

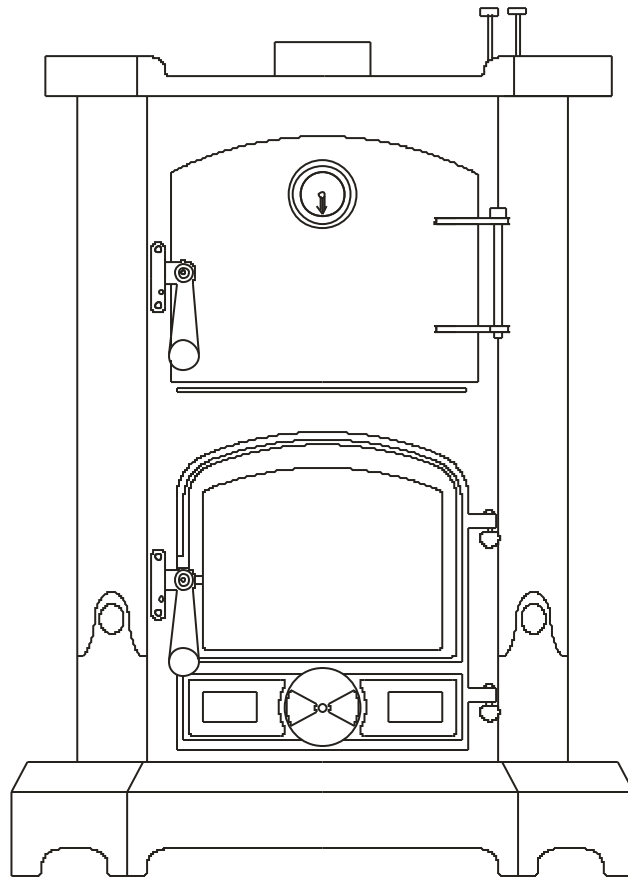


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USER SHEET

CORNER OIL OVEN APPLIANCE

USER INFORMATION ISSUE 1



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1-0 INTRODUCTION

The corner oven stove is a simple development of the corner oil stove incorporating a small oven built directly on top of the corner oil stove.

The oven will reach a pro rata temperature in line with the setting of the fuel flow control knob and with experience the user will learn the oven temperature scale in line with the position of the oil flow control knob WHICH IS NUMBERED FROM 1 TO 5.

Note that the dry oven stove will reach higher cooking temperatures than the wet stove because of the cooling effect of the water heating boiler.

The oven temperature gauge gives approximate oven temperatures in deg C.

The base of the oven, being nearer the flame, can be used for higher temperature cooking such as frying and boiling and the higher part of the oven can be used for lower temperature cooking note that for frying and boiling in the bottom of the oven the burner oil control will have to be turned up to the higher outputs.

In general when cooking veg, bring the pan up to temperature on the base of the oven and as soon as it has reached boiling point transfer it to the top plate where it should hold a simmer, use low water content pans with self sealing lids.

Whilst the veg cooks on the top plate, meat should be cooked on the bottom or centre of the oven.

AGA stackable stainless pans up to 2 litre x 200 dia or smaller can be stacked in the oven.

(See AGA cookshop booklet for details.)

Smallish frying pans with detachable handles are most useful on corner ovens as with the handle removed the oven door can be closed and cooking residue will vent off through the internal oven vent.

The triangular shape allows the appliance to be fitted with minimal use of space, allowing easy access past it and better integration with internal décor.

The triangular base acts as a built in drip tray and positioning device to allow adequate clearances for air to circulate around the heater panels and convect heat into the boat.

The removable top plate of the appliance can be used for warming and cooking items which have been brought to the boil, as previously mentioned, on the base of the oven.

The appliance uses a very economical burner which will run at 4ccs (.24 of a litre per hour) on minimum firing rate and 10ccs (.6 of a litre per hour) on maximum firing rate equating to a consumption per 24 hours continuous running of 5.76 litres low fire.

