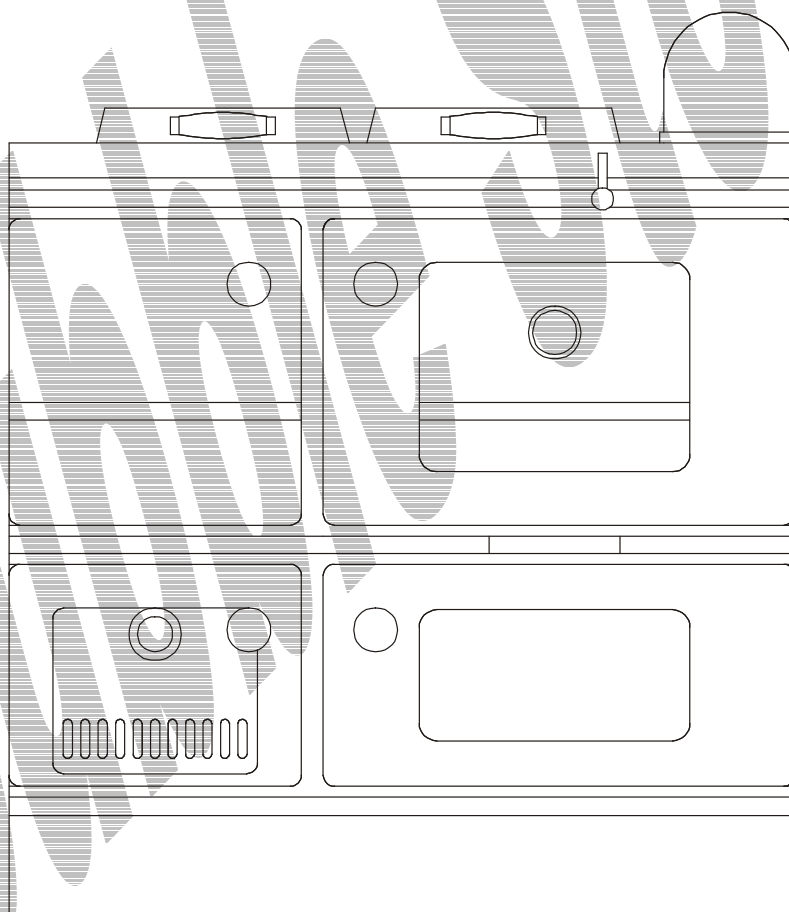




PRESSURE JET CONVERSION
STANLEY SUPER STAR
INSTALATION INFORMATION 01-05-03



<http://www.oilstoves.co.uk/>

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1. Health and Safety.

CONTROL OF SUBSTANCES.

Take great care when handling materials such as insulation boards, glass fibre ropes, ceramic wool, artificial fuel, kerosene and diesel oil, they are all irritants and suitable protective clothing such as disposable gloves dust masks and protective goggles should be worn.

Wash off thoroughly after handling any of these materials.

Carefully dispose of redundant or surplus materials and always vac up after service or installation work.

2. APPLICABLE REGULATIONS.

The installation of an oil fired Conversion Kit[®] must be carried out by a technically competent person, experienced in both solid fuel and oil fired installation and capable of installing, commissioning and servicing to the current requirements of the relevant local building regulations.

BUILDING REGULATIONS.

In England and Wales these are J 1-2-3 Provision for introduction of air supply and discharge of products of combustion. Provision for protection against fire and heat.

In Scotland Part F sec 3.

In Northern Ireland Part L. In Ireland Part J.

ELECTRICAL REGULATION.

British IEEE wiring regulations, latest edition.

Codes of practice which apply in the UK are :-

BS5410 OIL FIRED SPACE HEATERS.

Installation of oil fired space heating and hot water supply Part 1, boilers of rated output not exceeding 44kW

BS4543 CHIMNEY SPECIFICATIONS.

Specification for chimney for oil fired appliances. Part3.

BS5449 CENTRAL HEATING.

Central heating for domestic premises Part 1 Forced circulation hot water systems.

BS 5601 BS8303.

BS6461 Pts 1 & 2 1984.

BS7566 PARTS 1 TO 4.

OFTEC REGULATIONS.

Installers must have successfully completed OFTEC courses, OFT101 and OFT105.

Failure to comply with the relevant requirements listed above can be hazardous and could lead to prosecution under the law.

If you have any difficulties please phone our sales department on

PHONE 01302 742520. (3 lines.)

FAX 01302 750573

Email sales@oilstoves.co.uk

Web site www.oilstoves.co.uk

3. INTRODUCTION.

There are several of potential problems that can affect the way a converted appliance works.

To protect yourself against dissatisfied customers you must make sure that you are fully aware of them.

The best way to deal with these problems is to take-:

A check list

If you miss anything, it could result in an unhappy customer and invariably you will finish up footing what could be a large bill.

Remember what works for a solid fuel system does not always work for oil fired conversion particularly on the hot water side.

4. CHECK LIST.

Make sure that customers know what they are going to get for their money.

Some are under the misguided impression that once the appliance has been converted, it suddenly changes into something entirely different, with a whole host of features it never had before.

Obviously it doesn't and sometimes it is necessary to just to make sure that they do fully understand what a conversion is all about.

For customers who do a lot of cooking, make sure that they understand how the converted appliance will work.

1. HOW IS THE APPLIANCE USED.

Do they do all their cooking on it?

