


Control Board Replacement

⚠ WARNING

Explosion Hazard
<p>Turn off the gas supply to the heater before performing any service or maintenance.</p> <p>Failure to follow these instructions can result in death, injury or property damage.</p>

⚠ DANGER

Electrical Shock Hazard
<p>Disconnect electric before service or maintenance.</p> <p>Heater must be connected to a properly grounded electrical source.</p> <p>Failure to follow these instructions can result in death or electrical shock.</p>

Before proceeding with control board replacement, ensure that control board gas type matches gas type for the heater. Check gas type on control board against gas type listed on the silver rating plate on burner.


Burners are not convertible between gases. Do not use control board if gas type does not match the burner rating plate. Control boards are factory calibrated, do not tamper with factory sealed adjustment screws.

Disconnect burner's gas and electrical power supply before servicing. Extinguish any open flame and do not smoke while performing service to gas carrying components.

Control Board Replacement Kit Includes:
Control Board (Qty 1)
Pressure Switch (Qty 1)
Installation Instructions (Qty 1)

Heater must be grounded in accordance with applicable codes:
 United States: Refer to National Electrical Code® ANSI/NFPA 70 - latest revision. Canada: Refer to Canadian Electrical Code CSA C22.1 Part I - latest revision. If any of the original internal wiring must be replaced, it must be replaced with wiring materials having a temperature rating of at least 105° C and 600 Volts.

These instructions are for all board replacements, new and obsolete, having a change over date of Aug 15, 2011. Table 1 provides a general overview of new and old components that have been used to facilitate identification.

⚠ WARNING

Carbon Monoxide Hazard
<p>Replacement control board ID number must match ID number of removed control board.</p> <p>Installing incorrect control board will result in improper combustion and burner function.</p> <p>Failure to follow these instructions can result in death or injury.</p>

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Roberts-Gordon LLC
 1250 William Street
 P.O. Box 44
 Buffalo, NY 14240-0044
 Telephone: +1.716.852.4400
 Fax: +1.716.852.0854
 Toll Free: 800.828.7450

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Table 1 - Critical Burner Components

Control Board	P/N	Prior August 15, 2011	After August 15, 2011
CTH3 80NG	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320101 90439802 SCD-1080 Horizontal VB3-RG080NG	90320109 90439812 SCD:1130 Installed at 45° VB3-RG080NG
CTH3 80LP	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320102 90439812 SCD-1081 Horizontal VB3-RG080LP	P/N: 90320110 90439812 SCD:1131 Installed at 45° VB3-RG080LP
CTH3 115NG	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320103 90439812 SCD-1082 Horizontal VB3-RG0115NG	90320111 90439812 SCD:1132 Installed at 45° VB3-RG0115NG
CTH3 115LP	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320104 90439812 SCD-1083 Horizontal VB3-RG0115LP	90320112 90439812 SCD:1133 Installed at 45° VB3-RG0115LP
CTH3 150NG	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320105 90439804 SCD-1084 Horizontal VB3-RG0150NG	90320113 90439803 SCD:1134 Installed at 45° VB3-RG0150NG
CTH3 150LP	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320106 90439804 SCD-1085 Horizontal VB3-RG0150LP	90320114 90439803 SCD:1135 Installed at 45° VB3-RG0150LP
CTH3 200NG	P/N Pressure Switch P/N Software Valve orientation Board ID#:	90320107 90439803 SCD-1086 Horizontal VB3-RG0200NG	90320115 90439803 SCD:1136 Installed at 45° VB3-RG0200NG

To replace the control boards on heaters made AFTER August 15, 2011:

1. Turn off 120 V power to burner. Remove burner controls compartment door.
2. Verify that replacement board identification number (located on the white label) on the replacement board matches identification number on old board.
3. Remove all wiring and pneumatic connections from old control board.
4. Located behind the control board are the white mounting pins. Depress locking tab while gently pulling control board away from mounting pins to disengage the board.
5. Disengage all four mounting pins and remove old control board.
6. Orient the board as shown in Figure 1 and place replacement control board on the four mounting pins. Engage locking tabs by gently pressing the board onto the pins. Ensure each tab has locked the board securely in place.
7. Replace pneumatic and electrical connections as shown in Figure 1 and Figure 2.
8. Replace burner door and restore 120 V power to burner.