1. WARNINGS

1. Never try to relight a hot appliance; wait until it has completely cooled down, hot oil vapour is explosive.

2. Never try to light a the burner if it is flooded with oil, when attempting to light a appliance make sure that the pot is not flooded with oil, by looking into the base of the burner.

If it is flooded, remove the excess oil as per instructions in the fault finding section.

3. When attempting to light the appliance in a very cold boat, it is advisable to pre heat the pot and cold chimney to try and get the cold air within the chimney rising.

4. The appliance must not be operated with the glass front door opened or cracked.

2. GENERAL INFORMATION.

The appliance burns fuel oil in a controlled manner utilizing a chimney to discharge the products of combustion.

3. FIREGUARDING.

To prevent the risk of injury through burning a suitable fireguard must be fitted and adequate provision made for guarding the exposed flue pipe if a potential danger is presented.

4. DOOR GLASS.

The door glass may require light cleaning occasionally depending upon the running time of the appliance.

2-0 CHIMNEY PROBLEMS

1. DOWNDRAUGHTING

The hot contents of the chimney are equal to a cylinder of hot air which depending upon its temperature and volume wants to move vertically, with some force.

Exactly the opposite is a chimney full of cold air.

Stopping it moving vertically are resistances such as:

Smoothness of internal wall of chimney.

Chimney bends.

Chimney terminals.

Lack of ventilation. (Air going out must be replaced by air coming in).

2. ATMOSPHERIC CONDITIONS.

Atmospheric conditions at the chimney terminal that could be affected by where the boat is moored.

The boat is moored in a position near to high buildings, high trees or higher surrounding land and downdraughting is occurring.

This can be a serious problem, if there are any of the above in the immediate location (within 100 - 200 yards) of the boat.

Under changing and fluctuating wind conditions downdraughting will occur.

If you have to moor in situations where the above-mentioned criteria exist, and the appliance is running, you must let it go out.

Don't leave the appliance running and unattended.

Don't leave the appliance in running overnight.

3. MIN CHIMNEY HEIGHT FOR HIGH FIRE.

MINIMUM HEIGHT FOR HIGH FIRE RUNNING IS 2.2 METRES (long extension)

When cruising reduce the chimney height and turn the appliance down to match the reduced chimney height.

Do not cruise with the appliance turned up on full output.

4. MINIMUM HEIGHT FOR LOW FIRE RUNNING

MINIMUM HEIGHT FOR LOW FIRE RUNNING IS 1.8 METERS. (Short extension)

When mooring pay particular attention to the surroundings and remember that close objects such as high buildings, trees or adjacent walls may well cause down or up draughting.

Typical flue set ups can be seen in the illustrations showing the flue pipe fitting into a standard cast iron deck flange topped of with a traditional twin wall chimney, terminating with a rotating cowl.

3-0 FUEL SUPPLY PROBLEMS

There are several problems relating to fuel supply of which you need be informed.

WAXING - TRIM - ROLL

1. WAXING

Diesel has a nasty habit of waxing up when the temperature gets down to or lower than freezing,

This waxing or thickening alters its flow characteristics and consequently what was an adequate fuel feed supply can rapidly turn into an inadequate one when the temperature starts to fall.

The worst scenario is fuel feed pipe 50-60 feet long in 8mm dia. pipe.

The best-case scenario is a fuel pipe 4 feet long in 15mm dia with good insulated lagging.

2. OIL PRESSURE AT THE APPLIANCE.

Because of the layout of a boat it is not possible to provide a high pressure gravity oil supply, in most cases a pressure head of out 18" is all that is available and as the tank empties this head of pressure will reduce, and may alter the flow characteristics of the fuel.

In some cases this head can also be affected by the ballast or trim of the boat, the changing level of the boat due to addition removal of ballast, fuel or water can have an effect on the position of the oil tank in relation to the appliance and the angle at which the oil line is established.

Take great care to monitor all the effects of the different ballast and trim possibilities.

Make sure that adequate oil feed is always available at the outlet end of the fuel pipe before it enters the oil control valve at the appliance.

In certain cases where it is not possible to fit a gravity oil feed, the installing engineer may decide to fit an electric pump designed to provide fuel at a constant pressure.

