

# BULLFINCH INDUSTRIAL SPACEHEATER

**No. 1400**

A non-domestic, industrial high output convector heater for propane gas. Free standing. Unflued. Piezo-electric ignition. Flame supervision device.

For propane at 0,5 - 1 bar.

Heat input 17 kW - 25 kW

For use in G.B.

**This appliance requires a hose and regulator.**

**Read instructions before use.**

## OPERATING, MAINTENANCE AND SERVICING INSTRUCTIONS

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## Section 1 Operating Instructions

### 1. Introduction

The INDUSTRIAL SPACEHEATER No. 1400 is a non domestic free standing high output convector heater for use with propane at 0,5 - 1 bar pressure. It is ideal for heating warehouses, small factories, outhouses and for drying out buildings. The heater is fitted with Piezo ignition and a flame supervision device, it is also fitted with a hose tail end suitable for fitting to 4.8 bore HP rubber hose to BS 3212/2.

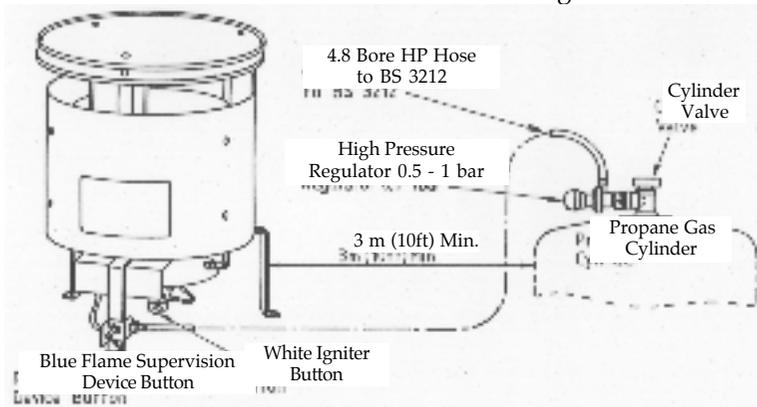
To get the best results from the heater it should be used in accordance with these instructions and the enclosed safety precautions leaflet giving general advice on the safe use of LP gas.

### 2. Ventilation and free space.

Use only in a well ventilated area. The minimum room size for the Spaceheater should not be less than 250 m<sup>3</sup> (8750 ft<sup>3</sup>) with a free ventilation area of more than 625 cm<sup>2</sup> (97in<sup>2</sup>) divided equally between high and low levels. This free space and ventilation area are in addition to those required for any other gas appliances and for occupants of the room.

### 3. Positioning.

Care should be taken to position the heater so that it cannot overheat the gas cylinder (3 m minimum distance) or any other combustible surface or wall (300 mm minimum distance). To avoid overheating the floor use only on a non combustible surface. Avoid twisting or kinking the flexible hose. Do not use aerosols, paints, glues or other flammable liquids in the same room as the heater. Ensure that the heater is sited away from pedestrian walkways and provide the heater with a suitable guard to protect people from hot surfaces. Do not use in basements or below ground level.



### 4. Using the Spaceheater.

To use the Spaceheater, a high pressure propane regulator, either pre set to 1 bar or variable up to 1 bar (Bullfinch Variable Tinyreg No. 1051/01 is suitable) and at least 4 m of orange 4,8 bore HP hose to BS 3212/2 must be used (Bullfinch H P Hose No. 1299). A preassembled regulator and hose kit, suitable for the Spaceheater, is available (Bullfinch No. 1401).

#### 4.1 Connection to the gas supply:

1 Fit hose to regulator and hose connector and secure with suitable hose clips.

2 Check the regulator connection and the inside sealing face of the cylinder valve are clean and undamaged, connect the regulator to the cylinder and spanner tighten the nut. It has a left hand thread.

3 Check that the hose is not twisted or kinked and is secured to the fittings at both ends with the appropriate clips and that the gas connections are tight. Turn on the gas at the cylinder valve and adjust the pressure regulator to 1 bar. The flame supervision device should prevent gas flow to the burner; if not, turn off the gas and consult your dealer.

4 Check for gas leaks using a soap solution or a leak detecting fluid as described in the Safety Precautions. Do not light the heater if gas is leaking but turn off the cylinder valve and have the heater serviced.

**Never search for leaks with a naked flame.**

5 When changing gas cylinders always ensure that there are no naked flames in the area. Check that the cylinder valve is closed before disconnecting or reconnecting the heater.

#### 4.2 Lighting the heater.

Note:- When lighting the heater for the first time from new, do so in a well ventilated or open space to allow any fumes from the protective finish to disperse.

1 Adjust the pressure regulator to 1 bar and turn on the cylinder valve.

2 Push in and hold the blue flame supervision device button and immediately push the white igniter button, this may require repeated operation until the gas is ignited. Continue to hold in the blue button for a further 10 seconds then release. The burner should remain alight. If not, repeat the ignition sequence again holding the blue button in for a little longer. If the burner does not remain lit, consult your dealer.

