TECHNICAL INSTRUCTIONS

AERCO
A WATTS Brand

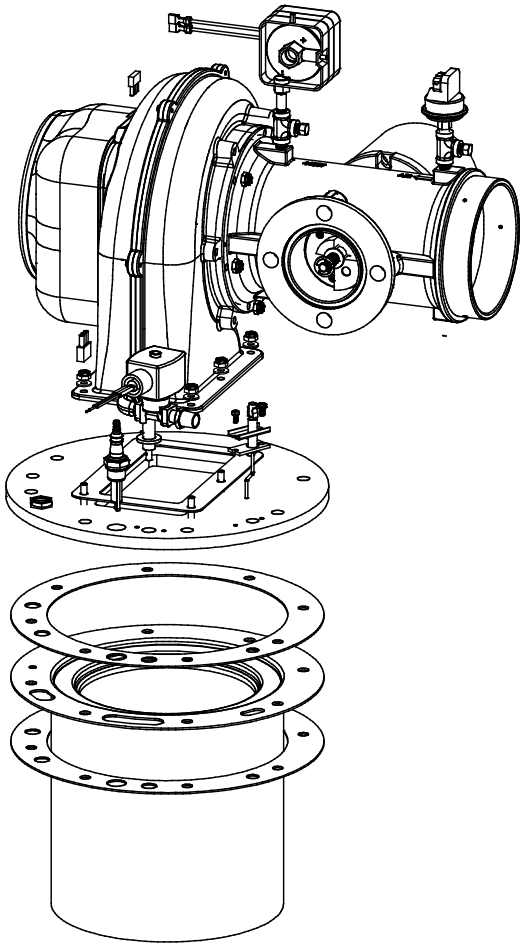
24-Month Maintenance Kit P/N 58025-06

For BMK2.0LN Boilers

Description of Document:

This TID provides the procedures to perform recommended 24-Month maintenance on the following Benchmark Low NOx Boiler Models:

- Benchmark 2.0LN
- Benchmark 2.0LN Dual-Fuel



BMK 2.0LN Blower/Burner Assembly

Latest Update: 04/29/2015

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Technical Support:
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1. INTRODUCTION

This Technical Instruction Document (TID) provides the procedures to perform waterside and fireside inspections of the heat exchanger contained in Benchmark 2.0LN and 2.0LN Dual-Fuel boilers equipped with an Igniter-Injector.

This kit provides the parts required to perform the waterside and fireside inspections on the Benchmark 2.0LN and Dual-Fuel Boilers.

2. CONTENTS OF 24-MONTH MAINTENANCE KIT

The items included in the 24-Month Maintenance Kit 58025-06 are listed in Table 1.

Table 1: Benchmark 2.0LN 24-Month Maintenance Kit, Part No. 58025-06

ITEM	QTY	PART NO.	DESCRIPTION
1	1	58023	**IGNITER/INJECTOR REPLACEMENT KIT:** 1 x IGNITER-INJECTOR – P/N **66026** 1 x NUT, COMPRESSION – P/N **56047** 3 x WASHERS, CLOCKING (INDEXING) – P/N **53033** 1 x LUBRICANT, ANTI-SEIZE - **89012**
2	1	24356-1	**FLAME DETECTOR REPLACEMENT KIT:** 1 x FLAME DETECTOR – P/N **66034** 1 x FLAME DETECTOR GASKET – P/N **81048**
3	2	81101	BURNER GASKETS
4	1	81068	BLOWER GASKET
5	1	84017	CONDENSATE TRAP O-RING
6	1	81092	CONDENSATE TRAP ORIFICE GASKET (.25" I.D.)
7	1	123612	EXHAUST MANIFOLD SEAL
8	1	88003	AIR/FUEL VALVE TO GAS TRAIN O-RING
9	1	69126	LWCO / CAPACITOR ASSEMBLY KIT
10	1	81129	PLUG GASKET

3. TOOLS, TEST EQUIPMENT AND MATERIALS REQUIRED

The items required to perform the inspections, replacements and tests specified in these instructions are listed in paragraph 3.1, 3.2 and 3.3 which follow.

3.1 Tools

Common hand tools, plus the items listed below are required:

- Small Wire Brush
- Flashlight
- Wrench set (box or open-ended)

3.2 Test Equipment

No test equipment is required to perform the 24-month inspections and maintenance included in these instructions. However, following completion of these inspections, the Benchmark Boiler should be tested using the combustion calibration procedures provided in O & M Manual GF-123, GF-123M (Massachusetts only), or GF-127 (Dual Fuel).

3.3 Materials

Expendable materials required to perform the procedures described in this bulletin are not included in the 24 -Month Inspection Kits. These materials may include such items as:

- Pipe joint compound
- Teflon tape
- Cleaning solvents and materials
- Loctite 246

4. PRELIMINARY INSPECTION PROCEDURES

The detailed procedures required to perform the waterside and fireside inspections included in these instructions are provided in sections 5 and 6. However, prior to performing the procedures in section 5 and 6, perform the preliminary safety, set-up and disassembly procedures described in the following steps:

WARNING!
FAILURE TO FOLLOW SAFETY INSTRUCTIONS REGARDING PREPARATION OF THE UNIT, AS DESCRIBED BELOW, MAY RESULT IN INJURY, DEATH, OR DAMAGE TO EQUIPMENT.

