

FRANCO BELGE 

Oil Stove Installation

INSTRUCTIONS FOR FRANCO BELGE OIL STOVES

TECHNICAL

A Franco Belge oil stove is the result of many years of engineering research and design expertise. Before beginning the task of installing the stove it should be remembered that it will be the major feature in any room when it is lit and will continue to add character even when cold.

We recommend the installation of the stove is carried out by suitably qualified persons working to the Codes of Practice issued by OFTEC and B&ES which are current at the time of installation. Our technically qualified staff will happily answer any questions which are not covered by the literature delivered with the stove.

The installer is responsible under the Health and Safety at Work act 1974 vi the caustic nature of fire cement and the possibility of disturbing asbestos and other materials such as ceramic in existing installations and to suggest appropriate protection to be given to the person(s) carrying out the installation. The complete installation must be carried out with due reference to the following Standards and Codes of Practice.

It should be noted that the requirements and these publications may be superseded during the life of this manual.

BS 799 Part Five, Specification for Oil Tanks.

BS 5410 Part One, Oil Firing Installations Up To 44kW.

BS 4543 Parts One & Three, Factory Made Insulated Chimneys.

Building Regulations: -

Part J England and Wales. Part F Scottish Regulations. Technical Booklet L for Northern Ireland

FRANCO BELGE 

Burner Operation

The oil burner can be referred to as a dry burner. During the burning operation the burner base is dry of oil. As the oil enters through the oil supply pipe it is vaporised by the heat reflected from the catalyser.

Under no circumstances should the appliance be operated with oil in the burner other than a small damp patch at time of ignition.

The ability of the burner to burn correctly is dependent on the correct mix of fuel (oil) and oxygen (air).

These stoves are not suitable for installation on a boat. If you require an oil stove for a boat please contact ABGO for further advice on suitable appliances and retailers.

These stoves should not be fitted in a bathroom or bedrooms where there is an increased risk of carbon monoxide poisoning.



OFTEC
Registered Engineers

Competent Persons Regulations and Oil Technicians in England and Wales

The Government have introduced the Competent Persons Scheme in England and Wales to give an advantage to operatives within the Construction Industry who are members of bodies that implement approved systems of competence assessment and inspection.

It is designed to remove some of the burden of supervising work away from the Local Authority Building Control Departments, so that they can concentrate on tracking down and prosecuting the 'cowboy' element within the construction industry.

For the oil industry, the OFTEC Registration Scheme has been chosen to define competence. The Building Act of 1984 requires a person carrying out certain types of building work to give building notice or Building Regulation approval to Building Control. This will involve payment of a fee to the Local Authority.

As from 1st April 2002, an amendment to Regulation 12 of the Building Regulations which covers Combustion Appliances came into force. This exempts OFTEC Registered Installation, Commissioning and Servicing Technicians and Tank Installation Technicians from the need to give notice and pay a fee when carrying out new installation work, replacement work or making a major change to a system, in the areas covered by their class of registration. Registered Technicians are required to keep a record of any work they undertake. OFTEC provides approved control documents for installation work (CD/10) and commissioning work (CD/11).

It should be noted that the Building Regulations define installation work as including commissioning. An oil installation will, therefore, require to be both installed and commissioned by a suitably qualified OFTEC Technician, if the need to apply for a notice and pay a fee is to be avoided. The table overleaf shows which categories of technician can undertake the various types of work covered by the new Regulations.

If you are qualified then you are competent to install this stove.



It is recommended that an audible carbon monoxide alarm is fitted as a precaution.

Order code: CO7B-10Y 10 YEAR CO ALARM

The carbon monoxide alarm should comply with BS EN 50291-1:2010, and must be installed to the manufacturers' installation instructions, and current Buildings Regulations.

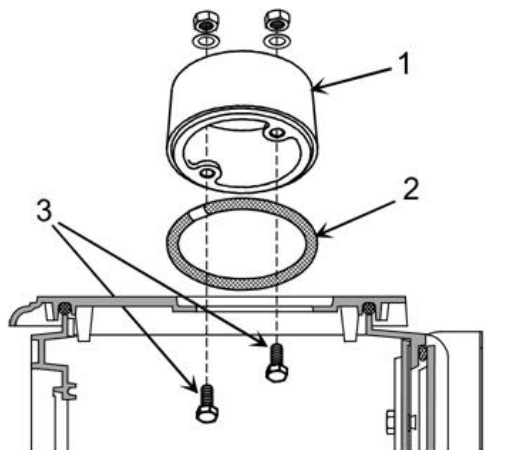
OFTEC QUALIFICATION	INSTALL	COMMISSION	CONTROL DOCUMENTATION
OFT 105 Appliance Installation Technician	Appliance Flues & Vents Oil Lines & Fire Valves Tanks Heating Systems	- - Oil Lines & Fire Valves Tanks Heating Systems	OFTEC CD/10
OFT 101 Pressure Jet Commissioning Technician	-	Appliances Combustion & Safety Flues & Vents Oil Lines & Fire Valves Tanks	OFTEC CD/11
OFT 102 Vaporising Commissioning Technician	-	Vaporising Appliances Combustion & Safety Flues & Vents Oil Lines & Fire Valves Tanks	OFTEC CD/11
OFT 600A	Oil Lines & Fire Valves Tanks	Oil Lines & Fire Valves Tanks	OFTEC CD/10

The types of work covered under the new Part J Approved Document of the England and Wales Building Regulations are new or replacement installations of boilers, oil tanks, associated pipe work, including the fitting of remote acting fire valves and major changes to flueing systems.

Part L1 of the Regulations, which came into force at the same time, covers the energy efficiency aspects of heating system installation, particularly their controls and requires commissioning to be properly undertaken and a certificate completed by a competent person.

The Building Act falls under criminal law and there is a structured fining system for those who are found not to comply. This is an important step which acknowledges those in the industry who work to Regulations and Standards and will help customers recognise that OFTEC Registered Technicians have had their competence independently assessed.

Flue Exit Direction – Belfort Oil Stove 174 05 06

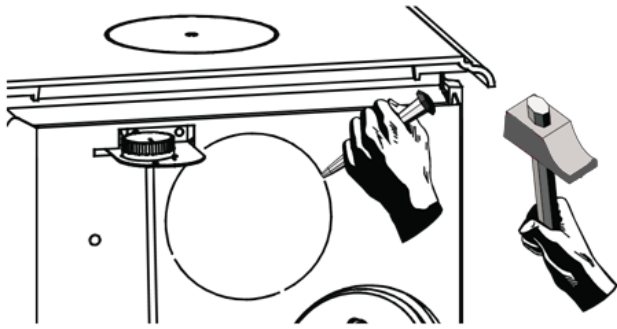


1 - Flue collar
2 - Sealing rope

3 - Screws, washers and bolts

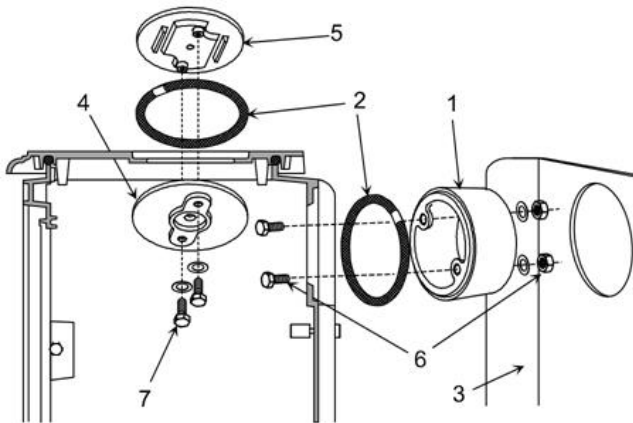
Top Flue Exit

- Open the main door, remove the ceramic logs if fitted and remove the internal baffle.
- Fix the sealing rope in the groove on the top and fit the flue spigot using the two bolts and washers supplied, ensuring there is a good seal.
- Replace the internal baffles.



Rear Flue Exit

- The cut-out in the rear heat shield must be removed in the case of using the rear flue exit and the heat shield removed from the back of the stove.



- Open the main door, remove the ceramic log effect kit if fitted and remove the internal baffle.

- Remove the blanking plate 5 and the clamp 4 from the back and refit them on the top with the 2 screws and washers supplied 7, ensuring there is a good seal 2.

- Set the ceramic rope in the groove and fix the flue collar at rear with 2 bolts and washers supplied.

- Reinstall the internal baffles.

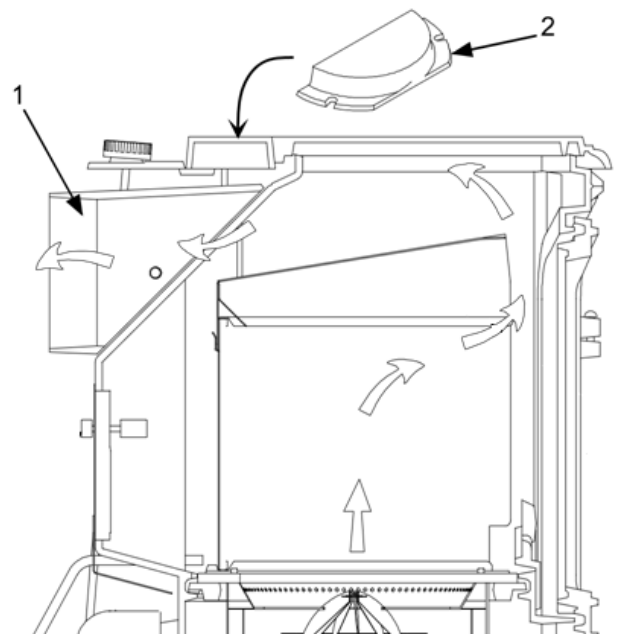
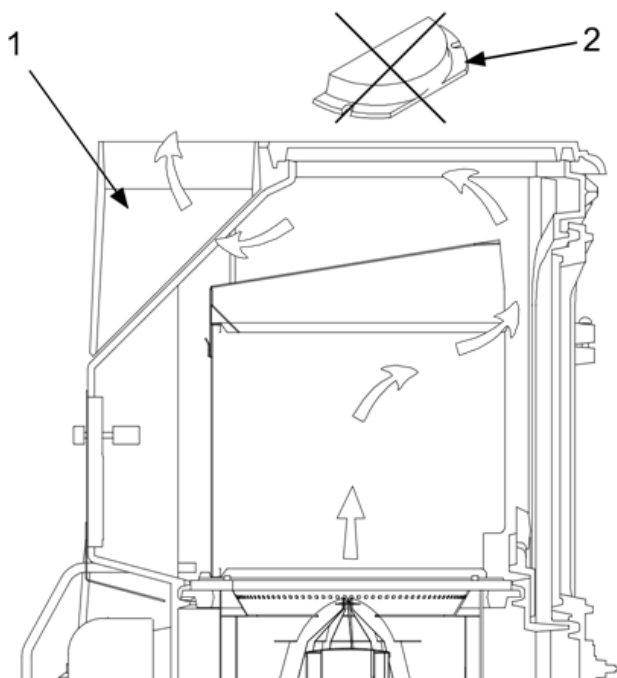
- Replace the rear heat shield.

