

April 8, 2009

PC45 Air Pump Flow Reduction

Problem:

PC45 Igniter air pumps (# 3-20-02679) have experienced a decrease in output which can lead to delayed ignition, and possible igniter failure.

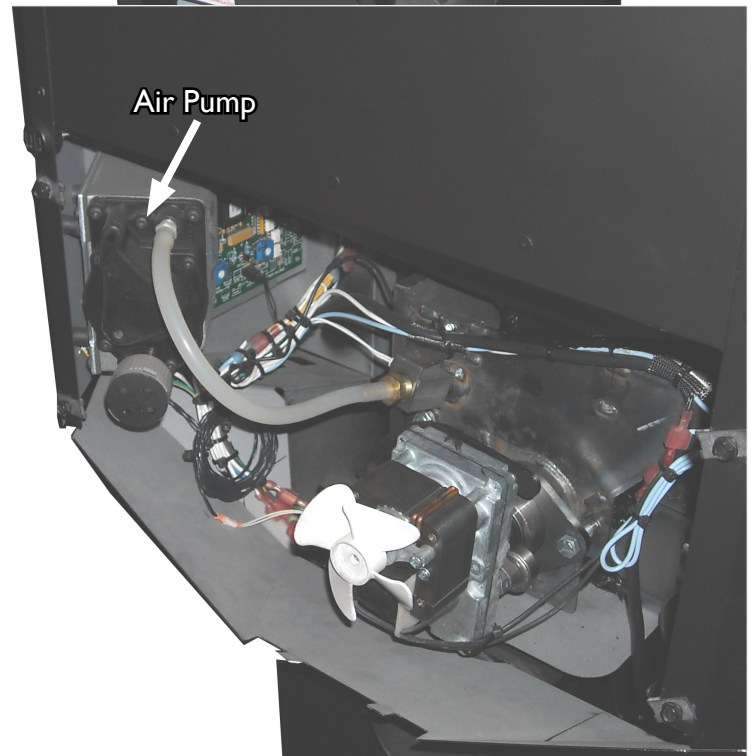
Cause:

The magnetic properties of the air pump, while running, cause the pulling of the internal components toward the motor windings. This can cause a decrease in the air flow from the pump due to friction. The pump runs but the output may be reduced.

Solution:

Using repair kit #1-00-724135, install a teflon pad onto the internal metal pole. This will provide a smooth surface so that the rub does not cause the pump to slow. Follow the included instructions to make the necessary modification to the pump. It is recommended to perform this modification on any stove you may have sold, especially those that are experiencing ignition failure or delayed ignition symptoms. The cut-in serial number for unit production with the updated pumps is #008055328.

Identification: As of 1/26/09, pumps being sent out as replacements are updated. The updated pumps have an X on the label.



Included is a condensed version of the modification instructions that are included with the kit.

PC 45 Air Pump Repair Kit Instructions

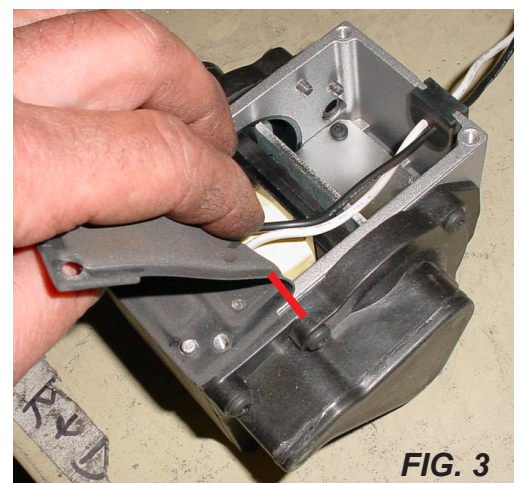
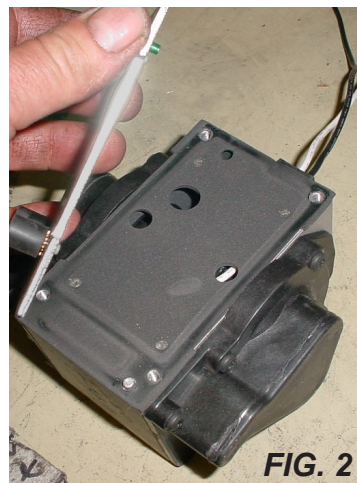
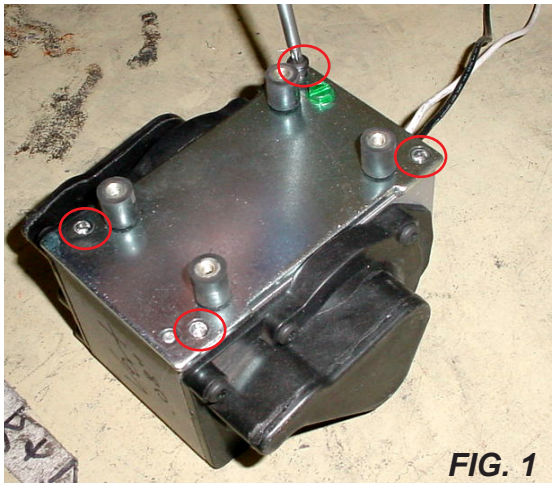
Kit # 1-00-724135 Contents