Preliminary Inspection Instructions

1. At the front panel of the unit, set the **ON/OFF** switch on the C-More Control Panel to the **OFF** position.
2. Disconnect electrical power to the unit by turning off the external circuit breaker.
3. Turn off the external gas supply shutoff valve.
4. Close the water supply and return valves to the unit.
5. Refer to Figure 1 and remove the top and side panels of the unit.
6. With the top and side panels removed, the Benchmark 2.0LN Burner, heat exchanger and Exhaust Manifold can be accessed to prepare the boiler for the required waterside and fireside inspections described in sections 5 and 6.

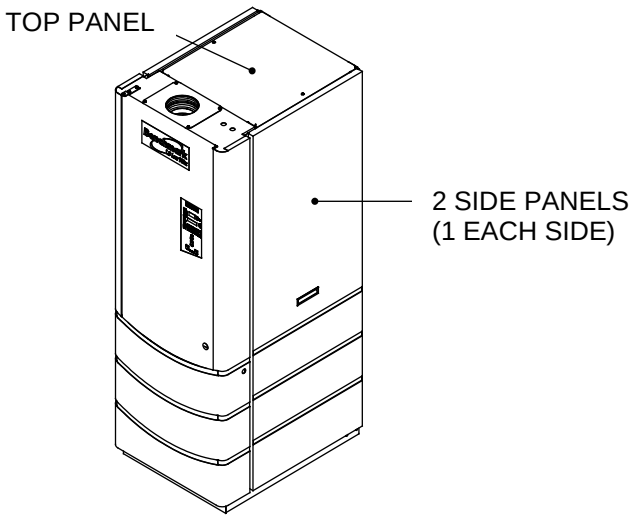

Figure 1: Benchmark 2.0 Low NOx (LN) Boiler

5. WATERSIDE INSPECTION OF THE HEAT EXCHANGER

Benchmark 2.0LN Models contain a single heat exchanger as shown in Figure 2. Perform the waterside inspection as follows:

Burner Preliminary Disassembly and Inspection Instructions

1. Ensure that the preliminary safety, set-up, and disassembly procedures in section 4 have been performed to provide access to the heat exchanger of the unit.
2. Allow the unit to cool prior to proceeding.
3. At the rear of the unit (Figure 3), slowly open the drain valve and drain the boiler water from the heat exchanger.
4. Open the P&T relief valve (Figure 2) to allow air to enter the heat exchanger during draining.
5. After the heat exchanger has been drained, remove the 2-1/2 inch access port plug on the right side of the heat exchanger as shown in Figure 2.
6. If waterside inspection is required by your local inspector, follow the inspector's instructions. Upon satisfactory completion of the inspection, proceed to step 7.
7. Apply pipe compound to the threads of the access port plugs and replace them using a pipe wrench.
8. Close the drain valve at the rear of the boiler.
9. Close the P&T relief valve.
10. Open the water supply and return valves to the unit and refill the heat exchanger. This completes the waterside inspection for the unit.