What do they cook on in summer time?

Do they use it mainly for central heating?

What do they expect from a converted appliance?

Remember it will not be possible to attain high oven temperatures without the heating being tuned on.

2. CHIMNEY.

Do they have any down draught problems?

Do they have excessive vacuum problems?

Will The Chimney need relining?

3. EXISTING HEAT LOAD.

Check out the existing system to see if it under or overloaded or about right.

For Gravity Circuits allow

8,000 BTU's for Hot Water

42,000 BTU's on Rads Max.

Pluss 20% Pipe losses.

For Fully Pumped Circuits allow

8,000 BTU's for Hot Water

50,000 BTU's on Rads Max.

20% Pipe losses.

4. OVERLOADING.

If the appliance is overloaded and trying to heat a system with a combined heat load in excess of 60,000 BTU's the burner will run for long continuous periods without a break, this will then result in excessive oven temperatures and excessive burner temperature.

This will result in overheating of the fan motor and damage to the bearings.

5. UNDER LOADING.

If there are only a few radiators on the system, this will cause the burner to shut down quickly and then the oven will not reach the desired temperature.

The underloading problem can be easier to deal with than the overloaded situation, read the **Heat Balancing** section for further info.

6. HOT WATER (PRIMARY PIPE WORK).

Solid Fuel stoves should always produce good quantities of hot water because the fire runs continuously and at high temperatures.

This is not the case with converted appliances and it is therefore important to make sure that the hot water side of the system is adequate.

Take care with indirect systems which have been running for a long time on solid fuel systems.

Because water temperature control is not all it should be, many of the cylinders have been exposed to excessive and continuous high temperature calcification in the indirect coil.

This can result in major post conversion heat exchange problems and consequent lack of hot water.

If the primary pipe work does not look adequate, modify it and fit a fully pumped, three port valve system.

7. OIL SUPPLY LINE AND TANK LOCATION.

Positive head systems are required.

Tiger loop systems will not work on solenoid pump burners.

Lift pumps can be used.

12 Volt Fuel pumps can be used.

8. ELECTRICAL REQUIREMENTS.

Make sure that there is a 3 amp, switch fused supply near to the appliance.

If the customer wants a time clock remember that you will have to arrange for cabling to the burner and the central heating pump.

9. VENTILATION REQUIREMENTS.

Check on the existing ventilation, if it is not adequate modify accordingly.

5. HOW IT WORKS.

1. MAXIMUM ALLOWABLE HEAT LOAD.

The conversion system is designed and tested to operate at its best on total system loads of between 45,000 and 60,000 B.T.U's, under winter time conditions.

2. TYPICAL RUN SEQUENCE.

Upon starting from cold, the burner should run for a maximum of 40 to 55 minutes before shutting down into its modulating mode.

(The rate of modulation thereafter will depend to some extent on the system size and the use of appliance controls.)

After the 40 to 55 minutes the oven should be coming up to 170 to 190 deg C and the heating system should be around 65 deg C.

This performance can be achieved on both larger and smaller systems but it will depend greatly upon compliance with our recommendations and requirements contained within these instructions.

3. HEAT BALANCING THE CONVERSION.

Heat balancing is proportioning the amount of heat which goes to water heating and oven heating.

The design and configuration of the appliance is the limiting factor.

Because there is only one combustion chamber it is not possible to separate cooking from heating.

It is possible to a small extent to bias the heat towards the oven or water and this is as good as it comes on conversions.

Great care will be required in setting up the correct heat balance for the appliance, here is a list of items which may require adjustment to achieve the correct set up.

Items which can be used to adjust the heat balance are as follows -:

The nozzle size.

The pump pressure.

The baffle system.

The appliance controls (thermostat and cook - heat lever)

4. THE HEAT LOAD.

The appliance is designed to operate at maximum output of 60,000 BTUs.

Make sure that you check this figure, if the appliance is under or overloaded it will have a considerable effect on the way that it functions.

5. THE NOZZLE SIZE.

Nozzles from .3 to .5 U.S. Gallons can be used, generally the conversion is set up with a .5 nozzle for the Stanley Super Star.

6. THE PUMP PRESSURE.

The pump can be set to run from 7 to 10 Bar

Generally it is set at 9 bar.

8. THE BAFFLE SYSTEM.

The Stanley Super Star has its own baffle which can be used to make the flue gasses go straight over the top of the oven or around it.

In addition the baffle system provided with the conversion can be adjusted by opening or closing the top board via the adjusting brackets.

The baffle is fitted as illustrated in FIG 10

9. THE APPLIANCE CONTROLS.

6. MATERIALS REQUIRED.

1. SUITABLE CHIMNEY LINER.
2. SUITABLE ANTI DOWN DRAFT TERMINAL.
4. VIT TO COPEX ADAPTER.
6. OIL ISOLATION VALVE.
7. REMOTE SENSING FIRE VALVE
8. 10MM KUTALEX COPPER TUBE.
9. WALL SLEEVING 22MM WASTE PIPE.
10. SILICONE SEALANT.
11. STADIUM AIR VENT.
12. VERMICULITE LOOSE FILL. (OPTIONAL)
13. CEMENT.
14. SHARP SAND.
15. FIRE CEMENT.
16. PLUGS AND SCREWS.
17. COMPRESSION FITTINGS.
18. 29 AND 16MM HOLE SAWS.
19. DISK CUTTER BLADES.
20. 6 KG TUB FIRECEMENT.
21. SILICONE SEALANT.
22. SMALL TIN HEAT RESISTANT PAINT.
23. 10 MM PIPE CLIPS.
24. PROTECTIVE CLOTHING (GLOVES, MASKS ETC).
25. WD 40.
26. SMALL TUBE 2 PART EPOXY.

