



Cleaning Instructions, Replacing Pilot and Control Valve

Series:
GWU501E, GWU511A, GWU512A
LP Gas



For assistance call 1.800.762.1142.

Tools required:

- # 8mm open end wrench
- # 9mm open end wrench
- # 10mm open end wrench
- # 12mm open end wrench
- # 17mm open end wrench
- 1/2" open wrench
- 5/8" open end wrench
- 3/4" open end wrench
- # 2 Phillips screw driver
- Heavy duty pipe cleaners
- Bottle brush
- Compressed air - canned or compressor with a hose
- Non-abrasive scouring pad
- Soft bristle brush
- Pliers
- Leak test solution: 1 part liquid soap and 3 parts water

DANGERS and *Cautions*

- 1. Installation and repair should be done by a qualified service person.**
- 2. Use only Blue Rhino Global Sourcing, LLC. factory authorized parts. The use of any part that is not factory authorized can be dangerous. This will also void your warranty.
Contact 1.800.762.1142.**



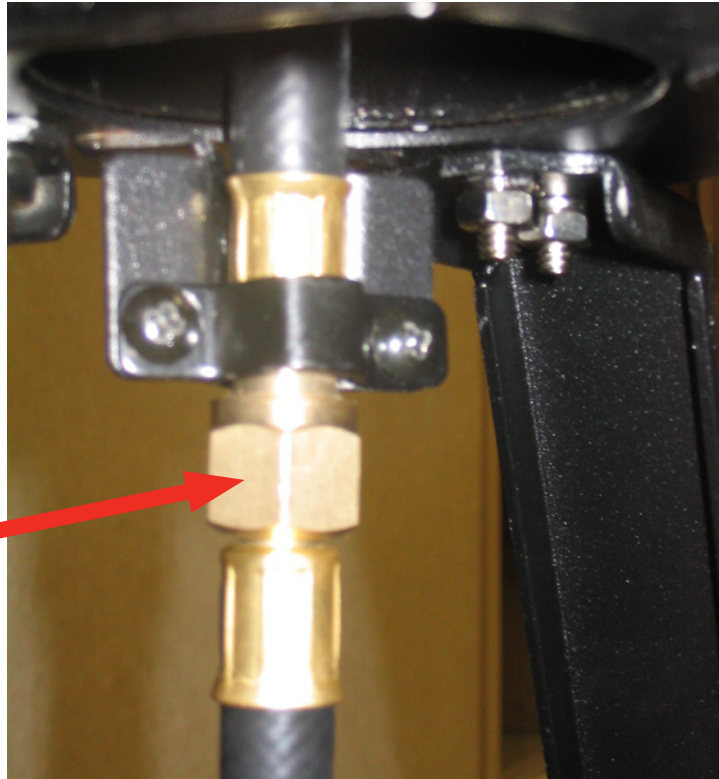
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Replacing the Pilot Assembly

Step 1

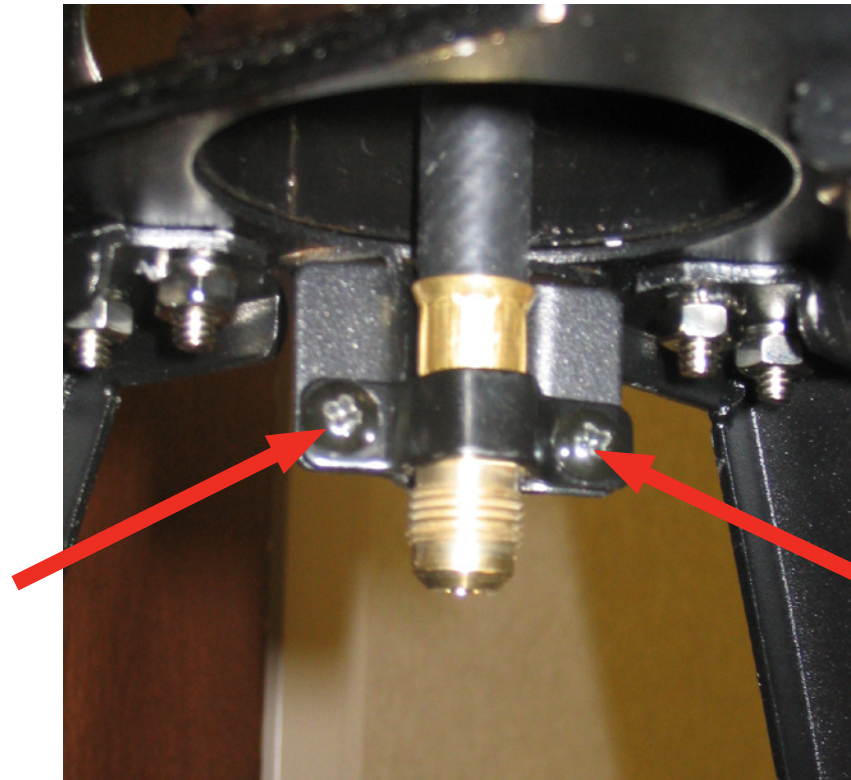
- A. Turn your LP gas tank off.
- B. Unscrew regulator and remove LP gas tank.

