

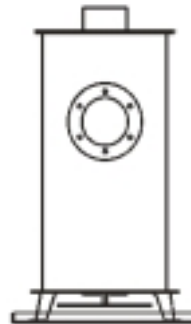
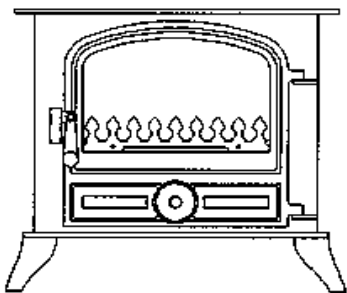
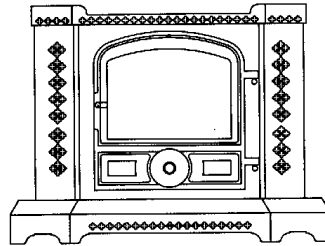
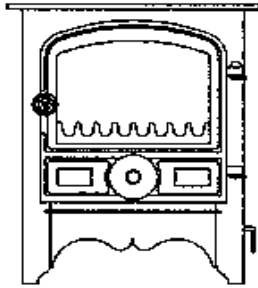


BUBBLE MARINE STOVES

SERVICE INSTRUCTIONS

Keep with the appliance at all times

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



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1. WARNINGS

1. HOT BURNER

Never try to re-light a hot burner, make sure that the burner is completely cooled down before re lighting.

Make sure that any excess oil has been removed from the base of the burner before lighting. (SEE 4-16)

2. POST SERVICE

Always check for oil leaks before leaving the site.

3. HEALTH AND SAFETY

Always observe good health and safety routines (use suitable gloves and mask.)

4. CONTROL OF SUBSTANCES

Take great care when handling materials such as:

Insulation boards, glass fibre ropes, ceramic wool, artificial coals, kerosene oil, 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. SERVICING PRE-AMBLE

1. Normally, you will only be called out to a Bubble stove when it doesn't work correctly, generally this means that it sooted up and won't burn with a blue flame.

2. The main cause of stoves not working correctly is **lack of oil flow and this can be attributed to by-:**

2-1. The stove not being installed and commissioned correctly from new.

2-2. A progressive build up of carbon deposits caused by lack of servicing or cleaning

3. Lack of oil flow, for whatever reason, stops the burner reaching the required temperature to make the oil vaporise.

As a consequence, the incoming diesel burns as a single streak of dirty yellow flame rising vertically from the oil inlet.

If the stove is allowed to run for any period of time in this condition, rapid sooting of the stove and pot internals will occur.

This situation constitutes 99% of all call outs on bubble stoves and once it has occurred it will be necessary to carry out a thorough clean out as per section 3-2.

When the burner is adjusted correctly, sufficient oil will flow into it to allow vaporisation to occur, at this point the diesel fuel **will burn as a gas** with the resultant clean blue flame.

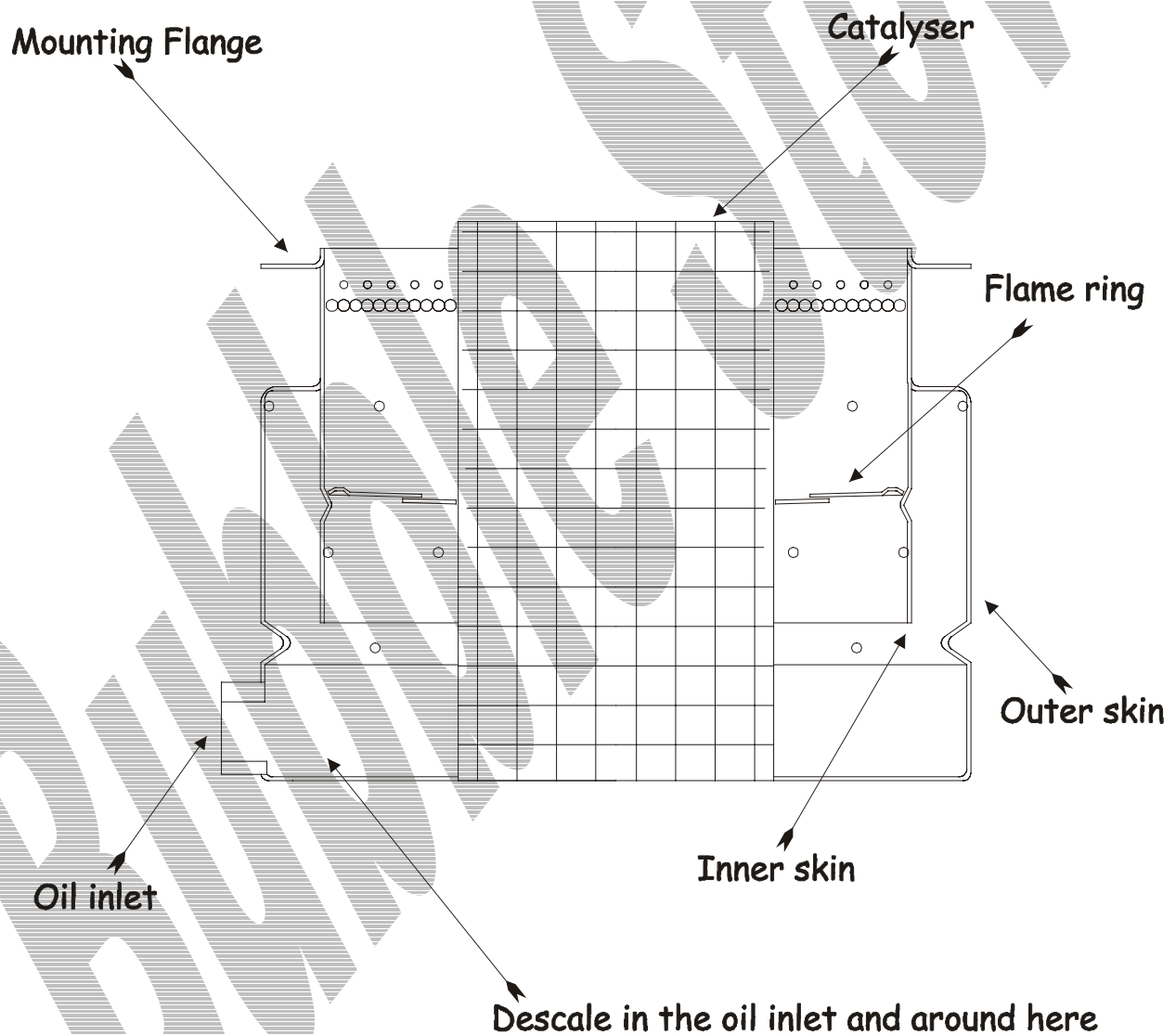
Note

We use two types of burner in our stoves, one has a single central catalyser and a flame ring halfway down the pot and it is used on round stoves and triangular stoves.