7. CHIMNEY AND FLUE VACUUM.

It is most important that any existing chimney faults such as: -

1. DOWN DRAUGHT.

Occasional or permanent down draught (see illustrations)

2. UP DRAUGHTS.

Excessive up draughts

3. FUME LEAKS.

3A. REGULAR BLOCKAGES.

If there are regular blockages the causes must be established and corrected before any installation work is carried out.

4. EXPOSED CHIMNEYS.

If the chimney is on an exposed wall, always reline and backfill around the lining with vermiculite to keep it warm and prevent condensation.

5. TERMINAL POSITIONS.

The chimney should terminate 2 feet above the ridge of the main or highest roof, in compliance with relevant legislation.

The chimney must be terminated with a suitable anti down draft cowl such as a VEDETTE or EUROCOWL ETC.

6. WARNING.

Abnormal chimney terminal locations are very likely to cause problems under certain windy weather conditions.

If you are unsure about the condition of the chimney, have it thoroughly cleaned and checked by a suitably qualified person.

Inform your customer that wind noise will occur in certain conditions.

7. CLEANING ACCESS.

Provision must be made to allow adequate and easy access into the chimney for cleaning purpose.

8. FLUE PIPE DIAMETER AND SPECS.

The flue pipe from the stove must not be less than 125mm diameter and must comply to one of the following -:

Acid resistant vitreous enamelled flue pipe to BS 1344 Part 2.

Stainless steel to BS1449 Part 2.

Cast iron to BS41.

Mild steel with a wall thickness of 2 mm minimum.

9. BENDS IN FLUES AND CHIMNEYS.

Flues and chimneys should always be vertical wherever possible.

On installations where using a bend is unavoidable the maximum allowable bend angle from the vertical is 45 degrees.

45-degree runs should be kept as short as possible (less than 1 metre long) and there should never be more than two bends used.

10. WARNING.

Horizontal flue runs are not allowed.

11. CHIMNEY VACUUM.

A constant steady vacuum of not less than .02" W.G. when COLD or more than .05" W.G. when HOT is required.

To achieve this line chimneys as follows:-

1. On chimneys above 25 - 30 feet use 5-inch dia linings
2. On chimneys less than 25 feet use 6-inch dia linings.
3. Chimney less than 20 feet may not generate the required vacuum and in these cases it may be necessary to fit a chimney fan.

The flue vacuum can be adjusted by use of a swinging barometric damper, which should be fitted via a vitreous tee piece into the flue pipe in the same room as the appliance.

The counterweights on the swinging dampers can be adjusted in or out to give the required vacuum.

8. OIL FEED AND STORAGE.

1. FUEL TYPES.

28 Second Commercial Kerosene to BS2869 Part 2: 1988 Class C2 is suitable for use with this appliance.

35-second diesel versions are available to special order.

2. FUEL SUPPLY PIPE WORK.

Installation of all oil feed pipe work and storage equipment should be in line with -:
BS5410 Part1

The burner can be supplied with oil via gravity or pumped oil feed system.

If a gravity system is used the base of the tank must not be less than half a metre or more than three metres above the burner.

The minimum fuel line diameter is 10 mm but this is dependent upon the length of run.

If other appliances are being supplied from the same oil supply allowance must be made when pipe sizing to ensure that an adequate supply of oil be maintained for each appliance.

The oil line must be sleeved and sealed in a plastic tube where it passes through any brickwork.

3. PROTECTION OF THE ENVIRONMENT.

Environment protection is of paramount importance, where oil lines are to be buried, special care is needed to ensure that they can't be damaged or cut through.

4. UNDERGROUND OIL SUPPLY PIPES.

Trenches must be a minimum of 300mm deep.

Oil lines laid in such trenches should have a substantial cover; strong enough to resist spade impact placed over them and marker tapes must be used.

For further advice phone our technical help line.

5. FUEL OIL STORAGE TANKS.

Steel oil storage tanks to BS799 Part 5, if there is any doubt about the suitability of the fuel tank, consult the tank manufacturer.

For further reference see OFTEC requirements book T3 July 1995 rev.7.95

Where the tank will be fitted at a lower level than the stove a lift pump must be used with max head above the burner base of 3 metres, the max head of the lift pump over the oil supply tank must not exceed 5 metres.

6. FUEL TANK SIZE.

Minimum size storage tank should be 300 gals.

7. ENVIRONMENTAL PROTECTION OIL SPILLAGE.

Environment protection is of paramount importance.

Where properties are prone to be at risk from flooding take great care when fitting oil storage tanks.

Make sure that they are supported on reinforced concrete walls, which are built high enough to keep the tank well above any potential flood level and strong enough to withstand swollen river current or flood tide conditions.

Make sure that the tank is firmly fixed to the supporting walls so as not to be washed away.

Tall, slim line plastic oil tanks must be secured to a substantial base to prevent them from being blown over when they are empty or have low oil content.

8. FUEL FILTER.

A suitable filter / water trap must be fitted with a 100-micron element.

The minimum fuel line diameter is 8 mm but this is dependant upon its length of run.

