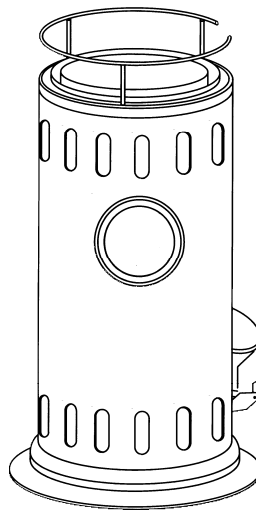


LOCKGATE REFLEKS

2000KT/KVT

USER OPERATION MANUAL

2000KT/KVT
(MK3)
(Double Envelope Burners)



Lockgate Stoves Ltd
Long Eaton, Nottingham
Tel: 0115 9988 305/07545 394 384
Web: www.lockgate.com

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★
 ★ SAFETY PRECAUTIONS BEFORE LIGHTING THE STOVE ★
 ★ **NEVER LIGHT** ★
 ★ A) A stove that has been extinguished and is still hot. ★
 ★ B) A stove that has any oil in the burner pot. ★
 ★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

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4	Ignition / Thermocouple / Spirit to fuel sequence
5	Fuel temperature / Cleaning Needle Assembly
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7	Operation of Thermocouple / Cleaning Needle
8	Maintenance Diagram of Burnerpot
9	Exploded diagram of Oil Regulator
10	Adjustment of Regulator / Overboil Sensor
11	Cleaning Tablets / Guarantee

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PRIMING THE STOVE WITH FUEL

Turn on fuel tank tap, bleed fuel filter (if fitted), turn on fuel tap/safety fuel tap fitted (if fitted) close to stove.

Remove burner net and burner ring located in burnerpot.

Pull up the switch on the end of regulator, lever will latch up.

Lever indicated on regulator cover as 'Lift Open'.

Turn regulator control knob, from OFF (All the way clockwise) to maximum, (All the way anti-clockwise).

Stoves with a Thermo-couple flame failure device fitted will also need to hold down the plunger while priming until fuel can be seen in the burnerpot.

The fuel travels from the regulator through the copper pipe to the cleaning needle (brass tee piece with stainless 6 mm pin extending from it) and then through the feeder tube into the burnerpot. The entry point of fuel into the burnerpot is found by following the line of the feeder pipe into the burnerpot and viewing from the inside.

When fuel can be seen flowing into the burnerpot, (this can take a few minutes), switch the control knob to OFF.

Replace the burner net and ring.

The stove is now primed and ready to light.

(The priming procedure is only required when the stove is installed or the fuel tank has been allowed to run out of fuel)

LIGHTING THE STOVE

- 1) Raise the hinged hotplate.
- 2) Check the burner ring (located in rim half way down burnerpot) and burner net (circular disc in gauze uppermost) are located correctly.
- 3) The start medium is methylated spirit, pour 50 ml, use measure, into burnerpot and throw a lighted match directly down into it. Close immediately. Re-opening during the start process can extinguish the stove.

4)

Do not look down into burnerpot when lighting the stove

IGNITION

On ignition the spirit will burn with a blue flame. Allow the spirit to burn for 3/4 minutes, during which time the condensation on the glass will clear and the burner net will be seen to start to glow red, and the flame will increase to high flame. (Flames coming out of the top row of burner holes)

At this point turn the regulator grey control knob from OFF to "Position 2" and also check the control reset lever located at the end of the regulator is pulled 'UP' in the 'ON' position.

(See note, Fuel Temperature Page—5)

STOVES FITTED WITH THERMOCOUPLE

On stoves fitted with a thermocouple flame failure device, when the burnerpot reaches high flame during the ignition sequence, press the aluminium plunger, (located on the fuel inlet pipe work, attached to the regulator), in and hold for a couple of seconds. This will latch the mechanism and open the fuel supply feed pipe to the stove.

The probe for this device is located in the top row of holes in the burnerpot, care should be taken when cleaning the stove not to damage or dislodge this probe.

CHANGEOVER FROM SPIRIT TO FUEL OIL/DIESEL

Wait 2/3 minutes before making changes to the control knob to alter the heat setting, this time period allows the pot to heat up and set light to the vaporising fuel oil/diesel. The changeover from spirit to fuel oil is normally indicated by a spitting sound, which is the fuel oil boiling prior to the vaporising process starting.

