I N F R A G L 0

SUPER SAVER SERIES

GAS FIRED INFRA-RED

RADIANT BURNERS

I N S T A L L A T I O N

A N D S E R V I C I N G

M A N U A L

(Leave these instructions adjacent to the site gas meter or with the engineer responsible for the burner system)

INFRAGLO (SHEFFIELD) LIMITED
DANNEMORA DRIVE
GREENLAND ROAD INDUSTRIAL ESTATE
SHEFFIELD S9 5 DF

TEL: 0114 249 5445 FAX: 0114 249 5066

INFRAGLO "SUPER SAVER SERIES"
GAS FIRE INFRA-RED
RADIANT BURNERS

DESCRIPTION OF THE BURNERS - Infraglo Super Saver Burners are supplied fully assembled and tested.

The main components of the burner is the all steel acid resistant vitreous enamel burner body, venturi tube, connecting piece with injector, incoloy heat regain panels and indented face ceramic plaques which attain a surface temperature of 900 - 950^{o}C.

Ignition of the burner is by spark electrode.

Flame monitoring is by ionisation probe electrode.

The safety solenoid is the Tekni type 2441.

The above three items are wired to a Pactrol Control Box.

INSTALLATION - These installation guide-lines must be observed together with the Gas Safety (Installation and Use) Regulations 1984, I.E.E. Wiring Regulations, BS 6891, the Health and Safety at Work etc., Act 1974 and any By-Laws.

These burners must be installed by a competent person in accordance with the above requirements.

TOTAL COMPLIANCE WITH ALL REGULATIONS IS A PRE-REQUISITE OF OUR WARRANTY.

VENTILATION - Air for combustion is taken from the area by the venturi effect of the burner injector, the air for combustion should be uncontaminated.

GAS SUPPLY - The gas inlet connection the each Infraglo burner is by an 1/4" BSP Male Thread. The pipework to the burner should be of such dimensions that with the nominal load of the total installation, the minimum pressure of 20 mbar (8" w.g.) is available at the inlet to each burner.

A unit isolation valve must be fitted in areas adjacent to the burner to allow the Burners to be individually serviced.

IMPORTANT: The complete installation must be tested for gas soundness (BS 6891 1988).

ELECTRICAL SUPPLY - 240V 50Hz fused at 3A. The mains inlet control switch must have a contact separation of at least 3mm on all poles. Make the

last 30” to the Pactrol Control Box (type CSS 01-24) in heat resistance cable, insulated and pvc covered to BS 6500 table 12 and capable of withstanding a temperature of 70^{o}C.

Ensure that the cable does not touch the burner and that the cable is not run in the burner combustion products area of where its temperature limits are exceeded.

The cable must be adequately secured into the cord anchorage thus eliminating any strain on the terminal connection.

This is a Class 1 appliance and must be earthed.

Observe the guide-lines of I.E.E. Wiring Regulations.

OPERATING SEQUENCE - Ignition is initiated by energising the control unit i.e. by turning on the mains electrical supply.

The sequence starts with a purge time of 18 seconds, if a flame is detected by the flame sensor at this stage the control unit will go straight to lockout.

If a flame is not detected the unit will then start the spark and open the gas valve.

When the flame has been established the spark will stop, if a flame has not been established after a period of 24 seconds the unit will shut off the main gas valve, and spark and go to lockout.

If the flame sensor detects a loss of flame after it has been established the main gas valve is shut off and the unit will go to lockout.

The control unit can only be reset from lockout by interrupting the electrical mains supply.

COMMISSIONING - Inspection should be carried out of the installation to ensure that all electrical and gas supplies are correctly located/supported and that the installation has been installed in accordance with current Regulations (see page 1).

Purge all pipework and test for soundness then open the gas valve, ensure that the burner electrodes are positioned correctly.

Set thermostats and time switches to call for heat.

