Technical Specification Bulletin Number TB188

Fuel Type	Date of Issue	Edition
Oil	Feb 2007	2

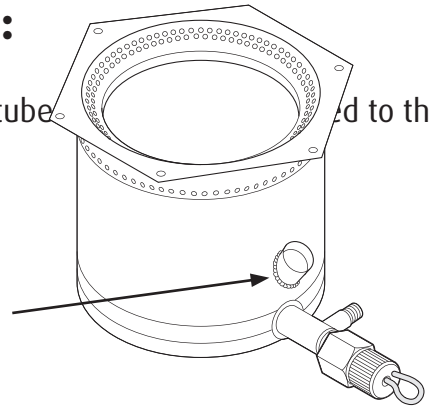
Euroheat
The Stove Company

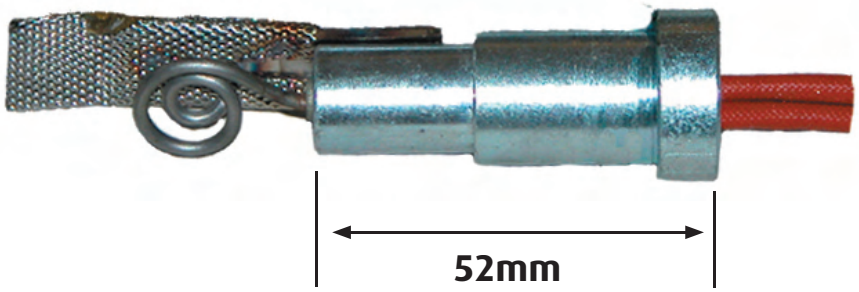
Short Igniter Replacement

Ignitor identification:

Short Igniter

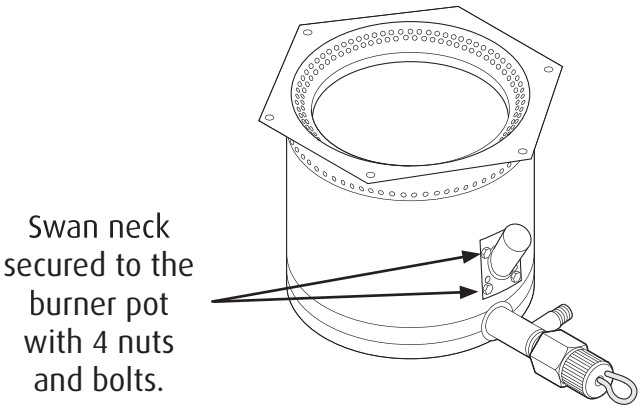
The short igniter is fitted to stoves in which the igniter mounting tube [illegible]d to the burner. The length of the igniter body is 52mm.

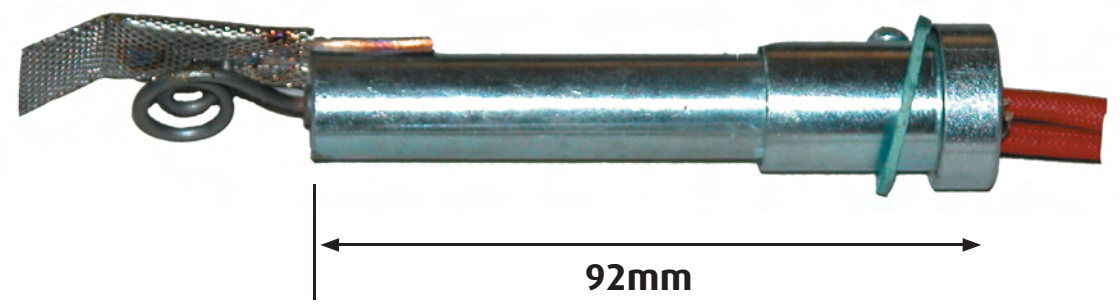




Long Igniter

The long igniter is fitted to stoves in which the igniter mounting tube (swan neck) is fixed in position by four nuts and bolts.
The length of the igniter body is 92mm.