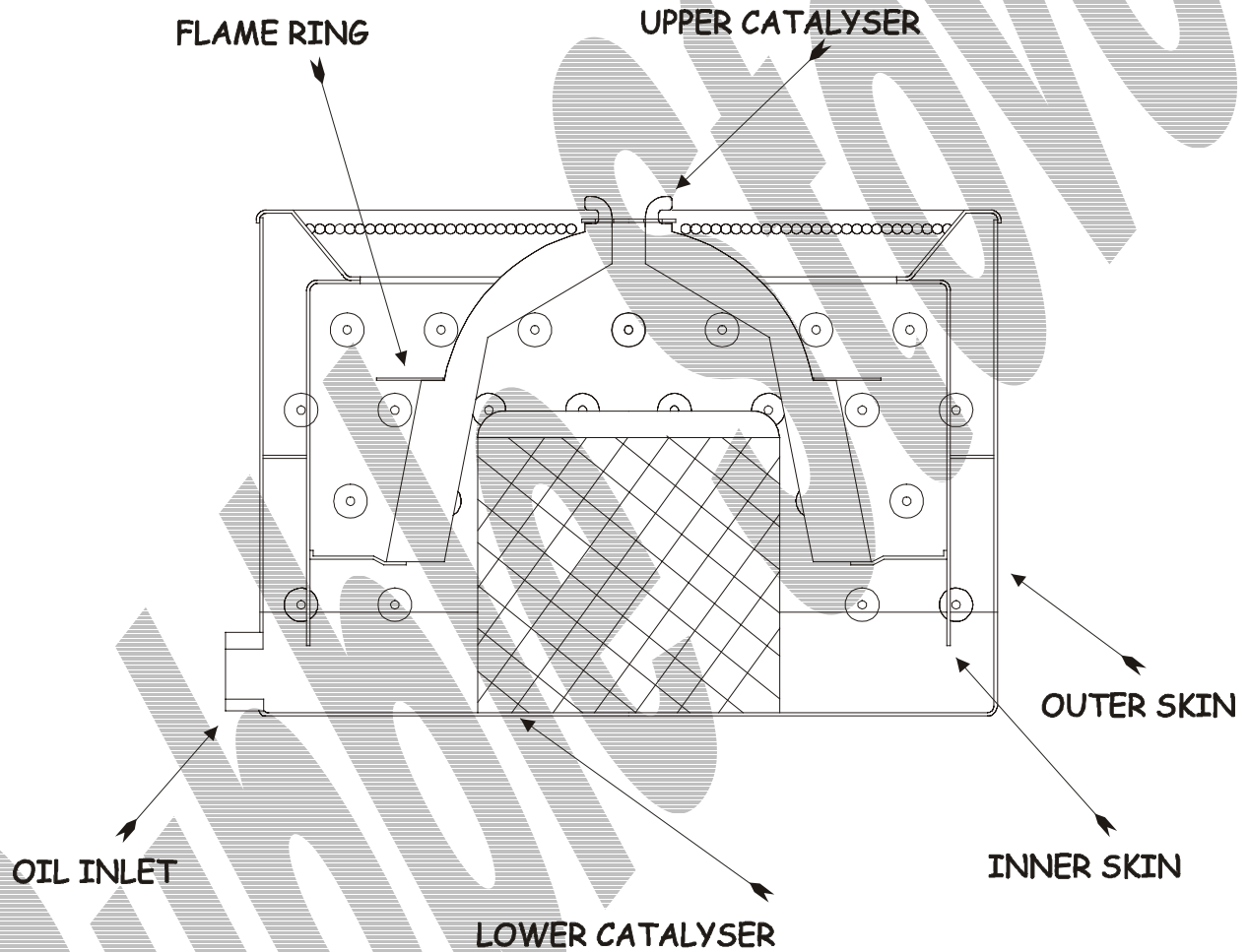
The other has a lower and upper catalyser and a flame ring, which fits on top of the upper catalyser, used on BB1, Belfort and BB2.

Make sure that you know which burner you are working on; the bb1 burner is capable of generating a taller blue flame on high fire and a smaller flame on low fire.

ROUND STOVES AND TRIANGULAR STOVES POT SECTIONAL DRAWING.



BB1, BELFORT AND BB2 POT SECTIONAL DRAWING



3. SERVICING

1. POOR OIL FLOW

The main causes of poor oil flow are -:

1. Water contaminated diesel.
2. Boat out of trim and stove out of level.
3. Syphonic oil feed in contradiction of installation advice.
4. Air locked metering stems or oil feed pipes.

If any one of 1 to 4 is at fault then 5 will be the result.

5. Badly carboned-:

5-1. Descaling device.

5-2. Vaporising pot.

5-3. Oil feed pipe from valve to descaller.

2. SERVICING DIRTY BURNERS ☹️

This information is given on the assumption that the appliance has run correctly for some time and then has progressively started to run sooty.

If the burner in the appliance has never been able to run in blue flame combustion, there will be a problem, normally associated with oil flow.

If the burner in the appliance will only run for a short period of time, in blue flame combustion, there will be a problem, normally associated with oil flow.

1. When 35-second diesel oil is vaporised in the burner, there will be a progressive build up of carbon in the bottom of the pot and around the inlet port of the burner, to deal with this a certain amount of service work is required.

2. Oil flows into the pot through the brass adaptor called the descaling device located at the base of the pot. (SEE FIG1)

3. Through the centre of the descaling device is a round metal rod called a descaling lever?

4. When the decaling lever is rotated it is so designed to remove some of the carbon, which builds up on the inside bore of the device.

5. Oil flows into the pot via gravity with very little head pressure and so the slightest build up of carbon around the descaler will cause a resistance to the flow of oil.

6. The burner needs a minimum flow of oil to generate enough heat to keep it up to its critical vaporizing temperature.

7. The critical vaporizing temperature is that at which the burner is hot enough to turn the oil into gas indicated by the presence of blue flame combustion.

8. The oil flow setting on low fire is deliberately set slightly higher than is required for two reasons -:

9. To allow the burner a margin of excess to compensate for the progressive build up of carbon and subsequent progressive reduction of oil flow.