9. FIRE AND ISOLATION VALVES.

Two remote acting fire valves such as a Teddington KBB should be fitted.

One (60 Deg C) mounted at high level over the appliance and the other fitted with the phial bulb mounted in the base of the ash pan, at the front of the appliance 90 deg C.

There must also be an isolation valve fitted in the same room as the appliance in a conveniently accessible place.

9. CONNECTION TO THE BURNER.

The burner is supplied with a flexible oil line with a union fitting into the pump, jointing compound must not be used at the union connection and the flexi pipe should be neatly laid so that upon disconnection it can be moved to the left hand side of the burner unit to allow room for the modular burner system to be easily withdrawn from within its compartment.

9. VENTILATION REQUIREMENTS.

1. AIR SUPPLY TO THE APPLIANCE.

If the appliance has been installed in line with current regulation there should already be an adequate air vent for the appliance to function as a solid fuel appliance

See Building Regulations J1/2/3 section 4. and BS5410 part1.

2. AIR REQUIREMENT CALCS.

Calculate air requirements at 5.5 cm sq per kW of output.

It is most essential that a permanent free air supply be established, as the burner cannot function correctly without it.

Provision for an adequate FREE air supply in to the room and house where the appliance is fitted is required and can be established by multiplying the kW oil input of the appliance by 5.5cm sq.

This will take the form of a purpose designed, NON hit or miss, air vent of 90 sq cm cross sectional area.

3. EFFECTS OF EXTRACTOR FANS.

If an extractor fan is fitted in the same room as the appliance or if there is an open fire in an adjoining room then extra compensatory air must also be made available for both these extra requirements.

Minimum extra requirement for extractor fans is 55 sq cm and it is preferred if the extra air supply can be positioned in such a way as it can supply air to the extractor fan without the air stream passing the stove.

4. EFFECTS OF OPEN FIRES.

If there is an open fire in the same room as the appliance then further extra ventilation must be provided.

The minimum extra requirement for open fires is 212 sq cm

5. TEST FOR ADEQUACY OF AIR SUPPLY.

Test for adequacy of air supply is to:-

Set the oil fired appliance going, close all doors and windows in the room, turn on the extractor fan to its maximum capacity, light the open fire and let it get well established,

Test for adequate maintenance of chimney vacuum on the appliance, both before and after the extractor fan is turned on, with the open fire going.

During the tests the flue vacuum of the oil-fired appliance should be measured to see if there is any noticeable reduction beyond that called for in these instructions.

6. WARNING.

Instructions on ventilation must be adhered to.

10. EXISTING HEATING SYSTEM.

1. COMPLIANCE WITH BRITISH STANDARDS.

Before you start remember that because this is an existing solid fuel central heating system it should comply with BS: 5449 part 1

A double feed indirect hot water storage cylinder to BS1556 part one, should have been used.

Before starting the conversion make sure that the total heat load on the appliance is neither too low nor too high.

If there is excess load (more than 55,000 B.T.U.s) then the oven will overheat, as the burner will be running continuously, causing potential damage to both the appliance, and the burner, and invalidating the warranty.

It is most important that all or any existing heating system faults, (particularly on the plumbing side) be identified and rectified before conversion is carried out, it is the responsibility of the installer to assess this situation and make adequate recommendations to the customer.

2. PRIMARY SYSTEM.

If there is any possibility that the primary system is slow, it is essential that it should be converted to " fully pumped " otherwise the burner will not run long enough to heat the oven or the hot plate, Make sure that there is a heat leak provided of 10,000 B.T.U's minimum.

Do not convert to pressurised systems, only open vented systems are suitable.

3. WATER TREATMENT.

In order to prevent the build up of scale and corrosion a suitable inhibitor should be used.

11. ELECTRICAL REQUIREMENTS.

1. EARTHING.

The converted cooker must be earthed.

2. CONTROLS.

The converted cooker can be turned on via a manual on off switch or an automatic time clock capable of switching both hot water only (burner) or central heating and hot water, (burner and pump.)

The burner is pre wired with a fully insulated three-pin plug and socket the socket should be removed and wired as instructed from either a switch or time clock.

3. FUSING.

(In each case a neon-fused switch with a 3-amp fuse should be fitted prior to the time clock or manual on off switch.)

4. REMOVAL OF THE BURNER.

NOTE this cable terminates in a pre wired plug to facilitate easy removal of the burner unit for service requirement and it is important that the plug is located in the ashpit area.

12. MAIN STEPS INSTALLATION.

1. CHECK OUT THE EXISTING HEATING SYSTEM.

2. CLEAN CHIMNEY.

3. LINE THE CHIMNEY IF REQUIRED.

4. CHECK AND ADJUST FLUE VACUUM.

5. PROVIDE A CLEANING ACCESS.

6. INSTALL FUEL TANK.

7. RUN A FUEL LINE.

To the left hand side of the appliance.

8. MODIFY THE ELECTRICAL SUPPLY IF REQ'D.

9. FIT SUITABLE TIME CONTROL SYSTEM.

Run the cabling to the pump and the left hand side of the appliance for later connection to the burner control module.

10. FIT SUITABLE VENTILATION.

Into the room where the appliance is situated.

APPLIANCE

Before starting any work on the Stanley Super Star take great care, the water jacket extends down to the base plate of the appliance. If you drill through the side of the appliance, to try and gain access into the ashpit, you will puncture the water jacket.

