# NESTOR MARTIN

# OIL



### INSTALLATION AND OPERATING INSTRUCTIONS

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A Nestor Martin oil stove is the elegant result of many years of engineering research and design expertise.

It was built by people who are justly proud of knowing the Nestor Martin oil stove is the finest stove produced and would like to know their efforts will bring many years of pleasure, instilling the pride of ownership it deserves.

Before beginning the task of installing the stove it should be remembered that it will be the major attraction in any room when it is lit and will continue to add character even when cold.

We hope this manual will answer all the questions that may ever need answering about the stove, but it should not be regarded as more than a general guide, highlighting the requirement of a good installation.

We recommend the installation of the stove is carried out by suitably qualified persons working to the local Codes and rules which are current at the time of installation.

### **1. INSTALLATION**

The complete installation must be carried out with due reference to the Standards and local Codes. It should be noted that the requirements and these publications may be superseded during the life of this manual. We recommend the installation of the stove is carried out by suitably qualified persons working to the local Codes and rules which are current at the time of installation.

### MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS





**Corner installations** 

| Measurement<br>(mm) | Α   | В   | С   | D   | E   | F   | G   |
|---------------------|-----|-----|-----|-----|-----|-----|-----|
| H11 / S21           | 450 | 300 | 200 | 250 | 300 | 300 | 300 |
| S31                 | 450 | 300 | 200 | 300 | 300 | 300 | 300 |
| S41 / H41           | 450 | 400 | 200 | 300 | 400 | 400 | 400 |

The measurements given are for advice only. In all installations surrounding flammable materials must not exceed 80°C. The stove must always stand perfectly level and have sufficient space allowed for service work. These clearances can be reduced by:

A. Using heat shield as listed in AS/NZS2918:2001 or AS1691:1985

B. Using a sheet metal spacing 22 mm from the wall, clearances may be reduced by 50%.

Our oil stoves do not require the use of floor protection.

### SEISMIC RESTRAINTS

The stove must be fixed to the floor using two heavy wood screws (for a wooden floor) or 2.5 mm Dynabolts or similar device, for a concrete floor. The restraints should be fitted through the holes in two diagonally opposite feet.



### THE FLUE

There is often confusion as to the terms "flue" and "chimney" and for the purposes of this manual we define whatever duct conveys the products of combustion as the flue, and the term chimney to mean any masonry structure within which the flue may be contained. It is upon the flue's ability to provide a consistent negative pressure or draft that the efficiency and reliability of the stove will depend and it is therefore important to understand what can affect the flue's performance and how to ensure the flue installation provides your stove with the optimum operating conditions.

However well the fuel metering valve is calibrated, good combustion is dependent on the correct amount of air being supplied to the stove at all times and this is ultimately dependent on a correct and stable negative flue pressure. The initial flue draft is created by the gas confined within the flue being hotter and therefore lighter than the air outside the flue. The tendency for the hot gas to move up the flue is proportional to the height of the flue, since the difference in weight of equivalent columns of air and flue gas is greater the higher the column. Whilst this may be theorectically true, in practice, because the temperature of the flue gas is cooled through the wall of the flue and the flow is slowed by the friction of the internal surface of the flue, the benefits of extreme flue heights are negated.

The need to minimise the fluctuating effects of wind by having very hot flue gas temperatures inducing the greatest possible constant negative pressure within the flue, conflicts with the ideal of utilising all the heat generated within the stove for heating.

The compromise is to ensure that whatever heat it is necessary to expend on creating a gas flow within the flue, the flue makes the most efficient use of this heat by being constructed with an internal surface as smooth as possible and by being thermally insulated. Both these requirements can be met in an existing chimney by lining it with a stainless steel oil liner insulated with vermiculite or mineral wool, and where no chimney exists, double walled insulated stainless steel flue systems are available.

### **ATMOSPHERIC INFLUENCES**

Wind blowing across the flue terminal will increase the negative pressure within the flue proportionately to the wind speed, but as wind speed is never constant the varying effect this has on the stove would be unacceptable. To control this, the stove is fitted with a draft stabilizer. When the negative pressure approaches the desirable upper limit the stabilizer will open, drawing air directly into the flue to supplement the flue gases coming from the stove, thereby reducing the negative pressure to within its limits. When the wind speed decreases the stabilizer will close to return the full negative pressure of the flue to the stove. When the stove is commissioned the negative pressure within the stove is measured and the stabilizer is adjusted to suit the characteristics of the flue, ensuring it gives the optimum control.

