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## HOW TO USE THIS REPAIR GUIDE

The instructions in this Repair Guide pertain to the **Bissell PowerSteamer ProHeat Series**. The information identifies those parts and components which are most likely to cause problems in the operation of the unit. Using easy-to-understand diagnostic procedures and step-by-step repair and/or replacement instructions, you will be able to identify and repair a wide variety of common repair problems.

### UL RECOMMENDED HIGH VOLTAGE TEST and Ground Continuity Test

#### High Voltage Test

In keeping with UL standards, a high voltage test should be

performed on a vacuum or deep cleaner any time the unit is in for repair, especially when the motor or other electrical components have been replaced. High voltage testing is done for the safety of both the customer and repair technician. By applying a high-voltage between "live" parts and various metal portions of the machine that are exposed to wear, you proof-test the entire machine against grounds or shorts that could cause inconvenience, fires or personal injury. High voltage testing is also a quality control measure. The possible future failure in the insulation of any portion of the unit, whether due to workmanship, components or materials, will be detected by this procedure prior to return of the unit back to the customer.

This test can be accomplished with any commercial available test equipment offered for this purpose. The normal test parameters are 1000 volts for one minute or 1440 volts for one second. After the product is completely assembled, applying the high-voltage tester connection simultaneously to both the hot and neutral plug terminals and applying the zero-voltage connection to the ground terminal perform the high voltage test. The product power switches must be in the "on" position during this process.

#### **Ground Continuity Test**

This test is performed to determine that grounding continuity exists between the grounding blade of the power supply cord plug and the motor. This test should be performed any time electrical connections are disturbed. Any suitable indicating device - ohmmeter, battery/buzzer combination or the like may be used to determine compliance. Contact points are the ground terminal in the plug to the shaft of the vacuum motor and the heater body.

## **USING THE SERVICING PLATFORM**

Begin by placing the unit on the Servicing Platform. Servicing Platform should fit securely under the unit and raise its wheels off the servicing surface.



## **ELECTRICAL SYSTEM CHECK**

1. **Hi-Voltage Test:** Refer to the previous page for information on the Hi-Voltage test. This test should be performed prior to plugging a suspected defective unit in and after reassembling any unit in which an electrical repair has been made.

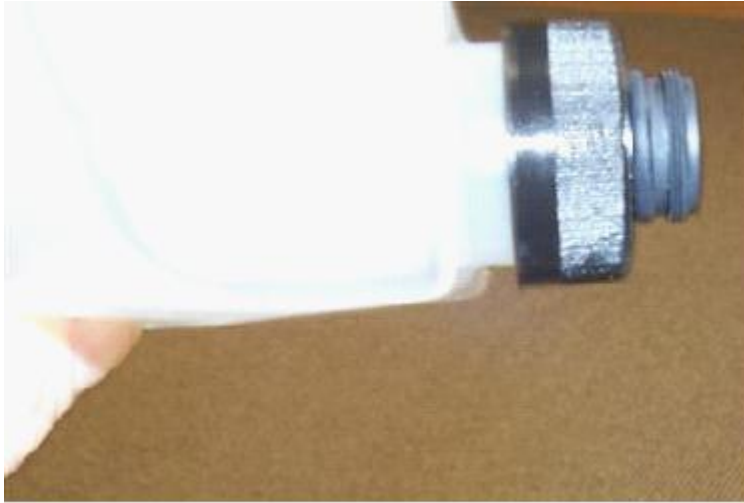
2. **Motor Sound Test:** Plug unit into outlet and turn heater (if present) and then power switch to “on” position. If motor makes an abnormal noise, the motor must be inspected for replacement. If the motor does not turn on at all, refer to the wiring diagram and locate the open circuit or defective component.
3. **Heater Light Test:** If present, turn heater switch “off” and “on” a few times and make sure the oval light on the front of the unit turns off and on.



4. **Speed Sensor Test:** If a speed sensor is included with the unit, spin the wheel on the opposite side as the belt cover. As you spin the wheel faster and faster, the red LED's should move toward the yellow zone. Make sure all LED's are active.
5. **Transmission Test:** If a transmission is present (7950-series units), test the transmission by placing the neutral knob to the green “on” position and then pressing the handle down and then pulling it upward. The wheel should spin forward when the handle is pressed and backwards as it becomes fully raised. Lock the handle in neutral by placing the knob into the red “off” position and then give the handle a quick push-pull. The pin in the knob should lock the handle and the wheel should stop spinning.