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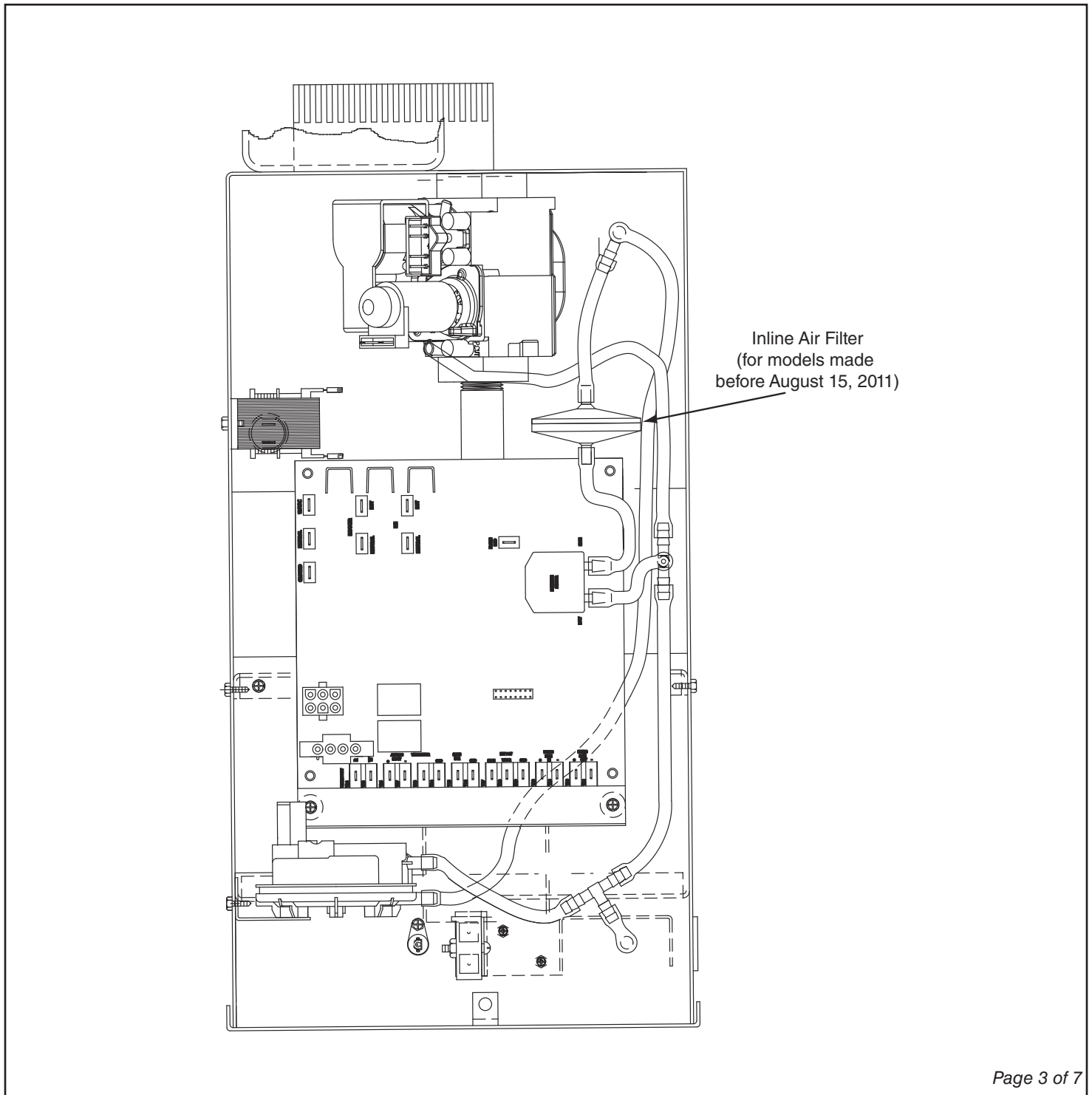
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Figure 1 - Control Board Orientation and Pneumatic Connections



