



# **Blue Rhino<sup>®</sup>**

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**Cleaning Instructions for  
Burner, Pilot Assembly,  
and Emitter Screen**

**Series: 220000 - 450000**

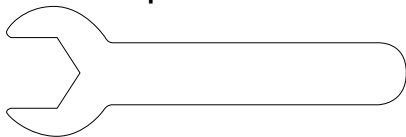


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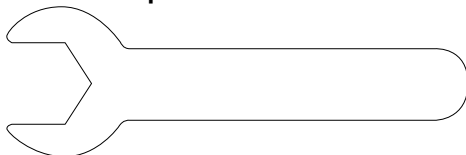
**For assistance call: 1.800.762.1142**

## **Tools Required for Assembly:**

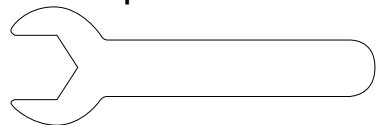
- 10 mm open end wrench



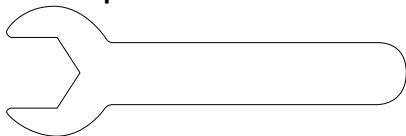
- 12 mm open end wrench



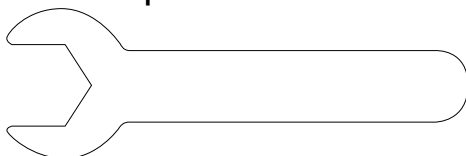
- 9/16" open end wrench



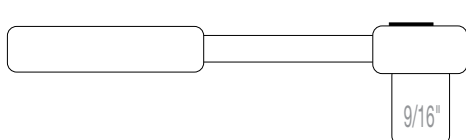
- 5/8" open end wrench



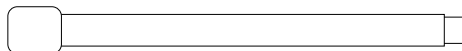
- 11/16" open end wrench



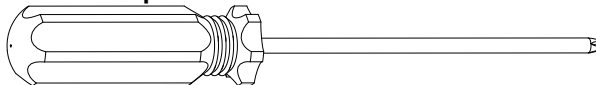
- 9/16" socket and ratchet



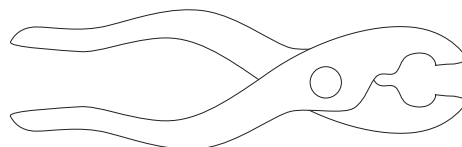
- Socket extension



- # 2 Phillips screw driver



- Pliers



- Compressed air – canned or compressor with a hose

- Soft bristle brush

- Brass brush

- Heavy-duty pipe cleaners

- Non-abrasive Scouring Pad

- Rubber gloves

- Leak test solution: 1 part liquid soap and 3 parts water

**1. Installation and repairs should be done by a qualified service person.**

2. Use only Blue Rhino Global Sourcing, Inc. factory authorized parts. The use of any other part that is not factory authorized can be dangerous and will void your warranty.

3. Do not use flammable solutions or material to clean heater or heater parts. Use only warm soapy water to clean outside of heater.

4. Do not submerge control valve in water.

## **Step 1 – 6**

1. For assistance call 1.800.762.1142 toll free. Please have your owner's manual and model number available for reference.

For Easiest Assembly:

- To avoid losing any small components or hardware, assemble your product on a level surface that does not have cracks or openings.
  - Clear an area large enough to layout all components and hardware and that is soft to not scratch or damage any surface finishes.
  - When applicable, tighten all hardware connections by hand first. Once the step is completed go back and fully tighten all hardware while being cautious not to over tighten to avoid damaging surfaces or stripping hardware.
  - Follow all steps in order to properly assemble your product.
2. Turn off heater per "Turning Off" instructions in owner's manual.
  3. Disconnect LP gas tank per "Disconnect LP Gas Tank" instructions in owner's manual.
  4. Make sure heater is completely cool (at least 45 minutes after use) before proceeding.
  5. Remove dome per instructions in owner's manual.
  6. Remove engine from post per instructions in owner's manual.

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## Step 7



Remove emitter from emitter bottom by removing the 9/16" nut and flat washer from inside cone.

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## Step 8



Remove the three bolts which secure the emitter to the emitter bottom.

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## **Step 9**



Carefully separate the emitter from the emitter bottom.

