ECR97 GAS VALVE KIT INSTRUCTIONS

ECR97 - 075 Kit #550002202

ECR97 -100 Kit #550002203

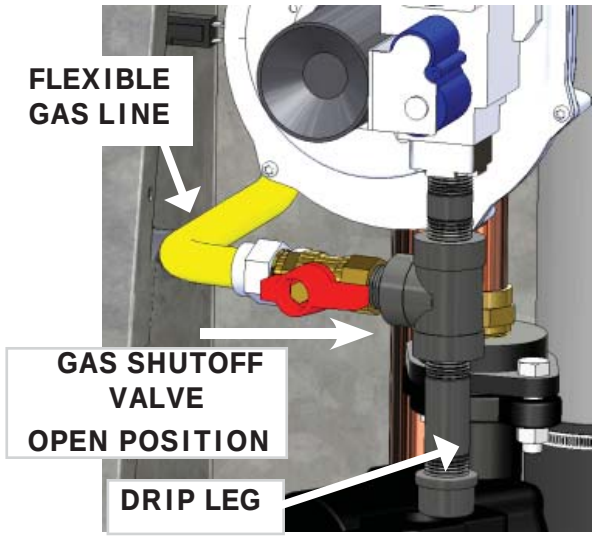
⚠ WARNING

Kit shall be installed by qualified service agency in accordance with manufacturer's instructions and all applicable codes and requirements of authority having jurisdiction. If information in these instructions is not followed exactly, a fire, explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. Qualified service agency is responsible for proper installation of this kit.

⚠ CAUTION

Shut "OFF" gas supply prior to disconnecting electrical power, before proceeding.

Figure 1 - Gas Shutoff Valve



Gas Valve kit:

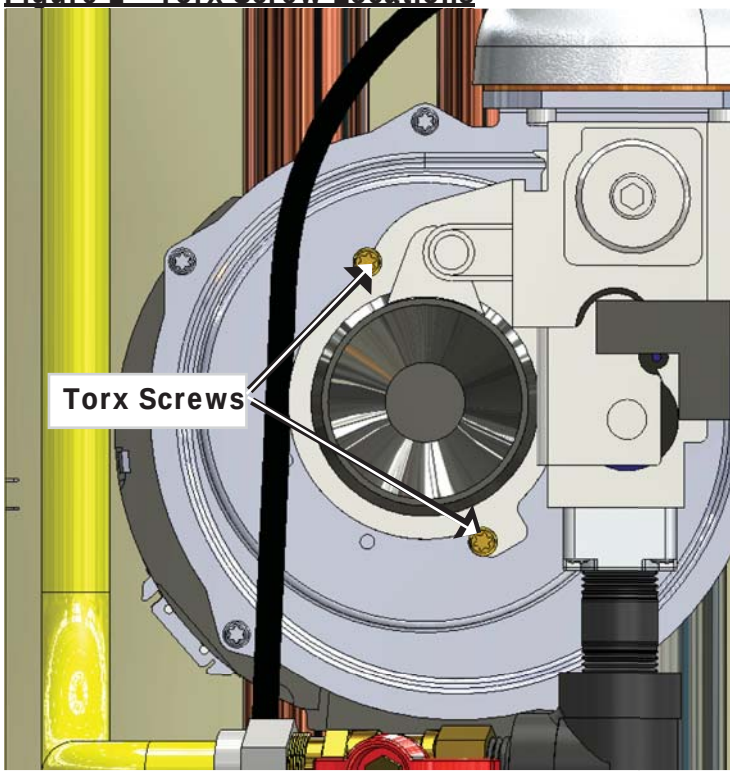
1. Tools required:
   - 2 crescent wrenches
   - Torx T25 driver
   - Slotted screwdriver
   - Combustion analyzer
2. Follow instructions To Turn Off Gas to Appliance found on Operating Instructions label inside jacket or in Installation, Operation & Maintenance Manual.
3. Turn OFF gas supply at manual main gas shutoff valve external to boiler.
4. Remove jacket from boiler. Grasp front cover at lip behind plastic smoke-colored control cover. Pull forward to release snap action latches. Lift jacket up and off bottom support rest.
5. Remove retaining screw and disconnect gas valve wire harness from gas valve.
6. Disconnect flexible gas line from gas shutoff valve.