If the flue terminal is too low in relation to the roof, or is masked by other buildings, it is possible for winds coming from certain directions to have become so turbulent that the stove's stabilizer will be unable to respond quickly enough to the changing conditions. Trees often create turbulence problems that cause difficulties because they are often overlooked in the search for the culprit. Not only are the aero-dynamics of trees changed with the seasons and leaf growth, but a large tree may have no effect for many years and its last foot of growth may never be suspected as the cause of a previously well controlled stove becoming erratic. No « patented » cowl fitted to the flue terminal will overcome serious wind turbulence, but minor turbulence can often be reduced to acceptable levels with a suitable «model». For major turbulence problems, increasing the height of your existing flue or demolishing the offending obstruction will be the only effective cure.

The term «down draught» is often used erroneously to explain almost any flue unable to sustain sufficient thermally induced gas speed to overcome high pressure zones caused by winds hitting an obstruction beyond the flue terminal. In most instances this is caused by a poor flue cooling the flue gasses and a cure would be effected with an insulated pipe. True « down draught » affects houses situated on or near to hills, when cooling air travels down the hillside.

This wind, called katabatic wind, can normally be controlled with an efficient flue system and suitable cowl, but if the wind causes a high pressure zone at the flue terminal, resitting the flue to the opposite side of the house may be the only effective answer if an otherwise satisfactory flue causes a problem. The opposite condition, when warming air travels up a hillside giving anabatic wind, can produce very high negative flue pressures which will sometimes necessitate a barometric damper being fitted to the flue.

Windows and doors opened down wind of prevailing winds and the running of large extraction fans without adequate ventilation may cause the flue to stall or even become positively pressurised with potentially dangerous consequences. Any smell of flue gasses within the house should be investigated immediately. Damp weather is one of a multitude of atmospheric conditions blamed for poor flue « draught » . There is no theoretical or practical foundation for these, only the existence of an oversized, cold and damp chimney needing lining and insulating.

### VENTILATION

The ventilation to provide the stove with air has to be regarded as an integral part of the flue system, because unless the air passing through the flue is replaced with equal amounts of air entering the house, the flue will cease to function. The colder the outside temperature and the harder the stove is working to maintain the required temperature inside, the colder the incoming air and the greater its flow. No amount of strategically positioned knitted draught excluders will overcome the laws of physics or your discomfort if ventilation not being given the planning it deserves.

Any room or space containing an appliance should have a permanent ventilation opening of free area at least 550 mm<sup>2</sup> (0.8525 square inches) for every kilowatt (3,412 BTU) of rated output above 5 kilowatts (17,060 BTU)

### FLUE PRESSURE ADJUSTMENT

The flue creates the negative air pressure within the stove which induces the air into the burner. For the correct operation of the burner this air flow must be proportioned to the firing rate of the burner. The following chart illustrates the required negative air pressures relative to the burner settings, with the shaded band giving the tolerance within which the burner will give satisfactory performance.

### **Correct Flame Pattern**

No assessment of flame size or pattern should be made until the stove and flue have reached full operating temperature and the correct negative pressure within the stove has been achieved. All adjustments to the oil metering valve should be followed with a 10 minute period of undisturbed running before making any assessment and several minutes should be allowed for the flue draft to stabilise after adjusting the flue stabiliser.

### Low Fire (Minimum)

The catalyser will glow brightly from its inner core of vanes and with a dull red blow from its outer vanes, with the only visible flames being horizontal blue translucent jets dancing between the catalyser and the holes in the burner cylinder wall.

### Low Fire (Maximum)

The main body of the flame should be a translucent ring, beginning from the top row of holes in the burner body and finishing approximately 1.18 inches above the burner rim. The complete catalyser should be glowing brightly with blue flame jets dancing horizontally between the calalyer and the holes in the burner cylinder wall.

### High Fire

A bright white/yellow, incandescent flame beginning at the top ring of holes in the burner body and drawing into a thinner column which will begin to break up to gently lick the top of the stove. If the flame size is increased beyond this size and allowed to impinge against the stove top the flame will be chilled and the resulting incomplete combustion will produce smoke.



## **FLUE CONNECTION IDEAL** TO BE AVOIDED Cowl to prevent ingress of rain, birds and/or to assist with flue stablization. Flue liner supporting collar Weather proof chimney capping and pot. 4 • Sound chimney brick work Stainless steel liner All voids between liner and chimney filled with insulation or flue lagging Register plate preventing the escape of heat, positioned as low as practicable to aid convection

Sufficient clearance behind stove for maintenance

Level and stable supporting hearth

### **IDEAL**

### TO BE AVOIDED

### External Flues



Insulated flue providing the minimum horizontal length. Access for cleaning, stove provided with stable and adequate hearth.