*Note:* Use caution not to loosen the burner stud spacer when separating.

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## Step 10



Clean the carbon build-up off the inside of the emitter bottom with a non-abrasive scouring pad or bottle brush. Clean the outside of the emitter bottom with the scouring pad.

**DANGER: Never use any flammable solutions or material to clean heater or heater parts. Use only a mild soap and water solution.**

**Do not to soak the valve.**

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## Step 11



Use a bottle brush to clean the inside of the emitter.



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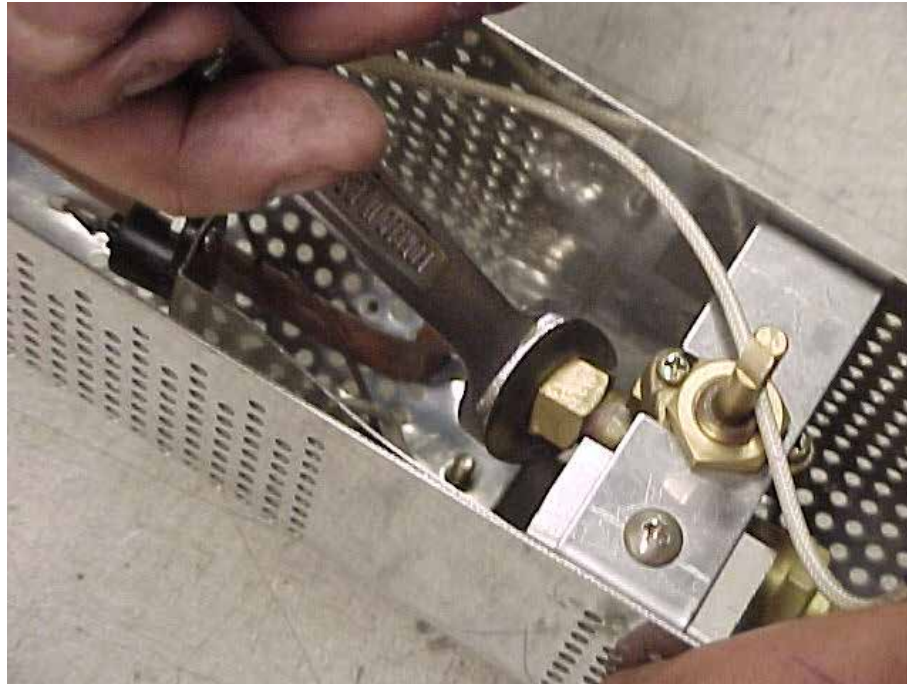
**For assistance call: 1.800.762.1142**

## **Step 12**



Blow out any excess soot with an air hose or a can of compressed air.

## Step 13

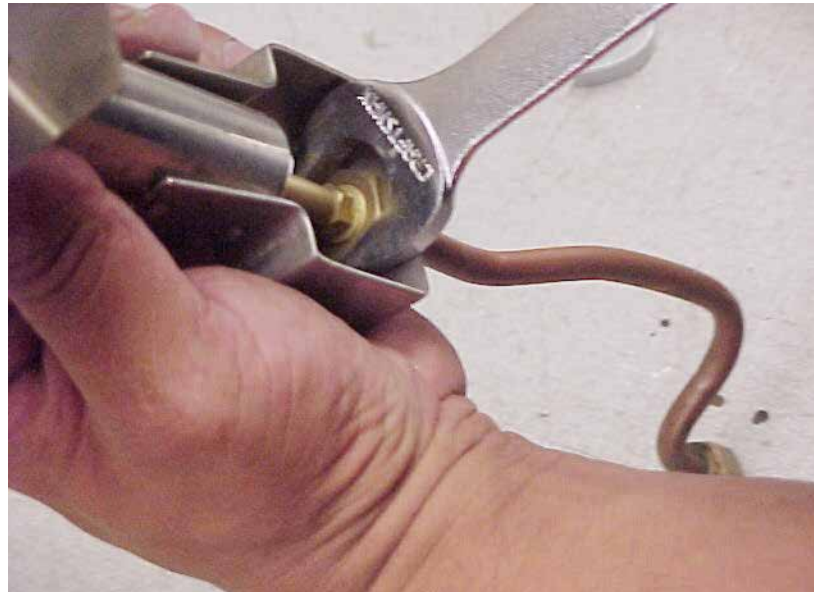


To remove the burner, hold the burner supply tube nut in place with an # 10 mm open-end wrench to prevent it from moving. At the same time, using another # 12 mm open-end wrench unscrew the burner nut from the burner. With the nut loose, lift the burner out of the valve housing. Use care not to damage the supply tube or any of the wires for the thermal-couple.