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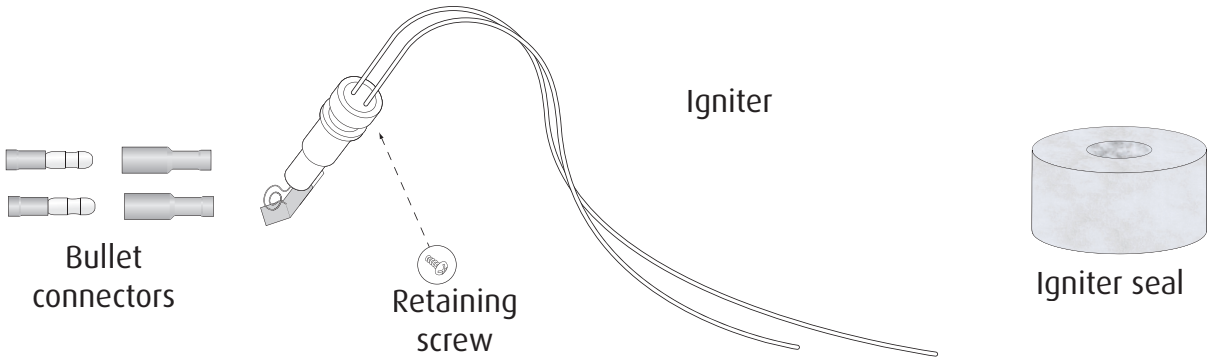
Short Igniter Replacement

Igniter Kit: Part No. 38500C



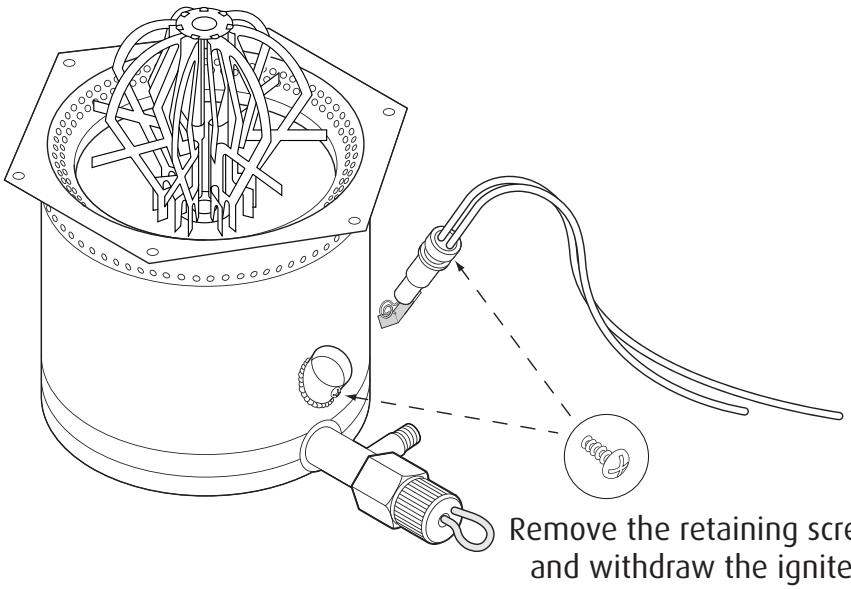
To remove the old igniter:

Remove the power cord from the power supply to the transforemr and remove the two wires from the transformer, which is fitted to the rear heat shield of the stove.

If there is limited access to the transformer the wires may be cut at a convenient point near to the igniter and the bullet connectors, supplied with the kit, used when fitting the new igniter.

Open the lower door of the stove to access the burner.

Unscrew the retaining screw on the side of the swan neck and withdraw the igniter.



Remove the retaining screw and withdraw the igniter from the swan kneck.

Short Igniter Replacement

To fit the new igniter:

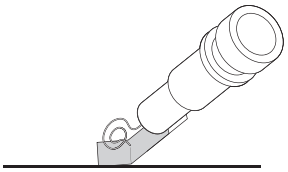
Using emery board clean any lacquer from the ends of the wires of the new igniter, to ensure a good contact at the transformer or bullet connectors.