12. REMOVE THE HOT PLATE.

13. REMOVE THE SECONDARY AIR VENT TUBE from the left hand side of the firebox.

14. REMOVE THE FIREGRATE ASSEMBLY.

15. REMOVE THE ASHPAN.

16. SCRAPE AND WIRE BRUSH ALL THE INTERNAL BOILER SURFACES.

If there are any large deposits of scale or vitrified coke chip it off and leave the appliance surgically clean.

17. SERVICES ACCESS INTO THE APPLIANCE

Using the appropriate hole saw, mark out and drill the lower left hand side plinth panel as per FIG 12.

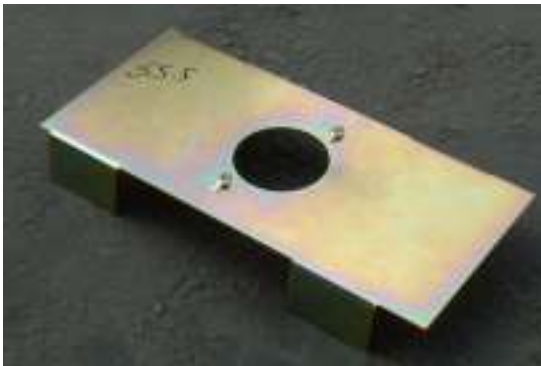
Using either a 4" angle grinder with a cutting blade fitted, or an 90deg angle drillhead driver, cut or drill, an access hole approx 25mm x 50mm in the base of the ashpit at the front left hand side as illustrated in FIG 10 AND 12.

The base of the ashpit is 10mm thick, patience and care is required.

(If you are using a grinder take care not to splatter the vitreouse enamel surfaces of the appliance with the sparks from it.)

18. BOARDS AND CLOSURE PLATE

19. FIT THE CLOSURE PLATE



As Per FIGS 11 AND 12

Resting the bent legs of the closure plate down on to the existing firegrate support lugs and pushing it up to and slightly under the front face of the boiler.

20. FIT THE CLOSURE PLATE BASE INSULATIONBOARD



Make sure that a good fillet of silicone sealant has been applied to the top surface of the metal closure plate around the center boss, wiping any excess away.

Make sure that the hole in the board is fitted concentrically over the hole in the closure plate.

21. FIT THE SECONDARY CLOSURE PLATE BOARD

(Concentric alignment again.)

Firecement around the edges above and below.

22. FIRECEMENT THE WHOLE LOT PERMANENTLY INTO PLACE

Push the cement firmly into all the gaps and smooth off both above and below the closure plate, wipe away any excess with a damp cloth.

23. FIT THE BURNER ASSEMBLY

The burner is supplied fully assembled, fitting it into the appliance needs care and patience, it is an awkward job.

Proceed as follows:-

Remove the control module and disconnect the

H.F. leads from the head

Photo cell from the head

Unplug the fan plug, the pump plug and the solenoid plug.

The control module is now disconnected.

PROVIDE A SUPPORT FOR THE BURNER ASSEMBLY, at the same height as the ash pit base, stand the burner assembly on it and carefully fit the assembly into the ashpit, gently pushing it in as far as possible.

Carefully lift the combustion head and push it up into the closure plate onto the threaded fastening studs, tighten the fasteners.

SEE FIG 12

Do not damage the flexi air hose as this will reduce the amount of air available to the burner head.

Note

Before refitting the control module make sure that the flexi high pressure hose is lying in a natural curve back to the pump. If there is any twisting moment on the hose it will be difficult to get the head into place as the hose tension will work against you.

At either end of the hose there is a swivel connection which will allow adjustment as required use two spanners, 12 & 14mm.

24. SERVICES INTO THE BURNER

REFER TO FIGS 10 AND 12

25. FIT THE FLEXI OIL FEED PIPE

and the remote fire valve phial and capillary through the large cable support..

26. FIT THE MAINS FEED CABLE

through the smaller cable support.

27. FIT THE OIL ISOLATION VALVE

at the termination of the flexi oil feed pipe (1/4" male bspt)

OIL PIPEWORK TO PRESSURE JET BURNERS

Because there is a motor and a fan in the burner unit, some vibration may be transmitted through the pipework.

If the pipework is in contact with any sharp edges fretting can occur, to prevent this apply silicone sealant at any potential hazard points.

28. ABOUT THE THERMOSTAT

One two stage thermostat is supplied and it is connected to the control module via a two pole plug fed through the existing ashpit air inlet.



The thermostat has a sensing bulb and a small diameter partially insulated, soft copper capillary tube which should be carefully unwound and neatly fitted, in the same way that the original stat was fitted, after first removing the upper and lower capillary tube cover plates shown on FIG10 making sure that the capillary tube and bulb cannot be bent, trapped or damaged, remember damage to the tube or bulb will prevent the thermostat from functioning .

The thermostat is mounted by fastening it using the two fasteners through the grill in the lower part of the ashpit door after first removing the existing solid fuel stat complete which is accessed via removal of the central fastener in the rear of the ashpit door. SEE FIG13

The new thermostat controls both the running temperature and provides the safety cut out at 85 deg C.

Normally the user will achieve the running temperature required by setting the control knob as required.