10. To give the flame enough energy to take the burner through the critical vaporising temperature barrier.

11. If the oil flow into the burner is allowed to reduce to a level lower than that required to keep the burner at or above the critical vaporising temperature, the burner can no longer do what it was designed to do and as a consequence, oil just burns at a much lower temperature, generally in a single streaky, dirty yellow flame up one side of the pot, generally the flame will rise vertically from the oil inlet.

This will result in -:

Smoke issuing from the chimney.

Rapid soot and carbon build up on, the burner, the stove glass, the chimney and the flue ways.

If this situation exists, the whole lot must then be thoroughly cleaned before the stove can be adjusted or ignited again.

2-1 CLEANING PROCEDURE

Before starting make sure that you have dustsheets down and plenty of tissue.

1. Remove the oil feed pipe in between the oil control valve and the descaling device.

(This procedure will be different on each stove.)

2. Unscrew the descaling device from the pot and dismantle it making sure that every scrap of carbon is removed from the descaler body and the descaling lever.

(If it is not possible to remove the descaling device, make sure that it is thoroughly cleaned.)

Note we use two types of burner, one has a central catalyser and a flame ring and it is used on round stoves and triangular stoves the other has a lower and upper catalyser and a flame ring used on BB1, Belfort and BB2. (SEE FIG 2 & 3 and detail drawings)

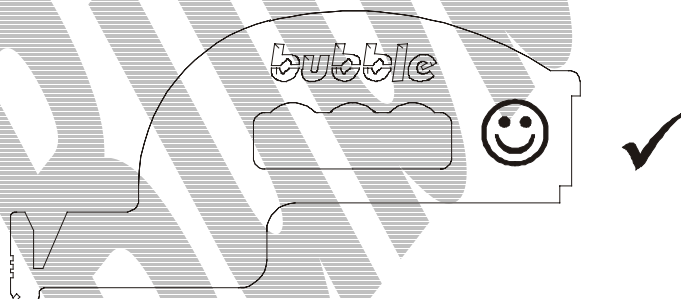
3. Refer to the sectional illustrations of the pots and you will note that there is a space between the inner and outer skin of the burner, on BB1 and Belfort burners this gap can be heavily contaminated with hard carbon scale.

Check this gap and thoroughly clean it out to remove every scrap of carbon build up. (SEE FIG 2 & 3)

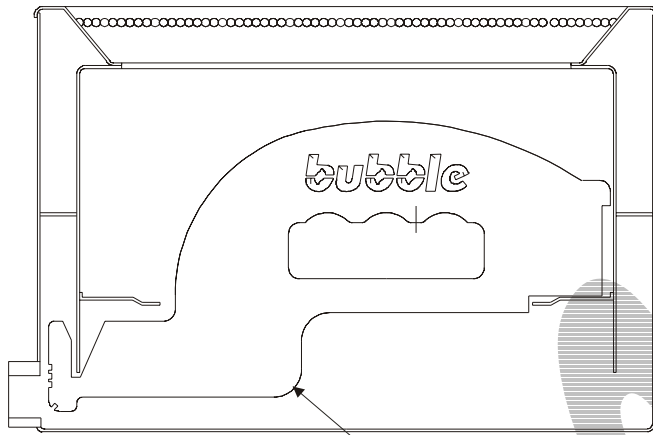
Cleaning is a difficult job as the carbon can be rock hard; the best way is to gently scrape an edge and then work around the pot off the edge.

We have a cleaning tool, which can be useful if the pot is not too heavily carboned, otherwise a small bent scraper has to be fabricated.

BB1, BB2 and BELFORT SCRAPER TOOL



BB1, BB2 and BELFORT, SCRAPER TOOL IN POT.



SCRAPER TOOL

Use a toffee hammer to tap the scrapping tool.

(Use a mirror on a stick to view the carbon in the annulus.)

4. Clean the catalysers with a brush
5. Clean the flame ring with a brush
6. Clean the stove or boiler internals with a soft brush
(If there is a thick coating of soot or scale on the stove it may be necessary to use a scraper tool to remove it)
7. Check that the chimney is clean.
8. Check that your oil supply tank is not water contaminated by flushing oil through the valve, into a settlement jar.
9. Clean or change all oil filters and water traps if fitted.
10. If applicable- Remove the door and door glass and thoroughly clean in warm soapy water.
11. If applicable- check all door seals.

2-3 REMOVE DRAIN AND CLEAN THE OIL CONTROL VALVE

12. Drain the oil control valve using the drain screw.
(See Toby valve booklet.)
13. Remove and clean the internal filter in the oil control valve.
(See Toby valve booklet.)
14. Brush all dust from the stove.
15. Vac up, clean all brassware and repaint the stove.

16. Rebuild in reverse order

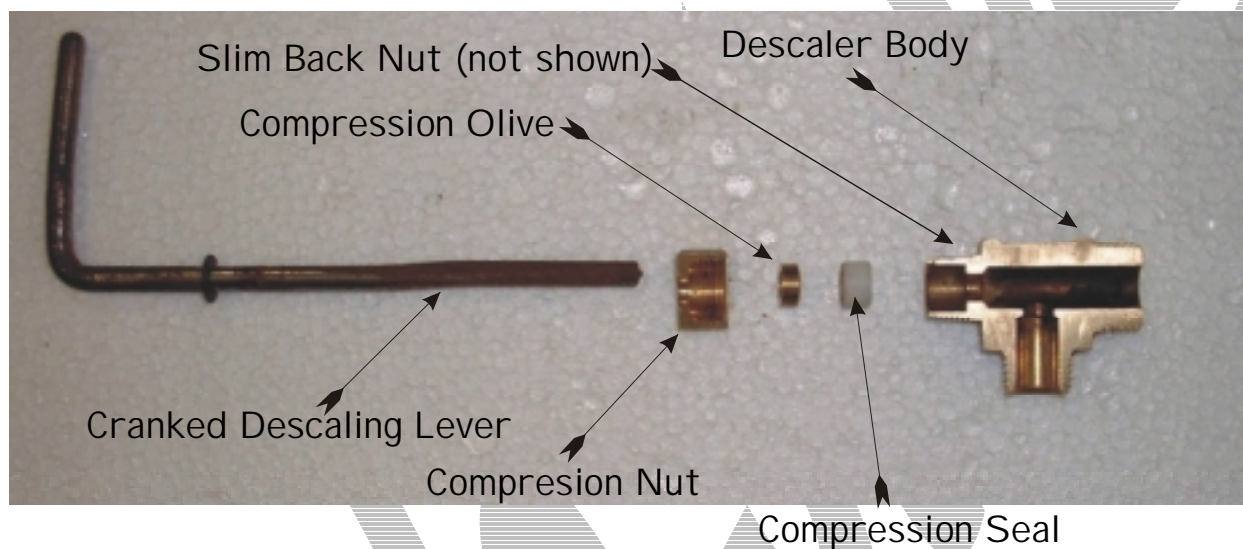
2-4 CHECK THAT OIL FLOWS FREELY INTO THE POT.