## SPRAY SYSTEM CHECK

1. **Setup:** Fill the Clean Tank and Solution Bottle half way with water and place on unit.
2. **Seal Inspection:** Check seals on Tank Bottom Assembly and Detergent Bottle. If necessary, re-seat or replace seals. If over-seal is missing from the cap and insert, see if it is stuck in the auto-mix assembly. If the overseal is missing from the bottom of the tank, see if it is stuck in the tank receiver. A missing overseal in either situation will cause a loss of prime or leaking.



3. **Valve Inspections:** Check valve action on Tank Bottom Assembly and Detergent Bottle by depressing valve with your finger. The valve should move up and down. Replace if necessary.



4. **Housing Screw Inspections:** Check the four rear screws on the main housing. If any bosses are broken, the base may drop, causing the tank to disengage from the receiver. This will result in no-spray.
5. **SmartMix Knob Inspection:** Check resistance of the SmartMix knob by turning it from left to right several times. If the knob becomes difficult to turn, especially near the "water only" setting, check to see that the piston is installed correctly (with housing removed). Otherwise, set the knob to the "Normal "

position.



6. **Trigger Rod Inspection:** Test the trigger mechanism. There should be 1/4" of free travel before 1/4" of resistance. If not, ensure that valve is seated correctly. If valve is OK, replace the trigger rod.



7. **Pump Inspection:** Manually rotate motor shaft to determine that motor, brush and pump are moving smoothly and quietly. Remove any debris that may be hindering the free movement of these components. If belt is not present, pump will not

rotate, unit will not spray, and brush will not rotate.



8. Turn the power switch "on".
9. Depress trigger -- watch for spinning flow indicator.  
If flow indicator does not spin, ensure that it is assembled properly.



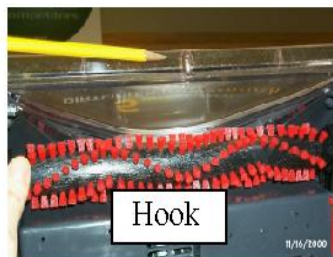
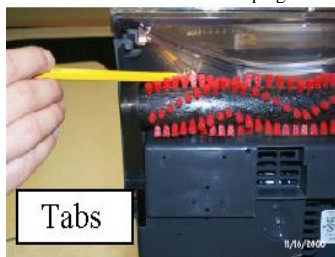
10. If unit does not spray through the front nozzle area, test the spray through the upholstery hose nozzle (no tools installed). If unit sprays through the upholstery nozzle but not the floor nozzle, inspect the following:
  - a. Clogged heater (if present)
  - b. Kinked/pinched tube between the "T" connection and the heater
  - c. Clogged flow indicator filter
11. If the unit doesn't not spray through either the front nozzle nor the upholstery hose, inspect for the following:
  - a. Kinked/pinched tube between the pump and the "T" connection.
12. Inspect the inlet and outlet tubing on the pump. If air bubbles are coming out of the pump and no air bubbles are entering the pump, there is the possibility that the pump seal is worn out. This would cause a slow to prime condition that the



customer would see if they were to run the unit completely dry. Verify this by removing both tanks and running the system dry. Replace the tanks and see how long the unit takes to prime. If it takes longer than 20 seconds, the pump should then be replaced.

## SUCTION SYSTEM CHECK

1. **Tank Filter Inspection:** Check the red tank filter screen for debris and clean as necessary.
2. **Tank Cover Inspection:** Check for improperly welded joints on the tank cover.
3. **Tank Inspection:** Check the tank for breakage at the handle latching area.
4. **Background Window Inspection:** Make certain the background window has its tabs properly seated and that the hook is properly located within the nozzle window. Also make sure the rope gasket is present.

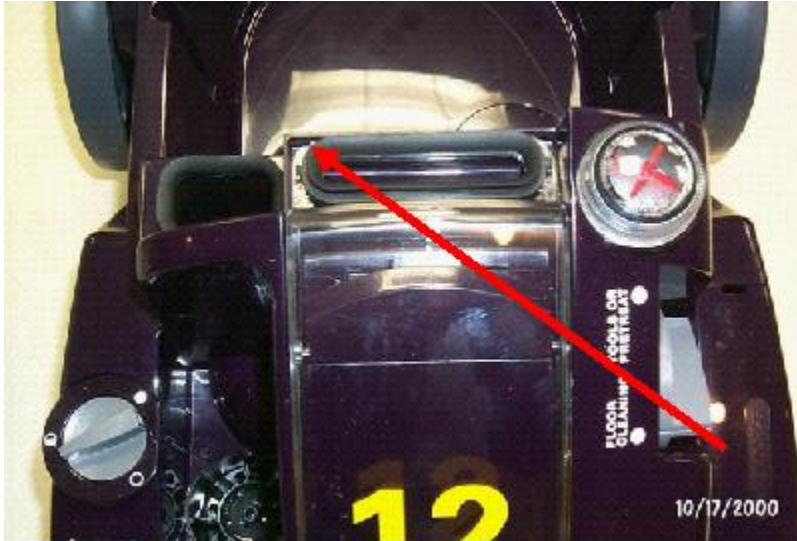


5. **Gasket Inspection:** Check position and condition of gaskets at nozzle window top and motor duct. Re-seat or replace if necessary.