Single skin flue with no cleaning access and undesirable horizontal length allowing flue debris to restrict the flue. No allowance for flue expansion and an unstable hearth will both contribute to leaking flue seals.



All voids within the chimney filled with insulating material. Access for cleaning, minimum horizontal path.



With no flue liner fitted and positioned on an unstable hearth makes sealing the flue reliably in this sort of installation impossible, and with no access for cleaning; this installation is dangerous.

### Flue Terminations





Unacceptable



### FUEL LINE AND TANK INSTALLATION

### The Oil Storage Tank

Many fuel companies allow discounts on an oil delivery of more than 500 gallons (2300 litres) and by installing a tank with a capacity of at least 600 gallons (2750 litres). Your customer will be able to take advantage of this arrangement whilst having the security of an adequate reserve.

An easily read level indicator fitted to the tank will help to establish your customers pattern of fuel consumption and so avoid "topping up" the tank with small premium priced deliveries or indeed running out of fuel. It is important that this level indicator is calibrated in volumetric units enabling the oil delivery driver to ensure he does not overfill your tank.

### Type of Tank

Contaminated fuel may do irreparable damage to the installation and as it is impossible to determine whether or not an oil tank is free from contaminates by visual inspection, we strongly advise not to fit a second-hand oil tank. A steel tank will provide an annual opportunity to paint and treat any signs of rust with the knowledge that even a well maintained steel tank will eventually develop rust holes - usually at the inaccessible areas of the tank where it rests on its supporting piers.

A polyethylene tank, will never rot or rust, are maintenance free and it is possible to render them inconspicuous with suitable permanent screening.

### **Position of Tank**

Avoid sitting the tank where it will be subjected to direct sunlight. Warm tanks invariably smell when localised oil spillages vaporise. Sunlight will also create problems by causing condensation within the tank. This condensate falls through the oil (water being more dense than oil) to the bottom of the tank where it will either flow into the stove which may damage the metering valve, or during severe weather freeze and stop all flow from the tank.

The majority of delivery vehicles are equipped to deliver 30 meters beyond the limits of vehicle access but expecting the heavy and unwieldy delivery hose to be threaded nearly through border plants and ornamental hedges is unrealistic.

Try to make the path from delivery vehicle to storage tank as straight and as uncluttered as possible.

To provide the stove with fuel at the correct pressure it will be necessary to have the tank outlet at the maximum 3 meters (118 inches) above the stove's metering valve top. The hightest fuel level must never be allowed to exceed 3 meters above the valve top. If these limits cannot be achieved a secondary reservoir with a lift pump or level control valve must be fitted. You will need to refer to the relevant building regulations and local bye-laws for any restrictions on tank position relative to buildings and boundaries together with the provision of barrier walls that may exist in your area.

Whatever type of tank you fit it must be equipped with two outlets, one to supply the stove and one at the opposite end through which to drain off any accumulation of dirt or condensate from the tank. To facilitate this the tank must be mounted to allow a fall, away from the stove outlet end and towards the drain, of 0.8 inches for every 1 meter of tank length.

If a metal tank is installed it may be supported on brick piers insulated from the tank with a waterproof membrane. A polyethylene tank must be supported over its entire base area.

Do not underestimate the weight of a full oil tank, it is heavy and must be supported with adequate foundations and plinth. All cemented support must be allowed sufficient time to cure before fitting the tank.

### **Tank Fittings and Pipework**

An isolating valve must be fitted directly to the tank outlet, allowing for the maintenance of the other components in the pipeline. These components should include a metal bowl oil filter mounted to allow adequate room for the removal of the sediment bowl and filter element without difficulty. The filter element should be cleaned or replaced at least annually. We do not advise the fitting of plastic bowl oil filters as we consider them too fragile for outdoor, unprotected situations.

Whilst the pipework from the tank to the stove may be in either steel or copper, the fitting of steel pipe necessitates regular maintenance, therefore, the use of plastic covered copper pipe is recommended because it is easily installed and virtually maintenance free. The use of galvanised steel pipe is prohibited because zinc reacts with the fuel.

Where it is possible it may be desirable to bury the pipe, and whilst this is perfectly acceptable it must be done with the utmost attention to the protection of the pipe from damage, both during the installation and throughout its life, as it will not be possible to make inspections for leaks after installation.

Before the pipeline enters the building a fire valve should be fitted which will cut off atomatically the oil supply in the unlikely event of the stove overheating. This valve is controlled by a remote sensing element situated within or near the stove and above the metering valve. Finally, another manual isolation valve should be positioned as close to the stove as possible to enable all supply to be turned off for stove maintenance.