2-5. CHECK FOR GOOD IGNITION

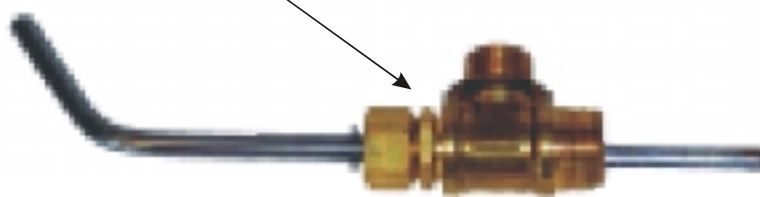
Test fire the appliance to make sure that it lights easily, make sure that the low and high firing rates are correct.

2-6 ADJUST THE HIGH AND LOW FIRING RATE.

Descaling Device fig 1



Slim Back Nut



3. ADJUST DESCALING DEVICE FIG 1

Every 12 Weeks

The descaling device is screwed directly into the vaporising pot and needs to be dismantled adjusted and cleaned on a regular basis.

When the low fire flow rate is set on a new and clean pot there is no resistance to the flow of oil.

During normal use carbon will build up around the inner diameter of the descaling device.

This build up will act as a resistor to the flow of oil and the low firing rate will gradually diminish until there is insufficient oil flow to support low fire, blue flame combustion.

If the descaling lever does not rotate in a nice arc to properly clean all around the outer edge of the outlet, it could be possible that the initial setting of the low firing rate will have to be re-adjusted.

The descaling device comprises of a cast brass descaler body into which is fitted a cranked descaling lever sealed via a compression nut, a small compression olive and a small circular compression seal.

(When correctly adjusted, there should be a slight resistance to turning; if it is loose the compression nut must be tightened slightly to keep an oil tight seal.)

Note the small compression olive has an internal cone shape at one end designed to press on to the compression seal.

Oil enters the tee piece from a feed pipe connected directly to the outlet of the oil control valve.

Oil is fed to the pot from the valve, through the interconnecting feed pipe and into the pot through the descaling device.

During normal running carbon deposits will build up in the bottom of the pot at the outlet side of the descaling device, and in the descaling device.

To keep the oil flowing freely into the pot the outlet must be de-scaled regularly and so to do this it is necessary operate the descaling lever by turning it completely two or three times, as you are rotating gently pull it out about 6mm (1/4") and then push it back to its start position.

The descaling lever is cranked at one end to allow the flattened end to describe a larger diameter arc, thus scraping any carbon deposits off the outlet diameter.

There are occasions where stoves are run under high flue vacuum conditions where carbon deposits can only be removed from within the tee piece by physically removing it completely from the pot, to allow access for descaling.

4. CLEAN THE OIL FEED PIPE

2. Remove and clean out the oil supply pipe from the oil control valve to the descaling device.

5. CHECK THAT THE OIL FLOWS FREELY INTO THE POT

After servicing carry out a visual check to make sure that the oil is flowing freely into the pot.

1. Remove all the internals from the pot.

2. Turn the oil on to mini and look into the pot to make sure that the oil is flowing freely.

3. Remove any excess oil and leave the pot dry.

6. CHECK FOR GOOD IGNITION 😊

Test fire the appliance to make sure that it lights easily, make sure that the low and high firing rates are correct.

7. CHECK THE LOW AND HIGH FIRE FLAME BB1, BB2 AND BELFORT ☺

There are two types of valve, which could be fitted to the stove.

Access to the low fire adjustment is different; make sure you know which valve you are working on.

On the OCI ships valve the plastic drive knob has to be removed to gain access to the low fire screw.

On the Toby valve the low fire screw is clearly visible as per TOBY MANUAL FIG 2

1. It is advisable to have a flue vacuum gauge available before carrying out this procedure.
2. When the burner has established combustion turn it up to half output. (Setting 3 on the fuel flow control knob) and let it settle down into blue flame combustion.
3. Allow at least half an hour for the chimney to warm up and the burner to stabilize before making any adjustments to the high or low fire screws.
4. Zero the vacuum gauge and insert the probe. (Each different stove has a vacuum test point, for location refer to the stove technical details.)
5. The vacuum should read between (.02" - .03") minimum or (.05" - .06") max

(If you can't get a reading investigate the cause by checking out the flue system and smoke bomb if required.)

6. Turn the stove down onto minimum firing rate and let the flame stabilise.

7. When the flame is stable the low fire catalyser should be glowing dull red in the bottom of the pot with wispy blue flames flicking in to the glowing edge of it.

8. If the flame drops out of blue flame combustion and falls into a dirty rolling yellow flame and the lower catalyser is not dull red then the low fire setting will need to be increased until it can support the required blue flame combustion.

Note to increase the low fire fuel flow, screw in on OCI valve and out on Toby valve.

9. When you are happy with the low fire combustion, set the high fire as follows

10. Turn the oil flow knob up to setting 4; let the flame stabilise, and look at it, if it is stable and blue, turn it up slowly using the control knob, letting it stabilise after each movement.

11. If the flame starts to go yellow and progresses into long yellow flame combustion, it is running fuel rich and the high fire screw needs adjusting to reduce the flow of oil. (Screw in for both types of valve)

12. Do not make any attempt to adjust the high fire screw, until you have brought the flame back into blue flame combustion.

To do this turn the fuel flow down until the yellow flames drop back into blue flame combustion.

