

Endless Summer[®]



Replacing Control Valve



Series:
200209 – 450000
LP Gas



Tools required:

- # 2 Phillips screw driver
- 8mm open end wrench
- 9mm open end wrench
- 10mm open end wrench
- 12mm open end wrench
- 5/8" open end wrench
- 3/4" open end wrench
- 7/16" nut driver or wrench (series 235000-450000)
- Locking pliers
- Leak test solution
- Ratchet
- 9/16" socket
- Extension 7.5" in length
- Penetrating oil
- 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.**



Steps 1-5

1. Turn your LP gas tank off, unscrew regulator and remove LP gas tank.
2. Remove the dome.
3. Remove the access panel and the igniter wire, set aside
4. Disconnect the gas line.
5. Remove the 4 screws that hold the engine to the post and remove the engine.



Step 6

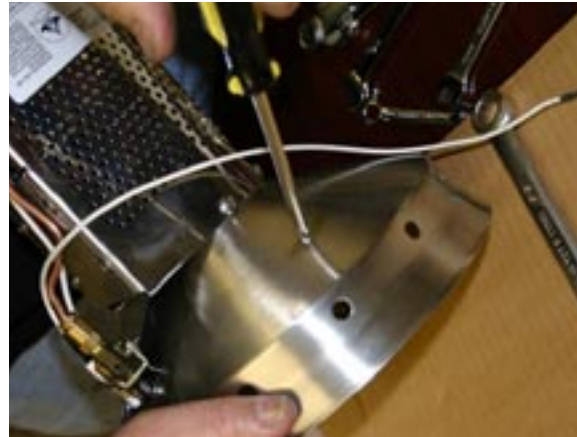


Remove emitter screen:

- A. **200209, 200308, 200605** – remove the 4 screws using a Phillips screw driver that attach the emitter to the emitter bottom, with the screws removed, remove the emitter.
- B. **230000-235000, 450000** – you will need to use the ratchet with an extension along with the 9/16” socket and remove the nut and washer in the bottom of the emitter. There are 3 bolts that attach the emitter to the emitter bottom Using the #8mm open end wrench remove these bolts. Remove the emitter screen being careful not to loosen the spacer ring from the burner stud. You will need this later. (On the 235000-45000 you may want to remove the medium and small domes but it is not necessary).
- C. **233000-235020** – there are 3 bolts that hold the emitter to the emitter bottom. Using an #8mm open end wrench remove these 3 bolts and remove the emitter.



Step 7



1. Disconnect the burner supply tube from the control valve, using a 5/8" open end wrench.

Note: There is a brass nut on the top of the control valve. You must remove the brass nut.

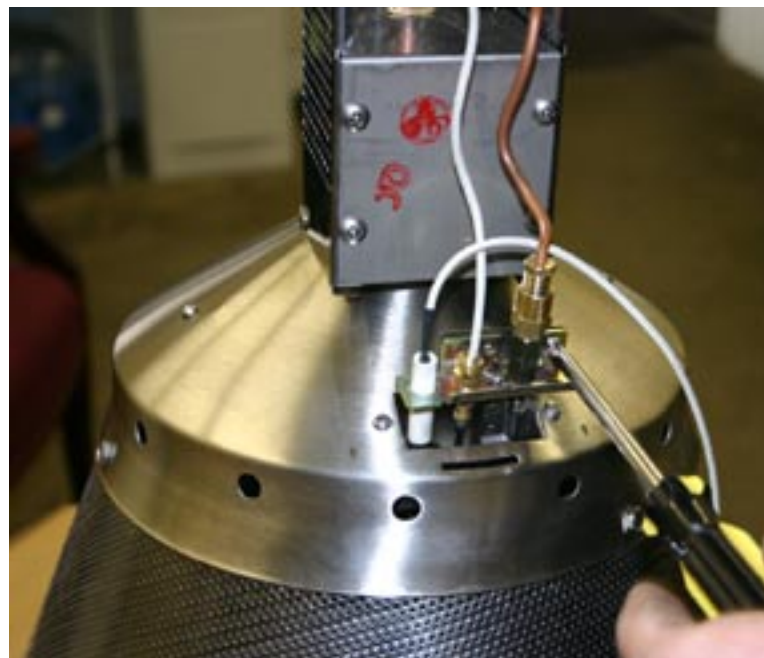
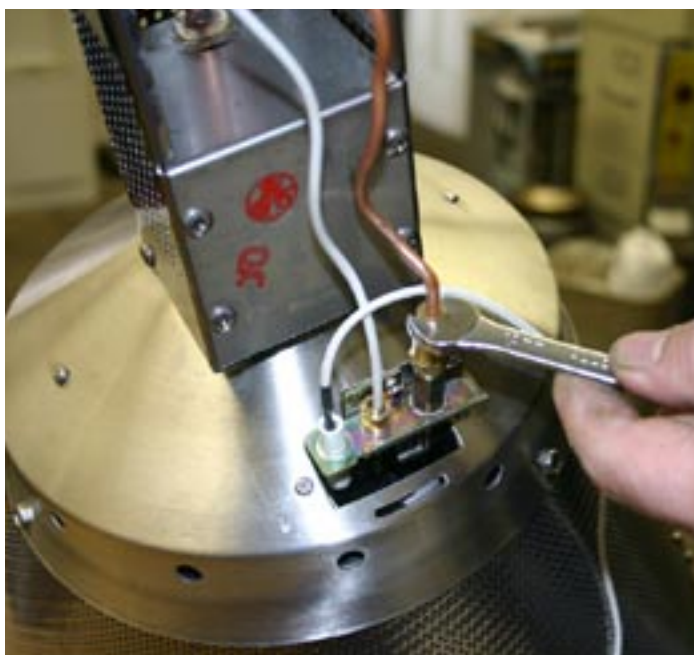
2. Remove the 2 screws on either side of the emitter bottom.