Slide the ceramic igniter seal down the wires to the body of the igniter and if there is a fibre gasket on the body of the igniter this must be removed.

Fit the two wires to the transformer, if you have cut the wires, as access to the transformer is difficult, the bullet connectors need crimping onto the wires using a crimping tool and the two ends joining.

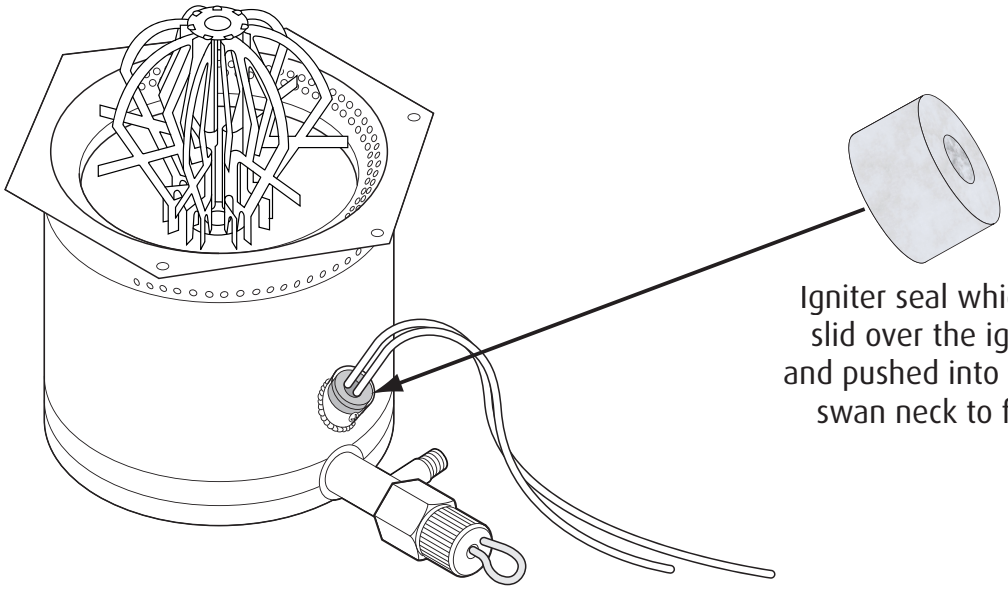
Insert the igniter into the swan neck and refit the retaining screw.

For clean and rapid ignition to be achieved the tip of the igniter's stainless steel gauze must rest on the pot bottom to allow oil to be attracted towards the ignition coil by capillary action with the minimum amount of oil having entered the burner.
For further more detailed information see page 5.



The igniter gauze with one side or the tip only touching the burner base.

Push the igniter seal into the top of the sawn neck to form a seal. Failure to do this will allow air to leak past the igniter and cause poor combustion to occur. Once fitted light the stove and check the flame pattern to ensure that the seal is not letting air past which would cause a yellow flame to appear in the area of the igniter port.



Igniter seal which should be slid over the igniters wires and pushed into the top of the swan neck to form a seal.