NOTICE

Use two (2) wrenches when loosening and tightening flexible gas line. Boiler's gas valve can be damaged if subjected to excessive torque.

7. Remove (2) T25 Torx screws holding gas valve to blower. Remove gas valve. See Figure 2.
8. Note orientation of drip leg to valve. Remove drip leg by removing (4) Phillips screws holding 1/2" flange to bottom of gas valve. See Figure 3.
9. If cork gasket is stuck to blower, remove, ensure mating surface is clean. See Figure 3.

Figure 2 - Torx Screw Locations



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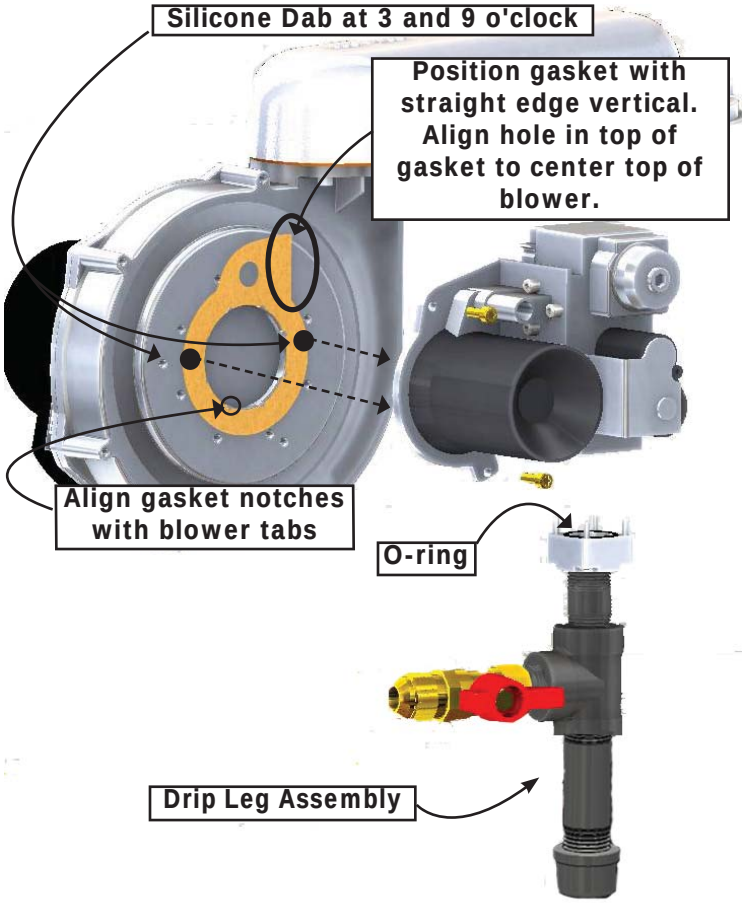
Replacement Instructions:

1. Attach drip leg on gas valve and tighten to orientation noted earlier, or remove O-ring from new 1/2" flange and replace onto existing flange and attach to gas valve with (4) phillips screws.
2. Apply thin film of silicone at locations shown in Figure 3 to help hold gasket in place on new gas valve. Use silicone sparingly it is not necessary for sealing.
3. Align gas valve on blower and attach using (2) Torx screws.
4. Reattach flexible gas line to gas shutoff valve.

NOTICE
Flexible gas line is flare connection, no pipe sealant is necessary.

5. Reattach gas valve wire harness.
6. Follow "Start Up Procedure" in Installation, Operation and Maintenance Manual to restore and verify operation.
7. Combustion throttle screw **MUST** be adjusted for safe operation. See page 3 for details on how to set properly (can also be found in Installation, Operation and Maintenance Manual "Start Up Procedure" Section).
8. Metric information can be found in Glossary of boiler's Installation, Operation and Maintenance Manual.
9. Re-attach jacket.