6. **Window Tab Inspection:** Check position of tabs, (2) at upper rear of nozzle window, to ensure they are properly inserted into their alignment holes. Re-seat if necessary. Note: older models may have window nozzles with long tabs that must be inserted

before screws are installed.



7. **Diverter Door and Suction Inspection:** Check suction of unit by moving diverter knob to “Tools or Pretreat” position. Energize unit and place your hand over the end of the hose grip. If the diverter door does not move freely, disassemble and inspect for cause.

## BRUSH SYSTEM CHECK

1. Remove belt access door at left front of unit (viewed from rear).
2. Manually rotate motor shaft to determine that motor, brush and pump are moving smoothly and quietly. Remove any debris which may be hindering the free movement of these components. Note: Units produced after the first week of March, 2003 (after serial date code 03067) have a new brush system that resists extreme heat conditions. Units where the brush ends have deformed should not only have the new brush installed, but the swivel arms, cogged belt and cogged pulleys should be inspected for



damage and replaced, when necessary.



3. Before servicing the brush, remove both the solution and recovery tanks.

## **PUMP and BRUSH REPLACEMENT**

1. Unplug the unit.
2. Remove the Detergent Bottle and Tank and turn unit over.
3. Remove the screw from the red retainer nearest the belt door. Remove the retainer and lift out the swivel arm. The Brush may now be removed for inspection/replacement. If pump replacement is suspected, leave brush off and turn unit upright.



4. Reference the next section titled "Taking Unit Apart" (page 10) to remove the Main Housing.

5. To prevent breakage, remove the Spray Tip nearest the pump from base.



6. Remove smooth belt from motor shaft.



7. Remove four retaining screws from pump and lift pump from unit.



8. Remove the tubes from pump and immediately place onto new pump.





9. Place smooth belt on new pump.



10. Re-seat new pump into position and screw into place (4 screws).
11. Reattach tubing.
12. Reseat spray tips.
13. Replace Main Housing and turn unit over.
14. Reattach brush, cog belt, and swivel arm.
15. Replace red retainer and secure with screw.
16. Put solution tanks in place.
17. Test pump operation by plugging in unit and depressing the trigger mechanism.

## **TAKING THE UNIT APART**

1. Unplug the unit. Place on servicing platform.
2. Recline the handle backwards fully.
3. Turn SmartMix to "HIGH" traffic setting.
4. Remove the Detergent Bottle and Tank Bottom Assembly.
5. Remove clear flow indicator cap, red spinner and filter.

6. Remove Belt Door.



7. Remove the two screws in the nozzle window.



8. Remove four screws located on top of main housing, near the wheels.



9. Remove the main housing from the unit. **Units where the brush is not visible have snaps on**

front of housing that must be disengaged to remove housing. To disengage, lift the front of housing while pressing on the top. Pressing down on flow indicator opening may help remove housing.



## MOTOR REPLACEMENT PROCEDURE

1. Remove main housing. (see page 6).
2. Lift Hose Duct Assembly from Base.



3. Remove the spray tip and spinner base assembly by releasing the spray tip tabs and pushing the spray tip forward. Set spray tip and spinner base assembly aside. **Failure to remove spray tip prior to motor or pump replacement may result in spray tip**



breakage.



4. Lift the pump outlet tube from the tube retainer located above the motor shaft on the motor housing.



5. Remove the four screws on the motor cover and lift off Motor Cover.
6. Remove the Motor Duct.
7. Lift out the motor.
8. Disconnect all wires. **Note: the green ground wire has a locking tab that must be pressed to remove. On newer units all wires have non-insulated locking tab terminals.**



9. Remove, clean and save the two gaskets on the motor.



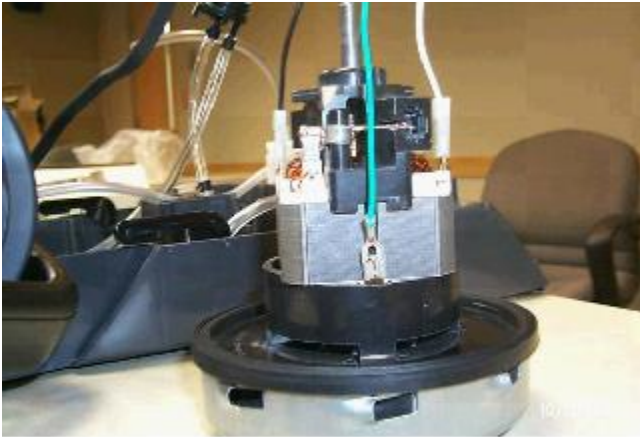
10. Clean any debris from motor cover top and bottom area.
11. Attach larger gasket to the new motor.