3. POOR OIL FLOW PROBLEMS.

Bubble appliances have a very accurate oil flow control valve, which is set up to give a precise oil flow at high and low fire.

For example the appliance is flow rated at 4cc per minute on low fire and 10cc per minute on high fire.

The test flow through the supply pipe should be well in excess of the maximum flow rate of 10ccs even when the temperature is below freezing and the boat is adversely trimmed.

4. OIL FEED SET UP.

Always add a suitable proprietary antifreeze additive to the appliance fuel for wintertime running.

The fuel tank should have an isolation valve before an easily replaceable cartridge filter and an isolation valve at the appliance.

In addition there should also be a firevalve located close to the appliance.

The fire valve has a capillary tube on the end of which is a temperature sensitive phial; the phial is fitted into 15mm pipe clips in front of the drip tray on the fireplace hearth, directly in front of the combustion air restrictor.

Should the wind ever blow down the chimney, hot air flowing out of the combustion air restrictor will trip the remote sensing valve and automatically close down the fuel supply to the appliance.

In this case the valve is acting as a flame failure device.

The oil control valve also acts as a further safety device in as much as it cuts off the supply of fuel after a flame out.

The sensing phial will be visible through the bottom of the fender.

If the Bubble appliance is fitted up to the first bulkhead the isolation valve may well be fitted outside the cabin or saloon of the boat and you should make sure that you know where it is and how to operate it.

Because of the high risk of fuel contamination with water, we strongly recommend the fitting of a high volume water trap in the oil supply line.

If there is a water trap fitted, make sure that you are fully familiar with its operation and service requirements.

In case of emergencies, a suitable and serviceable fire extinguisher should always be readily accessible near to the appliance.

4-0 HOW IT WORKS

The appliance generates heat from burning pre heated oil vapour, mixed with air in a vaporizing pot located in the bottom of the appliance.

Once ignition has been established, oil goes into the pot at a steady and controlled rate via gravity flow, metered by the OIL CONTROL VALVE the oil flow

can be controlled from minimum to maximum or any setting in between determined by where you set the oil flow control knob.

Air is sucked into the pot by the natural action of the negative pressure in the chimney and to allow the chimney to work correctly it is essential that you have adequate, unrestricted ventilation into the area where the appliance is situated.

The amount of oil that can be successfully burned is directly proportional to the amount of air that the chimney can draw into the pot and so to achieve adequate combustion a balanced and appropriate flow of both oil and air is required.

As stated earlier, the air side of the equation can vary wildly with the changing performance of the chimney and so to compensate for this the appliance has a built in combustion air restrictor designed to maintain a steady and constant supply of combustion air to the burner.

The flow of oil into the pot can be adjusted via the knob on top of extension rod rising up from the oil control valve.

With the increased flow of oil, extra heat is generated, which in turn stimulates the chimney to work harder and consequently draw more air into the pot to maintain an adequate fuel air ratio.

1. DESCALING CONTROL

NOTE WELL

The descaling lever must not be touched whilst the appliance is running; it gets very hot and if touched, will cause severe burning.

The descaling device is situated behind the lower left hand side panel, which has to be removed to gain access.

After removal of the panel you will see a brass tee piece where the oil line is connected to the bottom of the pot.

Protruding out from the tee piece is a bent lever, which is used for descaling carbon build up from the inside of the oil inlet connection.

1 Rotate the lever occasionally to remove any carbon build up at the point of oil entry into the pot.

The descaling device has a gland packing nut which must be tightened occasionally to stop oil fume leak. The sealing gland will need to be replaced every second year.

2. APPLIANCE COMPONENTS

The appliance has the following components, which can be removed for cleaning or servicing.

The top frame x1.

The hot plate.

The small lower side panels 1 x left and 1 x right hand sides, removed by undoing the brass knobs.

The front fender.

The inner catalyser.

The inner flame ring.

5-0 RUNNING THE APPLIANCE

You must familiarise yourself with all aspects of appliance control and your installing engineer will be able to go through this with you.