Note: 230000 and 235000 do not have these screws.

3. Remove the burner by pulling it up. *Be careful not to damage the wires on the pilot assembly.*



Step 8



1. Disconnect the pilot supply tube using the #10mm open end wrench.
Note: You may need to use the #12mm open end wrench to hold the pilot orifice.
2. Remove the 2 screws that hold the pilot assembly to pilot bracket.
3. Remove the pilot assembly.



Step 9



Disconnect the thermal-couple

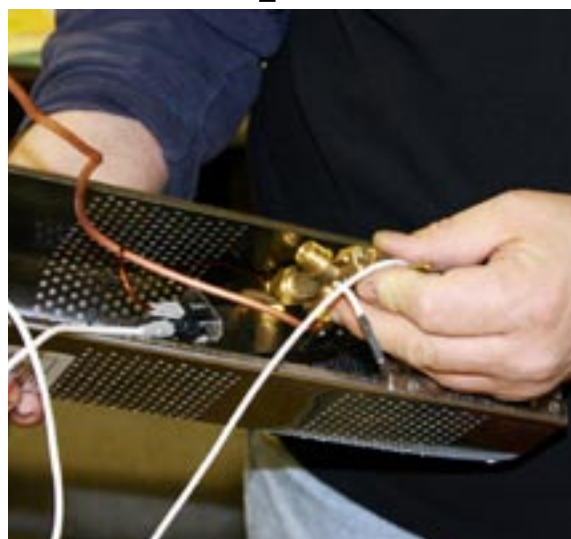
1. Remove the screw from the access panel on the rear of the valve housing.
2. Remove the access panel.
3. Using the #8 mm open end wrench remove the nut with wires coming out of it.

Note: When reinstalling the nut to the back of the control valve finger tighten plus a ¼ turn. **Do not overtighten.**

4. Remove the tip switch bracket on the front of the valve housing by removing the Phillips screw. *Be careful not to damage the wires.*



Step 10

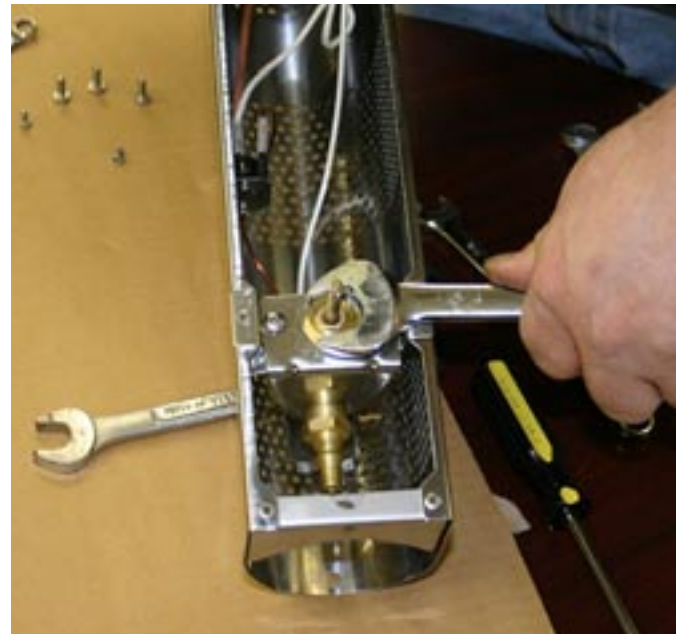


Disconnect the control valve

1. Remove the brass nut that holds the control valve in the valve housing using the 3/4" open end wrench
2. Remove the control valve from the valve housing
3. Remove the pilot supply tube using a #12 mm open end wrench.