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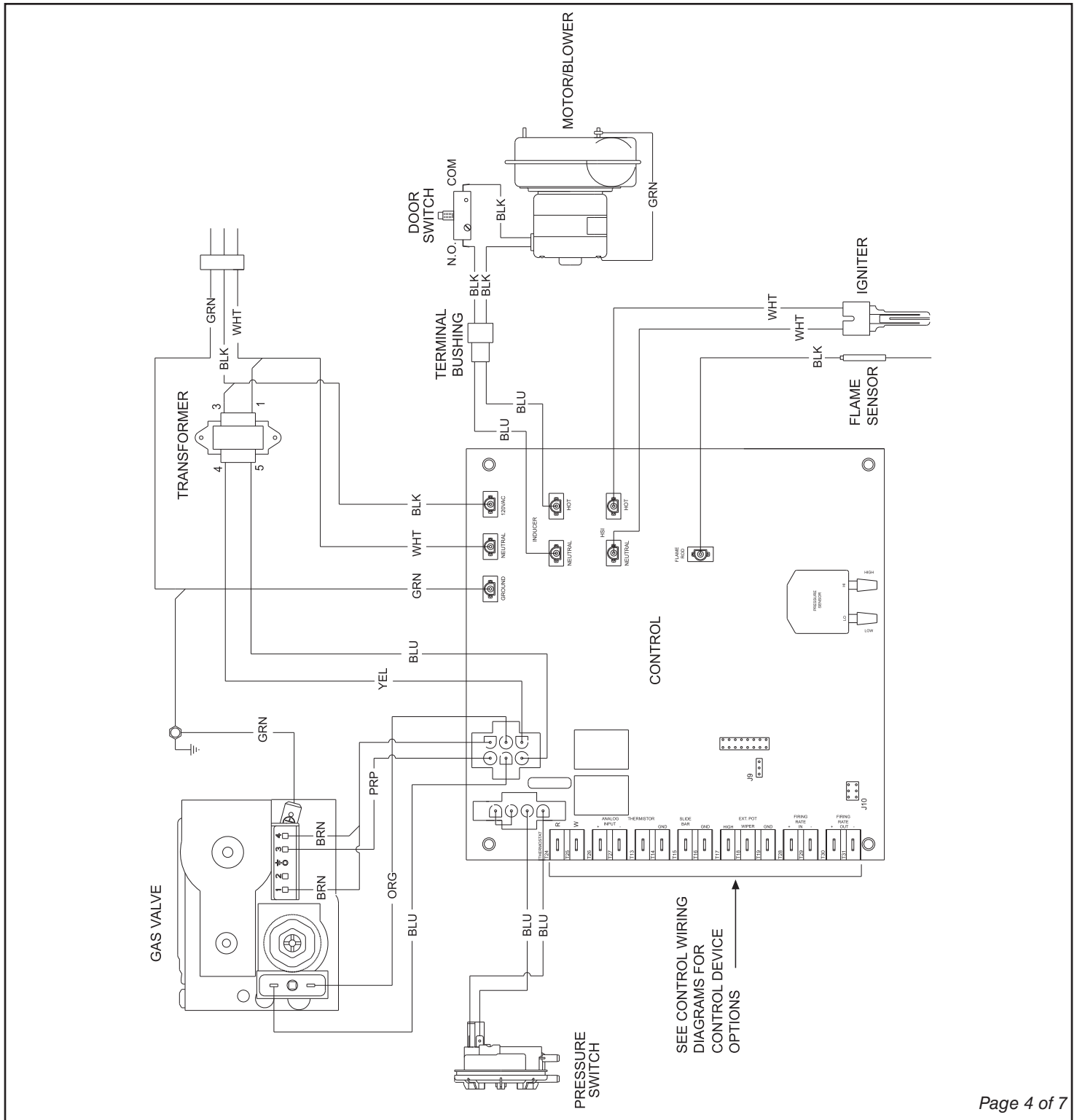
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Figure 2 - Control Board Electrical Connections



SEE CONTROL WIRING
DIAGRAMS FOR
CONTROL DEVICE
OPTIONS

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To replace the control boards on heaters made BEFORE August 15, 2011:

1. Remove both of the burner's side compartment doors.

Change the Control Board

2. Do the procedure as explained in steps 1 to 7 of the previous "after" section.

Change the Pressure Switch

1. Remove pneumatic lines from the pressure switch. Carefully remove pressure switch out of the snap in mounting ring and discard. Carefully pull out red orifices from pressure switch pneumatic connection ports. Insert new pressure switch and reconnect pneumatic lines as shown in Figure 3.