1. OIL CONTROL VALVE DETAILS

The output of the appliance is regulated by the amount of oil allowed to go into it and this function is controlled by the OIL CONTROL VALVE (O.C.V.), which is situated at the right hand side of the appliance, behind the right hand side panel.

Oil flow is controlled by turning the knob anti clockwise from its off position.

The control knob is located at the top right hand side of the appliance and is calibrated from off position (fully clockwise) through 6 graduations to maximum.

On boiler stoves there is an additional control knob which is used in conjunction the oil flow control knob to set the water temperature from low to high.

2. LIGHTING.

When lighting the appliance from cold it is advisable to pre heat the pot and cold chimney to try and get the cold air within the chimney rising.

Lighting the appliance takes a little time and patience; the following procedure should be adopted

Open the front door.

Remove the inner mesh catalyser.

Using the oil flow control knob, turn the oil on at full rate and allow oil to flow into the bottom of the pot to form a pool about the size of a digestive biscuit and then turn the oil off.

DO NOT ALLOW ANY DEPTH OF OIL TO BUILD UP.

Light a small piece of firelighter (about the size of a pineapple chunk) and place it into the centre of the pot.

Replace the lower burning ring, the mesh catalyser and the coal kit and then leave the door slightly open whilst the firelighter gets the oil going.

You will notice the flame start to establish itself and spread around the bottom of the pot, after one minutes it will start to die down at this stage turn the oil flow on to setting 1 and close the door.

The flame should then slowly change from yellow into blue flame combustion and settle down to a steady burn.

Watch the flame during and after the lighting process and if it starts to grow and become yellow turn the oil off immediately and wait until the flame starts to die down, when the flame starts to die down turn the oil control on to setting 1 and the burner should then settle down into blue flame combustion.

Note there may be the occasional growl or audible vibration whilst the burner settles down into blue flame combustion.

Do not turn the oil control knob up by any more than one increment.

Allow 5 minutes for the burner to stabilize at each adjustment.

Do not leave the appliance unattended during the lighting procedure.

On cold boat ignitions do not turn the appliance up to full fire until the chimney and appliance are up to temperature.

6-0 FAULT FINDING

1. OIL WILL NOT ENTER THE BURNER POT

Is the oil tank full of oil?

Is the oil contaminated with water?

Has the appliance been serviced recently?

Make sure that the fuel tank has an adequate vent.

Are the isolation valves turned on?

Has the KBB fire valve tripped off?

Has the safety thermostat on the oil control valve tripped off?

Make sure that oil is available at the point where the oil feed pipe is connected to the oil control valve.

Make sure that oil is flowing out of the oil control valve.

Make sure that the fuel feed pipe from the oil control valve to the burner pot has been removed and cleaned.

Make sure that the descaling device has been removed and cleaned.

Make sure that the burner pot base is clean and free of carbon build up.

1A. WATER CONTAMINATION

A major problem on boats is water contaminated fuel.

Because of changing temperature, condensation droplets can build up on the inside of the fuel tank.

These droplets along with other sources of water contamination can cause a serious problem if not attended to.

Always keep an eye out for water in the oil.

Make sure that you check the filter bowl regularly.

If your appliance is fitted with a Toby DVR oil control valve, it can be drained off without removal from the appliance.

The small drain screw is located at the bottom of the valve.

1B. RACING

1. Audible vibrations generated by the flame caused allowing by too much oil in the pot, too quickly.

1-1. Turn off the oil flow until the burner has settled down to a steady burn rate and then 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.

2. FLUE VACUUM

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

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

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

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

Check that the correct fuel oil is being used.

3. BURNER RUNS SOOTY.

Comments made on this subject assume that the appliance has been running normally for some time.

If the appliance soots up this indicates that there is not adequate air for blue flame combustion or there is an excess of fuel.

Check that the chimney is working correctly. (This means pulling enough air into the burner to allow correct blue flame combustion to occur.

Check that the fuel is the correct type and quality.

Check that the flow rates are correct.