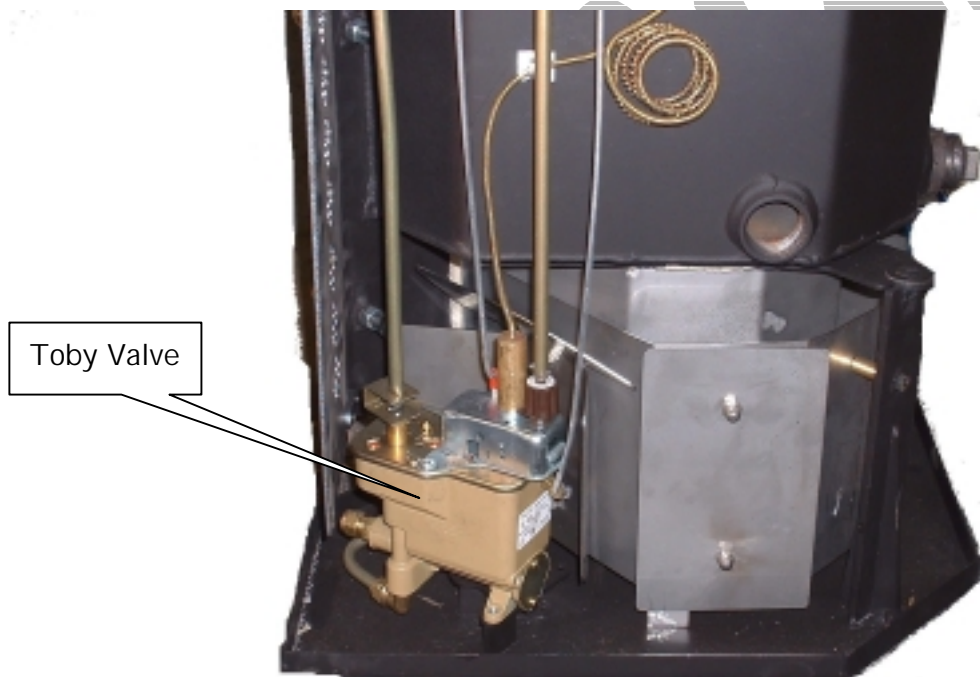
13. Adjust the high fire screw by half a turn in and try turning the fuel flow up, if it is still fuel rich repeat the process until the high fire flame is running blue with flicks of yellow in the tips.

14. When you think that you have the flame as you want it leave it running for ten minutes to see if it is stable.

15. Adjustment of the flame will not be possible unless our instructions on chimneys and flue vacuum are followed.

8. CHECK THE LOW AND HIGH FIRE FLAME (CORNER AND ROUND STOVE) 😊

There are two types of valve, which could be fitted to the stove.



Access to the low fire adjustment is different; make sure you know which valve you are working on.

On the OCI ships valve the plastic drive knob has to be removed to gain access to the low fire screw.

On the Toby valve the low fire screw is clearly visible as per TOBY MANUAL FIG 2

It is advisable to have a flue vacuum gauge available before carrying out this procedure.

The Toby valve has been flow rated before leaving the factory and it should not need adjusting, if it does it is necessary to remove the plastic drive cover (OCI VALVE) which is held in place by a single fastener in the side face of the knob.

Once the knob has been removed the low fire adjusting screw is clearly visible.

When the burner has established good blue flame combustion turn it up to half output.

(Setting 3 on the fuel flow control knob) and let it stabilize.

Allow at least half an hour for the chimney to warm up thoroughly before making any adjustments to the high or low fire screws.

Turn the stove down onto minimum firing rate and let it stabilize.

After stabilization the catalyser should be glowing dull red with wispy blue flames suspended off the top of it, just level with the top of the pot.

If the flame falls into a dirty rolling yellow flame then the low fire will need to be increased until it can support the required blue flame combustion.

When you are happy with the low fire, set the high fire.

Turn the oil flow knob up to setting 4, let the flame stabilize, and look at it, if it is stable and blue, turn it up slowly using the control knob, letting it stabilize after each movement, if the flame starts to go yellow with long flame combustion, it is running fuel rich and the high fire screw needs adjusting to reduce the flow of oil.

Before adjusting the high fire screw, turn the flame down and let it stabilize in blue flame combustion, adjust the high fire screw by half a turn at a time and try turning the fuel flow up, if it is still fuel rich repeat the process until the high fire flame is running blue with flicks of yellow in the tips.

Note there is not a large difference between the high and low fire.

9. CHECK ACTION OF OPERATING AND SAFETY THERMOSTATS 😊

1. Stoves with large boilers also have an automatic water temperature control thermostat and an automatic safety stat device. (Detailed information is provided in the Toby valve booklet.)

(Assuming that the oil flow control knob is set to 5 or 6)

2. If the stove is operated with the thermostat controls set to maximum it will run on full flame, until it achieves the target water temperature and then drop the flame onto mini, from there on it will automatically modulate the flame from high to low in line with the heating load demand.

3. To check the action of the control stat proceed as follows:-

3-1 Turn the central heating pump off.

3-2 Fix a pipe thermometer to the hot water outlet.

3-3 Turn the appliance up to full fire (Setting 6 on the oil valve)

3-4 Turn the thermostat up to full output (fully anticlockwise)

3-5 Watch the water temperature thermometer and as the water temperature comes up to 70 deg C the valve should drop the stove onto low fire.

3-6 To check the action of the safety stat allow the water temperature to come up to 90 deg C and the safety stat should shut the oil flow off.

NOTE 1.

It will not be possible to reset the stat until the water temperature has dropped.

NOTE 2.

Details on adjustment of the operating and safety stat can be found in the appliance installation details, or in the commissioning routine.

10. CLEAN THE STOVE INTERNALS ☹️

Every 12 months

1. To clean the stove internally use a soft brush and brush away any dust or combustion debris into a vacuum cleaner hose.

11. CLEAN THE STOVE EXTERNALLY 😊

As Required

1. To clean the stove externally, let it go out and simply brush and vac away any dust with a very soft brush.

12. CHECK THE DOOR SEALS 😊

The seal is designed to stop the ingress of air into the combustion chamber and as such must form a good seal with the front of the stove all around the door opening.

2. Check via visual examination that it is forming a good seal with the stove body.

3. The seal is fastened into its socket via high temperature ceramic adhesive available from our spares department.

The ends of the ceramic rope are terminated with high temperature adhesive tape.

4. When replacing the door seal make sure that the socket into which the seal is fitted is cleaned out prior to the application of new adhesive.

13. CLEAN THE DOOR GLASS 😊

If applicable

1. The door glass will require light cleaning occasionally and the frequency of cleaning will depend upon how the stove is used.

2. Where stoves are ignited each day then the glass may soot up as the lighting process may generate a little soot until the stove has settled down into blue flame combustion.