TESTING - Connect a ‘U’ tube pressure gauge to the burner test nipple. Switch on electrical supply and when burner has lit check all internal joints for gas soundness and set the gas pressure by adjusting governor to give required operating pressure, see ratings table.

NB The gas pressure should be adjusted with all Burners in operation.
Switch off the burner and disconnect the pressure gauge.

Advise the user or purchaser that for continued efficient and safe operation of the burner it is important that adequate servicing is carried out at regular intervals.

SERVICING INSTRUCTIONS

ROUTINE SERVICING

Servicing of the Burners is essential to maintain their efficiency. This should be carried out annually or more often if the Burners are sited where there are dusty conditions.

Routine servicing may be carried out with the burner in-situ as follows:-

A) Isolate electric and gas supplies to the burner.

B) Blow compressed air onto the face of the plaques.

C) Blow compressed air into the venturi.

D) Examine the spark and detection electrodes for signs of decay.

E) Turn the gas and power supplies back on and check that the burner ignites correctly.

F) Check and if necessary re-set the gas pressure.

FAULT FINDING - OPERATION OF THE CONTROL BOX

After the burner is switched on there is an 18 second delay whilst the control box checks that there is no flame signal. The gas valve is then opened and the igniter sparks. As soon as the rectification electrode senses the flame then the spark ceases and the control box continues to monitor the flame. If there is a subsequent loss of flame then the control box immediately de-energises the solenoid valve and goes to lock out. It is then necessary to interrupt the power supply to the burner to re-start the ignition cycle.

If the burner fails to ignite then the following checks should be carried out in sequence.

A) Check that gas is available at the burner at the required supply pressure.

B) Check that the spark electrode and rectification electrode are correctly positioned and are in a good state of repair. Also check the associated cables.

If the above items are correct then the fault lies in the control box or the solenoid valve.

A) If the igniter does not spark then replace the control box.

B) If the burner ignites but the spark continues until the control box goes to lock out, then replace the control box.

C) If the solenoid valve fails to open then the fault may be either the control box or the solenoid valve.

Replacement of these items is detailed on page 8

FAULT FINDING - LIGHTBACK

Indications

A) “Popping” noise from burner when lit.
B) No visible burning on the plaque face.
C) A flame can be seen at the burner jet.

Causes

A) The plaque temperature is too high - possibly caused by too high gas pressure setting.
B) Faulty seal of the plaque to the burner body.
C) Broken plaque.

To rectify faults B or C it is necessary to remove the ceramic plaques from the burner body. The procedure to be carried out is detailed below. These repairs should be carried out on a workbench **NOT** with the burner in its operating position.

REPLACEMENT OF COMPONENTS

Removal and/or replacement of the burner ceramic plaques

CAUTION: UNDER NO CIRCUMSTANCES SHOULD ANY ATTEMPT BE MADE TO REMOVE THE CERAMIC PLAQUES WITH THE BURNER IN POSITION.

To remove the ceramic gas plaques from the Infraglo super saver range of Burners, the following procedure should be adopted:-

A) First isolate the gas and electrical supply to the burner by switching off the burner electrical supply switch and disconnecting the mains inlet to the burner control box.

B) Turn off the mains gas cock to the burner and uncouple the union on the gas pipe inlet to the burner.

C) Disconnect leads to the ignition and flame sensing electrodes. Remove the complete burner from its mounted position and place upwards on a suitable flat surface.

D) With the burner in an upward position showing the heat regain panels, take a suitable spanner and remove the dome head nuts and lift off the stainless steel retaining strips, and the locating strips, and heat regain panels, then turn the burner face downwards.

E) With the burner in a downward position unscrew the three spider (injector holder frame) bolts and using gentle pressure, pull back the spider from the bell end of the burner body.

F) With the burner body facing downwards (Plaques to the flat surface) take a screwdriver and prise back to an upright position the plaque retaining strip steel lugs.