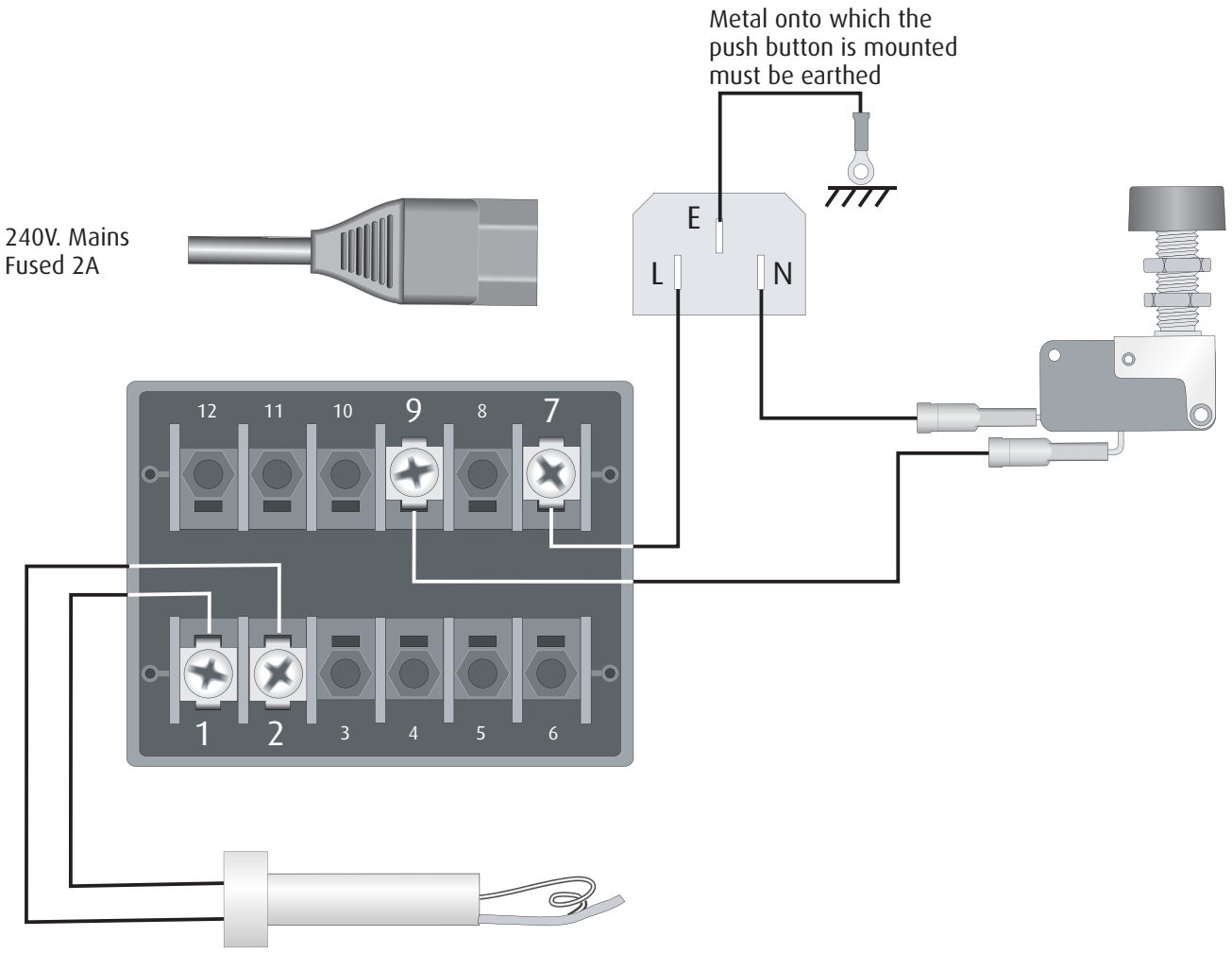
Short Igniter Replacement

Check the operation of the igniter:

Reconnect the power supply cable and turn the power on. Press and hold down the igniter button and check that the element glows bright red.

If it does not glow check the connection of the igniter leads to the transformer, that the fuse in the supply cord is working and that the transformer has 240V going into it and that 4V is leaving it.

Wiring diagram for the electric ignition



Euroheat supply a transformer kit, part No. MS1121, for further information see Technical Bulletin 179 on our web site www.euroheat.co.uk or telephone the Euroheat Technical Department 01885 491117.