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## **Step 14**



To remove the burner supply tube, unscrew the brass nut which attaches the burner supply tube to the burner bracket. Be careful not to damage the burner.

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## Step 15



Insert bottle brush into venturi tube and give a couple of twists. This will clear any debris or spider webs from the venturi tube.

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## Step 16

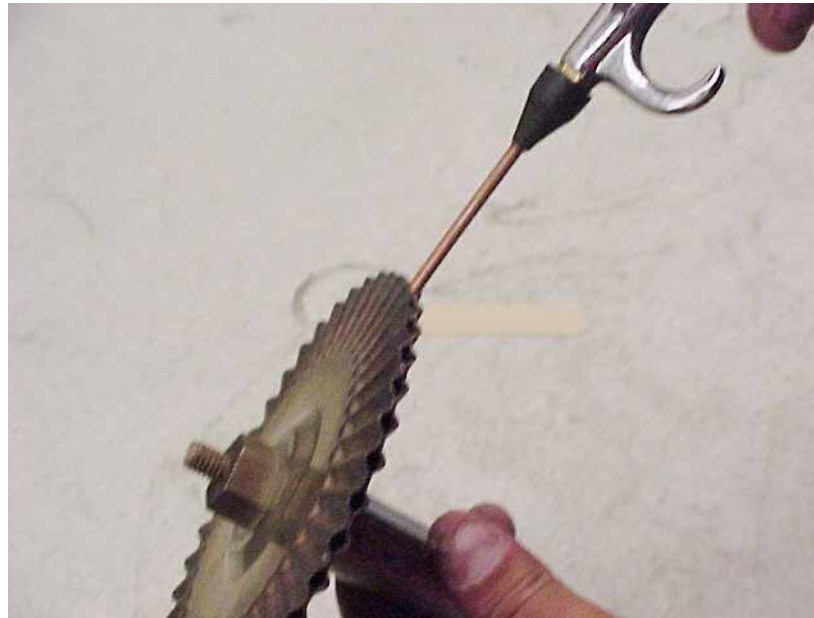


Insert a heavy-duty pipe cleaner into each burner port to clean them. Use a non-abrasive scouring pad to clean the outside of the burner.

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## Step 17



Using an air hose or can of compressed air to blow any excess soot from the burner ports and the venturi tube.

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## **Step 18**



Use a brush or compressed air to clean the burner orifice. Use care not to enlarge the burner orifice.

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## **Step 19**



Remove the copper pilot supply tube with a #10 mm open-end wrench and a #12 mm open-end wrench on the orifice nut. With the pilot tube loose, remove pilot tube. Do not kink the copper tube.



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## **Step 20**

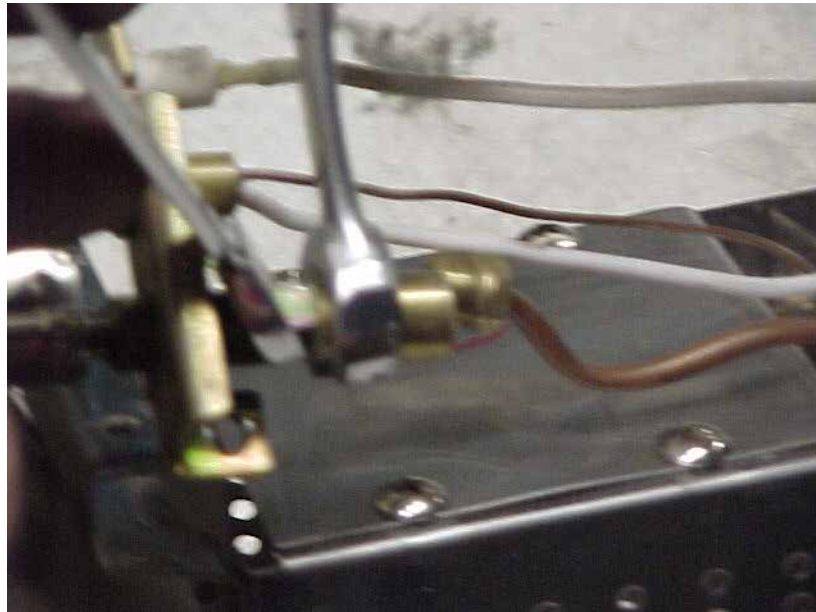


With pilot tube disconnected remove the 2 screws, which secure the pilot to the bracket.