- 1 - Flue collar.
- 2 - Sealing rope.
- 3 - Back panel.
- 4 - Clamp.
- 5 - Blanking plate.

- 6 - Screws, washers and bolts.
- 7 - Screws and washers.

Flue Exit Direction – Savoy Oil Stove 174 07 07

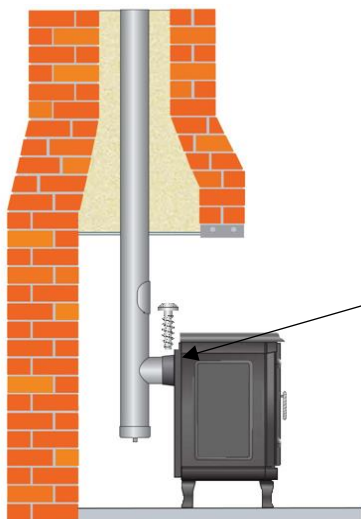
The flue collar/adaptor can be fitted to give a rear or top flue exit. If using the top flue exit the blanking plate is not required.



1 - Flue collar

2 - Blanking plate

Flue Exit– Burgundy/Bourgogne Oil Stove 174 10 59



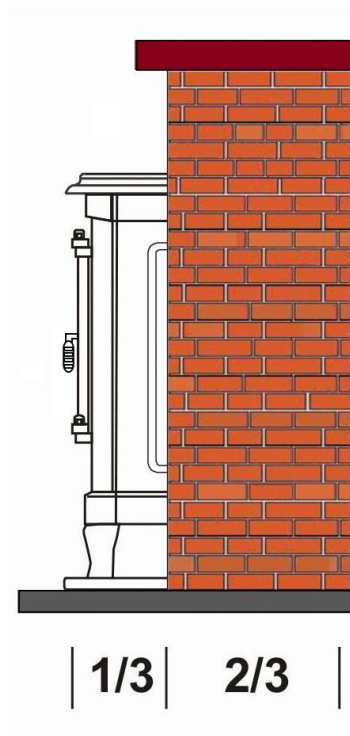
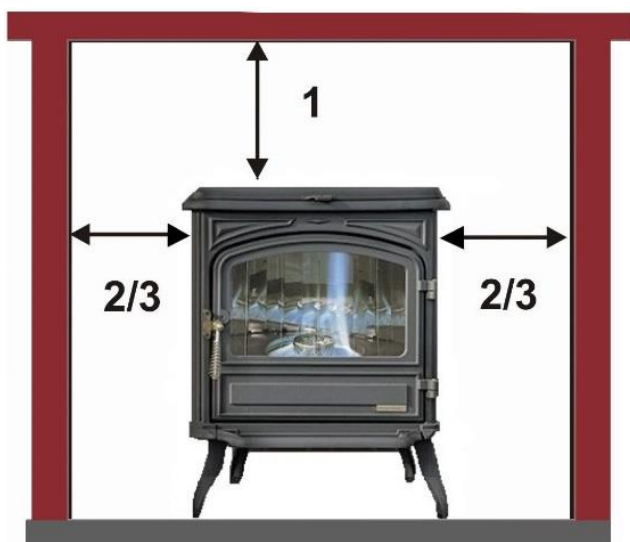
The stove has a top plate that lifts up to gain access to the simmering plate so there is only a rear exit option for this model.

We recommend a "T" piece secured to the flue collar with a self-tapping screw.

Installation

Do not be tempted to fit the stove into an unsuitable fireplace. Beyond the requirements of Building Regulations and providing suitable access to facilitate servicing the stove, providing a setting which will complement the stove is not a luxury, it is the practicality of making the most of an investment. A good builder will be able to transform even the most mundane of fireplaces, whether altering its proportions to those of the "Golden Mean" ideal, exposing a wooden lintel, stone or simply removing superfluous detailing for comparatively small costs, and the result will be a pleasure for many years.

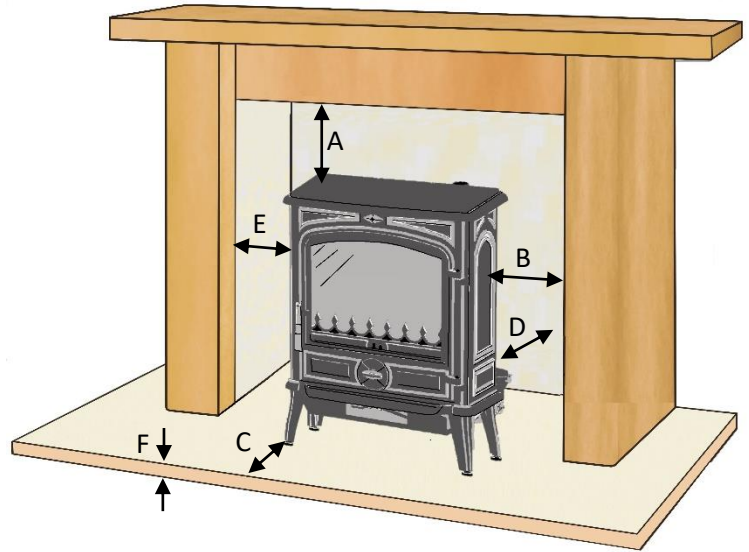
Golden Mean



Minimum Installation Clearances

The measurements to combustible materials are for advice only. In all installations surrounding inflammable materials must not exceed 80°C and therefore in certain circumstances they may need to be increased.

The stove must always stand perfectly level and have sufficient space allowed for commissioning the stove and service work. This may lead to the clearances to non-inflammable materials also being increased from those in the tables below.



Belfort	Minimum clearance from combustible materials	Minimum clearance from non-inflammable materials
A	450mm	300mm
B	200mm	150mm
C	225mm◆	225mm
D	200mm	150mm
E	200mm	150mm
F	12mm*	12mm*

Savoy	Minimum clearance from combustible materials	Minimum clearance from non-inflammable materials
A	450mm	300mm
B	200mm	150mm
C	225mm◆	225mm
D	200mm	150mm
E	200mm	150mm
F	12mm*	12mm*

Burgundy/ Bourgogne	Minimum clearance from combustible materials	Minimum clearance from non-inflammable materials
A	450mm	300mm
B	300mm	150mm
C	225mm◆	225mm
D	300mm	150mm
E	300mm	150mm
F	12mm*	12mm*

* The stove is supplied with a cast iron hearth plate, which we strongly recommend that you use to protect the surface below. It is also the minimum non-inflammable thickness required for installation.

◆ This is the minimum distance in front, at floor level, from the base of the stove. All combustible materials above floor level in front of the appliance must be a minimum distance of 500mm away or any combustible materials must not exceed 80°C.

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 “flue draught” 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 oil valve is calibrated, good combustion is dependent upon 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 draught” 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 theoretically 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, twin walled insulated stainless-steel flue systems are available.

If there is an existing flue liner this should be replaced whenever a new appliance is fitted

In all installations the flue diameter must be the same diameter as the flue spigot on the stove so in all cases this will mean lining an oversized masonry chimney or clay pot lined flue with a suitable flue liner. A minimum of 4m high or taller.

Atmospheric Influences

To control these, the stove is fitted with a draught stabilizer (barometric damper). When the negative pressure approaches the desirable upper limit the stabiliser opens, 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 stabiliser 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 stabiliser is adjusted to suit the characteristics of the flue, ensuring it gives the optimum control.



If the chimney draught is excessive, a secondary draught stabiliser (barometric damper) may be installed to the first section of flue pipe. This will be set to open when the stabiliser on the stove has fully opened. A wind “smoothing” cowl may also be fitted to the flue terminal as wind blowing across the flue terminal will increase the negative pressure within the flue proportionately to the wind speed.

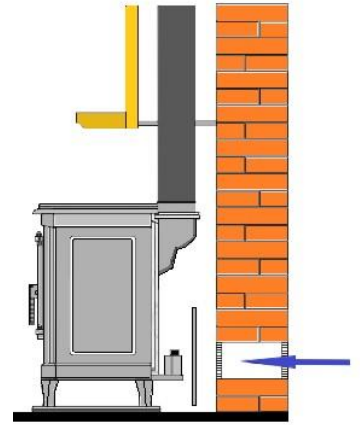
If the chimney has any downdraught tendency, due to its position in relation to nearby obstacles, an anti-downdraught cowl must be installed on the chimney or the chimney height may have to be increased.

Any smell of flue gases within the house should be investigated immediately.

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 cooler the outside temperature and the harder the stove is working to maintain the required temperature inside, the cooler the incoming air and the greater its flow. Strategically positioned, correctly sized and baffled vents will avoid any discomfort from draughts in the room. If the vent is directly behind the stove then an internal baffle is recommended.

Any room or space containing an appliance should have a permanent ventilation opening of free area at least 550mm sq. for each kW of rated. In older dwellings, pre-2008, with an air permeability which is greater than $5.0\text{m}^3/\text{hr}/\text{m}^2$ the first 5Kw may be ignored.



The Flue and Connections

Bends in flue pipe

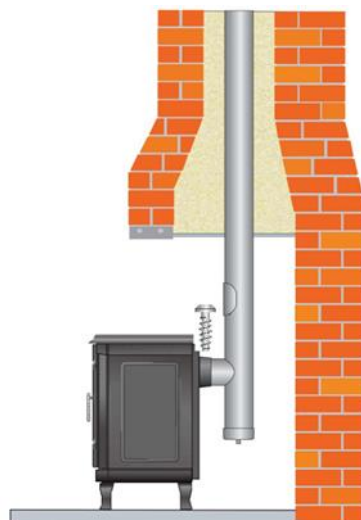
Top exit

A flue shall have no more than four bends, each providing a maximum change of direction of 45° , there should be not more than two of these bends before an access point for sweeping and two between a sweeping point and the flue terminal.

On top exit stoves, ideally, the flue should rise vertically 1 meter before the first bend. It is however permissible to have a bend no greater than 45° from the top flue outlet, or off the top of a "T" pipe, as long as it does not adversely affect the flue draught.