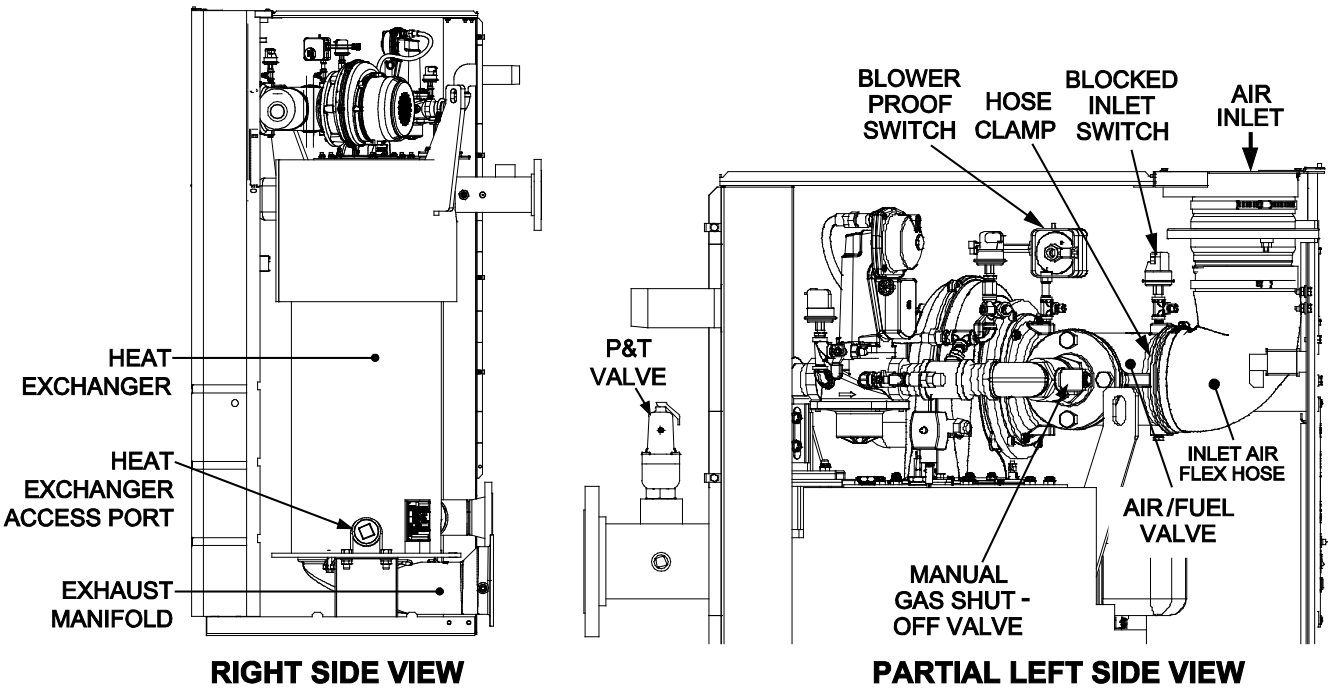

Figure 2: Benchmark 2.0LN - (Side Views)

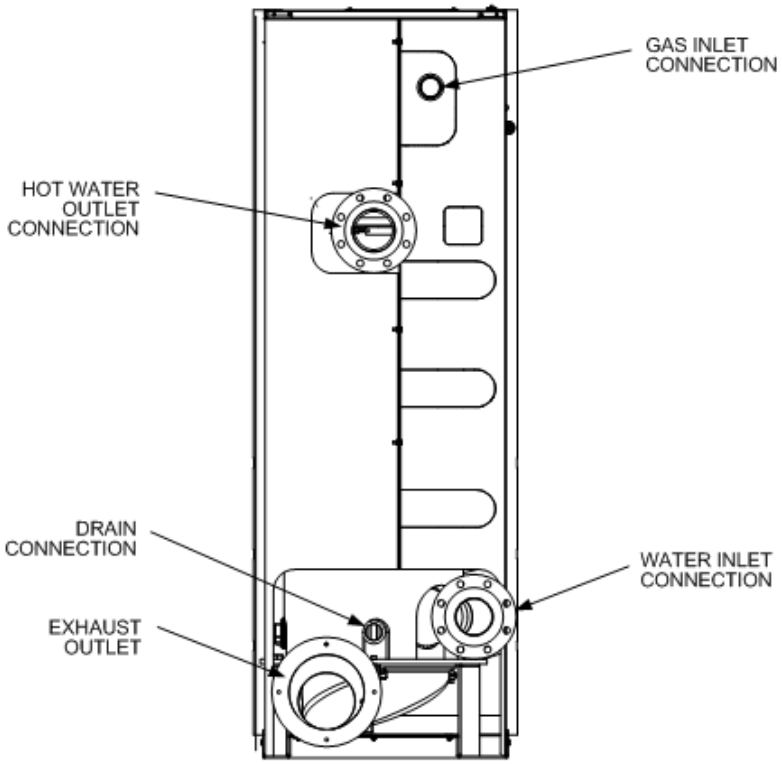

Figure 3: Benchmark 2.0LN - (Rear View)

6. FIRESIDE INSPECTIONS & COMPONENT REPLACEMENT

The heat exchanger fireside inspection includes removal of the Burner and recommended replacement of Burner components and inspection of the Exhaust Manifold assembly and replacement of Condensate Trap components. The 24-Month Maintenance Kit includes the recommended replacement parts for annual maintenance which should also be performed at this time. Therefore, the procedures in this section are organized as follows:

Burner Maintenance – section 6.1:

- Burner Disassembly and Inspection
- Preliminary Burner Reassembly
- Burner Component Replacement
- Final Burner Reassembly

Exhaust Manifold & Condensate Maintenance – section 6.2:

- Exhaust Manifold Disassembly and Inspection
- Exhaust Manifold Reassembly
- Condensate Trap Component Replacement

LWCO (Low Water Cut-Off) Capacitor Replacement and Testing – section 6.3:

- LWCO replacement
- LWCO testing

6.1 Burner Maintenance

Perform the fireside inspections of the low NOx Burner and replacement of Burner component parts using the procedures in the following paragraphs, 6.1.1 and 6.1.2.

6.1.1 Burner Disassembly and Inspection

The Burner Assembly is located at the top of the heat exchanger as shown in Figure 4. The complete Burner Assembly for Benchmark 2.0LN also includes the Blower and Air/Fuel Valve assemblies for the unit. Figure 4 shows the Burner Assembly mounting details and Figure 5 shows an exploded diagram of the complete Burner Assembly removed from the unit.