Figure 3 - Gasket, Valve, Flange



Boiler Start-up and Operational Test

1. Verify air is purged from hydronic piping
2. System test pumps - verify each pump is operational
3. Verify gas piping
   - Confirm pressure test, found in Installation, Operation and Maintenance Manual "Leak Check Gas Piping".
   - Visually inspect piping to determine there are no open fittings or ends, and all valves at unused outlets are closed and plugged/capped.
   - Purge air from piping
   - Check piping and connections for leaks immediately after gas is turned on. Shut off gas supply and make necessary repairs if leaks found.
4. Follow OPERATING INSTRUCTIONS found in boiler's Installation, Operation and Maintenance Manual to initiate boiler operation.
5. Inspect combustion air and vent piping. Verify pipe is not leaking and terminations are unobstructed and vent gas discharge is not a nuisance or hazard.
6. Verify boiler functions.
7. Inspect condensate disposal system. Verify condensate flows adequately and is disposed properly.
8. Check control module operation.
9. Check field-sourced limits, low water cutoffs, etc. per manufacturer's instructions.

Check Combustion

Natural Gas

1. Measure input.
   - Turn off gas to all other appliances.
   - Use ½, 1 or 2 cu ft dial on gas meter. Measure time required for one or more complete revolutions. Measure time for 1-2 minutes.
   - Calculate input.

$$\text{Input (MBH)} = \frac{3600 \times \_\_\_\_ \text{ cu ft}}{\_\_\_\_\_ \text{ seconds}}$$

Example: Gas flow from

Meter = 2 cu ft

Measured time = 72 seconds

$$\text{Rate (MBH)} = \frac{3600 \times 2 \text{ cu ft}}{72 \text{ seconds}} = 100 \text{ MBH}$$

1. Compare to boiler rating

Size	Minimum	Maximum
075	65	85
100	90	110

2. Adjust rate if needed using Figure 4.

NOTICE

Contact ECR Technical Support @ 800-325-5479 for additional information or assistance.

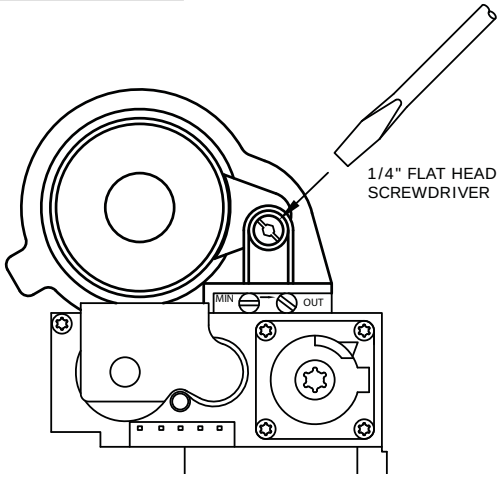
3. Check CO_2. Natural gas should be between 8.5% and 10.0%. See Figure 5 Combustion air analyzer port.
   - If CO_2 is low increase gas flow following Figure 4.
   - If CO_2 is high decrease gas following Figure 4.

Propane Gas

Most propane systems do not have flow meters.

1. Check CO_2. Propane should be between 9.5% and 11.0%.
   - If CO_2 is low increase gas flow following Figure 4.
   - If CO_2 is high decrease gas flow following Figure 4.

Figure 4 - Gas Valve



- To increase gas flow turn 'throttle' left or counter clockwise ↺.
- To decrease gas flow turn 'throttle' right or clockwise ↻.
- Limit adjustment to one turn and retest.

NOTICE
Verify proper operation after servicing.

NOTICE
Combustion analyzer port is provided with boiler. After use replace cover.

PARTS LIST

ECR97 075 Gas Valve Kit #550002202		
DESCRIPTION	PART #	QTY
Gas Valve ECR97, 75, 120V, VK4115V1212	-	1
1/2" Flange 45900 400-122B O-Rings & Screws	1235008	1
Screw, T25 Torx	-	2
Gasket, Cork	1250021	1
Instructions	240008603	1
ECR97 100 Gas Valve Kit #550002203		
Gas Valve ECR97, 100, VK4115V1213	-	1
1/2" Flange 45900 400-122B O-Rings & Screws	1235008	1
Screw, T25 Torx	-	2
Gasket, Cork	1250021	1
Instructions	240008603	1

Figure 5 - Combustion Analyzer Port