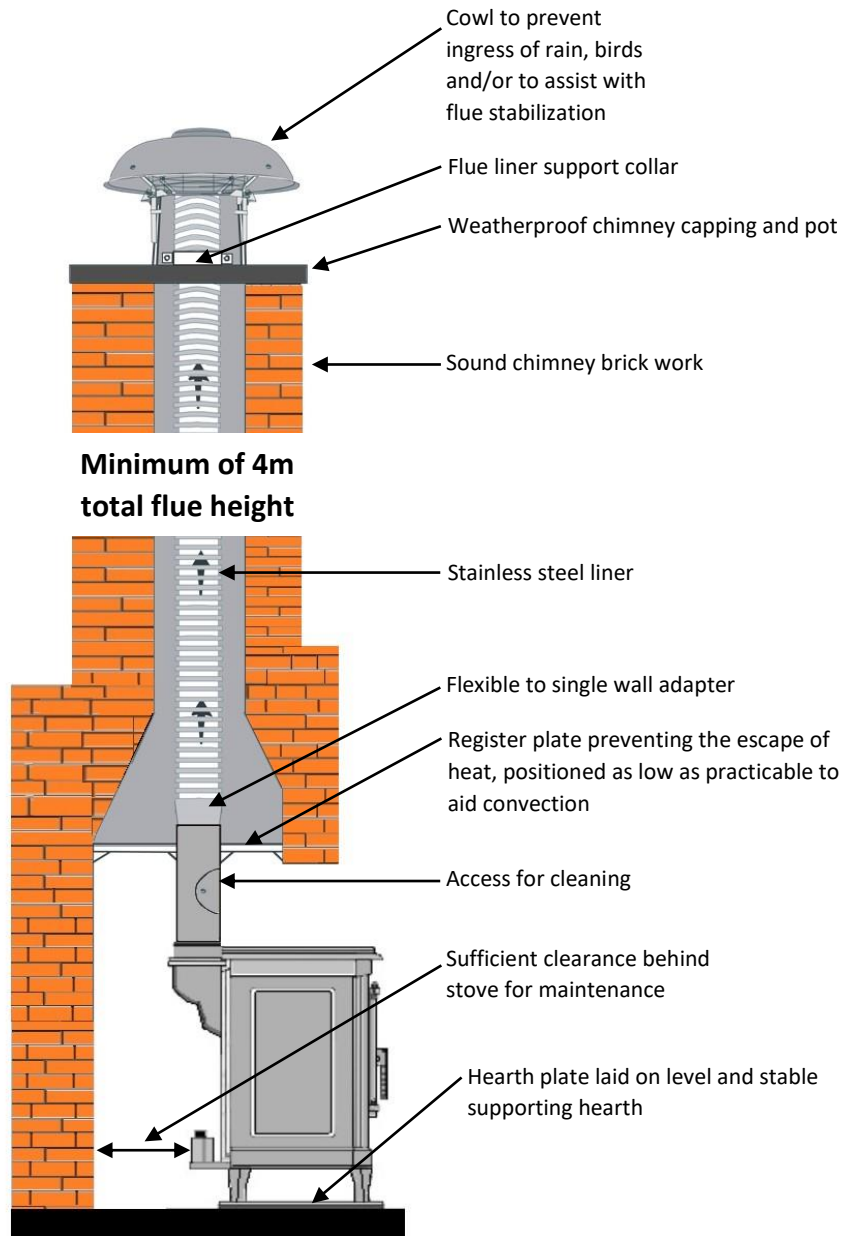
Back exit

For a rear-outlet application using a T pipe, this should be treated as two 45° bends. If a "T" piece is to be used, the horizontal flue run from the back outlet of the stove shall only be used to connect the stove to a "T" pipe and shall not be more than 150mm in length.



If, due to the location of the stove, the horizontal run is marginally greater than 150mm then it is permissible as long as it is not detrimental to the flue draught requirements of the appliance. It must be noted that the flue draught will take longer to establish the greater the horizontal length of flue and the sooting up of the glass on lighting will be greater.

Ideal Installation



Flue Terminations

Chimney cowls

The chimney cowl is an important part of the installation and can be often ignored.

A cowl normally serves more than one purpose.

- 1) It prevents rain entering the chimney system which will result in poor chimney operation and potential damage to the appliance.
- 2) It can prevent birds nesting resulting in partial or blocked chimneys.
- 3) Most important it can act as a stabilizer in windy conditions.

Different types of cowls produce different conditions which will affect the negative pressure within the chimney system. Great caution must be taken when choosing the cowl as an incorrect choice can result in poor stove operation. Some anti down draught cowls work by inducing up draught which can seriously affect the combustion within the burner and may even cause damage to the catalyser.

It is as important to fit the cowl correctly to the flue termination. All installations of this type should have a chimney pot fitted to the top of the chimney. The flue liner should be brought to the top of the chimney pot with insulation between the liner and pot.

Fuel and Fuel Oil Storage

All the stoves are calibrated for commercial Class C2 kerosene to B.S. 2869: suitable for vaporising pot burners.

Type of Tank

We strongly advise not to fit a second-hand oil tank as 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 contaminants by visual inspection.

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

All tank and oil supply pipe installations should follow BS 5410: Part 1: 1997.

An isolating valve must be fitted directly to the tank outlet, allowing for the maintenance of the other components in the pipeline.

A metal bowl oil filter mounted to allow adequate room for the removal of the sediment bowl and filter element without difficulty should be fitted in the pipeline to the property. We recommend a replaceable cartridge filter with a water separation bowl is installed.

Before the pipeline enters the building, a remote acting fire valve should be fitted which will cut off automatically the oil supply in the unlikely event of a fire within the property.

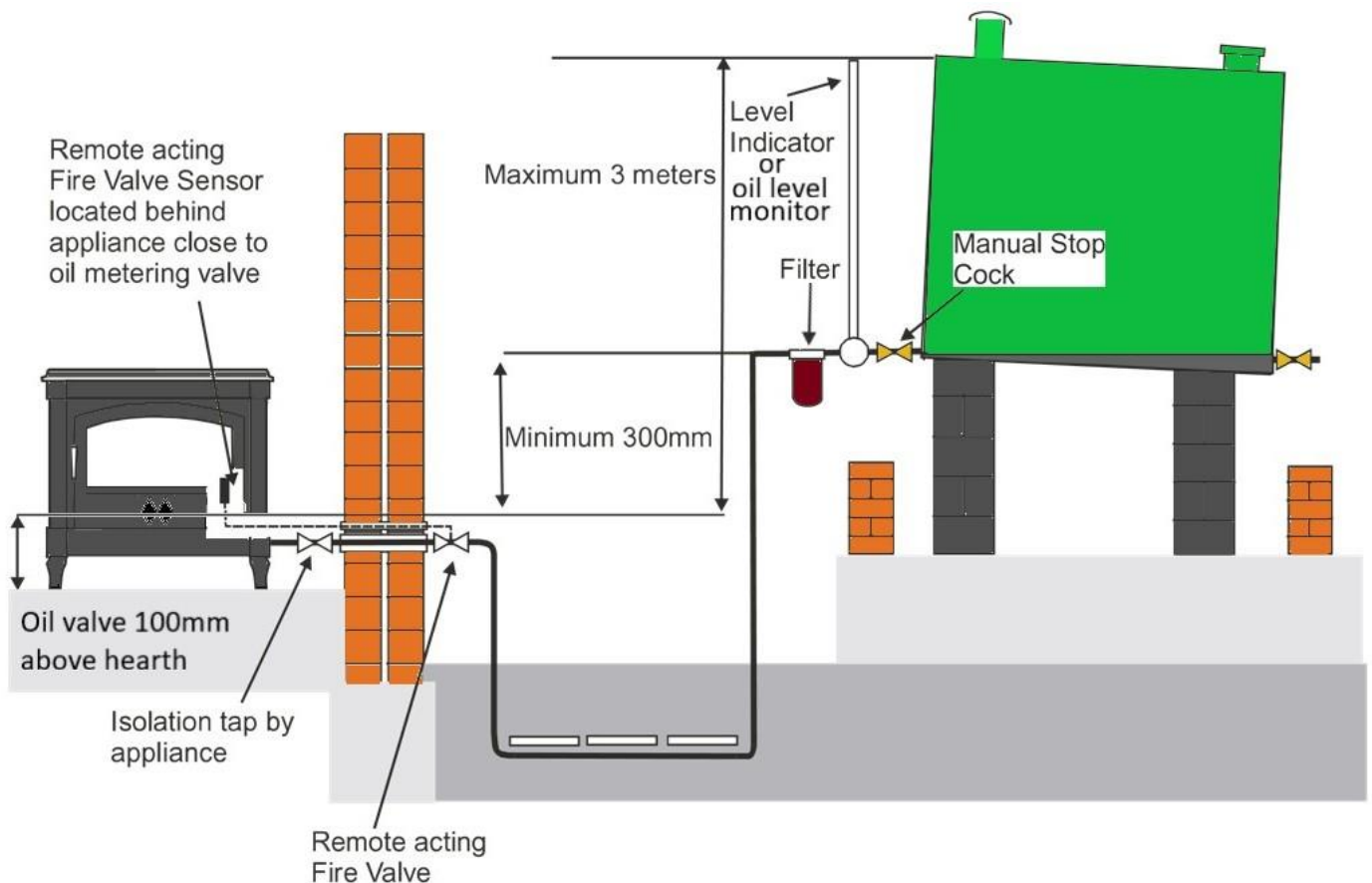


A manual isolation valve should be positioned as close to the stove as possible to enable all supply to be turned off for stove maintenance and if the appliance is to be out of service for more than a few weeks.

Where the stove is positioned higher than the fuel storage tank, an oil lift pump with integral reservoir will be required.

Where the stove is positioned to give a head to oil greater than 3.5 meters a constant level valve should be fitted.

Tiger loop systems are not suitable.

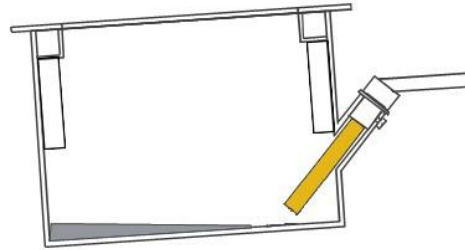


Electric Ignition

The electric ignition system operates by heating a ceramic electric heating element positioned 2mm from the bottom of the burner. Oil entering the burner is heated to its ignition temperature by the heating element. The element is energised for the period that the ignition button is pressed, between 30 seconds and a minute.

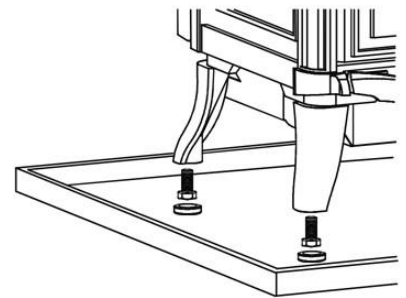
Common reasons for ignition to fail

- Electrical cable not connected.
- Oil supply switched off.
- Burner has large amount of oil in the base.
- Stove not level.
- Igniter leads at the control box poorly connected.
- Ceramic element touching the base of the burner.