3 If a variable regulator is being used then the heat input can be varied by reducing the pressure at the regulator (see technical data).

4 After use turn the heater off using the gas cylinder valve and allow the flame to die down. Do not turn on the cylinder valve again until the heater is about to be used.

**If you are in any doubt about the use of the Spaceheater, turn off the gas at the cylinder valve and consult your dealer.**

## 5. Care of the Spaceheater.

The Industrial Spaceheater No. 1400 is designed to withstand tough conditions; it is a quality product that will give reliable service when periodically cleaned and maintained.

See the Maintenance and Servicing Instruction for routine maintenance details. Your dealer can arrange for servicing to be done by trained agents who will ensure that the heater remains safe and efficient.

## 6. Technical data.

Technical data											
Heater No.	Jet size	Operating pressure bar	Heat input		Gas consumption		Dimensions			Vent. area cm <sup>2</sup>	
			kW	Btu/h	kg/h	dm <sup>3</sup> /h	ht	w	d		Min. size of room m <sup>3</sup>
1400	170	0,5	17	60000	1,24	651	0,60	0,43	0,43	250	625
		0,7	21	73000	1,46	771					
		1,0	25	84000	1,75	921					

All data are approximate and, in line with our product improvement policy, may be subject to revision without notice.

## Section 2 Maintenance and Servicing Instructions

### 7. Routine maintenance.

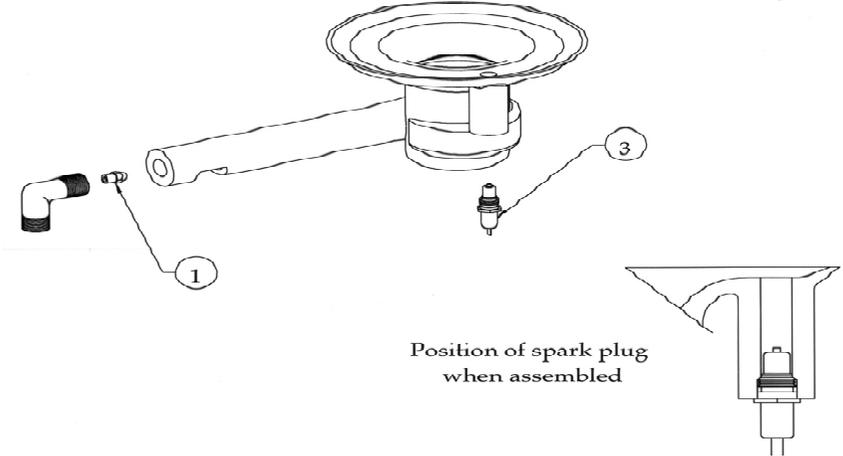
The following routine maintenance checks should be carried out at the beginning of each heating season or if the heater has not been used for a year or more.

- 7.1 Cleaning:-** When the heater is cold wipe exposed metal surfaces with a damp cloth.
- 7.2 Burner:-** Occasionally, especially if the heater has not been used for some time use a high pressure air line to blow through the gas mixing tube and into the ignition well to remove any dust or insect debris that may have lodged there.
- 7.3 Gas soundness:-** Check the soundness of all gas joints with a leak detecting fluid (Bullfinch No. 550) and rectify all leaks before lighting the heater.  
**Never search for leaks with a naked flame.**
- 7.4 Operation:-** Light the heater in accordance with the operating instructions and ensure that it ignites and burns correctly. The burner is designed to operate without the normal type of flame ports, ignition takes place within a well in the top plate of the burner and at full rate the flame should extend beyond the edge of the saucer shaped top plate and cover the tip of the thermocouple.
- 7.5 Controls:-** Check that the flame supervision device operate smoothly and that the thermocouple will hold the flame supervision device open within 10 seconds of lighting the burner. The flame supervision device should close within 90 seconds if the heater is turned off. Check the thermocouple connection to the flame supervision device; it should be

finger tight plus half a turn.

### 8. Servicing.

**Important:** Servicing should only be carried out by trained and competent service agents. After the servicing or replacement of any part check for gas leaks and correct operation before returning the heater to the user.