12. Attach the green ground wire to the copper terminal located on the bottom of the motor stack.



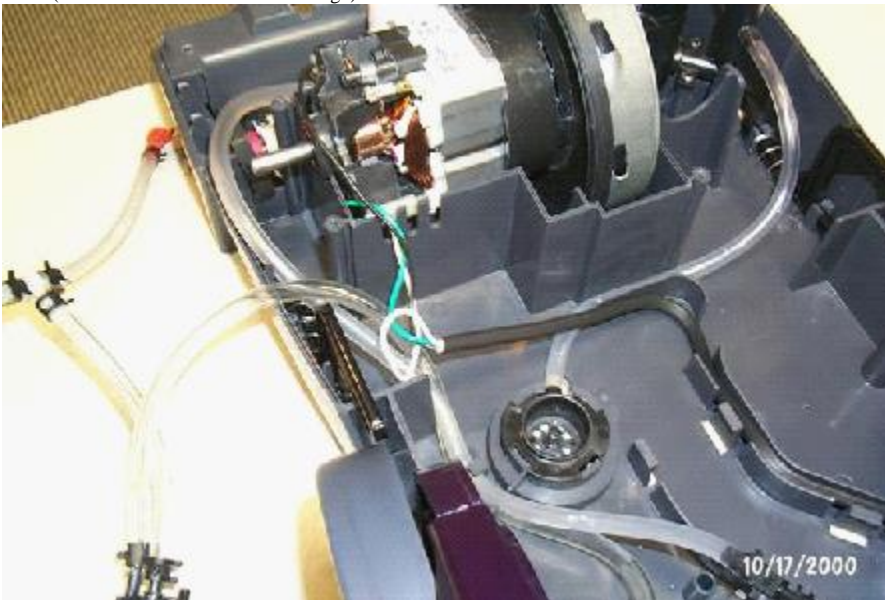
13. Attach the "hot" and "neutral" terminals onto the new motor.



14. Turn the motor so that the "ground" terminal is oriented downward.

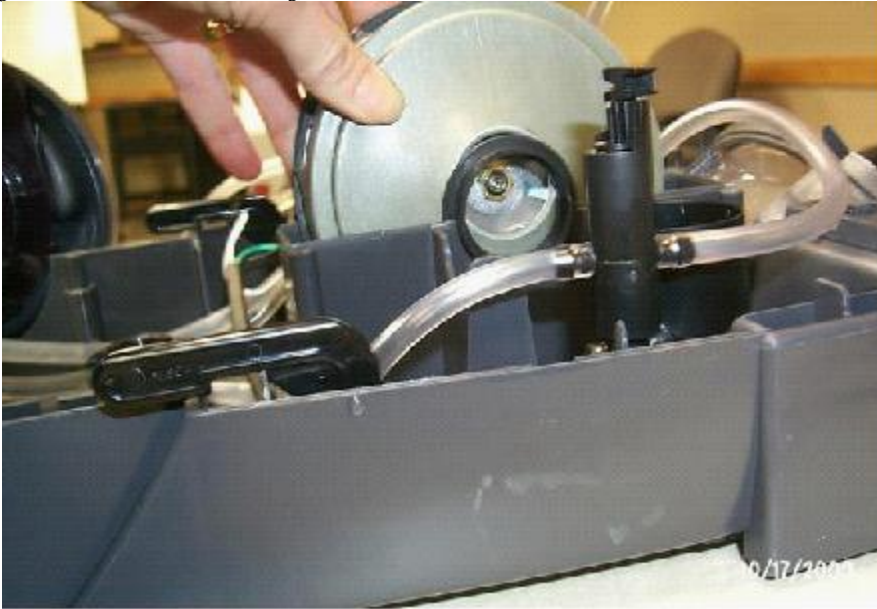


15. Loop the wires around the bottom of the motor, then out the three motor vents at the rear of the motor cradle (NOT where the shaft comes through).





16. Tilt the fan side of the motor up and insert the gasket into the bottom motor housing.



17. Replace motor cover. Gently rock into place and at the same time pull out on the tab on the motor cover and guide it past the gasket until the cover is completely seated.
18. Replace the four screws in the motor cover.
19. Replace the motor duct by placing the tab in first, then twisting and pivoting it into position.