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## **Step 21**



With the pilot loose, remove the pilot orifice. This is done by securing the black hex tube with a #10mm open-end wrench to prevent it from moving while using a #12mm open-end wrench to remove the brass piece just below the black hex piece. (This is your pilot orifice.)

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## Step 22

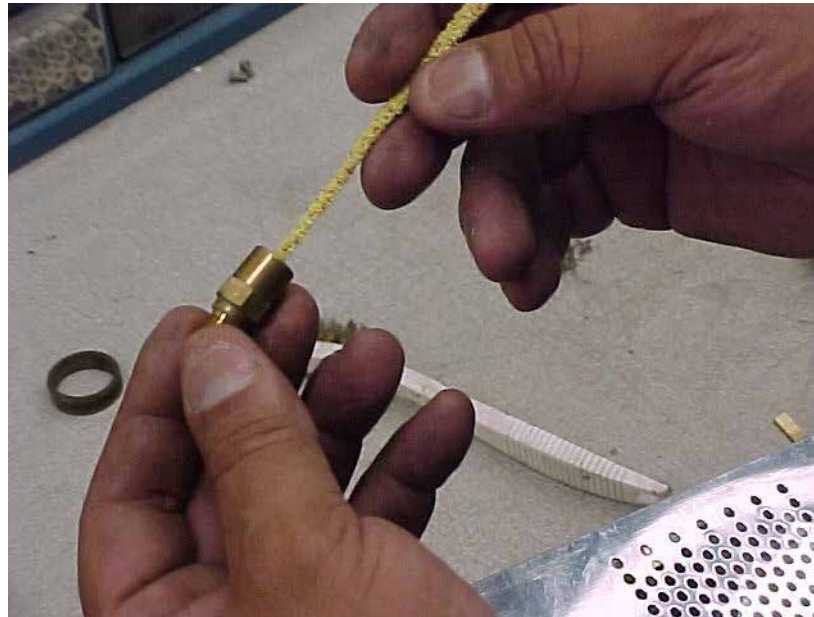


Pilot orifice removed.

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## Step 23



Use a pipe cleaner to clean both the inside and outside of the pilot orifice.

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## Step 24

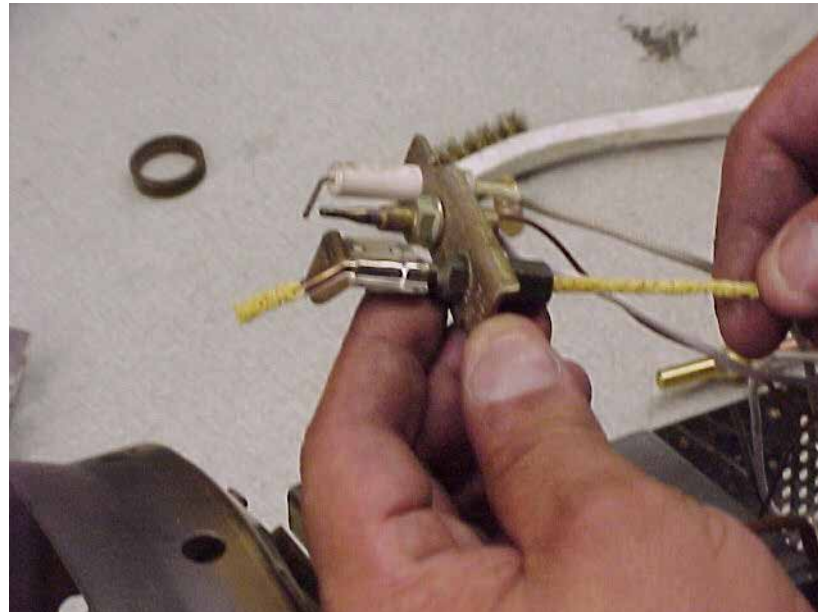


With a brush, lightly clean the top of the pilot orifice. Use care not to enlarge the orifice hole.