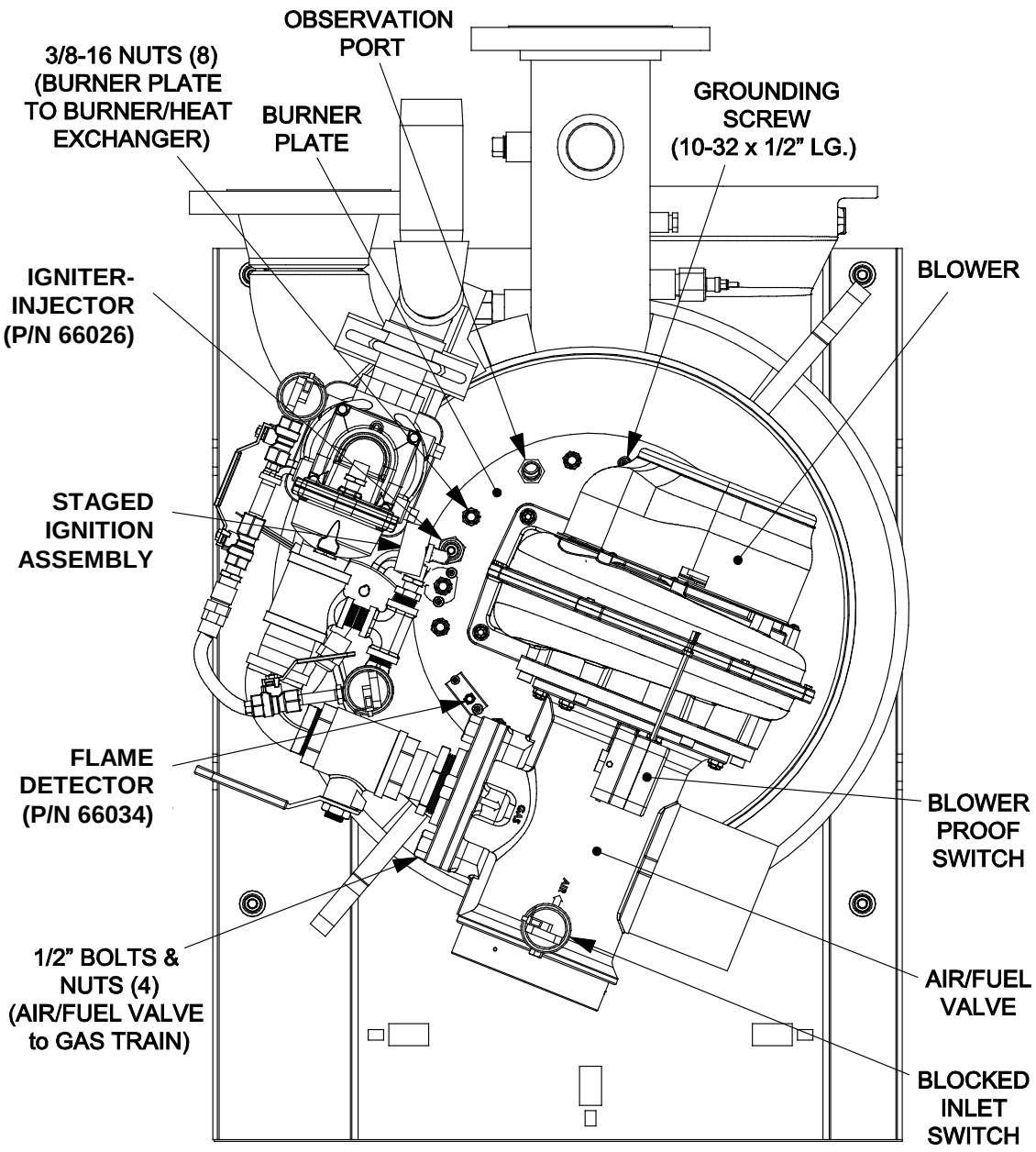

Figure 4: Benchmark 2.0LN - Top View

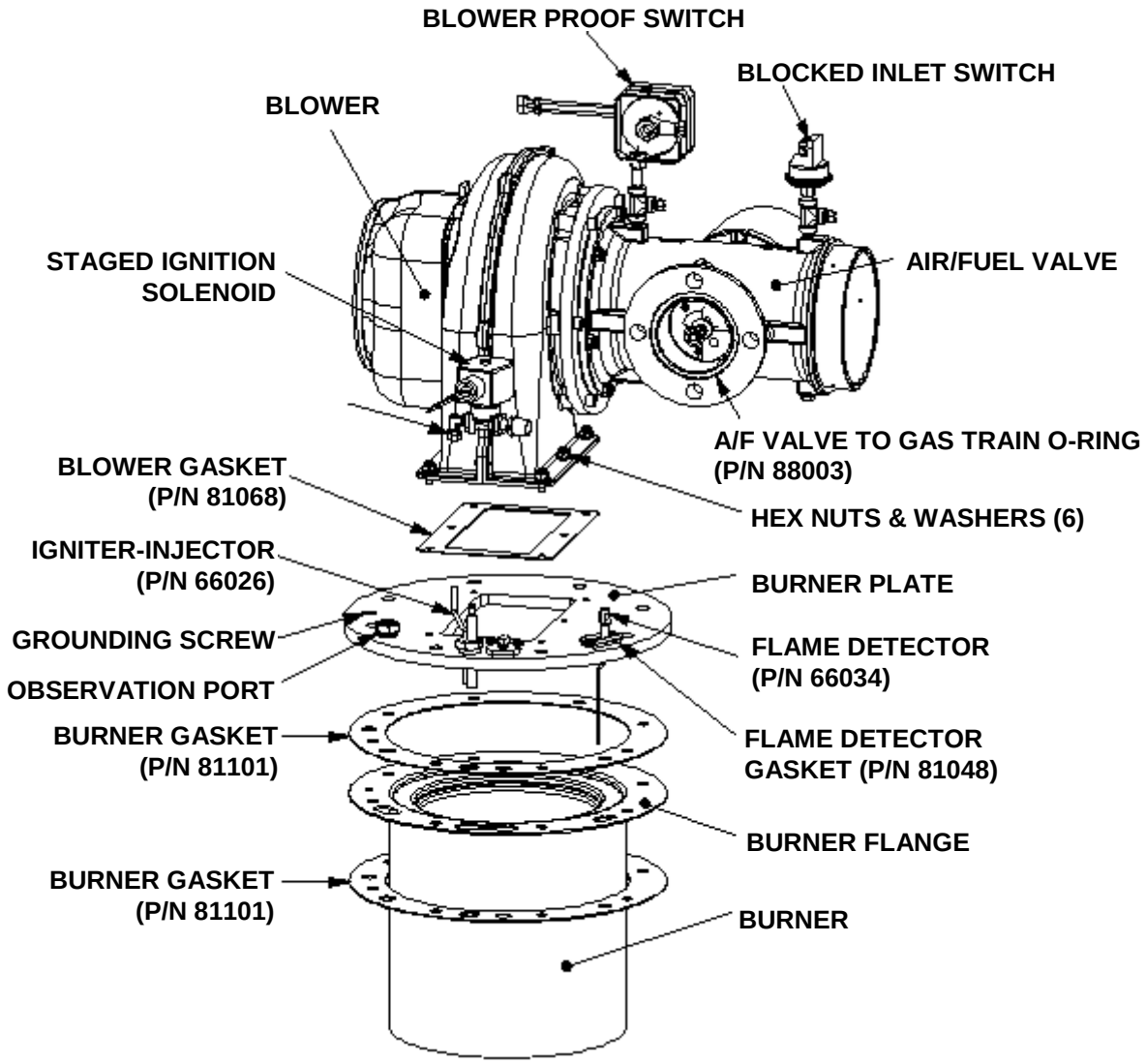

Figure 5: BMK2.0LN Burner Assembly - Exploded View

Remove and inspect the Burner Assembly as follows:

Burner Preliminary Disassembly and Inspection Instructions

1. Ensure that the preliminary set-up and disassembly procedures in section 4 have been completed.

   WARNING

   THE BURNER ASSEMBLY MAY BE EXTREMELY HOT. TO AVOID BURNS, ALLOW IT TO COOL SUFFICIENTLY BEFORE ATTEMPTING TO REMOVE IT FOR INSPECTION.

2. Disconnect the lead wire from the Flame Detector shown in Figure 6. Unscrew the two screws and remove the Flame Detector and gasket.

3. Disconnect the igniter cable from the Igniter-Injector (Figure 6).
4. Refer to the partial exploded view in Figure 6. Using a 7/16” open-end wrench, disconnect the compression nut securing the Gas Injector Tube of the Igniter-Injector to the elbow of the Staged Ignition Assembly. Remove the compression nut from the elbow and discard, as it will be replaced with a new one from the kit at reassembly. Disconnect the Staged Ignition assembly from the Igniter-Injector.
5. Next, loosen and remove the Igniter-Injector from the Burner Plate using a 1" open-end wrench.
6. Remove the two screws securing the Plug Gasket (P/N 81129), remove the existing Plug Gasket and replace it with one from the kit, and then secure it with the two screws.
7. Disconnect the unit wiring harness connectors from the Air/Fuel Valve and Blower motor (Figure 5).
8. Disconnect the Fast-On wire leads connected to the Blower Proof Switch and Blocked Inlet Switch (Figure 5).