G) With the lugs in an upright position hold the burner body and lift upwards, the plaques together with the retaining strip will be removed from the burner. Turn the burner on its back and replace the broken/defective

plaques by gently pressing the plaques downwards on the soft heat resistant felt strip located in the burner rebated surround.

H) With the burner still on its back, press into position the steel plaque retaining strips and gently replace the burner face downwards. Bend back over the steel plaque retaining strip lugs.

I) Replace the spider frame using the three locating bolts, ensure that the injector is centralised with the burner bell, refit the heat regain panels, stainless steel retaining strips and dome nuts (make sure a lateral movement is attained with the heat regain panels).

J) Replace the burner in its mounted position and reconnect the burner gas union to the inlet pipe, reconnect the mains electric's to the burner control box and follow the burner operating instructions. (Page 2).

NOTE: When replacing ceramic plaques, new steel retaining strips with lugs must be used.

Replacement of the burner Pactrol Control Box

A) Isolate the gas and electric supply to the burner by switching off the electrical supply switch and pulling apart the isolating plug and socket on the burner. Turn off the burner gas cock.

B) Take a suitable screwdriver and locate the two slotted heads of the retaining pins on top of the Pactrol Control Box, insert the screwdriver blade into the slotted heads and turn anti-clockwise until the securing pins become free of the control box base.

C) As this control box is a push in type, gently ease the control box from its base and replace with a new box, ensuring that the retaining pins fit correctly, insert the screwdriver blade into the slotted head of the retaining pins and turn clockwise until the control box is secure (DO NOT OVER TIGHTEN).

D) Turn on the burner gas cock, remake the isolation plug and socket, switch on the electrical supply switch and follow the burner operating instructions as described on Page 2.

Replacement of the solenoid gas valve

A) Isolate the gas and electrical supply to the burner by switching off the electrical supply switch and pulling apart the isolating plug and socket on the burner, turn off the burner gas cock.

B) Take a suitable spanner and disconnect the burner pipework via the union provided and by turning anti-clockwise remove the solenoid valve, replace with a new solenoid valve making sure that the screw on the valve is

pointing in the direction of the gas flow i.e. towards the burner and turn clockwise tighten onto the pipework, reconnect to the mains via the union and tighten.

C) Turn on the burner gas cock, remake the electrical plug connection, switch off the electrical supply switch and follow the burner operating instructions as described on Page 2.

Replacement of the burner injector

CAUTION: Under no circumstances should the injector be changed with the burner in position. Should the injector be required to be replaced, ensure by reference to the burner injection size chart that the correct injector replacement has been selected. If for any reason the injector is blocked under no circumstances should it be poked clean with wire, it should be blown clear with air only.

Should the burner injector be required to replaced for any reason, the following procedure should be adopted:-

A) First isolate the gas and electrical supply to the burner by switching off the burner electrical supply switch and disconnecting the mains inlet to the burner control box. Turn off the mains gas cock to the burner and uncouple the gas inlet union to the main gas inlet to the burner.

B) Remove the complete burner from its mounted position and place upwards on a suitable flat surface, (with the burner body in an upwards position).

C) Unscrew the spider/injector holding frame retaining bolts.

D) Gently slide back the spider and gas train assembly from the face of the burner inlet bell.

E) Using a spanner, hold the injector lock nut and with a second spanner turn the injector in an anti-clockwise direction and remove.

F) After selecting the correct required replacement injector hold the injector lock nut with a spanner and using a ring spanner enter the injector in a clockwise direction into the brass injector carrier and tighten in the new injector (ensure that you do not over tighten the injector).

G) Slide forward the spider and gas train over the burner bell mouth and screw back into position the spider/injector holder clip and on a dual burner, re-couple the burner gas bridge bundy tube union. Replace the burner in its mounted position.

H) Reconnect the burner gas union to the gas inlet pipe, reconnect the mains electric to the burner control box, and follow the burner operating instructions as described on page 2.