3. Where stoves are running continuously then the glass will need cleaning less frequently.

4. When cleaning is required you will need to let the stove go out and completely cool down.

5. To clean the glass use a soft cloth and dampen it with vinegar or a proprietary stove glass cleaner.

6. Rub the glass gently in a vertical direction, do not rub the glass with horizontal motion otherwise the glass strips will be disturbed and dirt will be forced in between them.

7. After cleaning the glass, wipe it dry and make sure that the glass strips have not been dislodged.

Note: the glass strips have to fit together with no gaps.

NOTE-: see individual stove spare parts list for replacement parts.

14. ADJUST THE DOOR FASTENING.

Every 12 months or as required

1. The door fastener may need adjusting occasionally to ensure that the airtight fit is maintained.

15. STOVES WITH BAROMETRIC DAMPERS - CHECK FUNCTION 😊

Note Barometric dampers attempt to control excess flue vacuum by spilling air into the flue thus reducing the vacuum applied to the burner.

Every Year

Applies to BB1 - BB2 and Belfort

1. The barometric damper must be cleaned to remove any build up of dust and checked to make sure that it swings freely and is correctly adjusted.

2. The damper will only swing open under conditions where the maximum chimney vacuum is exceeded, normally this will be anything over .05"-.06" W.G.

3. At any vacuum below this figure the damper should be in a closed position.

Apply WD40 to the spindle tips.

16. STOVES WITH COMBUSTION AIR RESTRICTORS - CHECK FUNCTION 😊

Note Combustion air restrictors attempt to control chimney vacuum by restricting the flow of air into the burner.

Every Year

Applies to Corner Bubble and Round Bubble

1. The combustion air restrictor or restrictors should be carefully cleaned.

Check that it swings freely.

Apply WD40 to the spindle tips.

17. CHECK IF THE HOLES IN THE POT ARE FREE FROM OBSTRUCTIONS

Every Year

1. Each year the holes in the outer surface of the pot should be checked to make sure that they are not blocked,

2. Because of the running temperature of the pot it is unlikely that they will be blocked with hair or dust, however if the burner has been running sooty, it is possible that there could be some carboning or rust build up particularly around the bottom of the pot.

18. CHECK THE COAL KIT

Every 6 months

The coal kit system is designed so that it can be quickly and easily removed in its entirety.

2. Hold the front decorative fret and lift out the complete kit.

2a. Place the kit on a dustsheet and carefully remove the coals, which are located on the coal support bars.

3. Examine-:

The coal support bars.

The cross ties.

The coals.

Note:

Distortion will occur on the bars and ties, if it is excessive, replace as a service item.

See the relevant parts list for identification of spare parts.

4. Care must be taken when positioning the coals on the spike follow the coal layout illustration for the relevant kit.

19. STOVES WITH ELECTRIC IGNITION

Every 6 Months

Remove and clean the plug

Refit and test the function

1. The spark plug should be carefully removed and cleaned.

2. Take care when refitting the plug.

3. Make sure that the tip of the metal wick just touches the bottom of the pot.

4. Make sure that the supply leads do not foul or fret on thin metal heat shields.

5. Make sure that the leads are not taped up together as they need to have an air gap around them for cooling purposes.

6. If the plug does not form a good seal with the plug port, air will be drawn into the pot and consequently upset the combustion process

7. This will manifest itself in the form of intensive and heavy carbon build up in the bottom of the pot reaching up behind the inner skin of the pot.

20. VENTILATION

Check Ventilation Area 😊

1. To accommodate the combustion air requirements of the appliance

Check that adequate free air ventilation is provided.

(550 mm sq per kW of appliance rating.)

21. OIL TANK, VALVE FILTERS AND LINE ☺

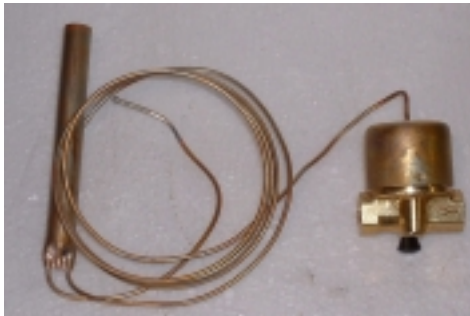
As required, carry out an oil line inspection.

Clean or change the oil tank filter every year or as required, we have found that paper filter cartridges can absorb moisture and freeze in cold weather creating oil flow problems. To check for this condition check oil flows out of the inlet vent but not the outlet vent.

Check that the oil tank is not contaminated with water or dirt.

Check that the isolation valve is working correctly and easily accessible

To check the action of the KBB fire valve. Carefully heat up the sensing bulb to a maximum temperature of 70 deg c, and make sure that the valve shuts off.



Allow the bulb to cool down and then reset it ready for use.

Check that the fuel filter not contaminated with water or dirt.



Clean or change the oil tank filter every year or as required, we have found that paper filter cartridges can absorb moisture and freeze in cold weather creating oil flow problems. To check for this condition check oil flows out of the filter inlet vent but not the filter outlet vent.

The filter illustrated has a washable nylon filter, which does not suffer from moisture absorbance problems.

22. FLUE 😊

Check flue type and suitability, as required

Flue Terminal Compliance Check, as required

Fire Guard Compliance Check, as required

Make sure that the flue system is airtight.

Check the flue vacuum using an appropriate manometer. Flue should pull between .02" and .06" W.G.

4 FAULT FINDING



To assist with servicing and fault finding we categorise problems under the headings listed.

1. FUEL SUPPLY PROBLEMS

(See Pre Amble notes)

1. Fuel contamination problems
2. Fuel type and quality problems
3. Fuel feed problems

2. AIR SUPPLY PROBLEMS

Air is drawn into the burner by the action of the chimney.

THE POWER, (suck or vacuum the chimney can develop) depends upon the following-:

THE HEIGHT.

THE DIAMETER.

THE TEMPERATURE OF THE GASSES IN IT.

THE RESISTANCE OF THE INNER SURFACE OF THE FLUE PIPE OR PIPES.

On a boat all the above elements are in short supply.

Normally, we have to deal with low flues which are small in diameter and generally not very well insulated, coupled with all these problems we have an other one, which is that the boat moves across constantly changing surroundings, through locks, into headwinds and crosswinds, all creating major opportunity for down draughting to occur.

Any bend in any part of the chimney or roughness on the internal chimney wall will slow down the velocity of rising gases and reduce the effectiveness of the chimney.

Any slight reduction in the flue gas temperature will reduce the chimney vacuum or pull, hence when the stove is slowed down for all night burning, as the flue gas cools down the chimney vacuum reduces and as the chimney vacuum drops, the stove may well start to burn sooty.