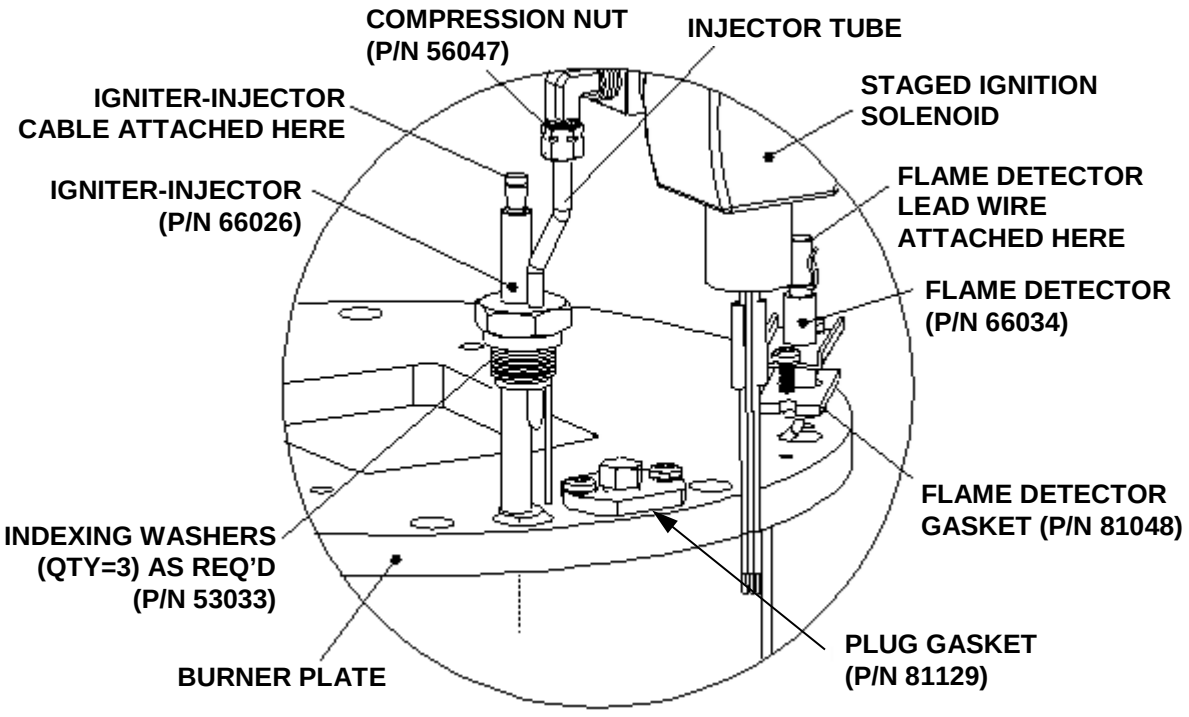

Figure 6: Partial Exploded View Showing Flame Detector, Igniter-Injector, and Staged Ignition Assembly on Burner Plate

9. Disconnect the Gas-Train from the Air/Fuel Valve flange by removing the four (4) 1/2" bolts and nuts (Figure 4). Remove the O-ring, which will be replaced at reassembly with the new Air/Fuel Valve to Gas Train O-ring (P/N 88003) provided in the kit.
10. Disconnect the inlet air flex hose from the Air/Fuel Valve (Figures 2 & 4) by loosening the hose clamp.

IMPORTANT!

There are some installations where it may be necessary to disassemble the Air/Fuel valve from the Blower to access the Burner. Note that there is a gasket (P/N 81057) located between the A/F Valve and Blower adapter, as shown in Figure 7. If you disassemble the Blower from the A/V Valve, check this gasket for damage and wear and retain for later reassembly. If replacement is necessary, contact AERCO technical support for assistance.

11. If it is necessary to separate the Blower from the A/F Valve, refer to Figure 7, and remove the 6 bolts from A/F Valve as shown. Retain the gasket (P/N 81057) for later reassembly.

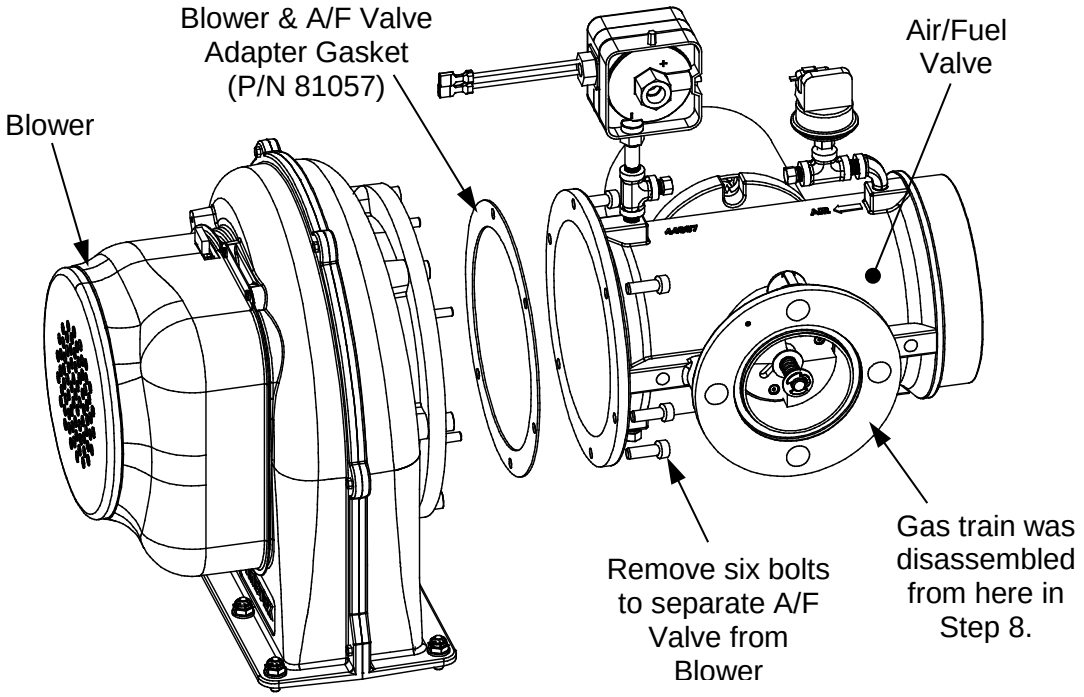

Figure 7: Exploded Veiw of Blower & Air/Fuel Valve (BMK2.0LN)

12. Remove the six (6) 1/4-20 hex nuts and flat washers securing the Blower to the Burner Plate (Figure 5).
13. If the A/F Valve and Blower are NOT separated (see step 10) remove the Blower and Air/Fuel Valve from the Burner Plate as one piece, lifting it straight up. If separated, remove both assemblies as is most convenient for your installation.
14. Remove the Blower Gasket that lies between the Blower and Burner Plate (Figure 5). This will be replaced during reassembly with a new gasket.
15. Remove the grounding screw on the Burner Plate (Figure 4).
16. Remove the eight (8) 3/8-16 nuts from the Burner flange (Figure 4) using a 9/16” wrench.