#### 8.1 Gas Jet To clean or replace the gas jet. (size 170)

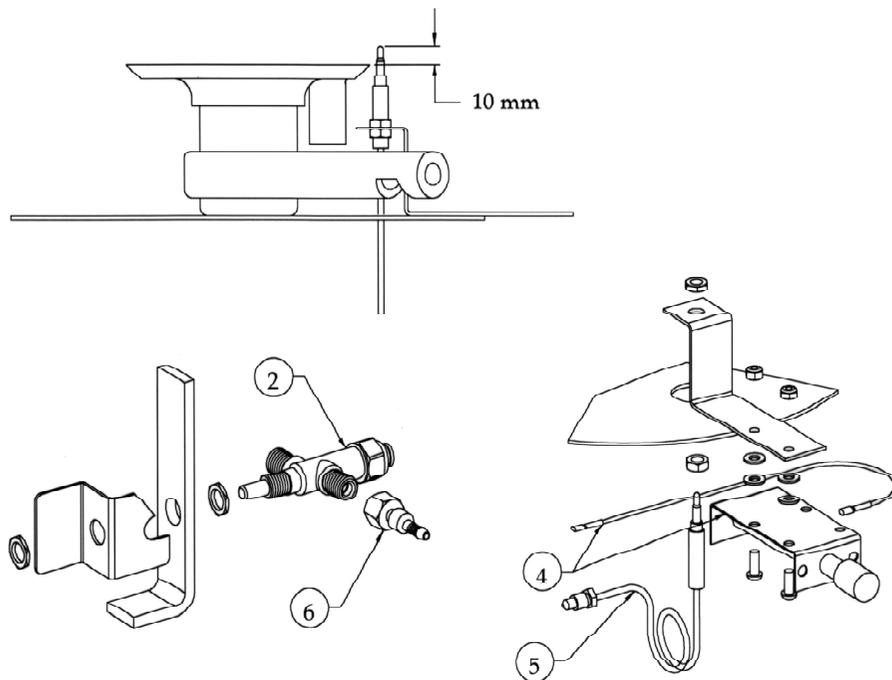
- 1 Disconnect the supply tube between the flame supervision device and the jet carrying elbow, unscrew elbow from burner.
- 2 Remove the jet and clean or renew.

**Note:** Jets should only be cleaned with a solvent or compressed air. If they cannot be cleaned easily they should be renewed. Never poke out a jet orifice; it will damage the jet and affect the safety and performance of the heater.

- 3 Use PTFE tape or a small amount of sealing compound on the jet threads and replace the jet into the jet carrying elbow.
- 4 Reassemble in reverse order.

#### 8.2 Spark electrode To replace the spark electrode.

- 1 Remove the HT lead from the spark electrode connector.
- 2 Unscrew the spark electrode from the burner.
- 3 Check and remove any obstructions from the ignition well in the burner.
- 4 Reassemble in reverse order, ensure that the spark electrode is screwed up to the shoulder (see diagram).



### 8.3 Igniter and Lead To replace the igniter and HT lead.

- 1 Remove the HT lead from both the electrode connector and the igniter connector.
- 2 Remove the two retaining screws along with the spacing washers and hexagon nuts.
- 3 Reassemble in reverse order, ensure that the spacing washers are placed in the correct position, i. e. in between the igniter and the support bracket, two for each fastener.

### 8.4 Thermocouple and Locknuts To replace the thermocouple and its locknuts.

- 1 Disconnect the thermocouple from the flame supervision device.
- 2 Remove top locknut and remove thermocouple from the bracket.
- 3 Remove one locknut from new thermocouple and position new thermocouple in bracket so that the tip of the thermocouple is 10 mm above the lip of the burner (see diagram). Secure into position with second locknut.
- 4 Reconnect thermocouple to flame supervision device. The nut should be finger tight plus half a turn.

### 8.5 Flame Supervision Device To replace the flame supervision device and its locknuts.

- 1 Remove the hose connector from the inlet side of the flame supervision device.
- 2 Disconnect the supply tube between the flame supervision device and the jet carrying elbow.
- 3 Disconnect the thermocouple from the flame supervision device.
- 4 Remove front locknut and the valve support bracket, withdraw the flame supervision device from the heater.
- 5 Remove one locknut from new flame supervision device, ensure that the second locknut is screwed down to the end of the thread and position the device in the location hole. Reassemble in reverse order.

**Note:** The thermocouple connection should be finger tight plus half a turn.

### 9 Accessories.

The following accessories are available for the Spaceheater.

#### Part Description

1401	Regulator and Hose Assembly
1051/01	Variable Tinyreg Regulator (0 - 1 bar)
1299	4,8 bore high pressure hose to BS 3212 (min. 4 metres)
1324	'O' Clip.

Due to the variation in outside diameter of high pressure hose other sizes of 'O' clip may have to be used, please refer to the Bullfinch catalogue for alternative sizes available, if you are in any doubt about the correct size of clip please consult your dealer.

### 10 Spare Parts. (See diagrams)

No.	Part	Description	No.	Part	Description
1	SP 170	Jet	4	SP 1400BD	Igniter & Lead
2	SP 1400CN	Flame S'vision Device Kit	5	SP 1400BA	Thermocouple
3	SP 1500C	Spark Plug	6	SP 1400BX	Hose Connector

### 11 Repairs.

Damaged heaters should be returned to our factory for repair. Returned heaters should be carefully packed as we cannot accept any responsibility for damage incurred during transit.

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