It is possible to bury oil tanks, install them in house cellars and end oil pipework over a tortuous route of many hundreds of yards, but any oil installation other than the most simple should be attempted only by suitably qualified and experienced personnel, with the written approval of your insurance company.



### **2. THE APPLIANCE**

### THE DRAFT STABILIZER

The draft stabilizer works by opening to provide an additional air supply to the flue whenever the flue's negative pressure reaches its upper limit and so checks any rise beyond this limit to maintain the correct negative pressure within the stove.

This system of flue control is universally accepted as both effective and reliable, but as the supplementary air it allows into the flue is drawn from the room, it is desirable to have it open as little as possible.

Where the flue is either subjected to prolonged strong winds, or the flue itself is of higher efficiency than normal, the stabilizer may be unable to supply sufficient air to reduce the negative pressure adequately, or be needlessly wasting room heat by having to supply dilution air constantly.

A second regulator may be fitted to the stove's flue if during commissioning the flue is found to be subjecting the stove to a negative pressure which is too high

for efficient combustion or the longevity of the stove.



### THE CARBURATOR

MODEL TOBY DVR5





- 1. Control knob
- 2. Actuating pin
- 3. Lid

- 4. Control lever
- 5. Draining screw/Drain opening
- 6. Filter screw/Filter lock

### **3. LIGHTING AND OPERATING**

### **FAILURE TO IGNITE**

The system will fail to ignite if there is insufficient or too much oil in the burner or because of an electrical power failure.

When no oil (or an excess of oil) is present, check the setting of the carburator. Also, its arming lever and supply line should be examined for faults.

Do not repeatedly attempt to ignite a burner if it fails to light. If no cause is found in the burner, a suitable qualified technician should be consulted.

### Before lighting

- Check that the valve on the tank is open,
- Check that the setting lever on the float chamber is in the upward position.

### LIGHTING

- A. Open the front door only slightly.
- B. Turn the control knob to position 1 (minimum) this will allow fuel to enter the burner/s. As soon as fuel enters the burner (after about one minute) the fuel must be ignited.
- C. To ignite the fuel use either a small piece of fire lighter, a taper or a well lighter match. The lighted item must be placed at the base of the pot
- D. Close the front door after about 2-3 minutes (depending on the draft).

Warning: The door may be left ajar only during lighting. The door must stay closed throughout the normal operation of the appliance. As the appliance requires a good chimney draught, it is imperative to allow the chimney to be thoroughly warmed before increasing the distributor control knob settings.

With a chimney which is new or has not been used for a long period, it is adviseable to leave the appliance at minimum setting for up to 1 hour.

In cases of an already warm chimney or recently used appliance, only 10-15 minutes will be required.

**Note:** If on lighting from cold a large smokey flame develops and persists and does not clear, the oil supply should be isolated to extinguish the fire. The chimney should then be examined for blockage or other means of poor flue draught.

### **EXTINGUISHING**

- 1. Turn the control knob to position 0.
- 2. Shut the reservoir tap.

### **ELECTRIC IGNITION SYSTEM**

The electric ignition system operates by heating a small electric heating element positioned in the bottom of the burner. Oil entering the burner is drawn by capillary attraction into stainless steel gauze, and then heated to its ignition temperature by the heating element. The coil is energised for only one minute during each ignition cycle, by turning the ignition timer dial.

### Lighting (with Electric Ignition System)

- A. Turn the control knob to position  $\mathcal{M}$ .
- B. Open the front door only slightly.
- C. Wait for one minute and then turn the ignition timer dial all the way.

In case of power outage, light a small amount of fuel or use a commercial lighter.

- D. Close the door after about 2-3 minutes (depending on the draft)
- E. Do not move beyond position 🗡 until the flame has properly stabilized and is dominantly blue.

### Note: Never relight the unit if the burner is still hot.



### COMMISSIONING

Commissioning should not be undertaken if the wind is abnormally high or blustery, nor should it be undertaken by anyone without suitable experience, testing equipment and working knowledge of the relevant standards and regulations.

The customers who will operate the stove are an essential component of any installation.

Ensuring they understand the operation of the stove, its controls and what to expect from the installation, whether simple or complex, is probably the most important single aspects of commissioning. Someone who understands never queries a satisfactory stove, but will tell you when something actually is wrong.

### **Pre Commissioning Checks**

The installation should be inspected to ensure the work is complete and the workmanship satisfactory. The commissioning engineer will be held responsible for any faults with the installation that would have been apparent at the time of commissioning. No stove should be commissioned if any part of the installation does not comply with the relevant standards and regulations.