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## Step 25



Use a heavy-duty pipe cleaner to clean the bottom of the black hex tube on the pilot assembly. Make sure to extend the pipe cleaner past the silver hood.

## Step 26



1. Clean the port at the side of the pilot hood with a heavy-duty pipe cleaner.
2. Blow out any excess soot or debris with an air hose or a can of compressed air.

## **Step 27 – 28**

27. To reassemble, follow these instructions in reverse and reassemble all parts to the heater in order.
28. Install LP gas tank per “Installing LP Gas Tank” instructions in owner’s manual.
29. Connect LP gas tank per “Connect LP Gas Tank” instructions in owner’s manual.



### **DANGER**

If you smell gas -

1. Shut off gas to appliance.
2. Extinguish any open flame.
3. Open lid.
4. If odor continues, keep away from the appliance and immediately call your gas supplier or your fire department.



### **WARNING**

#### **FOR YOUR SAFETY:**

You must follow all leak-checking procedures before operating. To prevent fire or explosion hazard when testing for a leak:

- a. Always perform leak test before lighting the heater and each time the tank is connected for use.
- b. No smoking. Do not use or permit sources of ignition in the area while conducting a leak test.
- c. Conduct the leak test outdoors in a well-ventilated area.
- d. Do not use matches, lighters, or a flame to check for leaks.
- e. Do not use heater until any and all leaks are corrected.

If you are unable to stop a leak, disconnect the LP gas supply. Call a gas appliance serviceman or your local LP gas supplier.



## Step 29 – 30

### 29. Check burner connections:

1. Make sure the regulator valve and hose connections are securely fastened to the burner and the tank.
2. If your unit was assembled for you, visually check the connection between the venturi tube and orifice. Make sure the venturi tube fits over the orifice.

**▲ WARNING: Failure to inspect this connection or follow these instructions could cause a fire or an explosion which can cause death, serious bodily injury, or damage to property.**

3. If the burner pipe does not rest flush to the orifice, please contact 1.800.762.1142 for assistance.

### 30. Tank/Gas Line Connection

1. Make 2-3 oz. of leak solution by mixing one part liquid dishwashing soap with three parts water.
2. Make sure control knob is in “OFF” position. (Figure 3)
3. Turn LP gas tank valve to “OPEN”.
4. Spoon leak check solution at all “X” locations. (Figures 1 and 2)
  - a. If any bubbles appear turn LP gas tank valve to “CLOSED”, reconnect and re-test.
  - b. If you continue to see bubbles after several attempts, turn LP gas tank valve to “CLOSED”, disconnect LP gas tank and contact 1.800.762.1142 for assistance.
  - c. If no bubbles appear after one minute turn LP gas tank valve to “CLOSED”, wipe away solution and proceed.

Figure 1

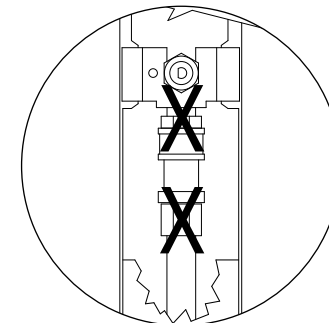


Figure 2

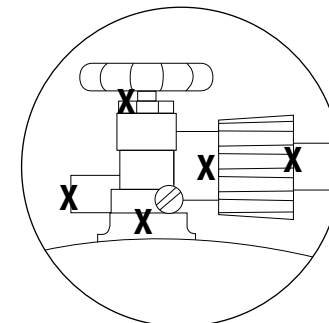
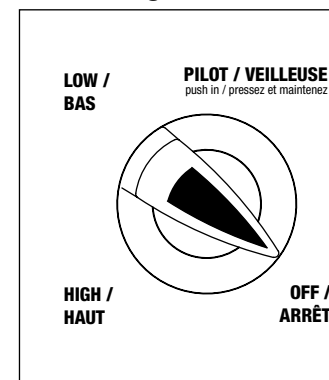


Figure 3





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