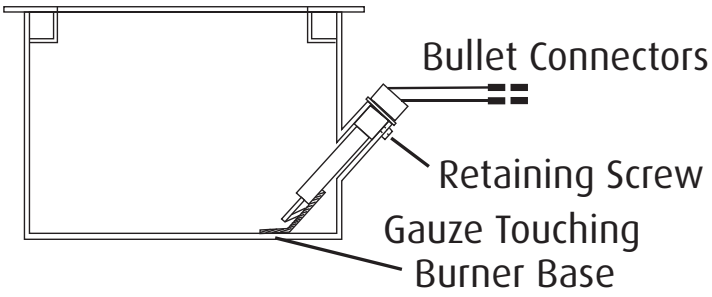
Short Igniter Replacement

The Oil Stove Igniter.

The igniter ignites the oil by using the capillary action of its stainless steel gauze to draw oil up towards its heating element, where the heat from the heating element causes the oil to vaporize and ignite as it passes over the element. The heat generated from this initial ignition heats the gauze to perpetuate the vaporizing process until the heat generated warms the burner pot body sufficiently for the oil to vaporize as it enters the burner.

For clean and rapid ignition to be achieved the tip of the igniter's stainless steel gauze must rest on the pot bottom to allow oil to be attracted towards the ignition coil by capillary action with the minimum amount of oil having entered the burner.

Bending the gauze to increase the length sitting on the pot bottom may aid the capillary action, but increasing the area the of gauze in contact with the burner bottom will cause the small amounts of heat generated by the igniter's heating element to be conducted away from the gauze too rapidly and will delay the oil within the gauze reaching vaporizing temperature. If the conduction of heat away from the gauze is too great, the flame at the igniter gauze may extinguish when the igniter is de-energized as the gauze will not maintain a high enough temperature to sustain vaporization of the fuel.



If the oil flow from the oil valve is not fast enough during the ignition sequence it will not form a "puddle" to reach the igniter gauze quickly but will instead flow directly towards the pot middle; the oil will then only reach the gauze when the pot bottom floods with oil. This will cause the ignition to be delayed and because of the excess amount of oil within the pot, when ignition is achieved, the flue will not be hot enough to induce sufficient air into the burner to allow complete combustion of this excess oil. The consequence will be that for the first few minutes the flames will be noisy, very yellow and smoky until the excess oil has burned off and the flue has warmed.

Because of the shiny finish of a new burner pot the initial "puddle" of oil takes a little longer to achieve than normal, but after running for several hours a fine deposit forms on the burner bottom which in subsequent ignition sequences assists in the oil spreading towards the igniter gauze.

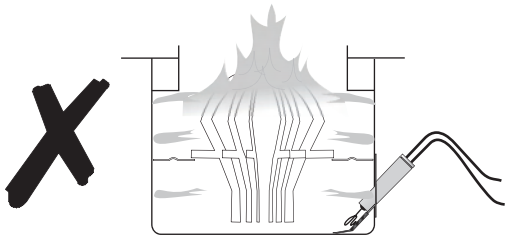
Short Igniter Replacement

If the low fire setting of the fuel oil valve has been tampered with, or the flue draught is too high and not within the specified limits, it is possible for all the incoming oil to burn from the igniter gauze and not heat, or maintain sufficient heat within the burner, to allow vaporization by the burner and catalyser.

The problem of oil not reaching the gauze, or indeed tending to burn at the gauze rather than spreading quickly to burn across the pot bottom, will be exacerbated by the pot not being level. Even if the pot was level with the stove top at the time of manufacture, time and heat will cause the seal between the stove and the burner to compress. This compression may not be uniform and, therefore, the pot itself must be checked to ensure it is level.

Igniter Failure

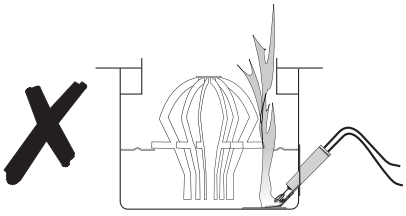
We examine every failed igniter returned to us and our records show that almost all failures can be ascribed to burners operating with an incorrectly set flue draught. After fitting the new igniter the flue draught must be checked using a reliable meter; we strongly recommend the Dwyer guage. Consult your installation guide for instructions and the flue draught necessary for your stove.