Where burners are incorrectly installed and are allowed to run at high fuel flow rates on low chimney vacuums, long unsatisfactory yellow flame combustion and bad sooting will occur.

To rectify this problem call your service engineer.

Never switch from low settings straight up to high settings, a longer burner life will be achieved if the oil flow control knob is moved only by one number at a time leaving approx. two minutes between each setting change.

4. BURNER DOES NOT LIGHT EASILY

Read the instructions in the lighting section of this publication.

5. OIL WILL NOT ENTER THE POT

1. Is there oil in the fuel tank?
2. Has the fire valve tripped?
3. Has the isolation valve been accidentally turned off?
4. Is the oil turned on at the oil flow control knob on the valve?
6. Is the oil feed pipe from the valve to the pot blocked? (Unlikely)

(APPLIANCES WITH BOILERS)

7. Has the oil trip lever tripped off?
8. Has the boiler stat tripped off?

6. OPERATING OIL FLOW RATES.

OIL Flow rates in cc per minute.

min	max
4cc	10cc

Oil Flow Rates In litres per hour.

.24 litres .6 litres

Oil Flow Rates In litres per 24 hours.

5.76 litres 14.4 litre

Oil Flow Rates In litres per 7 x 24 hours.

40.32 litres 100.8 litres

To achieve optimum burner performance at these flow rates you will need to have matching flue vacuums as stated.

7. OIL SMELLS

Visual check on all joints for obvious leaks.

Check that the descaling lever packing gland nut is adjusted.

8. DEFLOODING A FLOODED POT

If the appliance is blown out by severe down draughting oil will run into the pot to a depth of approx 15mm and then stop. If this has occurred do not attempt to light the pot until it has been de flooded.

To carry out this procedure you will need:

A small, leak proof plastic bag.

b. A small sponge.

A larger plastic bag for disposal of the residue.

A pair of disposable plastic gloves.

Put a small plastic bag into the appliance and sponge from the pot into the bag, when the excess oil has been removed put the plastic bag and sponge into another plastic bag and dispose of it.

9. OIL LEAKS

If the appliance has blown out, flooded oil should not leak from the pot, if it has leaked into the drip tray it will have come from the descaling seal or the boat could have been subject to heavy movement causing the oil to splash around and leak through the air holes in the side of the pot.

7.0 ROUTINE MAINTENANCE

1. Every 4 weeks:

Operate the descaling lever by turning it completely two or three times.

2. As required:

Clean inside of door glass.

3. Every eight weeks:

Clean the burner completely by removing all the inner components as follows,

1. Open the front door via the circular brass knob.
2. Remove the coal kit if it has been supplied with the appliance.
3. Remove the inner mesh catalyser
4. Remove the lower burning ring.

Scrape the bottom of the pot clean and remove all carbon build up.

Reassemble in the reverse order.

4. Every 24 weeks:

Tighten up the gland nut on the descaling device to stop oil smells.

5. Once per year:

Have your service man replace or clean all the filters in the oil supply line.

6. Every two years:

Have your service man clean out the filter and check the function of all the safety equipment associated with the appliance, oil supply and plumbing system.

Remove and clean out the oil supply pipe from the valve to the pot.

7. As required:

Keep the Coals, Coal kit, and burner inners in good condition, replace as necessary.

8-0 WARRANTY

1. Fill in the warranty form and returned it to us, the information recorded on the warranty form helps us to deal with any problems you may encounter.

2. Where we do not hold returned warranty forms replacement parts would only be issued when we are sure that the appliance has not been damaged by improper use or installation.

3. The warranty covers PARTS ONLY for a period of ONE YEAR and is conditional upon all the

requirements of our installation instructions being fully adhered to.

4. LABOUR, TRAVELING OR CONSEQUENTIAL LOSS OR DAMAGE IS NOT COVERED.

We will attend to any legitimate warranty claims (which must be made in writing) but we will make a charge for travelling and labour.

4-1 Glass is not covered under the warranty.