Stove and burner must be level

If the oil burner is not level as oil enters for ignition it will flow away from the igniter. This oil will build up until it finally reaches the igniter. This will result in long ignition times and excessive oil at ignition. Adjust the levelling feet in the legs of the stove.



Excessive oil will cause large flames, soot and very noisy operation.

Oil Metering Valve

The oil metering valve is set to give the correct flow rates before being fitted to the stove and will not normally require further adjustment. Any but a small adjustment should be regarded as an indication of a 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 oil metering valve.

The oil metering valve 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, and its 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.

The firing rate of the burner is regulated by the oil metering valve and having set the extremes of low and high firing as detailed 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.

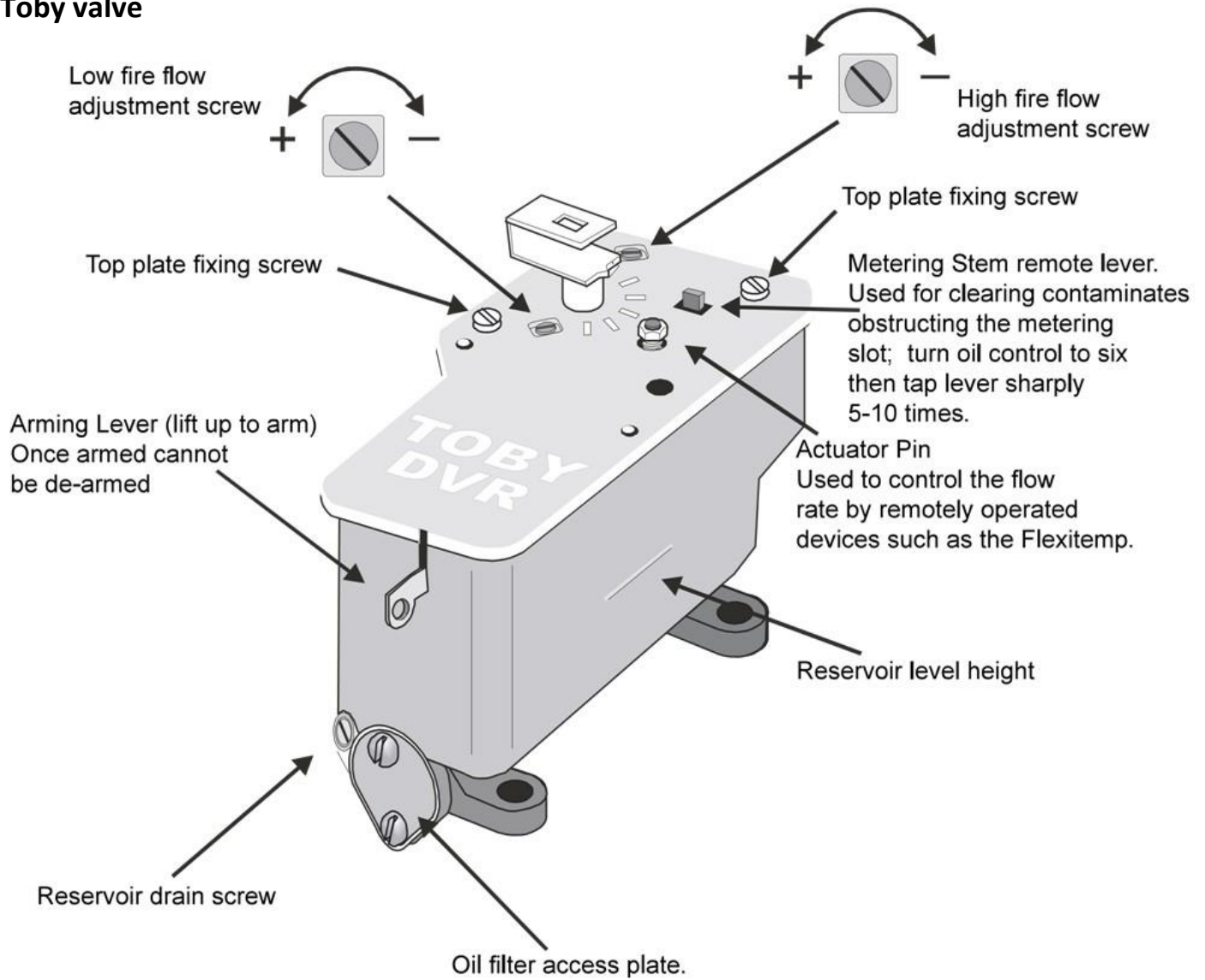
Most common problems

The oil control is a very reliable control system. If a problem with the oil flow is suspected it is very unlikely to be the control valve.

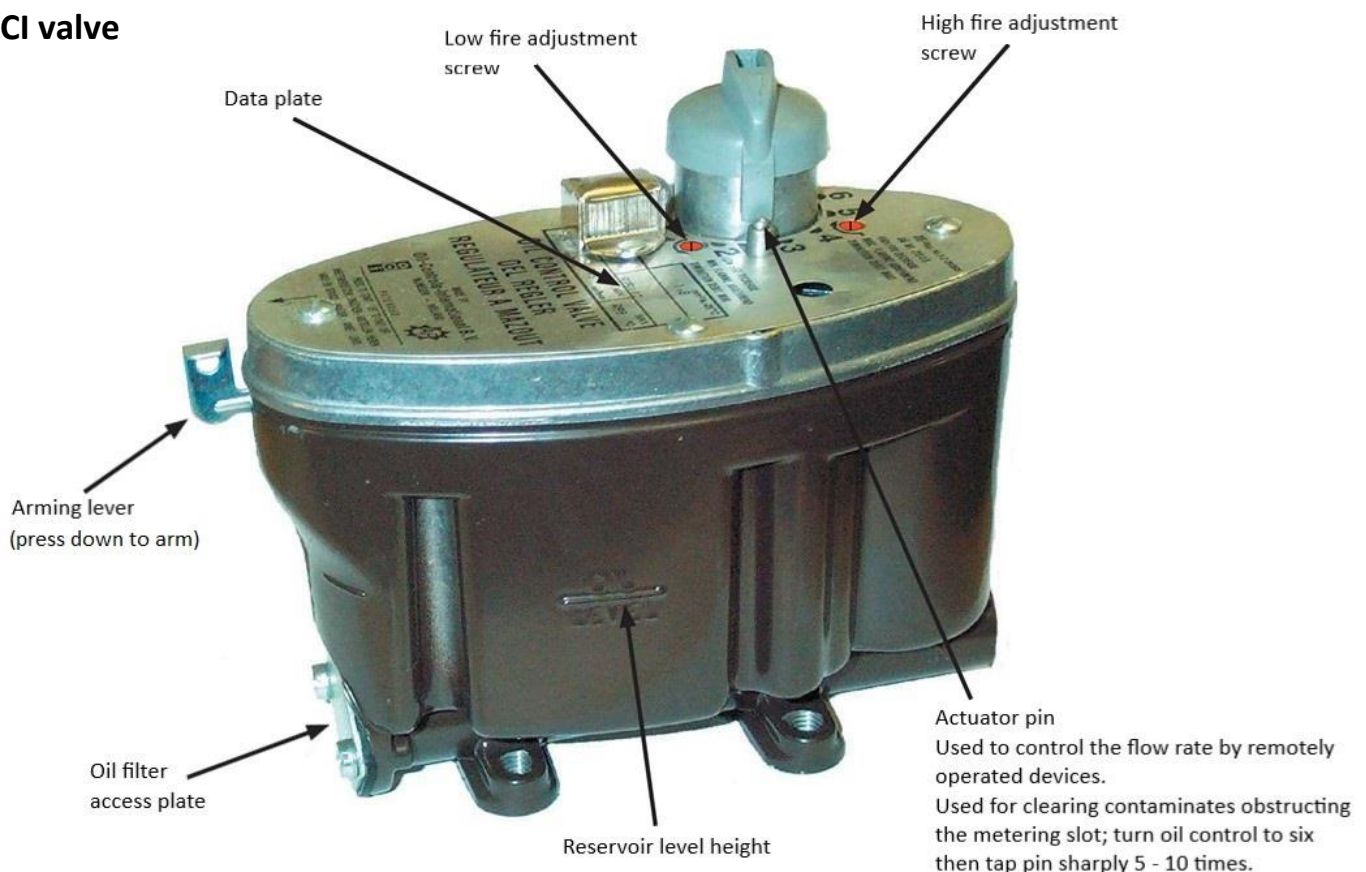
The most common reason for poor flow rates will be air trapped within the oil supply pipe or the oil valve float control stem. If an air lock is suspected the oil line should be disconnected from the oil valve and at least 1 litre of oil allowed to flow after no air is present.

If an air lock is suspected in the oil control valve, remove the top plate mounting screws and press the float assembly to the base of the oil control for 4-5 seconds, this will fully open the oil level inlet needle releasing trapped air.