29. CONNECT UP THE THREE PIN POWER SUPPLY
after first checking for correct polarity.

33. CONNECT THE ELECTRICAL SUPPLY.

3. COMMISSIONING.

Commissioning takes the form of three separate activities:-

1. Setting the burner up.
2. Heat balancing the appliance to the users system.
3. Final check of the complete installation.

1. SETTING THE BURNER UP.

- 1a. Nozzle .5 x 80 Deg Hollow
- 1b. Pump Pressure 9 Bar (130 P.S.I.)

1e. Flue Gas Flow .0027 m/s.

3. LIGHTING.

Make sure the appliance is fully assembled except for the hot plate, do not fit the baffle box as it is necessary to view the flame.

Carry out electrical safety tests in line with IEEE and OFTEC requirements

Polarity.

Short circuiting.

Earthing.

Turn the oil on and check for leaks.

3.1. TO BLEED THE PUMP.

Take great care when bleeding the pump, It is a single cylinder reciprocating device and if repeated lockouts occur, due to lack of fuel caused by air locking, it can soon be damaged. If the pump runs without oil it will make a quite loud and rapid rattling noise and permanent damage in the form of a subdued rattling will occur.

Use the 1/8" BSPT plug in the tee fitting connected to the outlet of the pump.

3.2. SET THE CONTROL STAT.

Turn the stat fully off .

3.3. SET THE TIME CLOCK.

Make sure that the time clock is calling.

3.4. CHECK THE BURNER AIR SHUTTER.

The burner air shutter has been set at the factory and should be satisfactory for test firing.

3.5. PREPARE A SAMPLING POINT.

Drill a hole suitable for your analysis probe in a suitable position.

After the tests plug the hole with a Dwyer test point plug.

3.6. IGNITE THE BURNER.

Turn the stat ON and will hear the burner go through an ignition sequence and ignite, it is unlikely that the burner will need bleeding although it may need two attempts at ignition.

Failure to ignite will cause the flame failure button on the controller to illuminate, after a short time push the button in to reset the controller and repeat the process again until ignition occurs.

3.7. FIT THE BAFFLE BOX.

When you are happy with the flame picture, turn the burner off and isolate the mains electricity before you fit the baffle box.

Fit the baffle box and the baffle box lid,

Allow the appliance to run the system up to temperature and if needed study the notes on heat balancing and carry any adjustments which may be required.



3.7A. HEAT BALANCING THE SYSTEM.

This can be a time consuming job depending upon how the user wants to try and operate the appliance.

There are quite a few small adjustments which can be made and these are covered in **Section 5-3, 4, 5, 6, 8 and Section 4-1, 4-3, 4, 5, 6**

3.8. FIT THE HOT PLATE.

When refitting the hot plate make sure that the ceramic rope seal is in good condition.

3.9. TO SET FOR GOOD COMBUSTION.

Do not attempt to take any flue gas readings until the burner has been running for at least three quarters of an hour after which time you should check that the flue vacuum conforms to our stated requirements.

Remove the sampling point plug insert your analysis probe.

Temporarily block the top oven vent to prevent the ingress of excess oxygen into the flue gas sample.

Make sure that the direct draught lever is closed.

By way of minor adjustments to the fuel air ratio, set the burner to give a CO₂ reading of 9.5 to 10%.

With the appliance running on a 60,000 BTU system, the efficiency should be between 79% and 82% and on average, the system should come up to a temperature of around 65 deg C with an oven of around 170 - 190 deg C in about 40 to 55 minutes.

3.10. COMBUSTION AIR.

Combustion air is adjusted via the air control damper on the fan unit which when set can be locked in place.

3.11. TO ADJUST THE PUMP PRESSURE.

There are two type of pump fitted to Flexaflame burners.

Nippon



The oil pump pressure on the Nippon pump is adjusted via the screw to the left of the fuel entry position. The burner is set at the factory at a pressure to suit the appliance being converted.

Fully in and three quarters of a turn out is equal to 10 Bar, each quarter of a turn out is equal to one bar reduction. If you lose your position with the adjustment, get back to the 10 bar start point.

Taisan



The oil pump pressure on the Taisan pump is adjusted via the setscrew and locknut to the Right of the fuel entry position.

The burner is set at the factory at a pressure to suit the appliance being converted.

4. FINAL CHECKS.

Commissioning checks should be carried out on the following:-

4.1. FUEL TANK.

Check for leaks-stability-height-position-vent.

4.2. FUEL.

Fuel- check for correct grade

4.3. FILTER.

Is it fitted?

Check for function and leaks.

4.4. SITE GLASS OR TANK GAUGE.

Check for function and leaks.

4.5. OIL LINE.

Check for function, positioning, material suitability and leaks.

4.6. FIRE VALVES.

Check for function and leaks.

4.7. THROUGH WALL SLEEVING.

Check that it is fitted and sealed

4.8. ISOLATION VALVE.

Check for function, convenience of positioning and leaks.

4.9. ELECTRICAL.

Check for correct fusing, location and specification of any isolation devices.

4.10. VENTILATION.

Make sure that adequate ventilation is provided.

4.11. CHIMNEY SYSTEM.

Chimney system should be checked to make sure that it complies with the relative standards, regulations and all other instructions given.

4.12. CHECK CONTROLS FUNCTION.

Check correct hot condition functioning of water heating system and all controls.

4.13. INSTRUCT USER.

Ensure that the customer is instructed on the basic use of the appliance, timers, controls and oil / electrical isolation devices if fitted.

The importance of regular maintenance.