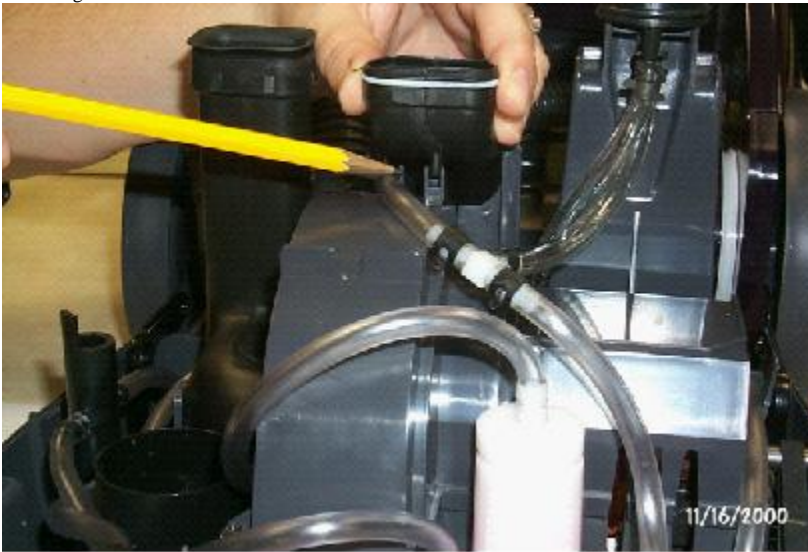


20. Replace the spray tip.
21. Replace the flow indicator by pulling the two tubes downward and making sure the flow indicator is

securely seated.

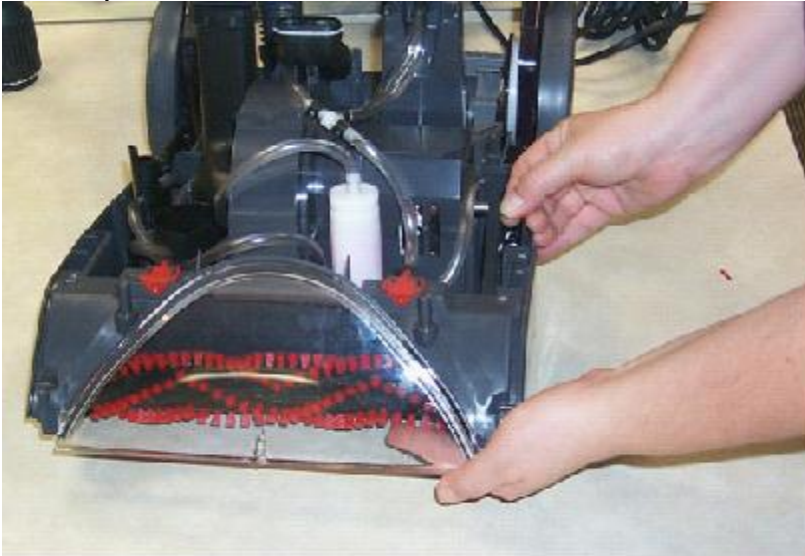


22. Replace all tubing and wiring in its proper position.  
See full size photo of base - page 18.
23. Put the upholstery duct into its proper position,  
making sure the tab on its underside is nested into  
the mating ribs on the motor cover.



24. Place the belt onto the motor shaft.

25. Make certain the brush is turning by turning the motor shaft by hand.



26. Turn on the motor briefly to check its operation.
27. Refer to the section titled "Putting the Unit Back Together".
28. Perform a high-voltage test (dielectric) and ground continuity test.

## **PUTTING THE UNIT BACK TOGETHER**

1. Follow the assembly diagram to ensure that all parts are replaced properly.

**SEE PAGE 18 for  
overhead views of Base**



2. Make sure the foot pedal is in the proper position.



3. The SmartMix Piston should be properly loaded into the main housing. To do this, first turn the SmartMix knob to the "water only" setting, place the SmartMix piston in place, and then turn the SmartMix knob to the "heavy traffic" setting to secure the Piston.



4. Make sure the cover is reassembled so that it is directly above the base before lowering it into position.
5. Guide gasket on Motor Duct into position.
6. Clean any debris from the flow indicator. Insert Filter with post up, install the red spinner, and then tighten flow indicator cap.
7. Make sure the rope gasket for the window is in place on the housing. Also, check to see that the rubber

gasket is in place at the top of the window.