Re-Orient the Gas Valve

1. The gas valve needs to re-oriented to be in a 45° upright position as shown in Figure 3.
2. In the control compartment, gently remove the igniter and flame sensor from burner partition. The igniter is fragile, handle with care.
3. Remove the molex 3-wire plug from the gas valve. Remove the orange and blue wire from blue modulator coil on gas valve.
4. In burner compartment, unscrew burner cup from the manifold and set aside for later assembly.
5. At the back of burner box, ensure shut off cock on flexible gas line is fully closed, then disconnect burner from the flexible gas line.
6. Remove two screws holding gas valve to rear of burner box.
7. From control compartment, gently remove gas valve (and attached manifold).
8. Using a wrench, grip only rectangular metal mounting blocks at inlet or outlet of gas valve. Gripping valve on any other part of valve body can cause valve damage leading to gas leakage. Carefully rotate gas valve on manifold. Ensure valve and manifold are aligned as shown in Figure 3. Ensure embossed arrow located on bottom of valve points toward manifold.
9. Drill new mounting holes in burner box as per Figure 4.
10. Replace the entire valve/manifold. Ensure rubber grommet is properly engaged in hole in burner partition.
11. Align valve mounting slots on back of burner box with mounting holes on the valve inlet mounting block and secure valve with two screws removed earlier.
12. Ensure the orifice in end of manifold is tightened and secure. Screw burner cup back onto manifold.
13. Replace the igniter, flame sensor.
14. Reattach gas valve molex plug and orange and blue wires, as shown in Figure 2.
15. Reattach the flexible gas line to burner. Turn on gas supply.
16. Test for gas leaks at the inlet and outlet of the gas valve using a suitable leak detection fluid. Ensure gas tightness before replacing compartment doors and restoring 120 V electrical power supply.