Step 2



Using the 3/4" open wrench, disconnect and remove the regulator hose assembly.

Step 3



Using the phillips screw driver, remove the two screws that hold the gas line clip. Set aside for later reinstallation.

Step 4

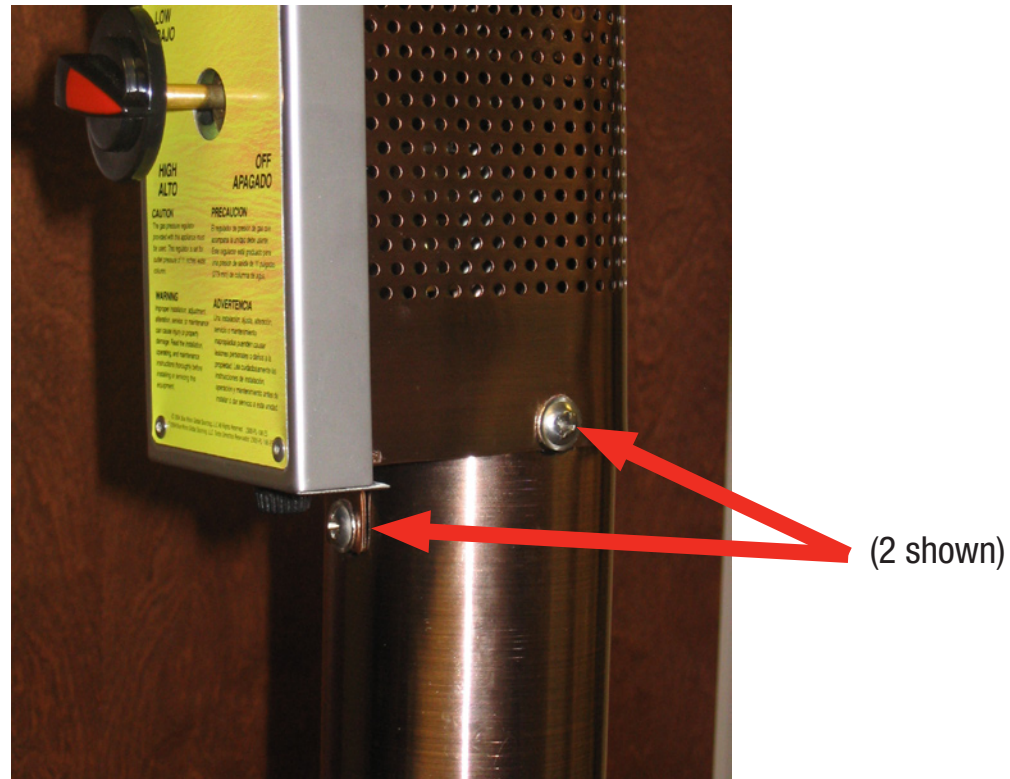


A. Remove the dome and dome cap.

Note: Depending on your model you may have to remove the finial and dome cap.