Toby valve



CI valve



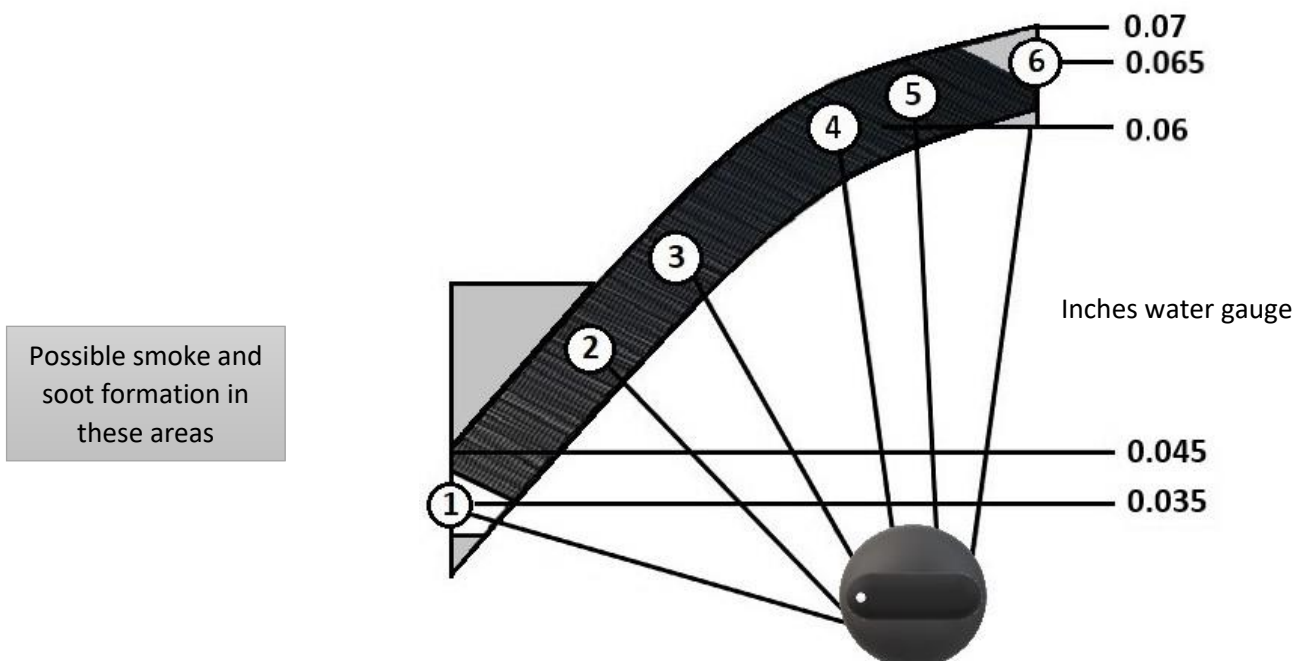
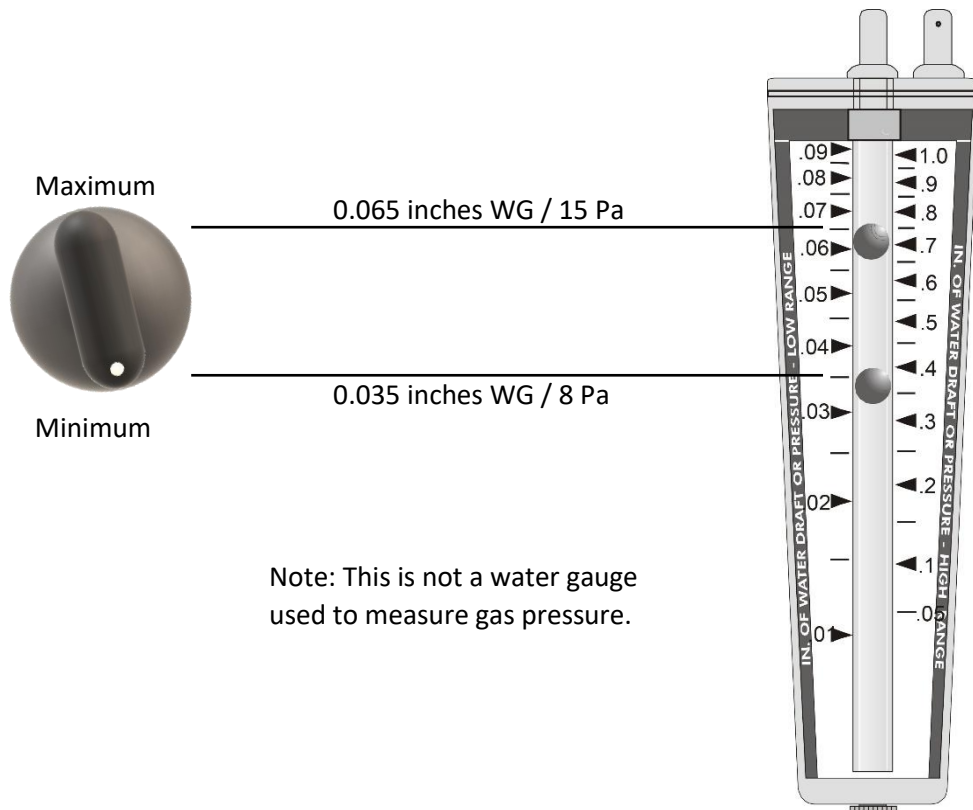
Flue Pressure Adjustment

The flue creates the negative air pressure within the stove which draws 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.

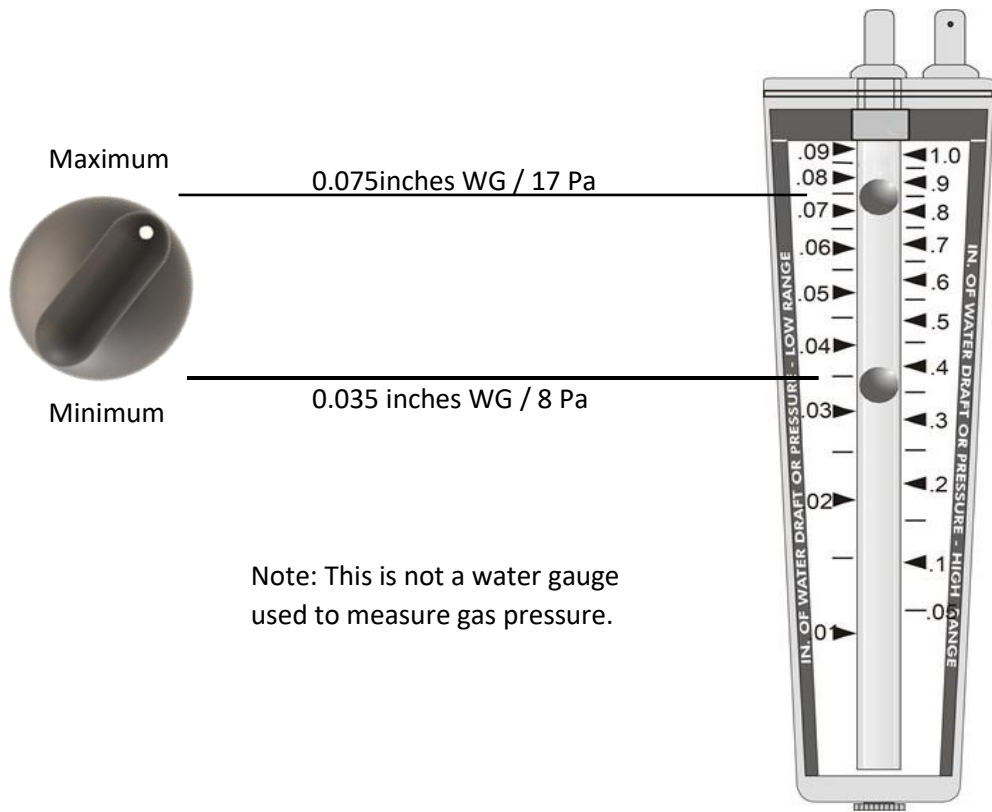
The chart illustrates the required negative air pressures relative to the burner settings, with the shaded band giving the tolerance within which the burner will give satisfactory performance. The stoves are equipped with pressure test points which will give the actual pressure within the stove, but it is not possible to verify the pressures to enable the correct adjustment of the draught stabilizer without a suitable manometer. The pressure must be tested within the stove as flue draught readings taken in the flue, are after the stoves stabiliser, and will give an incorrect reading.

We recommend the Dwyer 460 Air Meter is used when taking flue draught readings as it is small, light and easy to use.

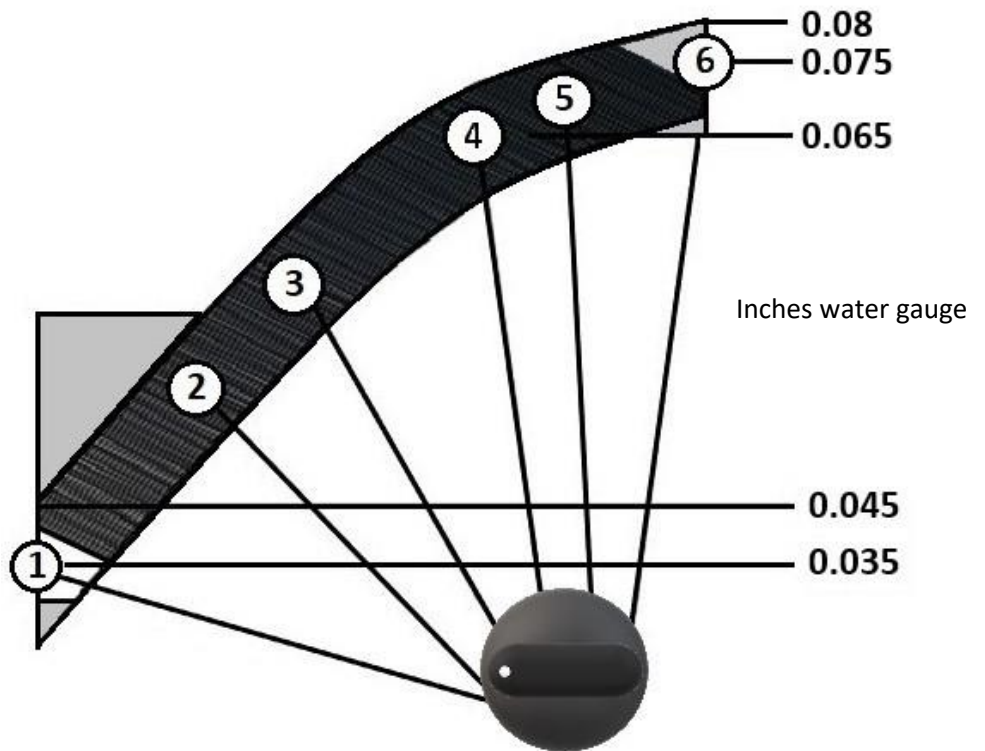
Draught Requirements Belfort and Savoy



Draught Requirements Burgundy

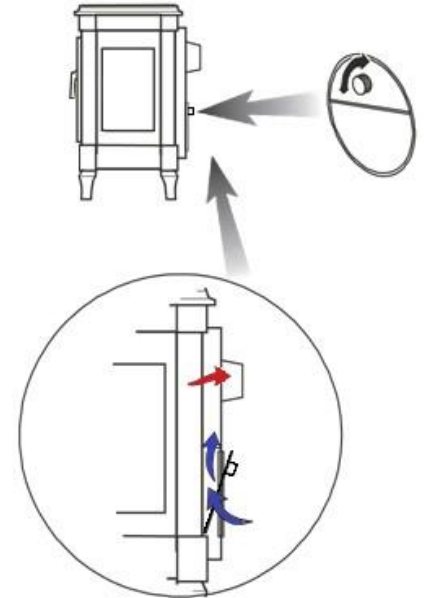


Possible smoke and soot formation in these areas



Draught Stabiliser

The flue stabiliser 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.



Excessive negative pressure at low fire (No1)

- Soot build up (for example overnight).
- Soft and hard carbon build up within burner.
- Damage to catalyser.
- Damage to ignition system.
- Smell of oil vapour from overheated oil supply components.

Low negative pressure at low fire (setting No1)

- Vaporisation slow at lighting resulting in sooty glass.
- Soft carbon build up within burner.

Excessive chimney draught at high settings

- Poor flame effect.
- Noisy operation.
- Damage to catalyser.
- Damage to ignition system.
- Hard carbon build up within burner.
- Lack of heat from the stove.

Poor chimney draught at high settings

- Sooty interior.
- Carbon build up within burner.
- Lack of heat from the stove.

Pre-Commissioning Checks

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 aspect of commissioning. Someone who understands never queries a satisfactory stove but will tell you when something actually is wrong.