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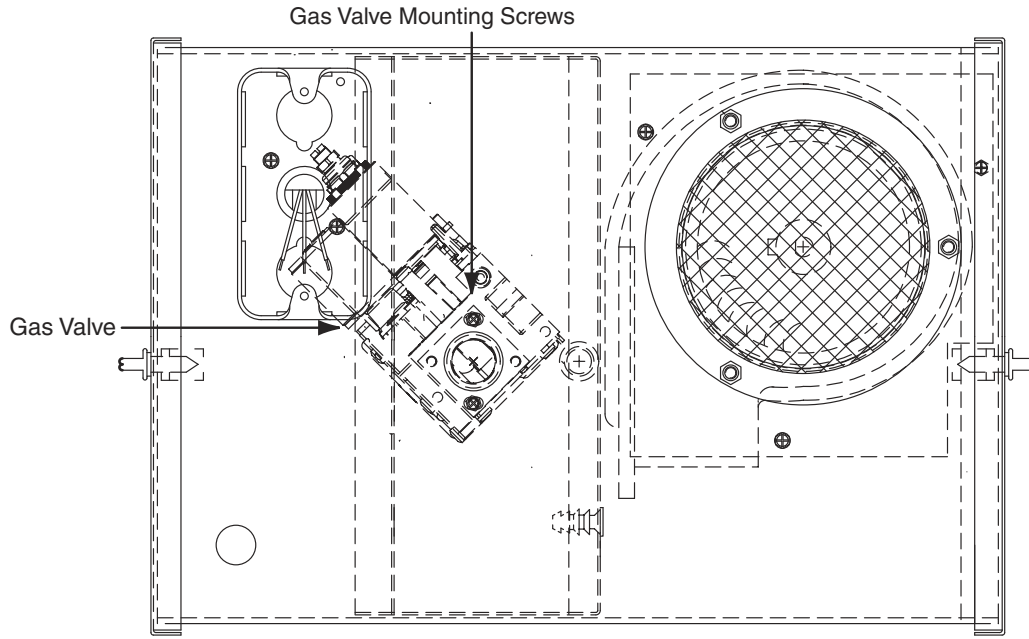
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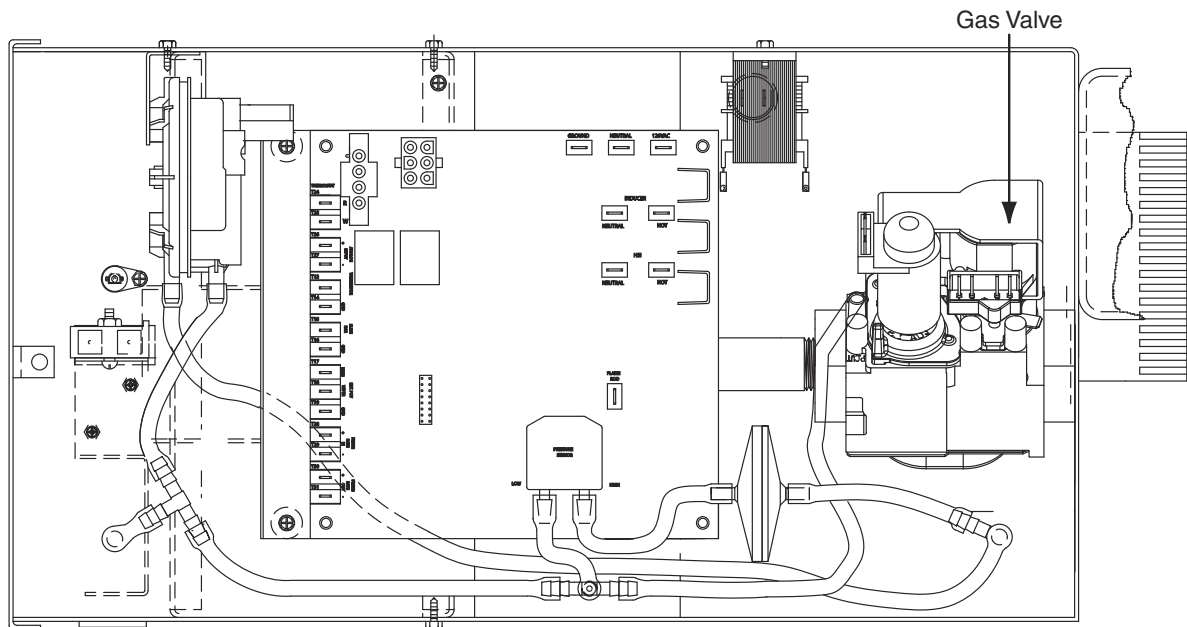
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Figure 3 - Gas Valve Orientation



Side View



Front View

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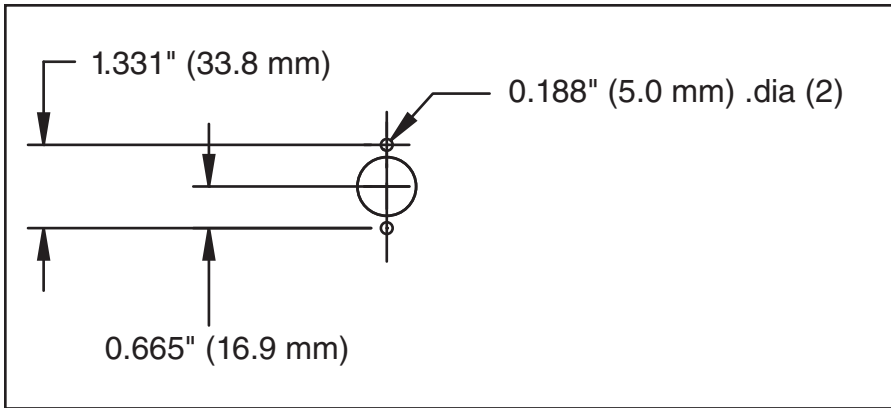
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Figure 4 - Gas Valve 45° Mounting Hole Pattern



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