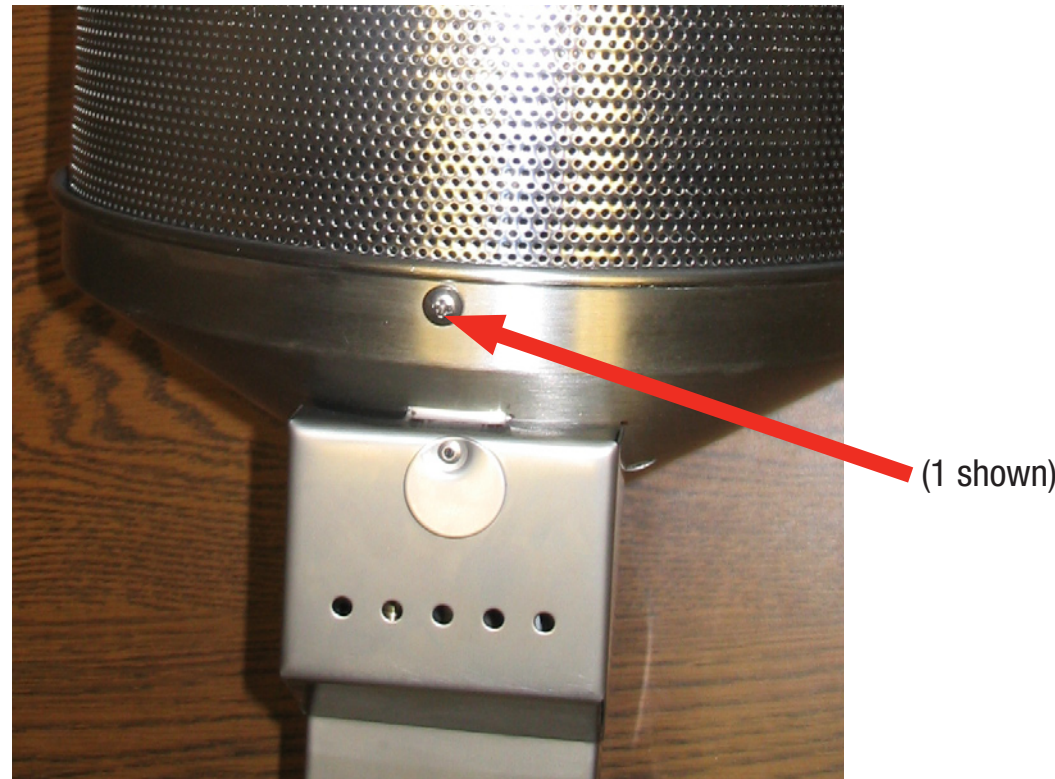
B. Set aside for later reinstallation.

Step 5



- A. Remove the engine/emitter assembly from the post by removing the 4 phillips head screws.
- B. Carefully lift the assembly from the post. **Be careful not to damage the hose.**
- C. Inspect the hose for nicks, cuts or other damage. Replace if damage is found.
- D. Set aside for later reinstallation

Step 6

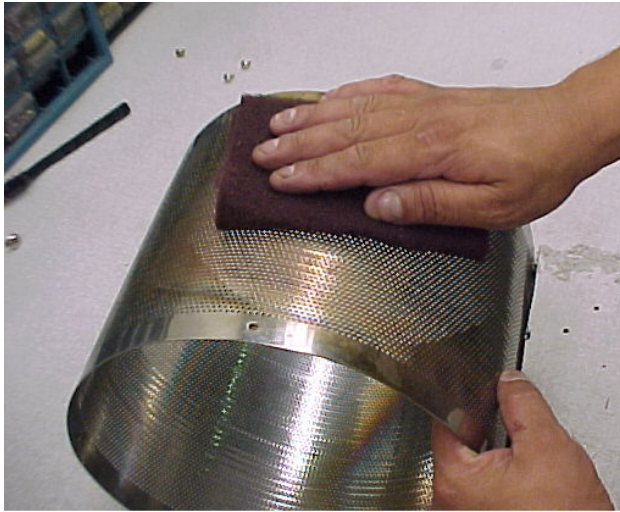


Remove the emitter screen:

GWU501E/GWU511A: there are 4 phillips head screws that hold the emitter screen (the section that gets hot) to the emitter bottom. Remove these screws then remove the emitter screen. Set aside for later reinstallation.

GWU512A: there are 3 small bolts holding the emitter screen (steel cone) to the emitter bottom. Using the #9 mm open wrench, remove these bolts. Then remove the emitter screen. [Not pictured]

Step 7



A



B



A & B (B shown)

Clean the emitter screen:

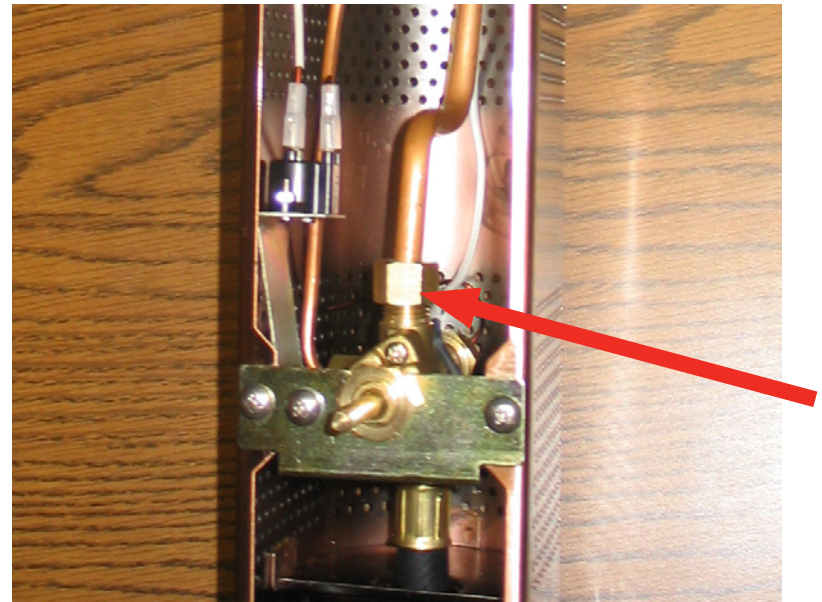
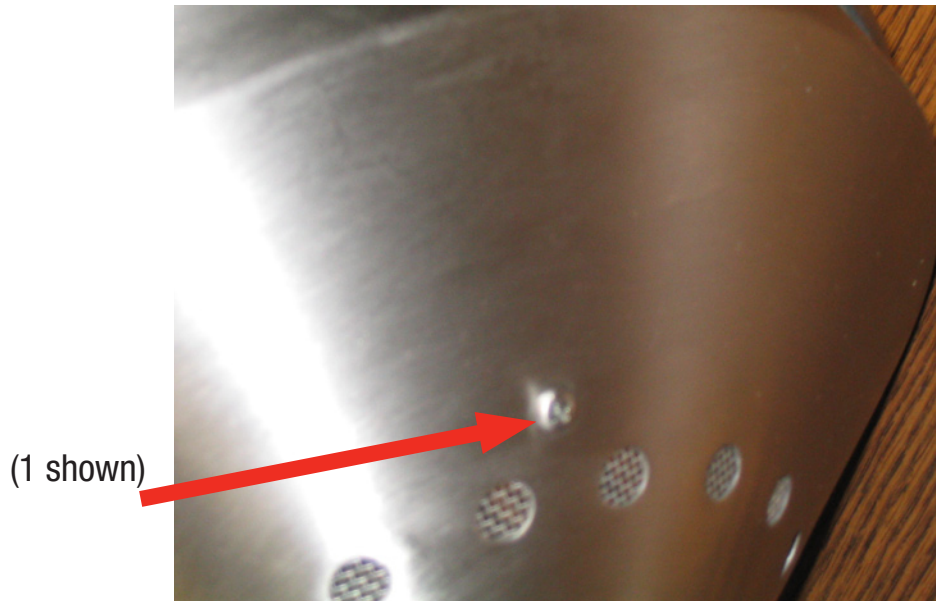
- A. **GWU501E/GWU511A:** Use the non-abrasive scouring pad to clean the soot off the inside and outside of the emitter screen. Use the compressed air to blow out any loose soot.
- B. **GWU512A:** Use the bottle brush to clean the soot off the inside of the emitter screen. Use the non-abrasive scouring pad to clean the soot off the outside of the emitter screen. Use the compressed air to blow out any loose soot.

Step 8



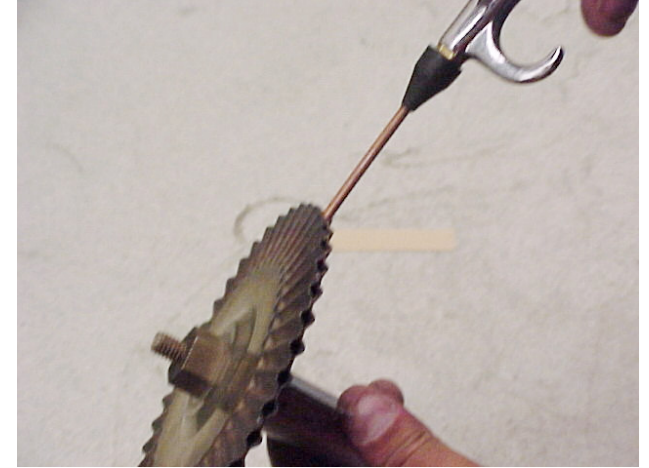
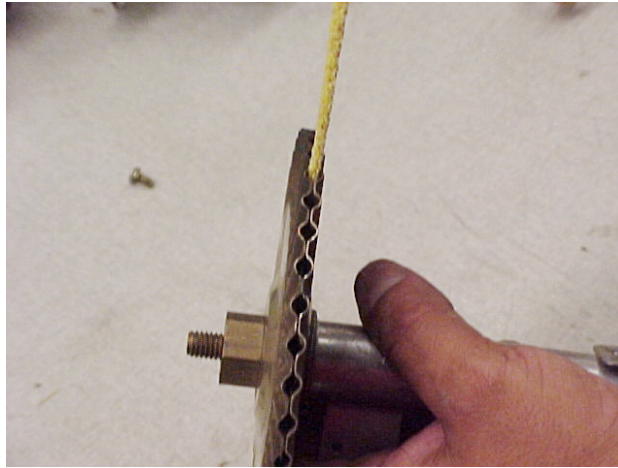
- A. Remove the control knob.
- B. Remove the engine/emitter assembly front access panel by unscrewing the black thumb screw (located near the post connection)
- C. Disconnect the igniter wire from the igniter box.