The oil tank should be examined to confirm there is a supply of the correct grade of oil, that a filter and working isolation valve is fitted. Having verified that the oil pipe work up to the stove is complete and that the fire valve is closed, the tank isolation valve should be opened and the pipe work inspected for leaks. The pipe into the inlet of the metering valve should be uncoupled, the fire valve opened and a minimum of one litre of oil collected into a suitable receptacle. If dirt or water is present in this sample additional oil should be allowed through the pipe work until it is free from contaminates. The fuel pipe work should be reassembled and the stove's combustion pressure testing point located.

If a boiler is fitted, all the control systems and valves should be set to allow for the system heating. The draught stabilizer should be examined to ensure it opens and closes freely before lighting the stove following the lighting instuctions relevant to the stove being commissioned.

### Commissioning

Shortly after the stove is lit a stove air pressure reading should be taken and the pressure monitored at fifteen minutes intervals to ensure the stove and the flue are operating safely with sufficient air. As the stove and flue warm, the supply of air being induced into the burner will increase, and it will be possible to raise the stove's firing rate progressively until the stove is running at maximum output. The entire stove and flue should be allowed to reach normal operating temperature but if becomes apparent that the stabilizer will have difficulty in limiting the negative pressures within the stove, the burner should be extinguished and an additional stabilizer should be fitted to the flue pipe.

These are illustrated in the flue draught and governing plate section.

Allow the stove to run at maximum output for at least thirty minutes and turn to minimum for a further fifteen minutes. At minimum output the stabilizer will normally be shut and if needing to be open to achieve the correct negative pressure within the stove it is likely further restriction of the flue will be necessary.

The low fire setting of the fuel metering valve has been set at the factory and should only be changed if the reasons for doing so and the consequences understood; it must never be adjusted to overcome conditions.

The low fire flame size can be varied by adjusting the low fire adjusting screw on the carburator, turning it clockwise to increase the flame size and anticlockwise to decrease the flame size. Adjustment of the low fire setting will affect the high fire setting. *Each adjustment of no more than one quarter of a turn should be allowed to stabilize for ten minutes before making a further adjustment and both screw and plate should be marked to provide a reference to which the settings can be returned*.

With a satisfactory minimum setting achieved the stove should be turned to its maximum and allowed to run for at least fifteen minutes before measuring the negative pressure and adjusting the draught stabilizer if necessary. The high fire rate has been set at the factory but as the low fire rate can be adjusted, the high fire flame size can be varied by adjusting the high fire adjustment screws on the metering valve.

# Each adjustment of no more than one quarter of a turn should be allowed to stabilize for ten minutes before making any further adjustments.

Changes to the high fire adjustment will have no effect on the low fire setting. Having completed the maximum setting adjustments the stove should be run at its minimum for thirty minutes and a pressure reading taken to ensure the negative pressure within the stove such as a Flexitemp unit together with its controlling components should be subjected to their full operating functions. (If approved)

The stove and the oil system should be examined for any evidence of leaks.

### CARBURATOR

The carburator is set to give the correct flow rates before being fitted to the stove and will not normally require further adjustment. Even a small adjustment should be regarded as a possible indication of damage or fault of the fuel supply, or of a flue system giving an incorrect negative pressure within the stove, and these should be examined thoroughly before attempting to re-calibrate the carburator.

The carburator performs three operations within its main body:

- it regulates with a float valve the depth of oil held,
- it meters with an adjustable outlet the fuel supplied to the burner,
- It safety float valve will isolate the fuel should the levels within the valve body become too high.

The safety float will cause the arming lever to "trip" whenever the fuel levels become too high, but severe vibration can cause ripples on the fuel surface to lift the float, and because of this it is possible for the vibration set up by heavy passing traffic to shut off the valve. Having "tripped", resetting the arming lever may need to be done several times before the fuel level within the valve falls sufficiently to allow reliable operation.

No attempt must be made to adjust the control float or its level. Adjustment of this control is impractical and may even be dangerous.

The firing rate of the burner is regulated by carburator and having set the extremes of low and high firing as detailled in the commissioning instructions, the firing rates are proportioned as indicated by the indices 1-6 on the valve top when aligned to by the control knob.

Where a thermostatic control is fitted to the valve, the low fire setting is set not only manually by the control knob but automatically by the thermostatic control operating the actuating pin. When the control knob is set to its number one position the screw should be resting, but not acting on the lever below. With the twin carburator it is important that both balancing screws are correctly adjusted.