Turning the regulator control up too soon on starting can cause the stove to over flame (excess oil in burnerpot), if this occurs, switch regulator to OFF and when the flame drops back to medium heat, without letting the flame go out, switch the fuel back on to a low number setting.

FUEL TEMPERATURE—LOW HEAT SETTING

The Fuel Controller flow rates, i.e. cc/min, are calculated at a fuel temperature of 25 deg Celsius. This “working” temperature is achieved by heat transfer from the stove case and the ambient temperature of the cabin. As the outside temperature drops, the viscosity of your fuel increases and the controller cannot deliver the same volume of the thicker fuel to the burner pot. At intermediate and higher settings this has little operational effect, but at lowest setting it can cause the burner to go “off flame” because of insufficient fuel, due to this combination of a lower temperature, thicker fuel and a cooler stove case not being able to raise the incoming fuel temperature sufficiently.

As a general guide, when outside temperatures are low, on lighting the stove avoid using the lowest heat setting for at least the first hour and do not leave the stove to run for long periods on its lowest setting. If the stove is burning cleanly and using the full circumference of the burner pot it is operating above the “off flame” level.

CLEANING NEEDLE ASSEMBLY

The Cleaning Needle is located in the brass tee piece at the end of the fuel feeder tube into the burner pot. It is a 6 mm stainless steel pin with the end bent at 90 degrees.

When the stove is in use the pin should be pulled back so that the end is not protruding into the inside of the burner pot. (Failure to pull the pin back will result in heat transmitting down the pin and damaging the seal in the tee piece, also the fuel will prematurely ignite on entry to the burner pot causing irregular flame pattern.)

The cleaning pin is used to keep the fuel entry to the burner pot clear of combustion scale, to do this, push the pin in and out two/three times.

This procedure should be carried out every third day of continuous running

Never run the stove with the cleaning pin removed

Maintenance

The stove requires cleaning when:-

- 1) The stove will not burn with a clean flame and combustion deposits occur in the burner pot
- 2) The stove extinguishes itself without reason.

Cleaning the stove. (Manually)

- 1) Remove the burner net and ring from the burner pot
- 2) The burner pot is cleaned with a wire brush and a scraper on the inside base. The top row of holes round the burner pot are clearly visible and normally never need cleaning. In the side wall of the burner pot are a series of 12 mm holes (inner envelope), behind each of these holes, centrally located, are the air intake holes, 2mm, (outer envelope). These should be cleaned with a small rod/drill held between two fingers. The air space between the two envelopes should be kept clear of deposits. In the base wall of the burner pot, just below the inner envelope, there are also small holes which should be clean and free from deposits.
All loose combustion scale should be removed from the floor of the burner pot with a vacuum cleaner.

Use gloves when cleaning inside the burner pot.

Decommissioning Stove.

If the stove is to be left for long periods without use, the following procedure should be adopted.

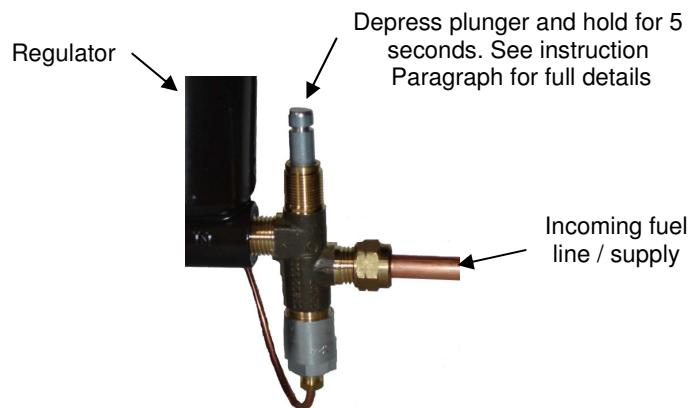
With the stove running.

Switch off fuel at fuel tank, switch off fuel tap/safety tap (if fitted) close to stove.

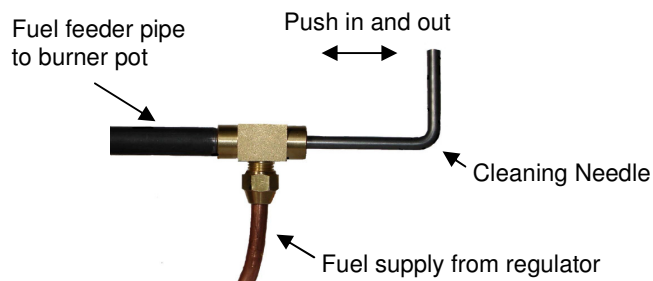
Turn regulator control knob to maximum, (All the way anti-clockwise) and wait for the stove to extinguish.