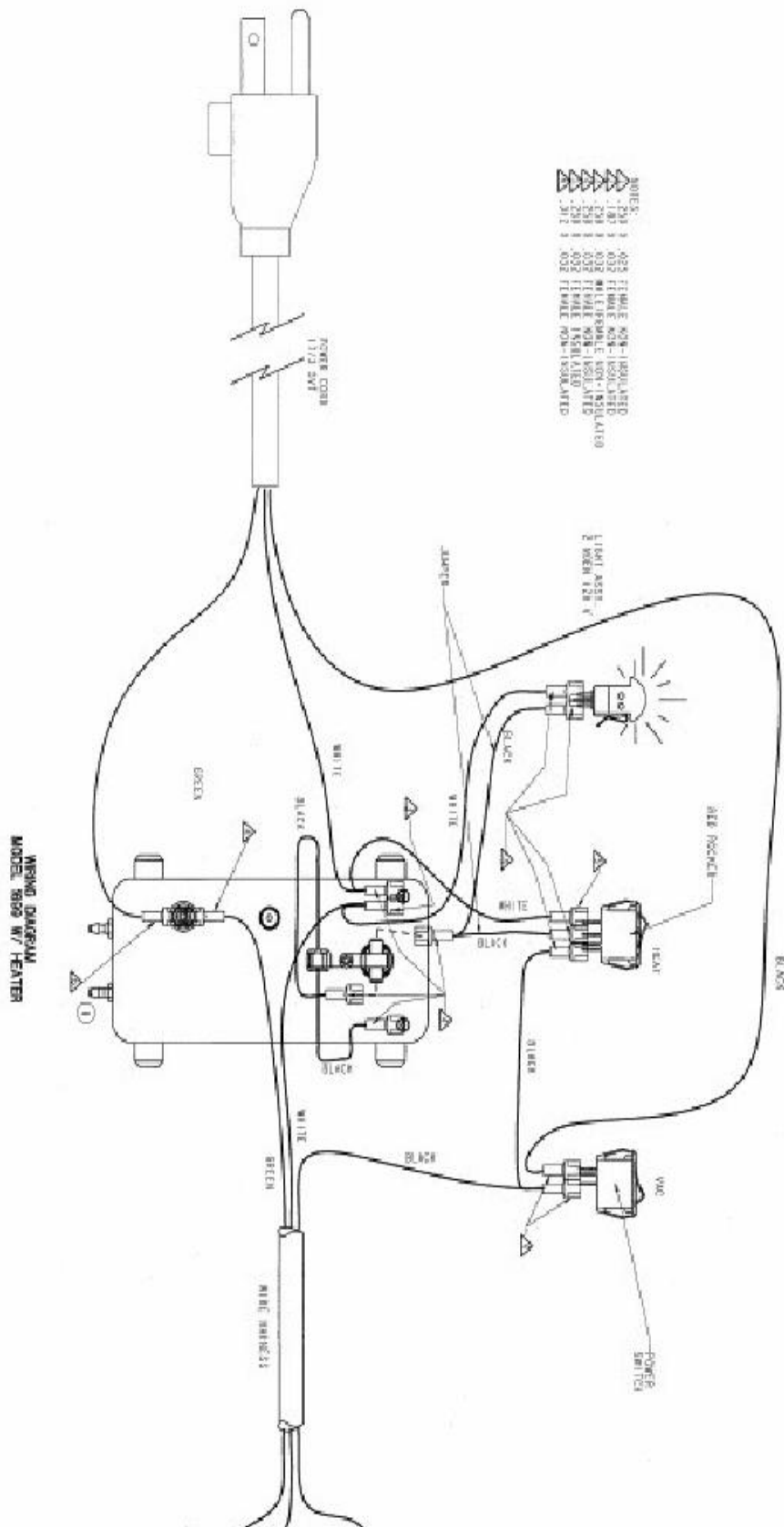
8. Replace the nozzle window by first pressing the front onto the screw area, then snap the top of the nozzle in place by pressing on the oval gasket seal. You will hear two "clicks" as the tabs drop into the housing slots (NOTE: on older models, insert the two rear tabs into the housing slots first, then lift upward on the front of the window to "bow" it into position. Attach both window nozzle screws.



