

Servicing Badly Carboned Burners. Issue 1 24-09-02

This information is given on the assumption that the appliance has run correctly for some time and then has started to run sooty.

If the burner in the appliance has never been able to run in blue flame combustion there will be a problem associated with either the flue vacuum applied to the burner or oil flow available into the burner pot.

1. When 35-second diesel oil is vaporised in the burner, there will be a progressive build up of carbon in the bottom of the pot and around the inlet port of the burner, to deal with this a certain amount of service work is required.

1-1 Oil flows into the pot through the brass adaptor called the descaling device located at the base of the pot.

1-2 Through the centre of the descaling device is a round metal rod called a descaling lever?

1-3 When the descaling lever is rotated it is so designed to remove some of the carbon which builds up on the inside bore of the device.

2. Oil flows into the pot via gravity with very little head pressure and so the slightest build up of carbon around the descaler will cause a resistance to the flow of oil.

3. The burner needs a minimum flow of oil to generate enough heat to keep it up to its critical vaporizing temperature.

3-1 The critical vaporizing temperature is that at which the burner is hot enough to turn the oil into gas indicated by the presence of blue flame combustion.

4. The oil flow setting on low fire is deliberately set higher than is required for two reasons -:

4-1 To allow the burner a margin of excess to compensate for the progressive build up of carbon and subsequent progressive reduction of oil flow.

4-2 To give the flame enough energy to take the burner through the critical vaporising temperature barrier.

5. If the oil flow into the burner is allowed to reduce to a level lower than that required to keep the burner at or above the critical vaporising temperature, the burner can no longer do what it was designed to do and as a consequence oil just burns at a much lower temperature.

This will result in -:

Smoke issues from the chimney, the burner soots and carbons up, the stove glass soots up, the chimney soots up, the flue ways soot up.

The whole lot must then be thoroughly cleaned before the stove will operate properly again.

PROCEDURE

Before starting make sure that you have dustsheets down and plenty of tissue.

1. Remove the oil feed pipe in between the oil control valve and the descaling device.
2. Unscrew the descaling device from the pot and dismantle it making sure that every scrap of carbon is removed from the descaler body and the descaling lever.
3. Check the gap between the inner and outer skins of the burner pot at the bottom of the pot and thoroughly clean the annulus to remove every scrap of carbon build up. (Use a mirror on a stick to view the carbon)
4. Clean the upper and lower catalysers with wire wool and a soft brush
5. Clean the flame ring with wire wool and a soft brush
6. Clean the stove or boiler internals with a soft brush (if there is a thick coating of soot or scale on the stove it may be necessary to use a scraper tool to remove it)
7. Check that the chimney is clean.
8. Check that your oil supply tank is not water contaminated by flushing oil into a settlement jar.
9. Clean or change all oil filters and water traps.
10. Remove the door and door glass and thoroughly clean in warm soapy water.
11. Check all door seals.
12. Drain the oil control valve using the drain screw.
13. Remove and clean the internal filter in the oil control valve.
14. Brush all dust from the stove.
15. Vac up, clean all brassware and repaint the stove.
16. Observe Good Health and Safety Routines (Suitable gloves and mask,)

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