Step 11

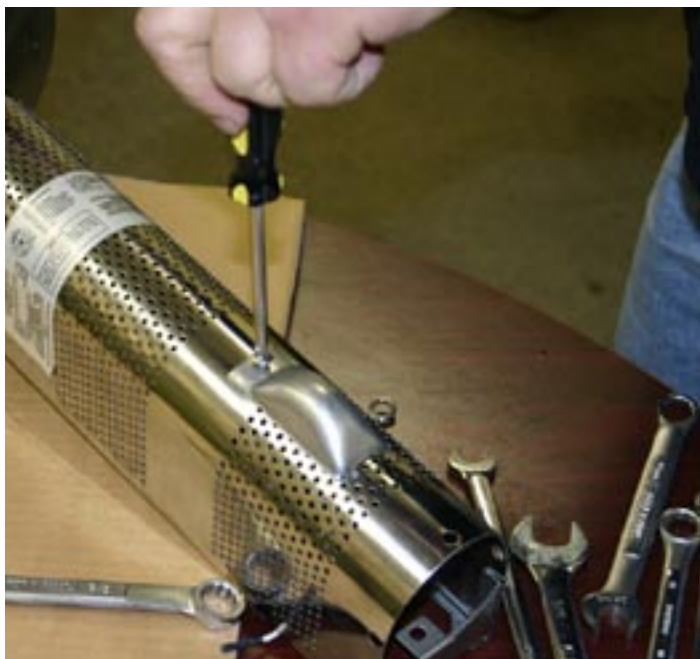


Re-install pilot supply tube and the control valve:

1. Connect the pilot supply tube to the control valve
2. Place the control valve into the valve housing. Secure the valve with the brass nut and tighten.



Step 12

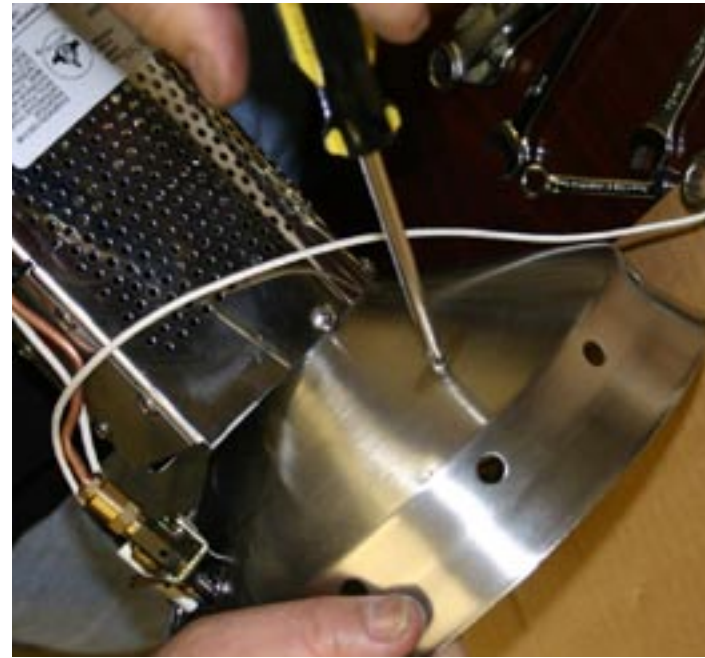


Reinstall the thermal-couple:

1. Attach the thermal-couple to the back of the control valve in the valve housing. Finger tighten plus a 1/4 turn with the #8mm open end wrench.
2. Reinstall the small access panel on the back of the valve housing