### NORMAL ANNUAL SERVICING

Like all mechanical devices, it is necessary to clean the TOBY oil controls at certain intervals, as a rule every 1-2 years. If particularly dirty fuel oil is used, additional cleaning may prove necessary.

The following sequence should be carried out during the annual overhaul:

**1.** Tap the actuating pin, with the control knob set at the highest position. In this way, any slight accumulation of dirt in the metering stem slit will be removed.



- 2. Remove the oil coke from the burner feed valve so that the fuel can flow unobstructed to the burner.
- **3.** Remove and clean the filter and refit it.



**4.** Remove the draining screw and rinse the oil control through with fuel oil from the tank until clear oil emerges at the point of drainage. In the case of models with no draining screw, the fuel oil must be removed from the interior of the oil control by means of a suction pump. **Note:** use only a soft pipe inside the oil control to prevent damage to any of the interior components.



Removal of the draining screw (Diagram 7) and rinsing of the oil control with fuel oil from the tank until only clean oil emerges at the point of drainage. In the case of models without a draining screw, the fuel oil inside the oil control must be removed by means of a suction pump.

**Note**: use only a soft pipe inside the oil control to prevent damage to any of the interior components.



Removing the draining screw.

**5.** If water should be found inside the oil control, it is advisable to remove the pipe between the oil control and the burner and to clean it. After the above-mentioned operations have been carried out, a trial run lasting at least 15 minutes must be made with the device set first at low and then at high.

Should this trial run not prove satisfactory for reasons of the oil flow or the proportions between the fuel and the combustion air, the oil flow is to be adjusted to the viscosity of the oil and/or the available flue draught or, if necessary, other more far-reaching adjustments made in the oil control itself. The measures to be taken in this case are described under «Oil Flow Adjustment».

# <image><image><image><image><image>



Removal of the complete lid assembly.

Removal of the metering stem.





Cleaning the metering stem slit. This must be done only with a soft, non-metallic instrument. The slit must not be enlarged and the washer not damaged.





Unscrewing of the float assembly. These screws are put under lacquer seals before the device leaves the factory in order to prevent unauthorized persons dismantling the oil control.

Should these seals be broken, unauthorized tampering with the oil control has taken place.





17.1





Lifting out the complete float assembly: When the attachment screws have been removed, the complete float assembly can be lifted out upwards. If the float assembly must be replaced by a new one because of a defect, the flows must be checked and, if necessary, corrected (see Diagrams 8 and 9).

### HOW THE FLAMES SHOULD LOOK FOR PERFECT COMBUSTION







Small blue flames at the crown. Blue spears in the pot. Base of catalyser is red. Draft has to be between 0.8 and 1.2 mm water column.



### MEDIUM-LOW SETTING

Small blue flames developing from the crown. Top of catalyst is dark red. Blue spears in the pot. Base of catalyser is "living red".



### MEDIUM SETTING

Flames arrive up to about <sup>3</sup>/<sub>4</sub> of the firebox. The top of the flames is "white/yellow". The base of the flames is blue. Blue spears only on the top of the burner. Base of catalyst is red.



### MAXIMUM SETTING

A large, full-firebox flame reaching above the glass door frame, though not touching the top plate of the stove. A narrow flame, mainly white/yellow. The base of the flames is blue. The base of the catalyser is red. Draft: between 1.8 and 2.2 mm water column.

TIP: If your chimney is slow in establishing suction, excess oil may build up in the base of the burner pot. This causes a flame larger than normally expected at the low setting. Turn the oil control knob to the OFF position ("O"), allow the flame to reduce in height, then switch the knob back to low setting.

### **4. MAINTENANCE**

Always allow the stove to coo before performing any maintenece operation.

### Weekly

The de-cocking rod must be operated at least once per week to keep the fuel line free of sediments and dirt. Decocking can be done when the stove is turned off or running at minimum setting. Use the tool provided to unscrew the cap. Then insert the tool into the tube and pull it back and forth in a brisk motion so that any solid materials lining the inside of the tube will be pushed out. Once you have finished, be sure to screw the cap back on securely.



### Every Two or Three months (depending on use)

Remove the catalyser and clean out any carbon deposits in the base of the burner. Also scrape carbon deposits from where the oil enters the burner. If necessary, use a glass cleaning solution to wash the glass. Replace catalyser on its support in the burner.



### **Annual Maintenance**

The catalyser and support ring should be removed from the burner.

The flue should be examinated for evidence of soot and where this is evident the flue should be swept.

All flue joints examined and re-sealed where necessary.

The stove should be vacuumed to remove all soot and debris.