Note: The stove will need to be primed following this Procedure for next use. See 'Priming the stove'

Operation of Thermocouple



Operation of Cleaning Needle



The Cleaning Needle should be pushed in and out 2/3 times every third day of continuous running of the stove. Burning of the fuel oil produces combustion scale in the area around the fuel entry point of the burner pot, using the cleaning needle breaks up the build-up of the scale allowing the fuel to flow freely into the burner pot.

When the stove is running the cleaning needle should always be pulled back with the tip out of the flame area, leaving the cleaning needle pushed in causes pre-ignition of the fuel causing irregular Running, and heat transfer along the shaft causing damage to the oil seal.

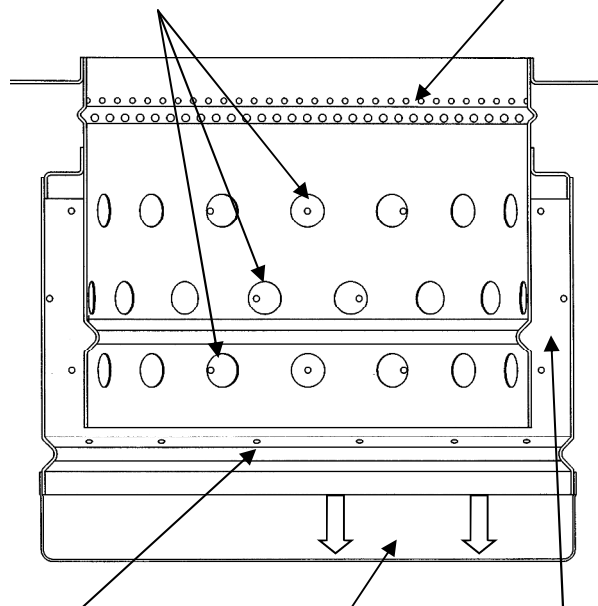
Maintenance - Double Envelope Burner Pot

Intermediate Flame Burner Holes

Behind each large hole of the inner envelope, located centrally, is a small air intake hole, clean by using 2 mm drill bit (or similar metal rod) held between the fingers, push through the hole to ensure it is clear and not blocked.

High Fire Burner Holes

Normally requires no maintenance



Low Flame Burner Holes

Situated on the lower side of the ridge. Ensure these are clear, paying particular attention to the section either side of the fuel inlet

Burner Pot Base

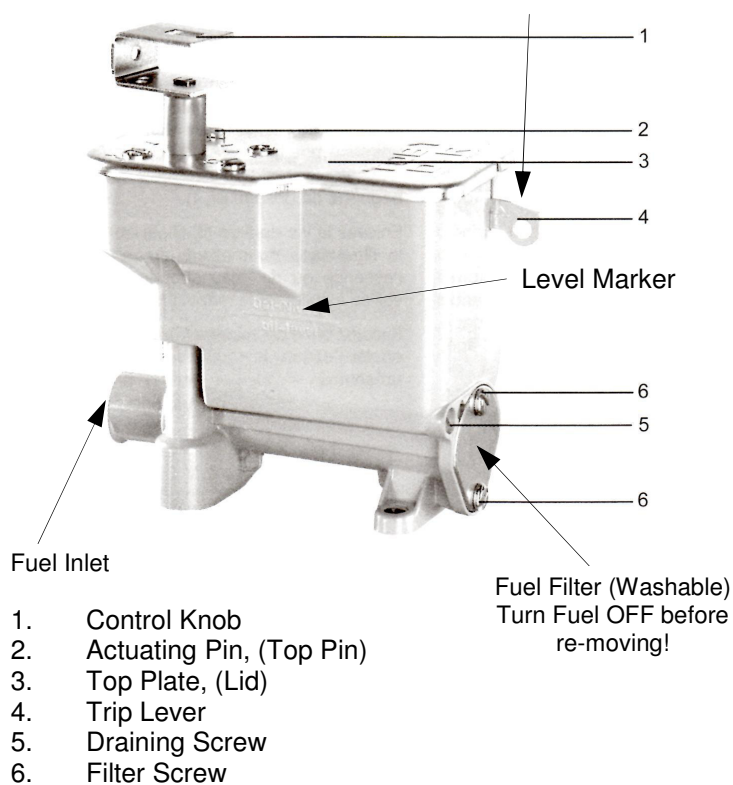
Remove combustion scale from base by scrapping, only use a mild pressure when scrapping. Use cleaning needle after to ensure scale has not blocked inlet