9. Turn the motor shaft to ensure that the brush and pump are both operating properly.

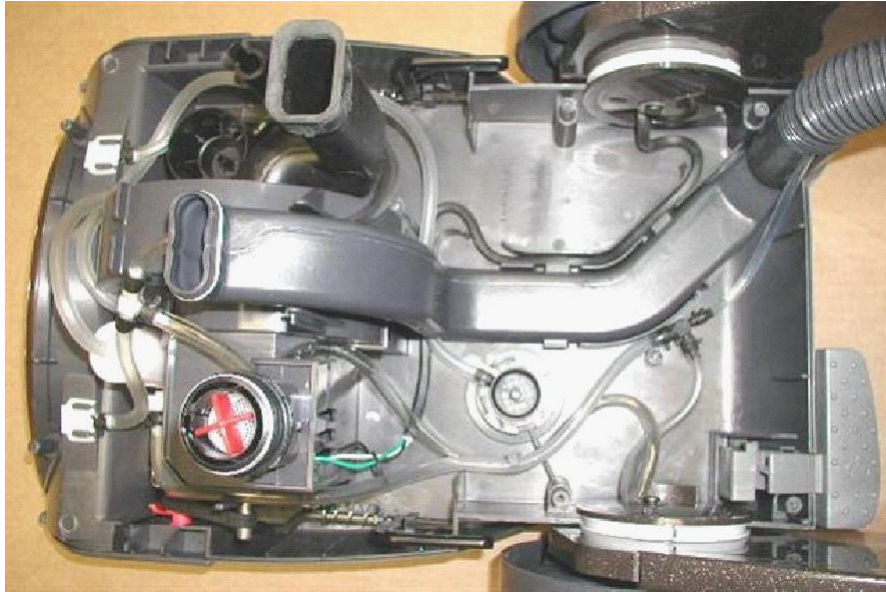
10. Reinstall belt access door and tanks. Retest unit.

## Wiring Diagram

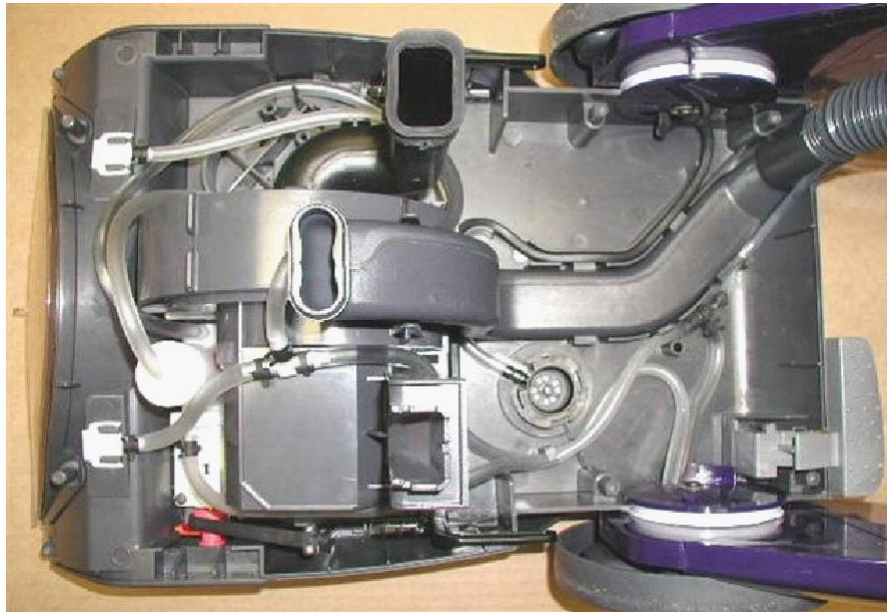




### **Overhead View of Proheat Series Base**



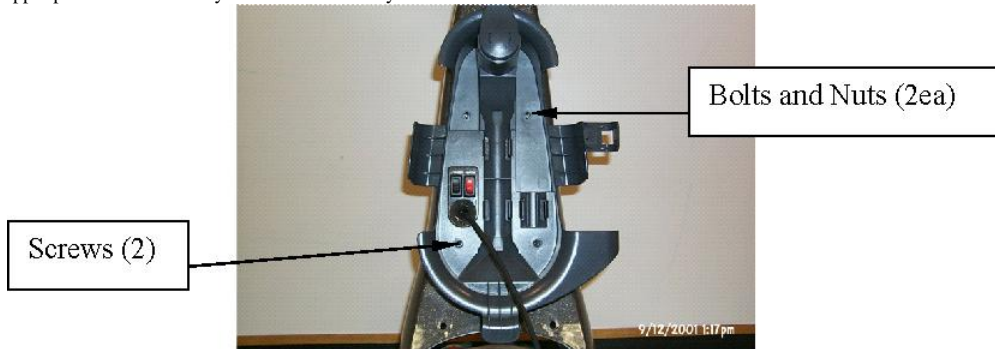
### **Overhead View of Models without Smartmix Feature**