Step 9



- A. There are two small phillips screws in the emitter bottom on either side of the burner. Remove these screws.
- B. Follow the copper burner supply tube down to the top of the control valve. You will see a nut that connects the burner supply tube to the control valve. Using a 5/8" wrench, remove the nut holding the burner supply tube to the control valve.
- C. Remove the burner and burner supply tube by pulling the burner straight up. Be careful not to damage the wires on the pilot or damage the burner supply tube.
- D. Set components aside for later reinstallation.

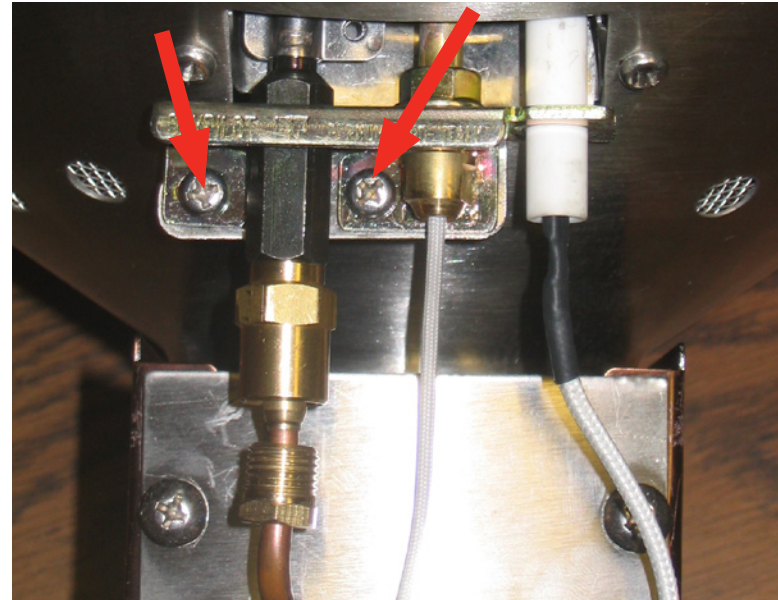
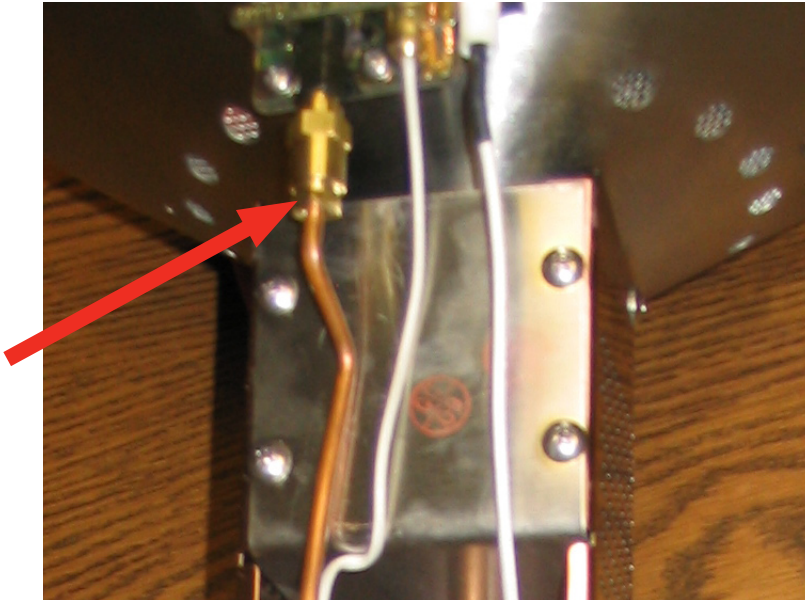
Step 10



Cleaning the burner:

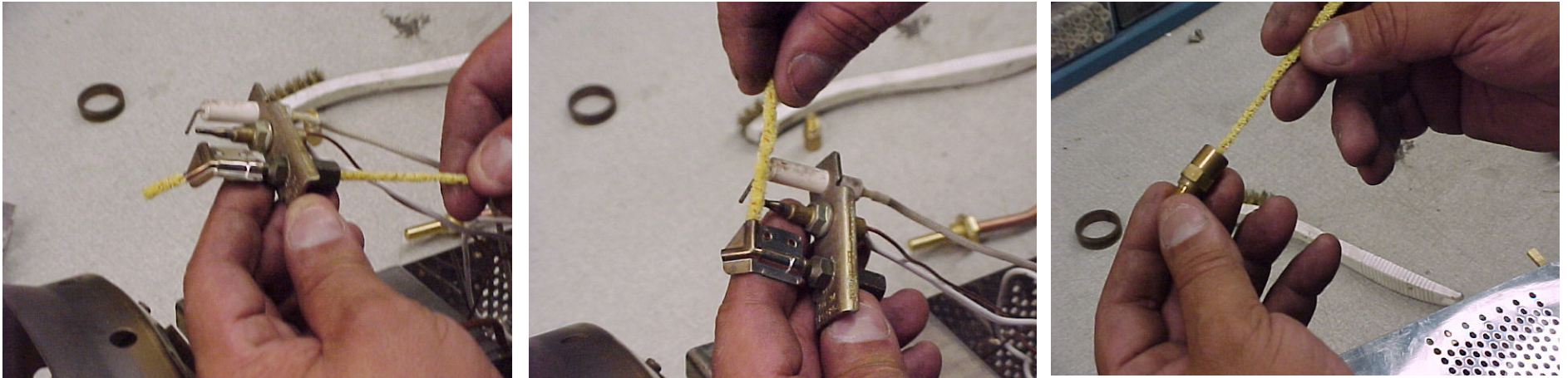
- A. With the burner and burner supply tube removed from the valve housing, remove the burner from the burner supply tube using a 3/4" open end wrench. CAUTION: BE CAREFUL NOT TO DAMAGE OR BEND THE BURNER SUPPLY TUBE.
- B. Insert the bottle brush into the venturi tube and twist a couple of times. This will remove any spider webs.
- C. Use the compressed air to blow out any loose debris.
- D. Insert the pipe cleaner into each burner port. This will remove any soot build up.
- E. Use the compressed air to blow out any loose soot.
- F. Insert the soft bristle end of the brush into the burner orifice and slide in and out a couple of times. This will remove any soot and debris. (not pictured).
- G. Use the compressed air to blow out any loose soot and debris.

Step 11



- A. Using the # 10mm open end wrench (you may need the # 12mm open end wrench to hold the pilot orifice), disconnect the nut on the pilot supply tube from the pilot assembly.
- B. There are two small Phillips head screws that hold the pilot assembly to the engine. Remove these screws.
- C. Remove the pilot assembly from the engine and pilot supply tube. Be careful not to kink the pilot supply tube.
- D. Set components aside for later reinstallation.

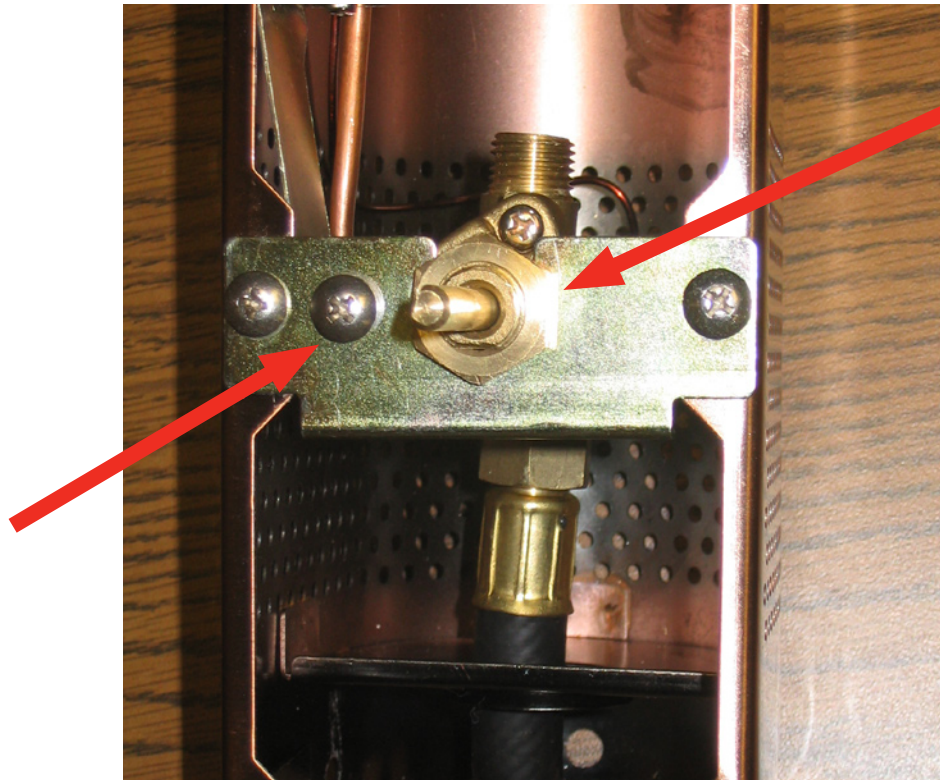
Step 12



Clean the pilot:

- A. Place the #10 mm open ended wrench on the black hex tube and the #12 mm open ended wrench on the pilot orifice (this is the brass piece on the bottom of the pilot housing).
- B. Disconnect the orifice from the pilot housing.
- C. Insert the pipe cleaner into the bottom of the pilot housing and slide through the top of the pilot hood.
- D. Use the pipe cleaner to clean the the port that heats the thermocouple.
- E. Use the soft bristle brush (or tooth brush) to clean the top of the pilot orifice.
- F. Use the compressed air to remove any loose debris.

Step 13



- A. On the front of the control valve you will see a large nut. Using a 3/4" open end wrench, remove this nut.
- B. To the left of that nut, you will see a Phillips head screw holding the tip switch bracket to the valve mounting bracket. Remove this screw.
- C. You should now be able to remove the control valve and pilot assembly from the valve housing.

Step 14



- A. With the control valve and pilot assembly out, on the back of the control valve there is a nut with wire on it. Using a #8mm open end wrench, remove this nut and the pilot assembly will be free from the control valve.
- B. You now will need to remove the tip switch from the tip switch bracket. There are two small screws and nuts. Remove these and your pilot will be free.

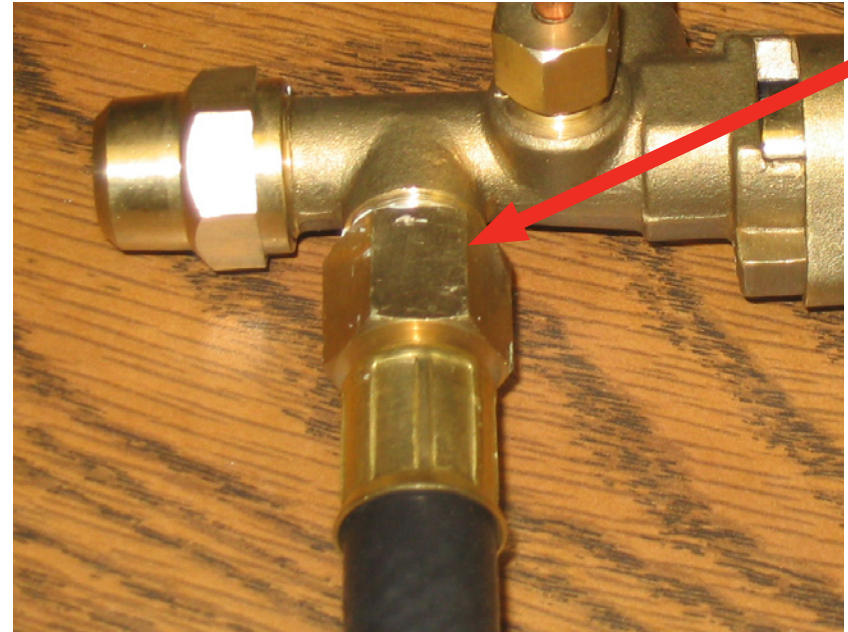
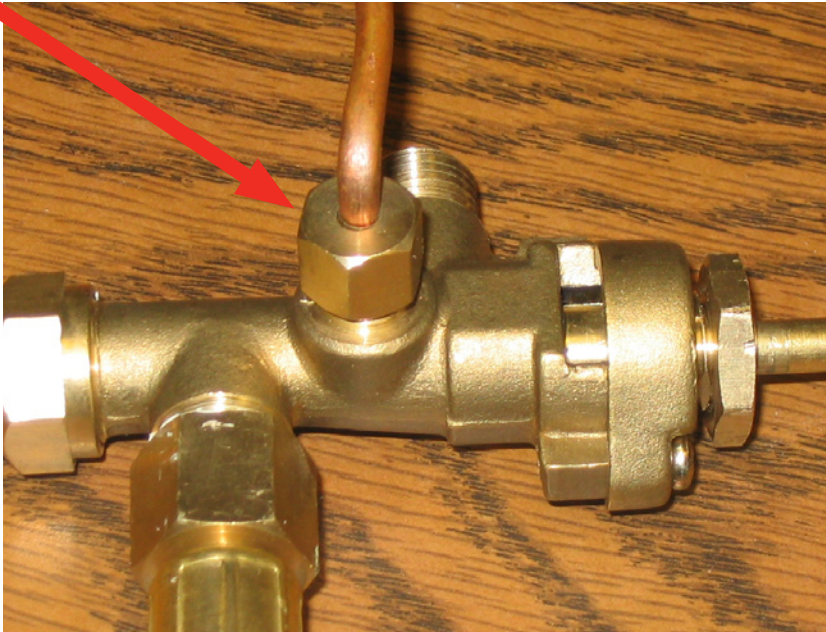
Note: When installing a new pilot, you need to make sure the tip switch is mounted to the tip switch bracket. While reconnecting the nut with wire to the back of the control valve, tighten it only finger tight plus a 1/4 turn. If you do not have to replace the control valve, follow the instructions in reverse and reassemble the control valve and pilot assembly to the heater.