Commissioning should not be signed off unless the commissioning engineer is satisfied that all the work done complies with the relative standards and regulations detailed within this document.

14. WARRANTY .

Ensure that the warranty registration documentation is returned to Harworth Heating Ltd.

It will not be possible to deal with any warranty claims unless we hold on our Data Base, details from a correctly filled in warranty commissioning form.

The form must arrive back at our works within two weeks of the burner being correctly commissioned.

When the warranty form is received at our works details from it will be entered on to our warranty registration Data Base.

This information will form part of a record of the installation and will be the first point of reference by our staff, for any claims made under the equipment warranty.

The warranty covers **PARTS ONLY** for a period of ONE YEAR and is conditional upon all the requirements of our installation and commissioning instructions being fully adhered to.

ITEMS NOT COVERED UNDER THE WARRANTY

LABOUR.

TRAVELLING TIME.

CONSEQUENTIAL LOSS OR DAMAGE.

NOZZLES.

BAFFLE KITS AND INSULATION BOARDS.

Damaged due to faulty installation and or faulty commissioning of the appliance.

DAMAGE TO THE FUEL PUMP.

Caused by air locks in the fuel line or lack of fuel.

If the fuel pump runs without oil. It will make a loud and rapid rattling noise.

If this occurs permanent damage in the form of a subdued rattling will occur.

15. FAULT FINDING.

Fault finding procedures are covered under a separate sheet.

16. SERVICING.

After a conversion the internal metal surfaces of the boiler shed considerable amounts of scale, The scale can drop into the combustion head and cause damage to it.

To prevent this we recommend that a chargeable, first quick service be carried out, to clean away the scale.

The scale shedding lasts for about 6 to 9 months, gradually decreasing. Thereafter servicing should be carried out at six monthly intervals.

18. FIGURES.

Additional information follows in the form of illustrations.