NOTE

The Burner Plate is heavy, weighing approximately 20 pounds.

14. Remove the Burner Plate and then the Burner by pulling straight up. Do not scrape or bang the Burner Mesh during removal of the Burner.
15. Inspect the removed Burner for damage, warping or discoloration. If the Burner is damaged, especially in the Observation Port or Staged Ignition Assembly area of the flange, it must be replaced with a new assembly. Inspect the Burner Mesh with a flashlight inside for evidence of clogging or sagging.
16. Inspect lower Burner Gasket for leak paths, gouges, or damage. An undamaged lower gasket may be left in place without causing any adverse issues.

IMPORTANT!

Follow appropriate local and state regulations as pertains to inspection of critical boiler parts.

During inspection, if the Burner and/or mesh appear damaged, contact AERCO technical support for information regarding Burner replacement. If undamaged, proceed to section 6.1.2.

6.1.2 Preliminary Burner Reassembly

Before Burner components may be replaced, the Burner must be partially reassembled as follows:

Preliminary Burner Reassembly Instructions

1. Remove the two old Burner Gaskets and install the two new Burner Gaskets (P/N 81101) from the kit. Ensure that the gaskets and Burner are aligned with the Igniter-Injector and Flame Detector slots in the heat exchanger top head.

IMPORTANT!

When installing new Burner Gaskets, it is imperative that the gaskets be properly aligned to assure that the cutouts for the Observation Port, Igniter-Injector, and Flame Detector line up with those in the heat exchanger top plate, Burner flange and Burner housing. Failure to properly align these items may result in damage to the gaskets or interference with the components.

2. Reassemble the Air/Fuel Valve to the Blower (if needed) per figure 7. Ensure that the Blower Gasket removed previously is included. Tighten each bolt in an alternating pattern to ensure a uniform seal between the Blower and the A/F Valve.
3. Place a new Blower Gasket (P/N 81068) from the kit aligning it with the Blower mounting holes on the Burner Plate.
4. Next, place the Blower-A/F Valve assembly onto the gasket and Burner Plate. Insert the six 1/4-20 bolts into the tapped holes on the Blower and thread each 1/4-20 bolt one or two revolutions to aid in proper alignment. Next, tighten each bolt in an alternating pattern to ensure a uniform seal around the Blower base.

5. To each of the eight (8) Burner mounting studs coming up through the Burner flange, add one of the 3/8" flat washers removed during disassembly.
6. After placing the washers, apply Loctite 246 to the Burner mounting studs. While supporting the housing so it is level with the Burner flange, use a torque wrench to tighten the eight (8) 3/8-16 hex nuts on the Burner flange to 35 ± 5 ft.-lbs. Use an alternating pattern when tightening the hex nuts to ensure a uniform seal.
7. Reassemble the Air/Fuel Valve to the gas-train flange by reinstalling the four (4) 1/2" bolts and nuts (Figure 4). Replace the Air/Fuel Valve to Gas Train O-ring (P/N 88003) with the one provided in the kit. Use an alternating pattern when tightening the bolts to ensure a uniform seal.

NOTE

At this point in the Burner reassembly process, the following new items included in the kit should be installed (may include Blower & A/F Valve Adapter Gasket, P/N 81057, not included in the kit):

- Blower Gasket (P/N 81068)
- Burner Gaskets (two P/N 81101)
- Air/Fuel Valve to Gas Train O-Ring (P/N 88003)
- Igniter-Injector (P/N 66026, a component of kit P/N 58023).
- Flame Detector and gasket (P/N 66034 & 81048).

8. Replace Burner and Burner Plate back onto heat exchanger, making sure to align the holes for the Igniter-Injector, Flame Detector, and other components in the Burner Plate with the holes of the heat exchanger top head.
9. Proceed to section 6.1.3 for instructions to replace the Igniter-Injector and Flame Detector components prior to final Burner reassembly.

6.1.3 Burner Component Replacement

The old components that need to be replaced have already been removed during the disassembly process in section 6.1.1. The following instructions show how to install the new parts during the Burner reassembly process.

6.1.3.1 Igniter-Injector Installation

The spark Igniter-Injector (P/N 66026) installation is accomplished as follows:

Igniter-Injector Installation Instructions

1. Burner, Burner Plate, and Blower must first be completely reassembled to the Burner.
2. Prior to installing the replacement Igniter-Injector, you must apply a high temperature, conductive, anti-seize lubricant to the Igniter-Injector threads. A small tube of this lubricant is included in the Igniter-Injector replacement kit (P/N 58023).

NOTE

The Igniter-Injector kit contains a compression nut (P/N 56047) with a built-in ferrule and three clocking (indexing) washers (P/N 53033). These washers are used, as needed, to properly position the Igniter-Injector's gas injector tube, as described in the following step.