The drip tray removed and cleared of all dirt and fluff.

The burner bowl should be examinated for deposits adhering to both the sides and bottom, and all deposits removed from the fuel inlet.

Where fitted, the electric igniter should be cleaned and examined for any signs of distress.

The catalyser should be cleaned and assessed as to its condition and suitability for a further 12 months operation.

The glass should be cleaned using, only vinegar and water with any damaged glass being replaced.

All rope seals should be examined and replaced where necessary.

The door, hinge and locking mechanism examined for damage.

The stove body examined for damage.

The carburator and control knob extensions examined for wear or damage.

The oil storage tank should be examinated for leakage, the filter removed and examined for evidence of contamination before being cleaned or replaced.

The oil supply pipe work and any valves and filters examined and cleaned or replaced as necessary.

The oil valve and immediate supply and delivery pipe work examined for evidence of leaking.

The catalyser should be examined for signs of deterioration and black carbon, which indicates poor flue draught. The red oxidation must **not** be cleaned off as this aids efficient burning at low settings.

The catalyser and support ring should be reassembled and the burner lit and the stove and flue allowed to reach its operating temperature.

A draught reading should be taken at both low and high fire with adjustment to the draught stabilizer being made where necessary.

All remotely operated thermostats and timers systems should be verified as working correctly.

If the operation of the appliance is suspect follow and complete the commissioning instructions.



### **5. TROUBLESHOOTING**

### **Burner Symptoms**

- **1.** Oil found in bottom of burner before burner control knob turned on.
- 2. No oil appearing in burner bottom when control knob turned on.
- 3. Smoky flame when lit.
- 4. Smoky when on low setting.
- 5. Smoky when on high setting.
- 6. Burner extinguishes on low setting.
- 7. Burner extinguishes after long periods on low setting.
- 8. Burner extinguishes in high winds.
- 9. Burner extinguishes and will not relight.
- **10.** Burner noisy on high fire.
- **11.** Burner flame size reduced on high setting.
- 12. Glass sooting.
- **13.** Smell of oil coming from stove.
- **14.** Smell of smoke or soot coming from stove.

### **Burner Faults**

- Carburator having been left turned on for a long period without the burner being lit. Oil metering valve bypassing float control.
- 2. Arming never not set.

A manual valve in the oil supply line shut.

Fire valve tripped.

Faulty carburator.

No oil in tank.

Water in the carburator and/or the supply line.

Air lock in supply pipe.

Blocked carburator filter.

Water in the supply line which has frozen.

3. Blocked flue.

Flue too cold.

Carbon deposits accumulating at oil entry port.

Wind conditions causing the air pressure to be out of limits.

Incorrect grade of oil in the burner.

Air stabilizer not shutting.

Stove door not closed.

Faulty or badly positioned catalyzer.

**4.** Any of the faults in « 3 ».

Faulty sealing rope on door or top plate if fitted. Dirt in the bottom of the burner.

**5.** Carburator calibrated to give incorrect oil flow. Flue not hot enough.

Flue restricted or blocked.

Flue stabilizer incorrectly adjusted.

Faulty sealing rope on door or top plate if fitted.

Dirt in burner.

Faulty or badly positioned catalyzer.

Flame impinging on stove body.

- **6.** Unstable draught conditions.
  - Faulty draught stabilizer.

Incorrectly calibrated low fire setting on the carburator.

Faulty carburator.

Faulty or badly positioned catalyzer.

Vibration to the carburator causing the arming lever to trip.

**7.** All of the faults listed in « 6 ». Dirt in the burner.

- **8.** Abnormally very high and gusty wind conditions. Faulty draught stabilizer.
- 9. No fuel supply.

Tripped fire valve.

Arming lever tripped.

Aquastat tripped.

Water in fuel.

Blocked fuel supply.

Damaged fuel supply.

Valve in fuel supply inadvertently shut.

**10.** Carburator grossly out of calibration.

Stove door having been opened for a period with the burner lit.

Draught stabilizer unable to cope with high flue draught.

**11.** Burner fuel inlet requires decoking.

Carburator driven to low setting by aquastat or flexitemp.

Thermostat pin on carburator sticking.

Stabilizer closed

**12.** Flue blocked.

Dirt in the burner.

Incorrect grade or contaminated fuel.

Stabilizer out of adjustment.

Faulty or miss-aligned catalyzer.

Lack of ventilation to the room or extraction fans with the property affecting the flue.

Door or top seals leaking.

Cracked or badly fitted door glass.

Fuel metering valve out of calibration causing flame impingement at high fire.