This problem is highlighted even more during very cold weather when the chimney can cool down even faster.

THE CHIMNEY RULES.

Always use a top outlet for flue pipe take off.

Never put any bends in the flue. (To maintain a concentric fit, we will allow a slight kick off the stove and a similar kick into the deck flange).

Always try to get the stove as low as possible in the boat, this will allow installation of maximum length flue pipe.

Always have two double walled, above deck extensions, short for cruising and long (28inch minimum) for mooring. Insulated extensions are a thing of the future but it is possible to fill the space using a vermiculite and cement mix sealed off with flexible fire putty.

Fit a rotary swinging cowl to each extension or make one interchangeable.

Clean or have the chimney cleaned regularly. (Frequency depends upon type of fuel and length of time used).

Loss of chimney vacuum can also be caused by-:

Faulty Stove seals.

Door seals, Glass seals, Pot to closure plate seal, damaged door glass.

Bad deck flange fitting.

3. COMMISSIONING PROBLEMS

(See Pre Amble notes)

Commissioning, or lack of it, is the biggest single problem associated with alleged faults on Bubble stoves.

4. PLUMBING CIRCUIT DESIGN

If the plumbing circuit is not of a suitable design, it will not be possible to carry out the commissioning procedure as the burner may well shut down due to overheating of the boiler.

Always check that water is flowing freely through the boiler.

If the oil valve safety stat shuts the burner down, check the temperature of the boiler outlet flow pipe.

5 BURNER DOES NOT LIGHT EASILY

1. Check the level of the bottom of the pot and make sure that the stove is levelled so that the oil flows very slightly towards the ignition wick.
2. Check the chimney vacuum cold.
3. Check that all the seals in the stove are sound.
4. Check that the swinging dampers are not jammed open.
5. Check that the oil is flowing freely into the pot.

See Pre Amble notes.

6 STOVE GOES OUT WHEN THE CENTRAL HEATING PUMP IS TURNED OFF

1. Generally this is caused by the action of the safety stat, which shuts off the flow of oil to the appliance from the oil control valve.

This will be observed via a tripped off oil valve.

Re set the valve to re commission the oil supply.

Note each different valve has a different re setting procedure, which should be detailed in the appliance manual.

2. To check this out, feel the trip lever to see if it has tripped off, if it has this will confirm the cause.

3. Unwanted trip offs can be caused by one of the following-:

3-1. The flow of water to the heat leak rad is inadequate.

3-2. The size of the heat leak rad is inadequate.

3-3. The safety stat set point needs increasing.

3-4. The heat leak circuit has been inadvertently eliminated or reduced via the turning off of the upstairs radiators, (as could be the case in summer time running.)

7 FLUE VACUUM

1. The pot type burner is extremely sensitive to flue vacuum variations.

2. Good combustion will not be possible unless our instructions on chimneys and flue vacuum are followed.

3. If the burner does not burn with a blue flame, recheck the chimney vacuum and oil flow rate.

4. If the burner does not run well check that the seals in the stove are good and that there is no ingress of air into the appliance flue ways.

5. Check that the swinging damper is not jammed open. (BB1, Belfort and BB2 Stoves)

6. Check that the correct fuel oil is being used.

7. Check the levels.

8 BURNER QUICKLY CARBONS UP

See Sec 2 Pre Amble

9 OIL WILL NOT ENTER THE POT

(See Pre Amble plus the following.

With each appliance a separate oil valve booklet is provided, make sure that you have it to hand when carrying out this type of work.

NOTE.

On new installations, it is not unusual for an air bubble to restrict the flow of oil through the metering stem in the oil control valve.

To cure this problem gently tap the valve with a plastic handled screwdriver or agitate the oil in the float chamber to try and break the meniscus lock created by the air bubble.

Is there oil in the fuel tank?

Has the fire valve tripped?

Has the isolation valve been accidentally turned off?

Is the oil turned on at the oil flow control knob on the valve?

Has the level of the oil valve been disturbed?

The oil level mark on the side of the oil control valve should be set at 20mm from the bottom of the pot, check this out using a rule or height gauge.

Is the oil feed pipe from the valve to the pot blocked? (Unlikely)

Clean or change the oil tank filter every year or as required.

We have received reports that paper filter cartridges can absorb moisture and freeze in cold weather creating oil flow problems.

To check for this condition check oil flows out of the inlet vent but not the outlet vent.

10 CHECK FOR OIL LEAKS

1. Check that oil does not leak from the pot, valve, and descaling device or pipe work.

11 CHECK THAT THE OIL IS IN THE CORRECT PLACE

1. Make sure that when the oil first runs into the pot, it is not running away from the oil inlet.
2. It should gather in a small pool around the oil inlet at the bottom of the lighting tube, if it does not do so, level the stove up until it does.
3. When you are happy that the oil pool is forming in the correct position, the stove will light easily and not be prone to ignition flair ups.

12 FLOODED OIL CONTROL VALVE

See "Oil Will Not Enter the Pot".

13 OIL SMELLS

1. Carry out a visual check on all joints for any leaks.
2. Check that the descaling lever packing gland nut is adjusted.
3. If there is a slight lingering smell with no obvious visual signs of a leak, this will be attributable to the descaling lever packing gland nut requiring adjustment or possibly a new seal.

14 OPERATING FLOW RATES

See 3-3-5a

15 BURNER FLARES UP DURING IGNITION

If the burner flares up during the ignition cycle, this is normally caused by allowing too much fuel into the pot before the flame has had the time to come up to establish at vaporisation temperature.

The other cause of this is the burner being out of level and the incoming fuel running away from the lighting port and forming a pool opposite the lighting port.

Oil entering the pot should form a pool at the bottom of the lighting port tube.

16 DE-FLOODING A FLOODED POT

If the pot has become flooded with oil proceed as follows: -

1. Wear plastic gloves do not allow fuel oil to contact your skin, if it does wash off immediately with soap and warm water.
2. You will need a plastic bag and a small sponge, remove the coal kit if applicable, catalysers and ring to give clear access to the base of the pot.

Sponge out the fuel and squeeze the sponge into the plastic bag, (it helps to keep drips to a minimum if the bag is put inside the stove) when all the oil has been sponged from the stove it will be safe to re assemble and re-ignite.

Note there are generally two reasons for flooding,

1. High winds have caused down drafting which has blown the burner out.
2. The appliance has run out of oil and the user has filled the oil tank without first turning the burner off.