Space between Inner and outer envelope should always be clear, again check area either side of fuel inlet

Oil Regulator

Main Jet Cleaning

To access, remove the two silver screws in top plate and lift top plate off. Make sure the fuel supply to the regulator is turned off. Directly below the control knob is the main jet and remembering the position, take a picture is possible, should easily be lifted out. (Slot located at end of barrel, clean with corner of piece of paper) Replace ensuring top pin goes through top plate before screwing down.



Please Note: The adjuster screws are factory set at the correct rate for your stove. These should not be turned.

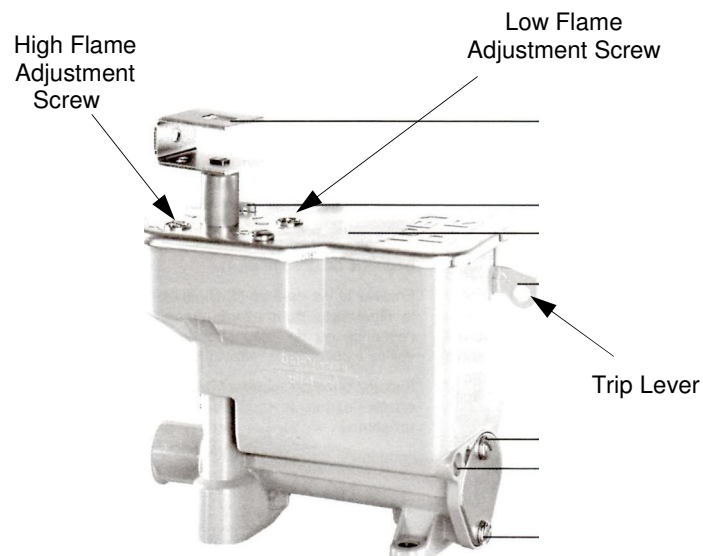
Regulator Adjustment

Trip Lever Operation

When the trip lever operates, this can be for two reasons.

- 1) the regulator has detected excess movement,
- 2) the over boil sensor has detected the water temperature it is set for. (if fitted)

Re-set by lifting the lever once. Fuel will continue to flow.



These screws are warrantee protected

The High and Low Flame adjustment screws are very sensitive, they have been factory set and tested. Turning these screws will void the regulator warrantee and effect the stoves true running and ability to dispense the correct amount of fuel, effecting the stove overall.

Seek advice before turning any screws

Cleaning Tablets

Cleaning the stove.

To keep the stove running at optimum performance, we supply cleaning tablets (packet of 10) designed for vaporising burner pot stoves. The tablets chemically clean the stove and flue system. First clean the stove, (see page 6).

Place a cleaning tablet in the base of the burner pot and light the stove normally, when the stove is vaporising and running on the fuel oil, (the stove will burn with green flames), turn up to half power. Allow to run at this level for 30 minutes, then turn to low heat for 15 minutes, then high heat for 15 minutes, return to medium heat until the flames return to normal colour.

This procedure will clean all segments of the burner pot.

Using a tablet every couple of weeks will keep the stove running at optimum performance and making the most efficient use of the fuel.

GUARANTEE

- 1) One year guarantee against material failure and manufacturing faults from date of purchase.
- 2) The guarantee covers only spare parts unless the product is sent carriage paid to Lockgate Stoves Ltd (Valid only if the product is purchased in the U.K.)
- 3) The guarantee does not cover mistreatment of the product, and the guarantee on Regulators is invalid if the seals on the adjusting screws are broken.
- 4) If the product is purchased in a country other than the U.K., details of the guarantee should be obtained from the distributor.

LOCKGATE STOVES LTD

Manufactures and suppliers of Marine Diesel Heaters

Tel: 0115 99 88 305

Tel: 07545 394 384

Website:- www.lockgate.com

E-Mail:- info@lockgate.com