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

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 are fitted. Having verified that the oil pipe work to the stove is complete and that the fire valve is opened, 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, and a minimum of one litre of oil collected into a suitable receptacle. If dirt, water or air bubbles are present in this sample additional oil should be allowed through the pipe work until it is free from contaminants. The fuel pipe work should be reassembled.

Note: air within the oil supply system or oil control valve will affect the ability of the oil control valve to allow the correct flow rate. If an incorrect flow rate is suspected, inspect the oil control valve and supply line for air.

The draught stabilizer at the rear of the stove should be examined to ensure it opens and closes freely before lighting the stove.

The stove's combustion pressure testing point located.

Belfort: This is a screw fitted in the flue blanking plate which can be removed to insert the steel tube from the draught gauge.

Savoy: Lift the breather tube out of the oil control valve and attach the draught test gauge to this to take the reading, the other end of this tube remains within the body of the stove.

Commissioning

Remove the fuel effect before attempting commissioning.

Following the lighting instructions relevant to the stove being commissioned light the stove.

Note: Do not light the burner if oil is present in the burner base. Remove this oil before lighting.

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 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 its maximum output.

Note: do not increase oil flow rate to the point where smoke is produced.

The entire Stove, flue should be allowed to reach normal operating temperature. Depending on the flue system this may take up to 1 hour.

Note: Commissioning without the system at operating temperature will probably result in you, the engineer, returning to correct the commissioning at a later date.

Reduce the control setting to No 1 (low setting, the resistance before the control valve goes "click off" is the ideal point).

After 5-10 minutes take a draught reading. This reading should be within the requirements of the stove.

If the draught readings are higher or lower than required adjust the stoves stabiliser so the correct reading is obtained by winding in (clockwise) to increase or out (anti-clockwise) to decrease the counter balanced weight on the stabiliser.



Once the correct low fire chimney draught has been achieved turn the stove to high fire, No 6, progressively over 5 minutes.

Wait 10-15 minutes for the chimney draught to stabilise.

Adjust the draught stabiliser weight so the chimney draught does not exceed the maximum required. If the draught cannot be achieved for high fire see section reducing high fire flow rates.

With the chimney draught settings correctly set the oil flow rates need to be checked. This is normally checked by the visual size of the flame it is not usual to disconnect the feed pipe to the burner and do a timed flow test.

Flow Rates		
Model	Min cc/m	Max cc/m
Belfort	3	9.7
Savoy	4	16
Burgundy	4	21

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 (chimney draught) within the stove has been achieved.

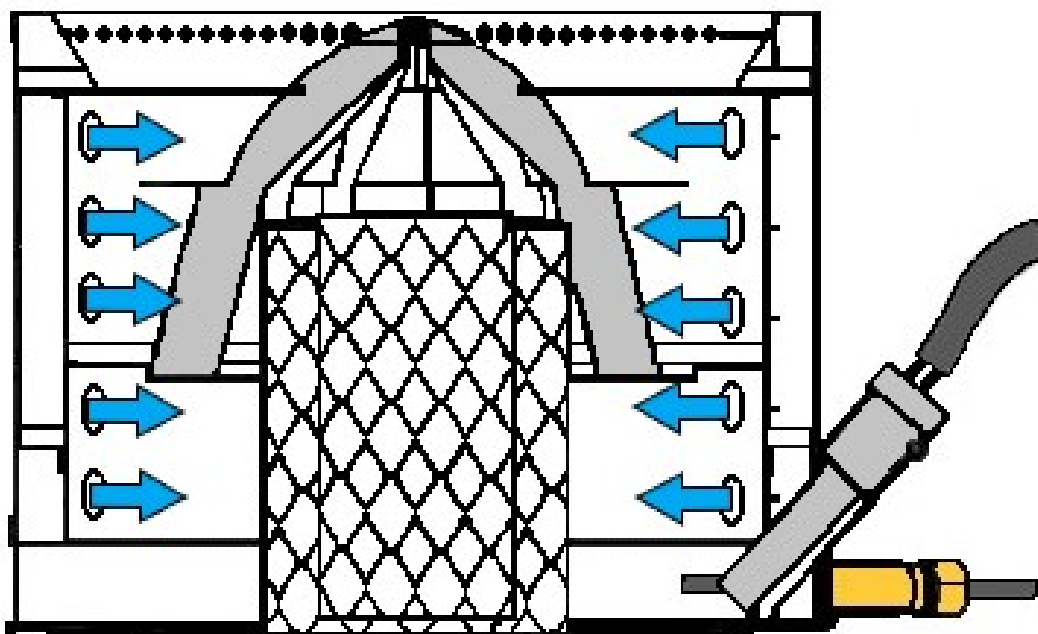
All adjustments to the oil metering valve should be followed with a period of undisturbed running before making any assessment and several minutes should be allowed for the flue draft to stabilise after adjusting the flue stabilizer.

Low Fire (Minimum flame size)

Flue draught set at the requirement for low fire No 1 setting e.g. 0.04"wg

The catalyser body will glow brightly, with the only visible flames being horizontal blue translucent jets dancing between the catalyser and the holes in the burner cylinder wall. No flames from the top row of holes.

The following flame size diagrams are to assist with correct adjustments.

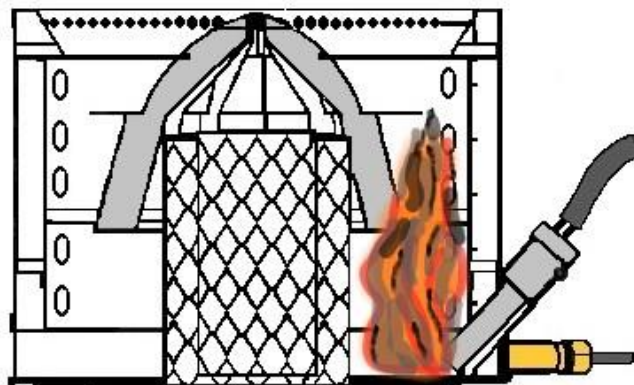


If the flame size is larger than this decrease low fire flow rate, if the flame size is smaller increase the oil flow rate. (See adjusting screw position on the oil valve in previous pictures).

Do not adjust the low fire screw more than 1/4 turn at a time before allowing burner to settle. Check the flame pattern again and adjust again in the same manner if required.

Oil flow rate to low

If the oil flow rate is too low insufficient heat will be produced to vaporise the oil entering the burner, this will result in the fuel being burnt as liquid which will wick from the bottom of the burner creating smoke. The same symptom can occur with excessive chimney draught at low fire as the amount of air passing through the burner will cool the burner preventing vaporisation of the fuel.



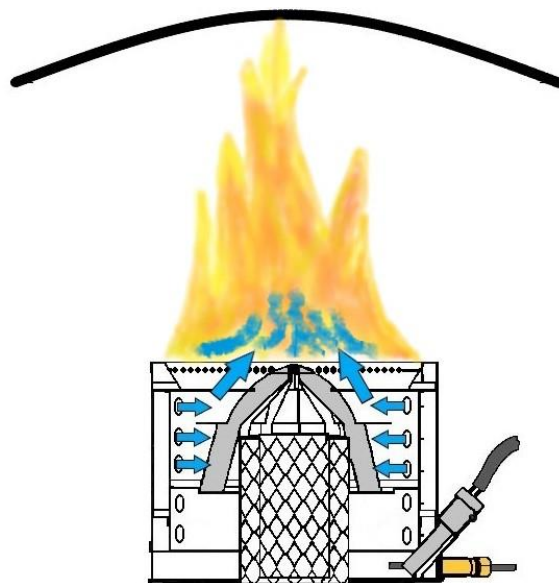
Maximum flame size (no 6 setting)

The maximum flame size, depending on the chimney draught requirements, should not touch the top of the stove. The size of the flame depends on the chimney draught produced.

If insufficient draught is created a tall long lazy yellow and sometimes sooty flame will occur.

If excessive the flame size will be small and noisy within the burner.

A good guide is that the flame should not pass higher than the top of the glass in the door. If a poor flue draught occurs the flame at maximum flow rate should be adjusted to reduce the flow rate to gain a correct maximum flame.



Solving Negative Pressure Problems

What to do if the chimney draught is too high at low fire.

There are two reasons chimney draught can be high at low fire.

1. The chimney is susceptible to increases of draught from external conditions such as wind.

If this is the case the flue termination position must be examined to confirm it is correct and a draught stabilising cowl fitted.

2. Excessive negative pressure can occur with chimneys over 20ft (6 meters).

Utilize the draught stabiliser at low setting to reduce the chimney draught. This solution can only be used if the higher heat settings of the stove are unlikely to be required.

In this case adjust the draught stabilizer to reduce the flue draught at setting 1 to 0.045" water gauge. Turn the control knob to setting 6 maximum and reduce the high fire oil flow setting to decrease the flame size until a clean soot free flame is produced.

A 90mm choke plate, FB237405, can be fitted under the flue collar which will reduce flue draught where there is a high flue draught due to the chimney being tall. It cannot be used where the high flue draught is due to wind induced conditions.

What to do if the chimney draught is too low at high fire setting.

This problem will only normally occur with poor flue construction or an unlined flue or short chimneys. The only solution to this is to improve the chimney system or calibrate the high fire oil flow to reduce the flame size so it burns cleanly.

As many stoves will never be run at high fire the reduction in the flame size on high is generally not a problem in comparison to soot formation within the stove.

Once the stove has been adjusted and operating correctly the following points must be checked.