FIG 10

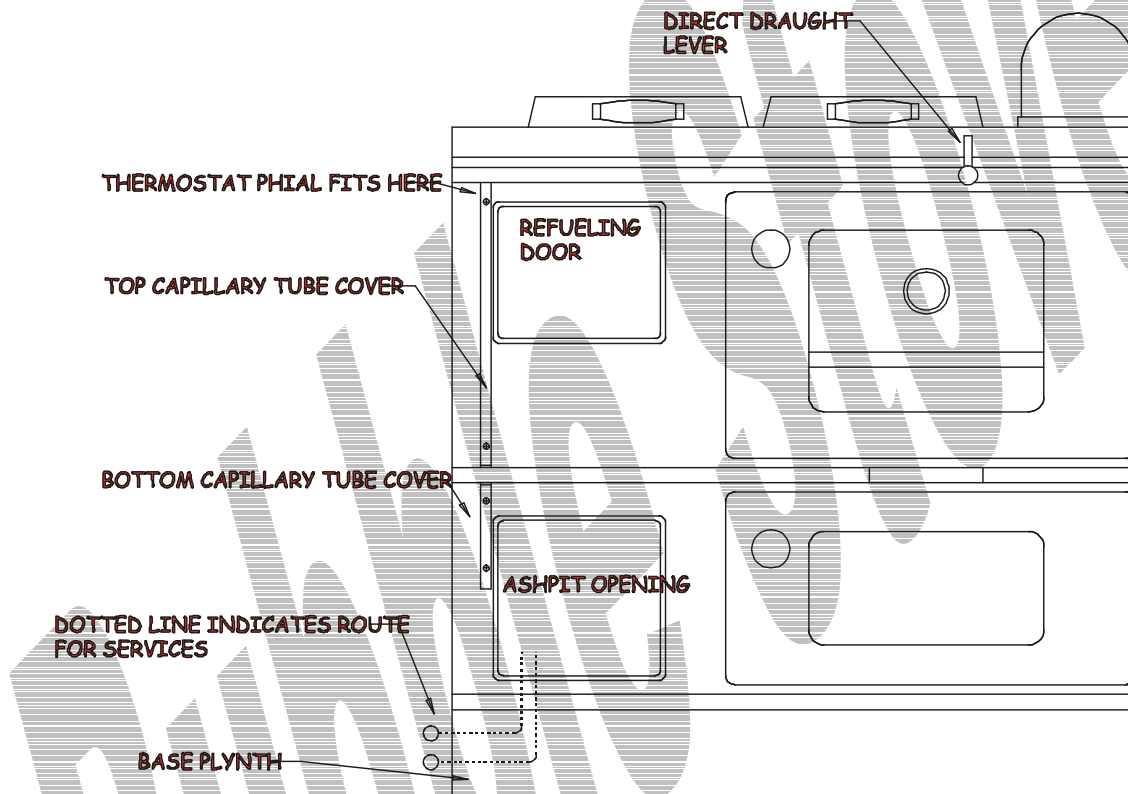


FIG 11

**VIEW FROM FRONT OF APPLIANCE
SHOWING METAL CLOSURE PLATE
LEGS RESTING ON ORIGINAL GRATE SUPPORT LUGS**

SEAL IN HERE WITH FIRRE CEMENT

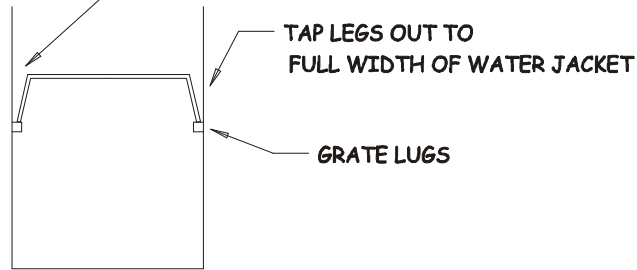


FIG 12

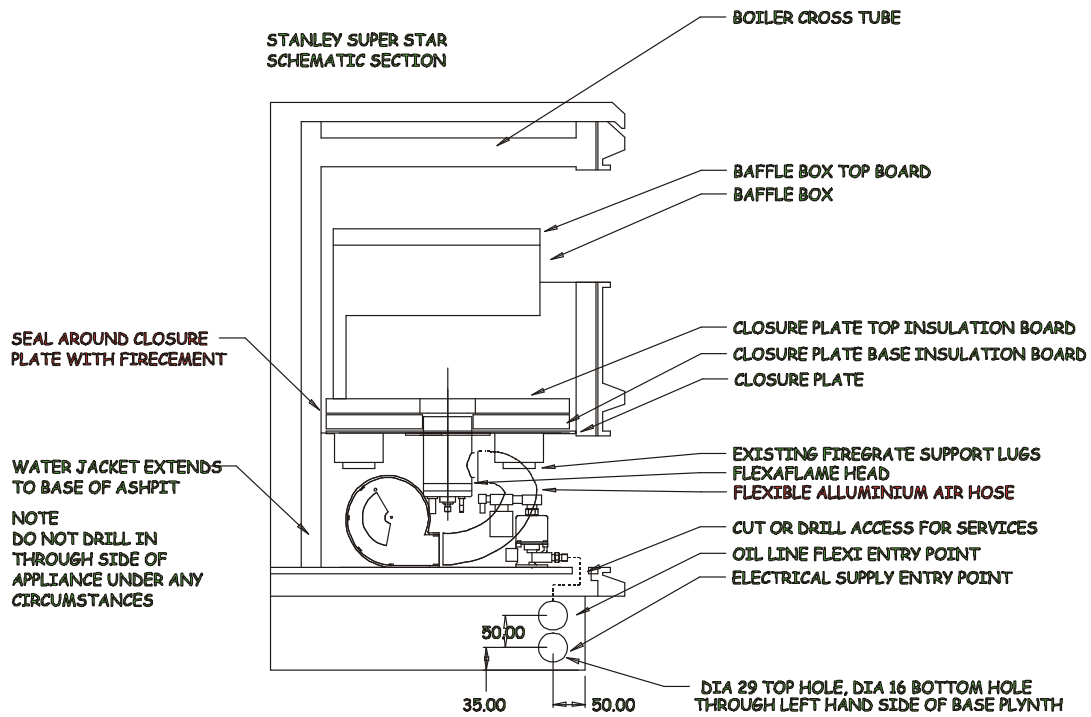


FIG 13

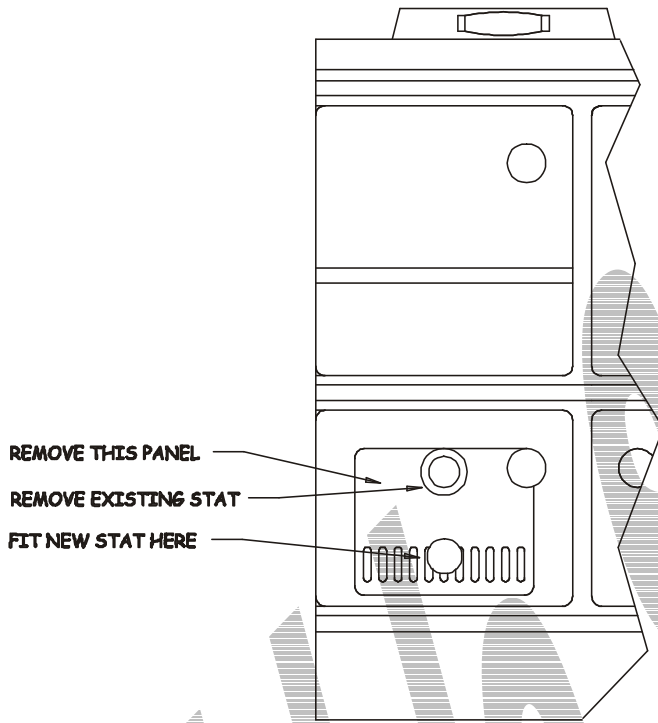


FIG 14



PACKING LIST

Item No	Description	PART NUMBER	Qty	Check
1	Burner assembly complete	77-10-001/MB1	1	
2	Bi pole stat assembly	77-01-007	1	
3	Closure plate insulating primary board	87-19-090/a	1	
3a	Closure plate insulating secondary board	87-19-090/c	1	
6	Closure plate with fasteners	87-18-090CD/V2	1	
7.	Baffle Box	87-01-090/1	1	
8.	Baffle Box top board	87-04-090	1	

9	4 Split pins and 4 washers		8
20	Cable Strain for fuel supply	77-01-023	1
21	Cable strain for electrical supply	RS392-056	1
22	Flexi oil supply pipe	77-01-017/A	1
23	Fire Valve	77-07-004/C	1
24	User instructions		1
25	Installer instructions		1
26	Flexaflame service burner book		1

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Only approved personnel, WHO HAVE BEEN SUITABLY TRAINED, may carry out maintenance on this product.