Noisy, ragged flames burning with haphazard shape below the secondary air holes is being supplied too much primary air causing the flame to burn within the burner barrel.

If the flue draught is too high when the stove is operating above the minimum burning rate the excess primary air will cause the flame to burn lower in the burner barrel than it should. This will cause not only the burner to overheat but also the sleeve of the igniter. The igniter will not be damaged simply by the high temperature, but because the conductor and insulator within the igniter sleeve have differing thermal expansion rates the conductor is abraded with each cycle of heating. This disparity and abrasion is of little significance within the temperature limits the igniter is designed to operate at, but when the igniter is regularly exposed to cycles of extreme temperatures the resultant movement between the conductor and insulator is high enough to abrade and wear away the cross section of the conductor. As the conductor thins its ability to pass the high currents during ignition sequences is reduced and it will eventually burn away.

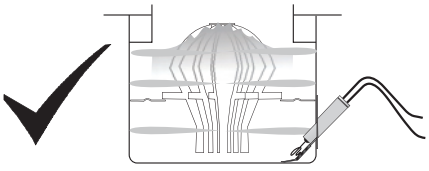
Short Igniter Replacement



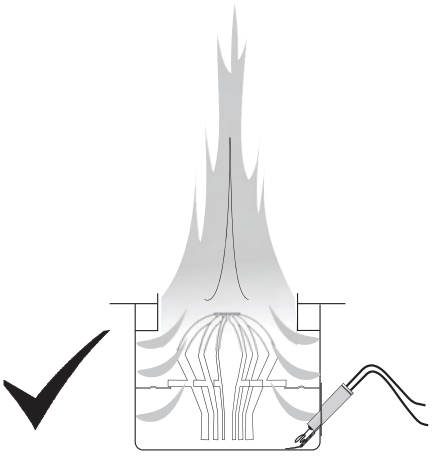
If the flue draught is too high at minimum setting the pot will cool, stop vaporizing, and the incoming oil will burn from the igniter wick with a long, dark yellow flame.

If the flue draught is too high when the stove is operating at its minimum setting it is possible that the excess air will cool the burner floor pan below the temperature at which it will completely vaporize the incoming oil. The build up of un-vapourised oil will collect at the igniter's stainless steel "wick" and will start to burn as a candle. This will further reduce the heat being transferred to the burner until it no longer vaporizes the oil and all the incoming oil burns on the igniter wick as a tall, thin, smoky yellow flame. This flame is of such poor and incomplete combustion that it is capable of chemically eroding the heater coil of the igniter. The coil will fail either because it is completely eroded away or the coil will overheat at the point of greatest erosion and will fail during ignition.

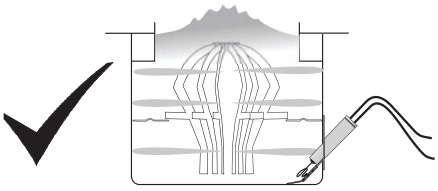
Correct Flame pattern



At the minimum setting, flames which come directly from the burner walls should be blue and gentle, causing the catalyser to glow at its lowest point. All flame activity should be no higher than the catalyser.



At maximum setting the flames from the burner walls will be drawn upwards, washing against the catalyser edges, the central core of flame will be bright yellow. It should be evident that the final, top row of holes in the burner are shaping the flame.



The final row of holes, providing the secondary air, should always be supplying some air to the flame. This is best indicated by the flame being waisted at the height of the holes whenever the flame is of large enough size.

Short Igniter Replacement

Euroheat have a policy of continual research and development and reserve the right to modify its products without prior notice. We make every effort to ensure that the information provided in this document is correct and accurate at the time of printing. Continued updates occur to adapt documents to customer requirements and appliance changes. For the latest editions of all Euroheat documentation visit our web sitewww.euroheat.co.uk.We would request that you inform Euroheat of information which you feel is not provided in this document which would assist other users in the future.

The Euroheat Technical Team