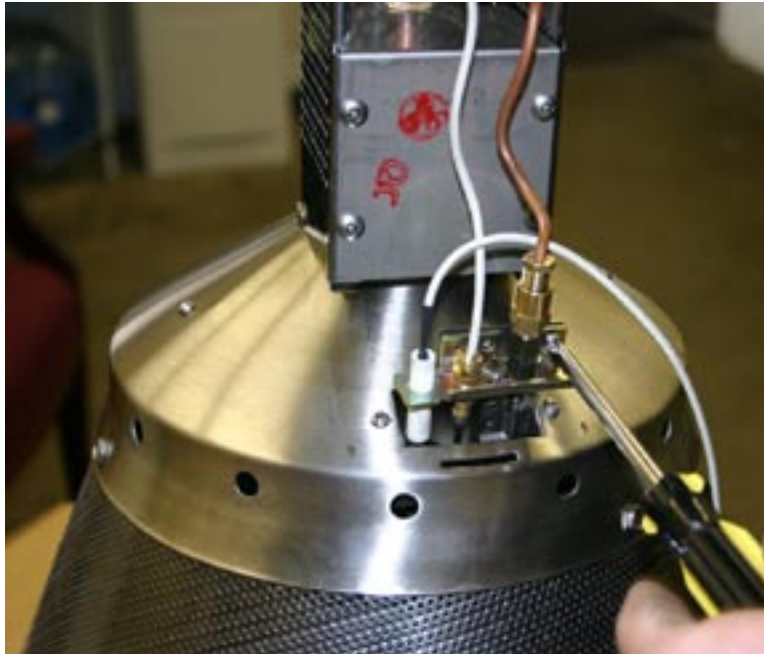
Step 13



1. Slide the burner assembly into the valve housing.
2. Attach the burner supply tube to the top of the control valve. **Do not over tighten.**
3. Tighten the two screws that hold the burner in place.



Step 14



1. Attach the pilot to the pilot bracket.
2. Connect the pilot supply tube to the pilot.



Step 15



200209, 200308, 200605

1. Attach the emitter to the valve housing, using 3 screws.
2. Secure.

230000 - 450000

1. Place the spacer ring on the burner stud.
2. Insert the burner stud through the bottom of the emitter. Secure with washer and nut. **Do not fully tighten.**
3. Align the holes of the emitter with the valve housing, and secure with screws.
4. Tighten nut inside emitter.



Steps 16-19

16. Attach the engine to the post

17. Burner Connections

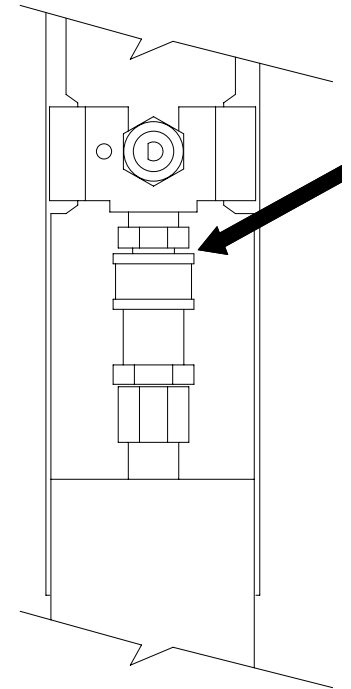
1. Make sure the regulator valve and hose connections are securely fastened to the burner and the tank.
2. If your unit was assembled for you, visually check the connection between the burner pipe and orifice. Make sure the burner pipe fits over the orifice.

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. Please refer to diagram for proper installation.
4. If the burner pipe does not rest flush to the orifice, please contact 1.800.762.1142 for assistance.

18. Attach the dome

19. Attach the LP gas tank



Step 20 - IMPORTANT

Perform leak check.



WARNING **FOR YOUR SAFETY**

If you smell gas -

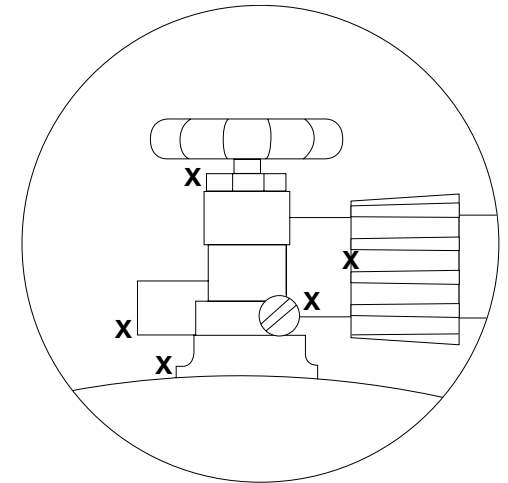
1. Shut off gas to appliance.
2. Extinguish any open flame.
3. If odor continues, immediately call your gas supplier or your fire department.

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 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.



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