- 1½" X 2⅛" Adhesive backed Teflon Pad
- Instruction Sheet
- 4 new rubber insulators for mounting bolts

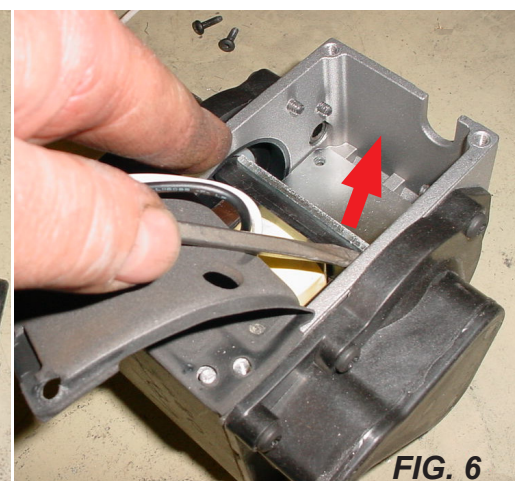
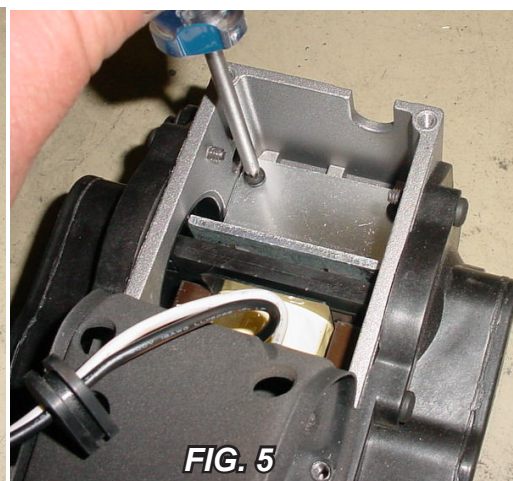
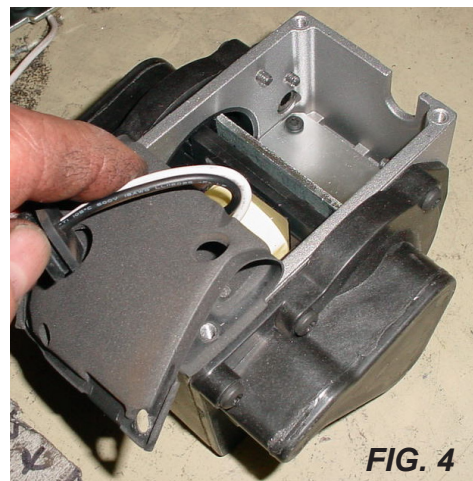
Tools Required

- T-15 Torx Driver
- T-20 Torx Driver
- 3/32" Hex Key Wrench
- Pliers

If the air pump sounds like it is working, but there is no ignition, the igniter may have burned out due to low air pump flow. The likely cause is from parts rubbing together inside the pump. This condition can be corrected using a teflon spacer between these rubbing parts. Remove the rear covers and disconnect the wiring and the silicone tubing from the air pump. Using the 3/32" Hex key wrench, remove the mounting screws that hold the pump to the stove. Sometimes these screws are so tight that you must damage the rubber mounts to remove. Replace with the mounts supplied, as needed.



With the pump out of the stove, apply power to it and check the air flow by putting your finger over the outlet. (make a mental note of the volume of air movement). Remove the four # 20 Torx screws from the corners of the bottom plate. Take notice that the position of the green ground screw is on the same end that the wires come out of the pump housing (FIG 1). Carefully remove the bottom cover from the air pump and lay it aside (FIG 2). Gently pull the rubber gasket back starting at the wire end of the pump and stop at the screw shown above (FIG 3). Remove the wire and strain relief from the housing and lay the wires back over the rubber gasket (FIG 4). Remove the two #15 Torx screws that hold the steel pole piece to the pump body (FIG 5). Gently pry the steel pole piece from the housing (FIG 6). The plastic armature it is against contains two magnets which are holding it in. Once the magnets release, the steel piece will come out more freely.



Using a clean cloth, wipe off the pole piece and the plastic magnetic armature of the air pump. Remove the paper backing from the adhesive on the Teflon sheet (FIG 7), and apply it to the slotted side of the steel pole piece (FIG 8), keeping it evenly spaced between the edges, while covering the slotted surface. Install the pole piece back into the pump housing with the Teflon facing the plastic magnetic armature. (FIG 9) It is easier to start the screws while the pole piece is held in an angled position and then allow it to sit down onto the pump housing. Install the wire and strain relief back into the notch in the air pump body (FIG 10). If the gasket was completely removed from the housing, be sure there is no damage to the gasket in the area shown (FIG 11). This area is the outlet passage to both pump diaphragms. Leakage here will reduce pump output. Lay the gasket back into place on the bottom and install the bottom cover. Apply power to the pump and check the outlet air flow in the same manner as when it was first removed. You should be able to feel a significant increase in the flow. Install the pump into the stove, and re-connect the hose and wiring. Ty-wrap the wiring to the original configuration and re-check the operation of the pump.