DO NOT ATTEMPT TO BURN OFF A FLOODED POT

Never try to ignite a flooded pot, always de flood it as described in 4-15.

17 RACING

1. The term racing is used to describe audible vibrations, generated by the flame and caused by allowing excessive oil to build up in the bottom of the pot too quickly during the ignition process.
2. Turn the oil flow off until the burner has settled down into a steady burn rate.
3. Turn the fuel on again but don't let the flame go out, otherwise the burner **MUST** be allowed to cool down fully before a re ignition is attempted.

FIGURES

FIG 2 SECTION OF BUBBLE 1 POT

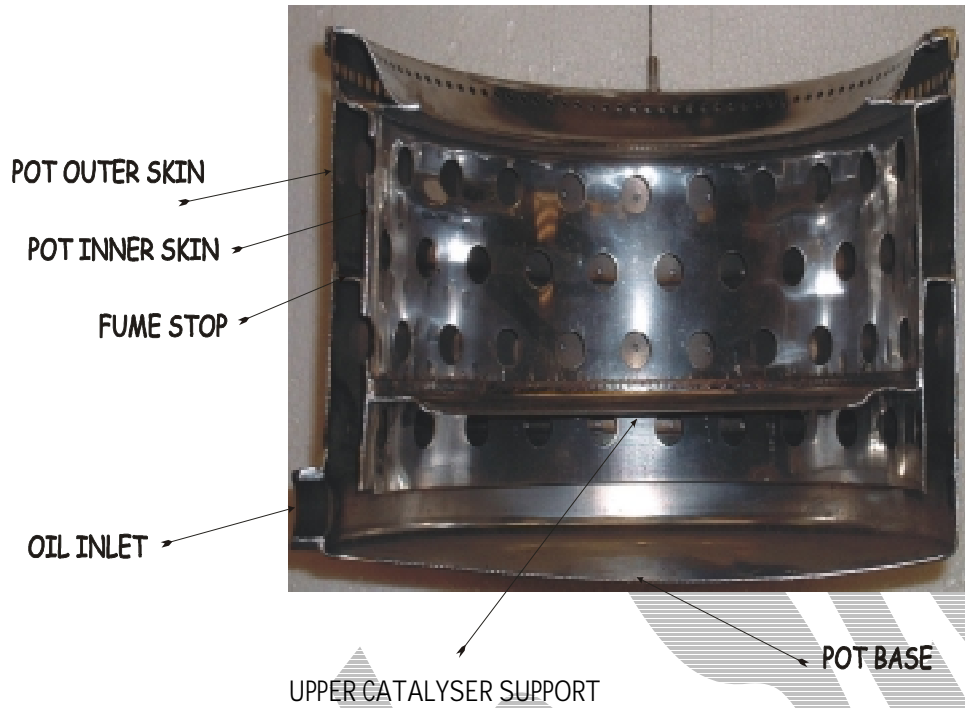
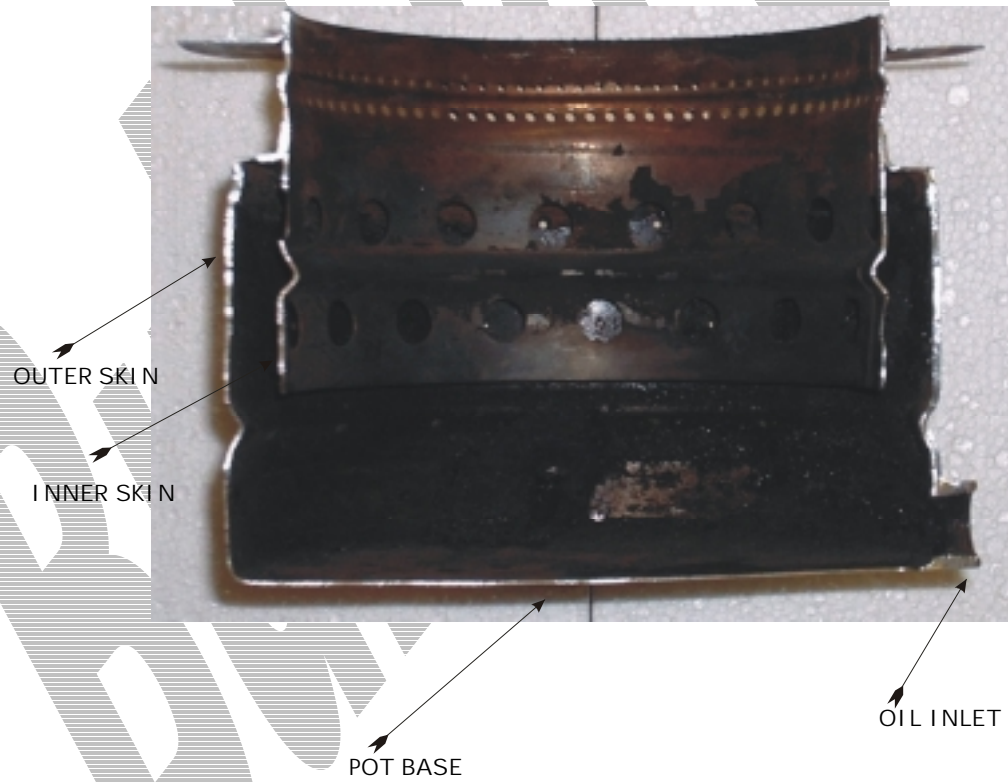


FIG 3 SECTION OF CORNER AND ROUND BUBBLE POT



ADDITIONAL PUBLICATIONS

INSTALLER INFO.

- Bb1
- Bb2
- Corner Stove
- Bubble PJ

USER INFO.

- Bb1
- Bb2
- Corner Stove
- Bubble PJ 12/24 volt dc
- Bubble PJ 12/24 volt dc
- Bubble PJ 230 volt ac

PARTS LISTS

- Bb1
- Bb2
- Corner Stove
- Bubble PJ 12/24 volt dc
- Bubble PJ 230 volt ac

PRICE LISTS

- Oil stoves
- Marine Oil Stoves
- Conversion Kits
- Oil Spares Price List

OTHER INFO.

- Toby Valve Booklet
- OCI Ships Valve Booklet
- Deck Flange Info
- Digital Time clock Info
- Flexaflame and Pressure Jet Conversions.
- Vaporising Pot Conversions
- Gas free Cooking and Central Heating
- Unvented heating system.
- Water circulating pump leaflet.

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