Note: when reconnecting the pilot to the pilot supply tube and the burner supply tube to the control valve, do not over tighten.

CAUTION: it is possible to crack the nut.

- C. Once assembled, a leak check on these connections and the regulator hose assembly must be performed.

Replacing the Control Valve: Step 15



- A. With the pilot assembly removed, disconnect the pilot supply tube from the control valve using a 1/2" open end wrench.
- B. Remove the gas line (rubber hose) from the control valve using a #17mm open end wrench.



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Step 16

- A. Install the pilot supply tube to the new control valve, making sure it is tight. **Do not over tighten.**
- B. Reinstall the gas line (rubber hose) to the new control valve making sure it is tight also.
- C. Install the wire and nut from the pilot assembly to the back of the control valve. Should be finger tight *plus* a 1/4 turn.
- D. Install the tip switch to the tip switch bracket.
- E. Reinstall the control valve and pilot assembly in the valve housing.

To reassembly, follow these instructions in reverse and reassemble all parts to the heater in order.



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Step 17 - IMPORTANT

Perform leak check.



WARNING **FOR YOUR SAFETY**

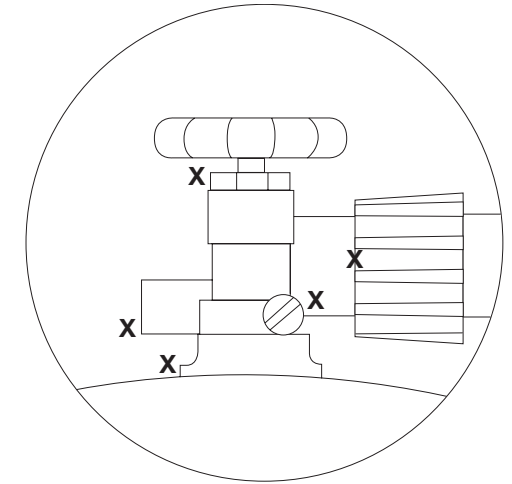
If you smell gas -

1. Shut off gas to appliance.
2. Extinguish any open flame.
3. If odor continues, immediately call your gas supplier or your fire department.

1. Do not operate if gas leak is present. Gas leaks may cause a fire or explosion.
2. 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.

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 knobs are off.
3. Turn LP gas tank ON at valve.
4. Spoon leak check solution at all “x” locations
5. If any bubbles appear turn LP gas tank OFF, reconnect and re-test. If you continue to see bubbles after several attempts, disconnect LP gas source and contact 1.800.762.1142 for assistance.
6. If no bubbles appear after one minute turn tank OFF, wipe away solution and proceed.



Pilot, Pilot Supply Tube, Control Valve and Burner Supply Tube

1. Make 2-3 oz. of leak solution by mixing one part liquid dishwashing soap with three parts water.
2. Turn LP gas tank ON at valve.
3. Turn control knob on to LOW
4. Remove access panel
5. Place leak solution on pilot supply tube at the pilot and at the control valve.
6. Place leak solution on the burner supply tube.
7. If any bubbles appear turn control valve OFF, check all connection to make sure they are tight, and retest. If you continue to see bubbles after several attempts, turn control valve off and disconnect LP gas source and contact 1.800.762.1142 for assistance.
8. If no bubbles appear after one minute turn tank OFF, wipe away solution and proceed.

Blue Rhino Global Sourcing, LLC
Winston-Salem, NC 27104 USA
1.800.762.1142, www.bluerhino.com

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