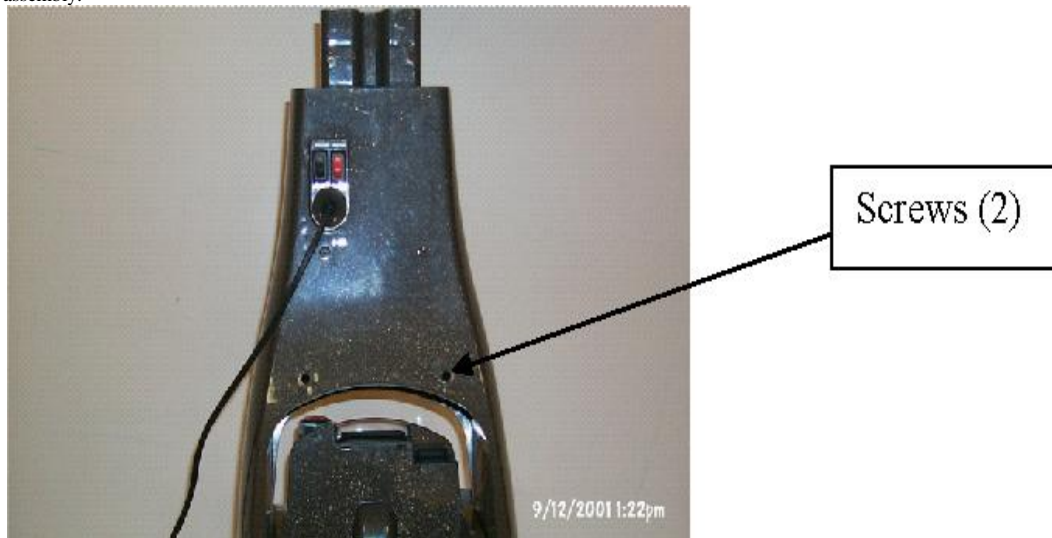
### **Lower Handle Disassembly**

1. Remove the two screws located near the bottom of the tool caddy on the back of the machine.

2. Remove the two bolts and nuts that go through the upper part of the tool caddy and handle assembly.



3. Lift upper handle off lower handle assembly.
4. Remove two screws from the back of lower handle assembly.



- Recline the handle backwards fully.
5. Lift lower handle front free by pulling up on the tab near the top.



6. Slide Lower Handle Front off to side to avoid disconnecting wires.



## Circuit Board Replacement

1. Disassemble lower handle assembly according to instructions on page nineteen.
2. Remove the black circuit board wire from the power switch (this is the black wire that runs from the switch to the circuit board).
3. Disconnect speed sensor wire from circuit board (this wire has a soft, silver colored, braided thermal covering on it).
4. Remove the four short screws that mount the Perfect Pass™ housing to the handle front.



5. Pull the Perfect Pass™ housing away from the handle front (the circuit board and housing are replaced as an assembly).
6. Install new circuit board and replace the screws.
7. Reattach wires.
8. Reassemble Lower Handle and test.

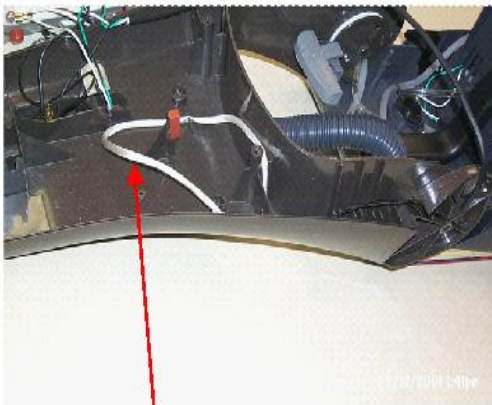
## Speed Sensor Replacement

1. Remove the main housing according to instructions on page six.
2. Remove the right side wheel (held in place by an E-clip on the end of the axle).
3. Disassemble Lower Handle Back – see page 19.
4. Gently lift plastic retaining tab up and away from speed sensor and pull sensor out.

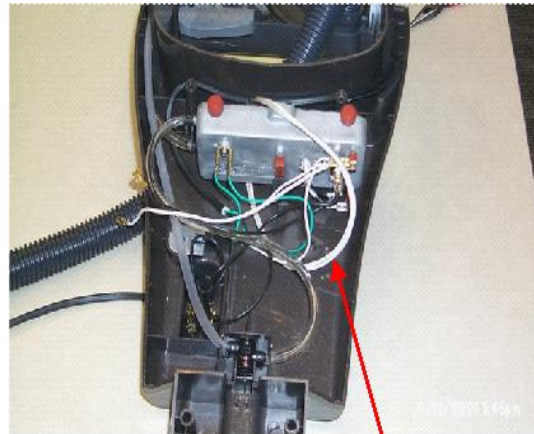
5. Disconnect wires.



6. Snap new speed sensor in place with Sensor facing magnet on wheel. Reattach wires.
7. Speed sensor wire should run under the power cord, then under the heater, then around to circuit board.



Speed Sensor Wire



Speed Sensor Wire

8. Reassemble Lower Handle and Main Housing.
9. Test unit.