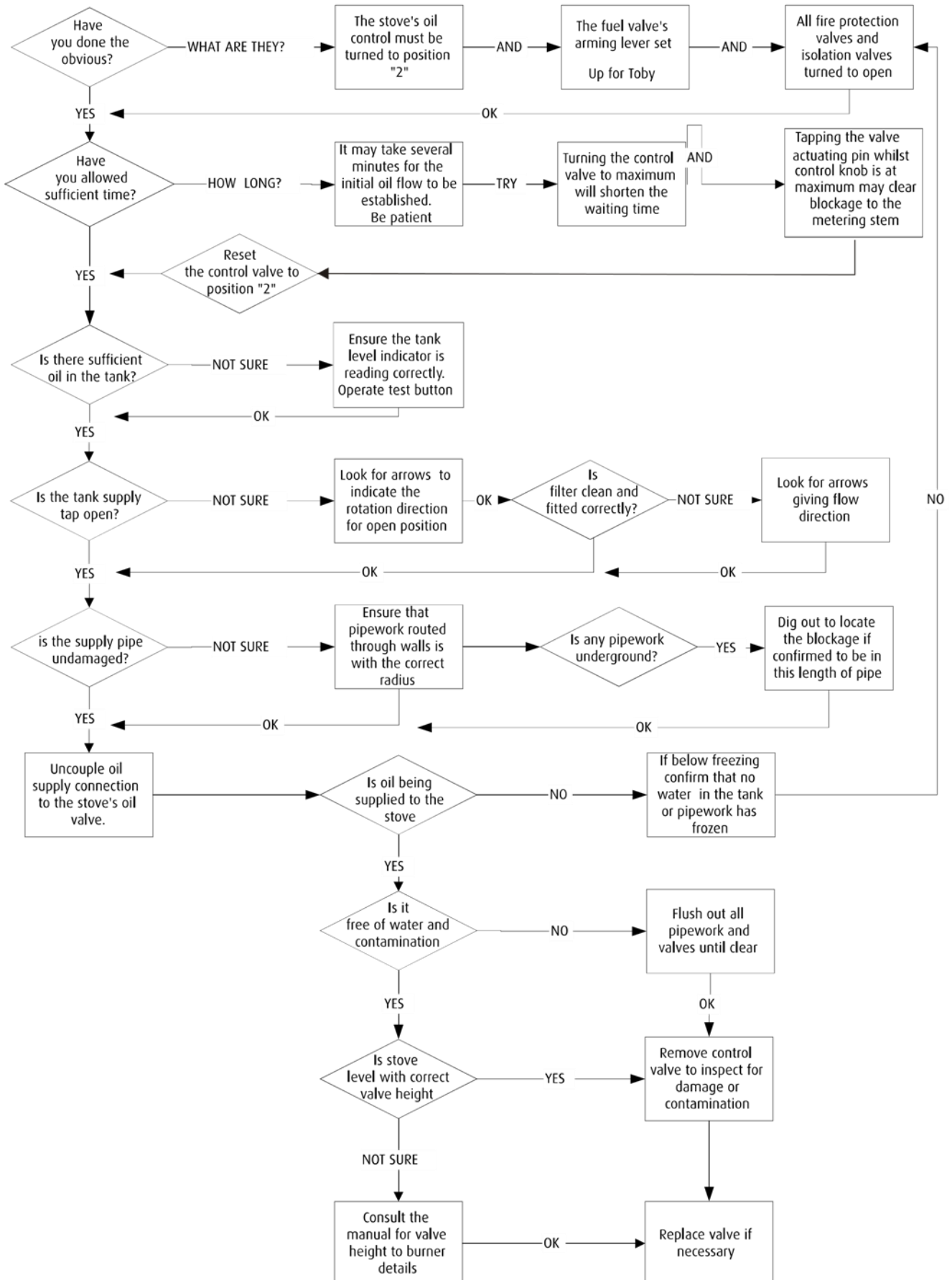
1. The stove and the oil system should be examined for any evidence of oil leaks which may only occur when the stove is hot.
2. The customer must be advised about the operation and the lighting procedure. If the chimney system is slow in establishing a chimney draught the customer should be advised to leave the door open a crack for the first few minutes and that soot may occur on the glass at lighting. This can be easily removed with a dry cotton cloth or kitchen towel. If the door is left open a crack for the first few minutes on lighting the stove **MUST NOT** be left unattended.
3. Advise the customer that if the stove is to be out of operation for more than a few weeks that the isolation tap which should be located by the stove should be turned off, demonstrate this to the customer.
4. Ensure the customer understands that, like any heating appliance, the stove must be serviced annually. Failing to do so could invalidate any warranty the stove may have. There is a page in these instructions where a record may be kept.
5. Instruct the user never to operate the stove with the stove's door open and that the user is aware of the requirement of a suitable fire guard where children, the old or infirm may come into contact with the appliance.
6. The warranty registration form should be completed and the user advised to return it fully completed to ABGO.
7. All instructions are left with the user.

Commissioning Engineers notes

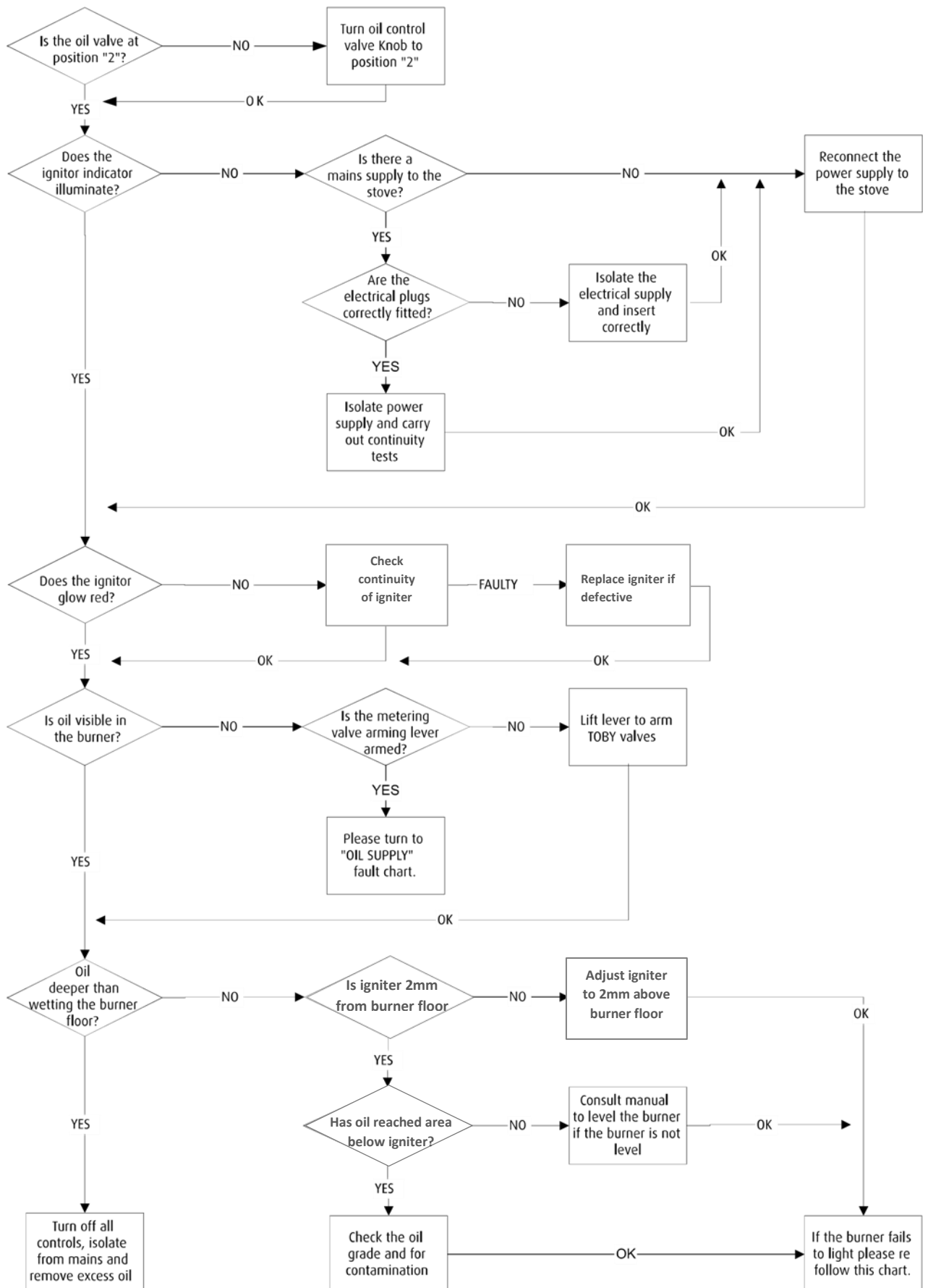
Record any unusual procedures taken:

Fault Finding Flow Charts

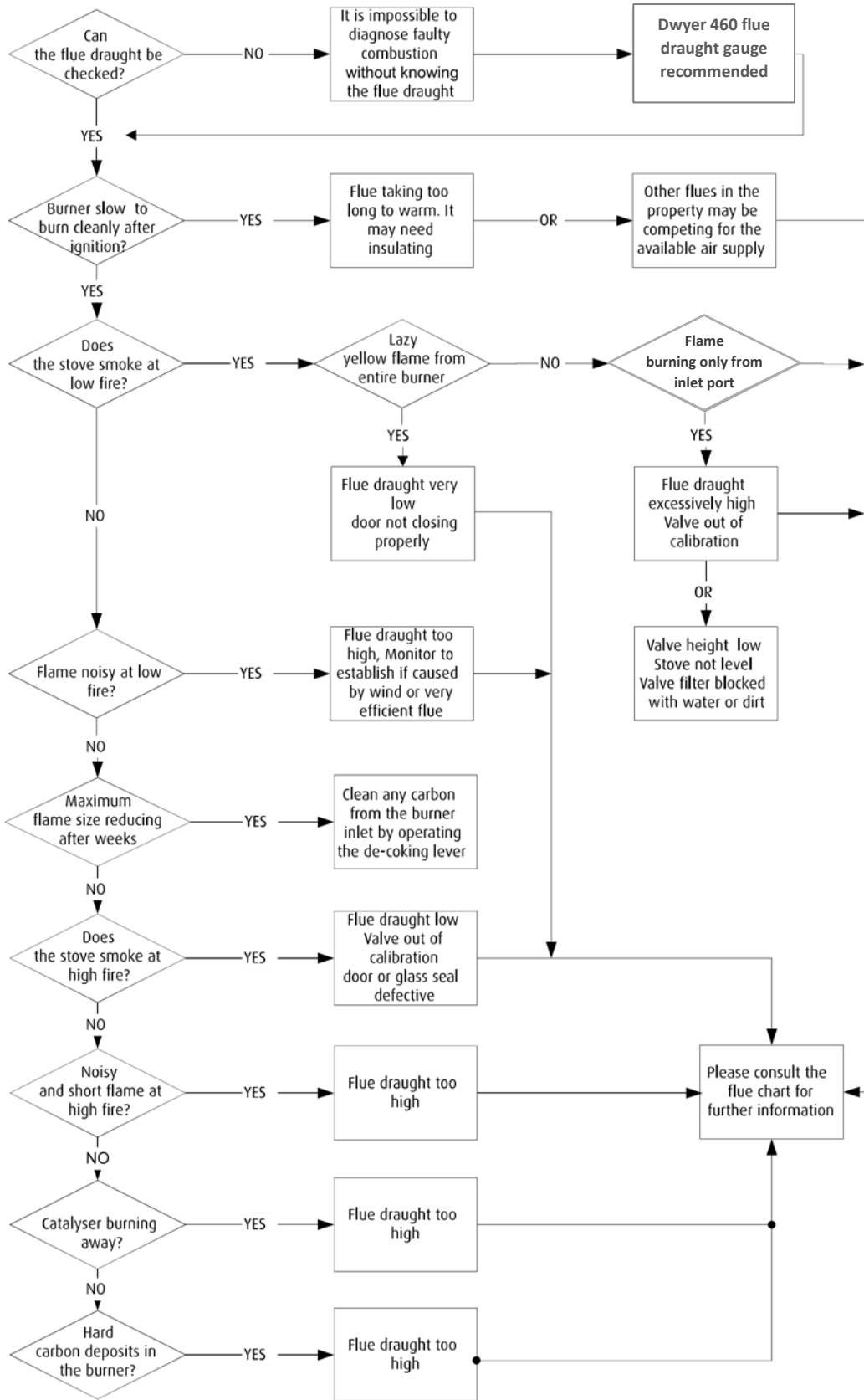
OIL SUPPLY



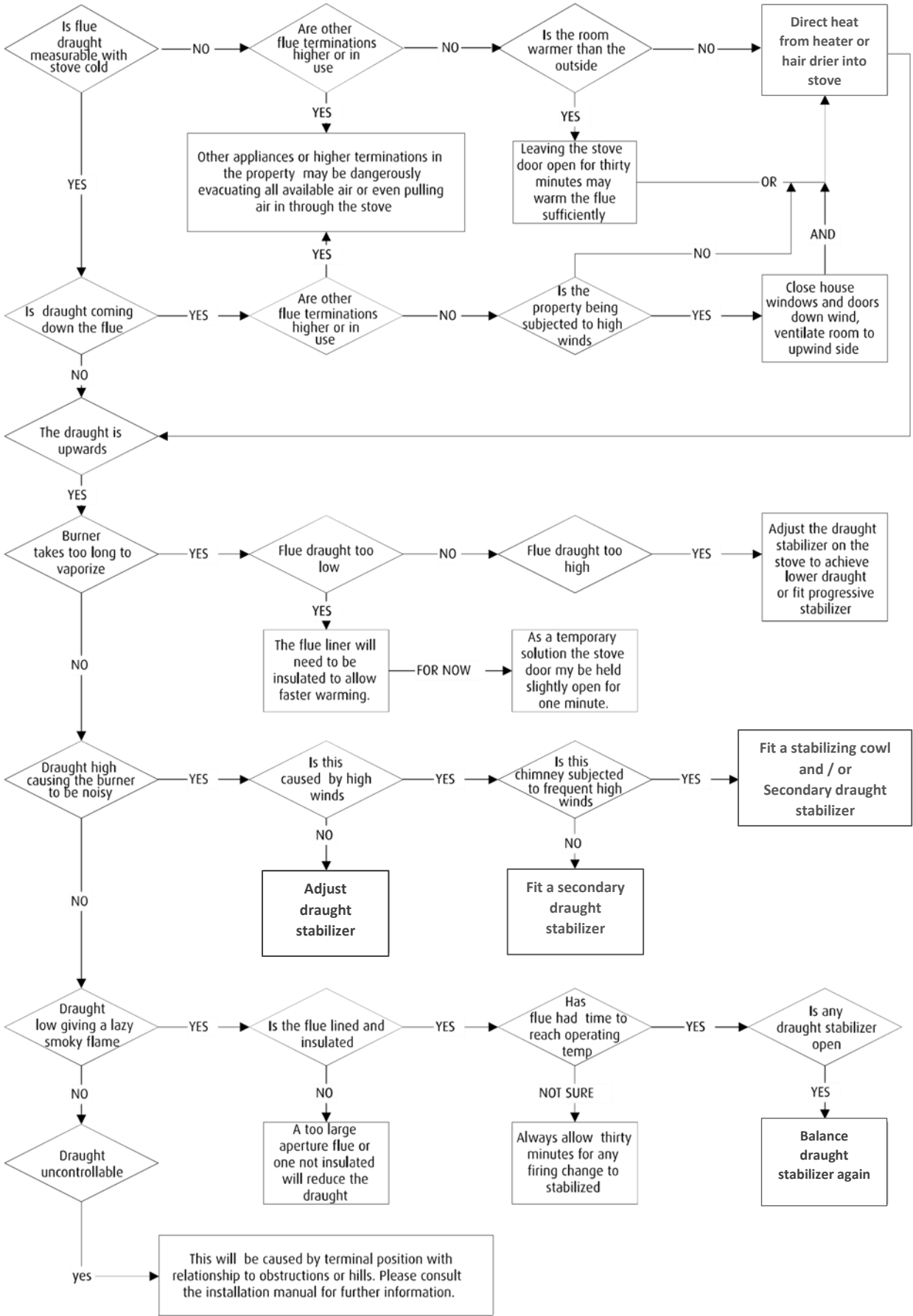
BURNER FAILS TO IGNITE

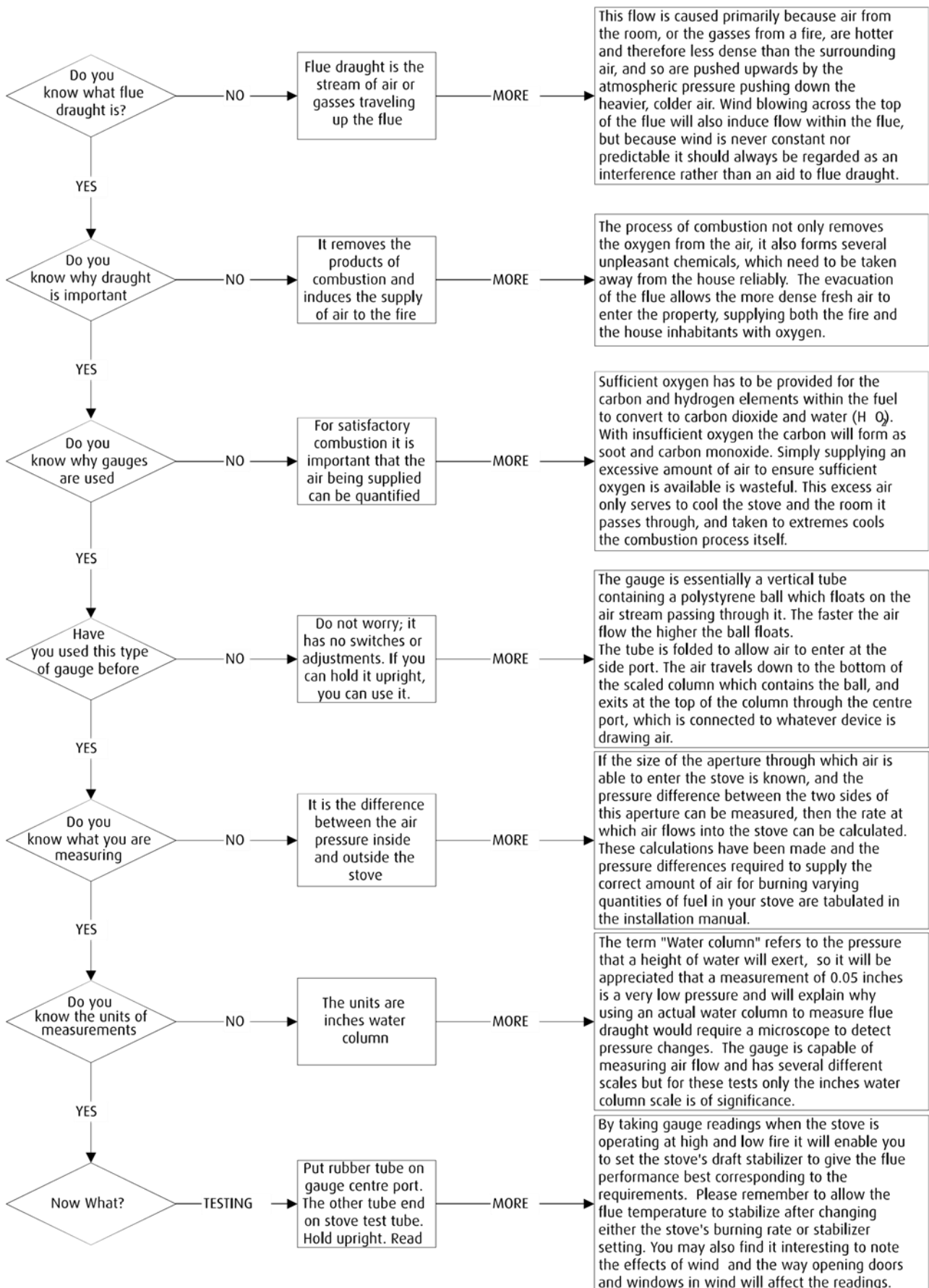


BURNER NOT OPERATING SATISFACTORILY



FLUE DRAUGHT





Minimum Service Requirements

1. Check the in-line oil filter, clean or replace as necessary.
2. Check for oil leaks at rear of stove. Reseal joints if leaks are evident.
3. Remove coal or leg effect, if fitted, check condition and remove any soot that may have formed.
4. Remove catalyser ring, top and body. Check condition and remove any carbon deposits that may have formed. Replace if signs of damage or distortion are apparent.
5. Clean out any soot from inside the stove with a vacuum.
6. Remove any hard carbon that may have built up inside the burner. A blunt screwdriver is ideal to chisel this off with, then vacuum away.
7. Undo the oil feed pipe to the decoke assembly and check for any carbon build up in pipe.
8. Remove the brass assembly from the burner. Remove any hard carbon from the decoke rod so it can be withdrawn easily.
9. Check the condition of the decoke seals and replace if damaged, part No. FB142889, or if there are signs of oil seepage from around the rod.
10. If fitted, ensure that the ceramic igniter is 2mm from the base of the burner if not adjust the height.
11. Press the igniter button and check that the ignition element glows bright red. Replace if required.
12. Check door and glass seals are in good condition, replace if damaged or hard.
13. Using a vacuum cleaner remove dust, dog and cat hairs and any cobwebs from behind the stove that could be a fire hazard.
14. Reassemble the stove and light the stove ensuring that the stove lights within 90 seconds.
15. Allow the stove to come up to operating temperature, this may take 20 minutes or longer.
16. Ensure that the fire responds to the operation of the control and that there are no visible emissions of the flue gases into the room.
17. Check that the flue draught is set within the parameters for the burner size of the stove. Adjust if required.
18. Check the height of the flame pattern on both low and high fire. Adjust if required.
19. Fill out the service record on the next page.

Tools Required

Large dust sheets.

Latex gloves.

Vacuum cleaner, bag type.

Inspection lamp.

Dwyer 460 flue draught gauge.

Small flat head screwdriver, to adjust oil control valve.

16mm open ended spanner, to undo union between oil feed pipe to decoke assembly.

17mm open ended spanner, to remove decoke assembly from the burner pot.

Large old blunt screwdriver, to chisel hard carbon from burner pot.

Small socket set, to release bolts holding burner in place, if it needs to be rotated to release oil feed pipe from the decoke assembly.

Remember you will need plenty of patience when servicing an oil stove, as if you rush this you can vastly increase the odds on being called to come back.

Service Record

Year	Date	Company/Engineer	Tel. No.	Parts replaced
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