**13.** Oil leaking from any of the oil supply components.

Carburator becoming dangerously overheated and vaporizing large quantities of oil.

Burner poorly adjusted and leaking stove allowing products of combustion into the room.

14. Leaking or blocked flue.

Badly adjusted burner with flue or door seal leakage.





# NESTOR CE

|   |                    | EN 1        |  |  |  |
|---|--------------------|-------------|--|--|--|
| Poêle à combustible liquide avec brûleur à vaporisation,<br>destinés à être utilisés comme appareils de chauffage au<br>fioul |                    |             |  |  |  |
| Stove with liquid fuel vaporizing burner,   | for use as fuel he | aters       |  |  |  |
| Combustible / Fuel: fioul   | domestique / fu    | eloi        |  |  |  |
| Туре:   | S31/S31+/          | / H31       |  |  |  |
| Nº Fabric. / Production Nº:   |                    |             |  |  |  |
| Year :  |                    | 17          |  |  |  |
| Puissance thermique / Output [W]  | 8000<br>7500 (Fr   | ) /<br>ance |  |  |  |
| Distance aux matériaux combustibles /<br>Minimum clearances to combustibles [4  | cm] 40             |             |  |  |  |
| Sécurité électrique / Electrical safety   | N/A                | Ą           |  |  |  |
| Classe d'appareil / Class of appliance  | class              | e 2         |  |  |  |
| Débit / Rate of flow [l/h]  | 0,29 /             | 0,96        |  |  |  |
| Vol.corr.[m <sup>3</sup> ]  | 220                | )           |  |  |  |
| B39015839 SOTO DE LA MARINA CANTABRIA   |                    |             |  |  |  |
|   |                    |             |  |  |  |

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| NESTOR<br>MARTIN  |                          |  |  |  |  |
|---|--------------------------|--|--|--|--|
| Poêle à combustible liquide avec brûleur à vaporisation,<br>destinés à être utilisés comme appareils de chauffage au<br>fioul |                          |  |  |  |  |
| Stove with liquid fuel vaporizing burner, for use as fuel heaters   |                          |  |  |  |  |
| Combustible / Fuel: fioul domestique / fuel oil   |                          |  |  |  |  |
| ype: S41 / S41+ / H41   |                          |  |  |  |  |
| № Fabric. / Production №:   |                          |  |  |  |  |
| Year : 17   |                          |  |  |  |  |
| Puissance thermique / Output [W]  | 10000 /<br>9400 (France) |  |  |  |  |
| Distance aux matériaux combustibles /<br>Minimum clearances to combustibles [cm]  | 40                       |  |  |  |  |
| Sécurité électrique / Electrical safety   | N/A                      |  |  |  |  |
| Classe d'appareil / Class of appliance  | classe 2                 |  |  |  |  |
| Débit / Rate of flow [l/h]  | 0,43 / 1,29              |  |  |  |  |
| Vol.corr.[m³]   | 285                      |  |  |  |  |
| B39015839 SOTO DE LA MARINA CANTABRIA   |                          |  |  |  |  |
| www.nestormartinstoves.com  |                          |  |  |  |  |

# NESTOR

| NESTOR<br>MARTIN  |                  |  |  |  |  |
|---|------------------|--|--|--|--|
| Poêle à combustible liquide avec brûleur à vaporisation,<br>destinés à être utilisés comme appareils de chauffage au<br>fioul |                  |  |  |  |  |
| Stove with liquid fuel vaporizing burner, for use a   | as fuel heaters  |  |  |  |  |
| Combustible / Fuel: fioul domest  | tique / fuel oil |  |  |  |  |
| Туре:   | S21/H11          |  |  |  |  |
| Nº Fabric. / Production Nº:   |                  |  |  |  |  |
| An / Year :   | 17               |  |  |  |  |
| Puissance thermique / Output [W]  | 5000             |  |  |  |  |
| Distance aux matériaux combustibles /<br>Minimum clearances to combustibles [cm]  | 40               |  |  |  |  |
| Sécurité électrique / Electrical safety   | N/A              |  |  |  |  |
| Classe d'appareil / Class of appliance  | classe 2         |  |  |  |  |
| Débit / Rate of flow [l/h]  | 0,21 / 0,53      |  |  |  |  |
| Vol.corr.[m <sup>3</sup> ]  | 120              |  |  |  |  |
| B39015839 SOTO DE LA MARINA CAN   | TABRIA           |  |  |  |  |
|   |                  |  |  |  |  |

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# NESTOR MARTIN

SOTO DE LA MARINA - CANTABRIA Apdo. de correos 208 SANTANDER

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