5. ARRANGE FOR SERVICE visits with a service engineer.

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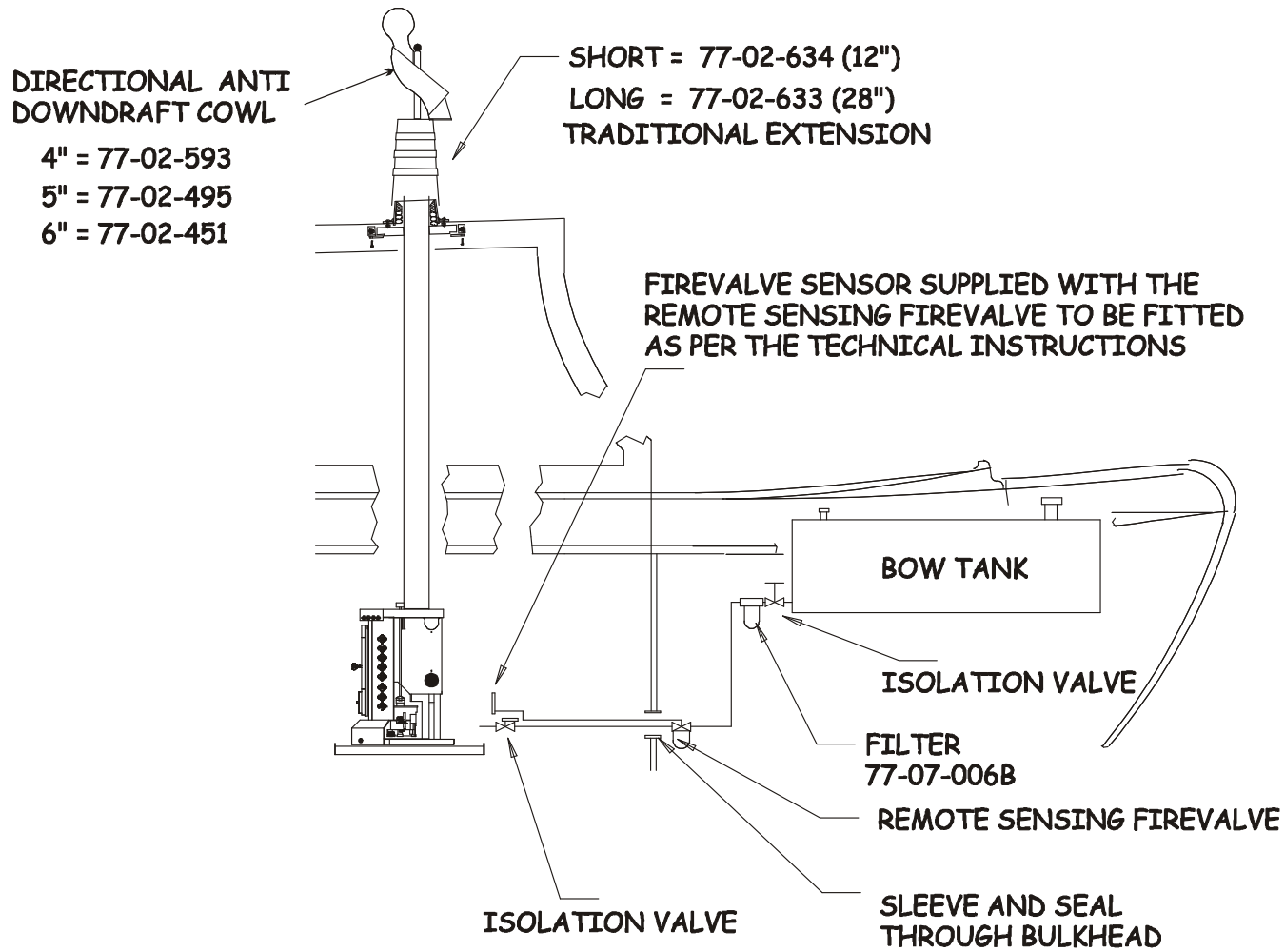
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FIG 1 PREFERRED OIL LAYOUT.



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FIG 2 FLUE LAYOUTS

