternative injector(s) provided with the conversion kit. Check the size reference marked on the injector(s) agrees with that listed in the Technical Data table (see Section 1. of the Installation Manual) for the appliance model in question.
- 9.1.2. Remove the governor adjuster cap from the integral pressure governor of the gas safety shut-off valve and screw the adjuster clockwise $\frac{3}{4}$ of a turn.
- 9.1.3. Affix the gas adjustment label (3P G31 37mbar) provided with the conversion kit onto the appliance Data Label, adjacent to the headings "Adjusted For" and "Setting Pressure" to cover the original adjustment label (2H G20 20mbar)
- 9.1.4. Carry out checks in accordance with Section 5.3. of the Installation Manual to ensure correct gas supply pressure and setting pressure, relevant to the gas type being used (G31 – Propane). Carry out checks to ensure the gas rate is in accordance with the value stated in the Technical Data table. (see Section 1. of the Installation Manual)
- 9.1.5. Install the reverberatory screen provided with the conversion kit in accordance with the instructions included.

Important: it is essential, for the safe operation of the appliance when using LPG, that the reverberatory screen is fitted.

9.2. Conversion from cat. 2H (Natural Gas) to cat. 3P (LPG) – Appliance with reverberatory screen.

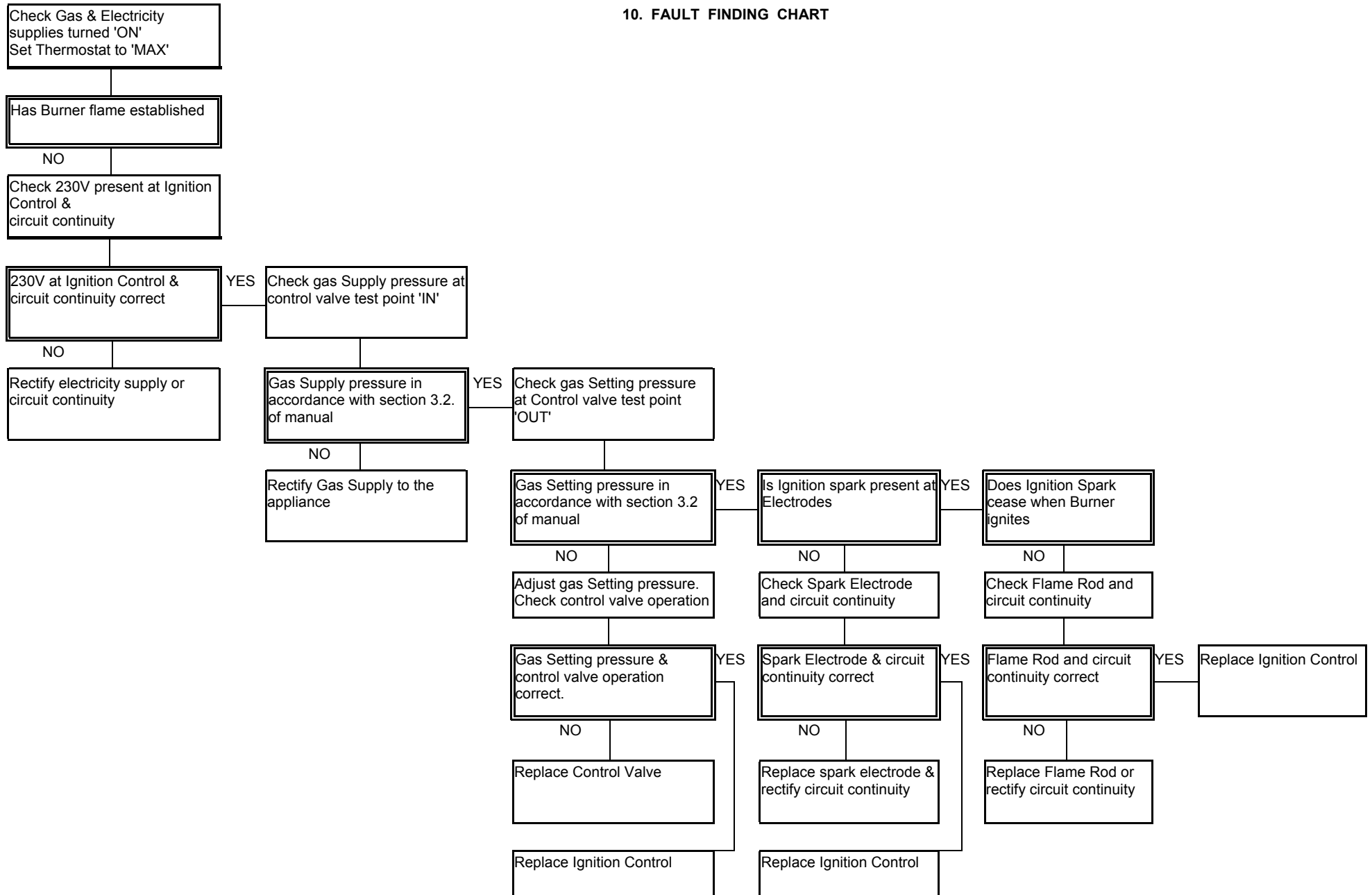
- 9.2.1. Carry out the instructions 9.1.1. to 9.1.4. above, leaving the reverberatory screen in position.

Important: it is essential, for the safe operation of the appliance when using LPG, that the reverberatory screen is fitted. If the screen is showing signs of deterioration, it **must** be replaced prior to operating the appliance

9.3. Conversion from cat. 3P (LPG) to cat. 2H (Natural Gas)

- 9.3.1. Remove the injector(s) from the appliance manifold and replace it (them) with the alternative injector(s) provided with the conversion kit. Check the size reference marked on the injector(s) agrees with that listed in the Technical Data table (see Section 1. of the Installation Manual) for the appliance model in question.
- 9.3.2. Remove the governor adjuster cap from the integral pressure governor of the gas safety shut-off valve and screw the adjuster anti clockwise $\frac{3}{4}$ of a turn.
- 9.3.3. Affix the gas adjustment label (2H G20 20mbar) provided with the conversion kit onto the appliance Data Label, adjacent to the headings "Adjusted For" and "Setting Pressure" to cover the original adjustment label (3P G31 37mbar)
- 9.3.4. Carry out checks in accordance with Section 5.3. of the Installation Manual to ensure correct gas supply pressure and setting pressure, relevant to the gas type being used (G20 – Natural). Carry out checks to ensure the gas rate is in accordance with the value stated in the Technical Data table. (see Section 1. of the Installation Manual).

10. FAULT FINDING CHART



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