3. Reinstall the Igniter-Injector and, if necessary, install 1, 2 or 3 clocking washers to properly position the Gas Injector Tube within the 120° angle shown in Figure 8. Torque the Igniter-Injector to 15 ft.-lbs. Do not over tighten.

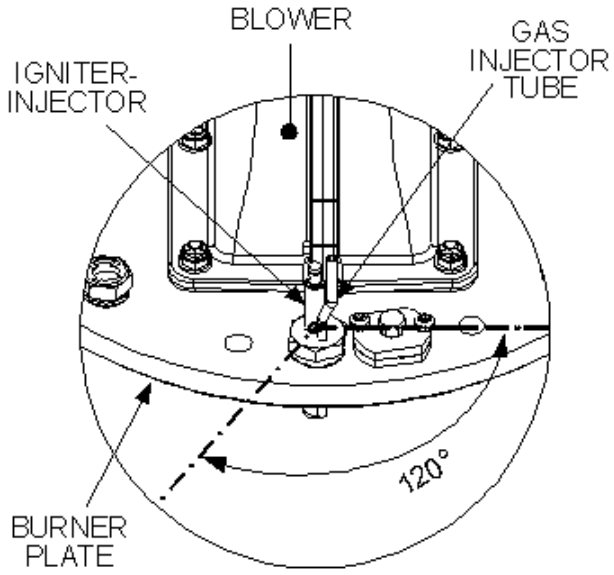

Figure 8: Benchmark 2.0LN Igniter-Injector Orientation

4. Connect the Staged Ignition Assembly to the Igniter-Injector's Gas Tube by securing the compression nut (P/N 56047) to the elbow of the Staged Ignition Assembly using a 7/16" open-ended wrench. Position the Staged Ignition Solenoid so it is not contacting any other components of the Burner Assembly or heat exchanger.

5. Reconnect the Igniter-Injector cable. This completes the replacement of the Igniter-Injector.

6.1.3.2 Flame Detector Installation

Flame Detector (P/N 66034) and gasket (P/N 81048) installation is accomplished as follows:

Flame Detector Installation Instructions

1. Refer to Figures 4, 5, and 6 to locate the Flame Detector installation location.

2. Install the replacement Flame Detector and gasket in the location shown. Secure the Flame Detector on the Burner housing flange using the two screws removed previously.

6.1.4 Final Burner Reassembly

After Burner component replacement (Section 6.1.3), continue Burner reassembly as follows:

Final Burner Reassembly Instructions

1. Reinstall the grounding screw to the Burner Plate (Figure 4).
2. Connect lead wire to the Flame Detector (Figure 6).
3. Attach igniter cable to the Igniter-Injector assembly (Figure 6).
4. Reconnect the unit wiring harness connectors to the Air/Fuel Valve and Blower motor.
5. Reconnect the wire leads connected to the Blower proof switch and blocked inlet switch.
6. During the Burner maintenance process, the following items (included in the maintenance kit) should have been replaced:
   - Blower Gasket (P/N 81068).
   - Burner Gaskets (2 x P/N 81101)
   - Air/Fuel Valve to Gas Train O-Ring (P/N 88003)
   - Igniter-Injector (P/N 66026, a component of kit P/N 58023).
   - Flame Detector and gasket (P/N 66034 & 81048)
7. This completes the Burner Maintenance for the BMK2.0LN boiler. Proceed to section 6.2 for Exhaust Manifold maintenance instructions.

6.2 Exhaust Manifold Maintenance

The Exhaust Manifold of the Benchmark 2.0LN is installed at the rear of the unit as shown in Figure 9.

6.2.1 Exhaust Manifold Disassembly and Inspection

To remove and inspect the Exhaust Manifold:

Exhaust Manifold Disassembly and Inspection Instructions

1. Disconnect the flue starter section from the Exhaust Manifold.
2. Disconnect the Condensate Trap from the 1/2" NPT port on the side of the manifold.
3. Using a 3/4" socket wrench, remove the three bolts securing the Exhaust Manifold to the heat exchanger (Figure 10).
4. Remove the Exhaust Manifold and seal from the rear of the unit.
5. Remove the silicone rubber seal from the recess in the flange of the Exhaust Manifold. Ensure that all seal residue is removed from the flanges of the Exhaust Manifold and heat exchanger.
6. Inspect and clean the Exhaust Manifold as necessary.

6.2.2 Exhaust Manifold Reassembly

To reassemble the Exhaust Manifold:

Exhaust Manifold Reassembly Instructions

1. Replace the Exhaust Manifold Seal (P/N 123612) with the new seal provided in the 24-month maintenance kit. Install the adhesive-backed seal in the recess of the Exhaust Manifold flange (adhesive side down) as shown in Figure 10.
2. Align the Exhaust Manifold with the lower heat exchanger flange and secure it in place using the three (3) bolts removed in step 3 in the disassembly instructions. Alternately tighten the bolts to obtain a uniform seal.
3. Reconnect the flue starter section to the Exhaust Manifold.
4. Prior to reconnecting the Condensate Trap, perform the procedure described in paragraph 6.2.3.
5. After servicing the Condensate Trap components as described in section 6.2.3, reconnect the Condensate Trap to the 1/2" NPT condensate drain port on the Exhaust Manifold as shown in Figure 12.

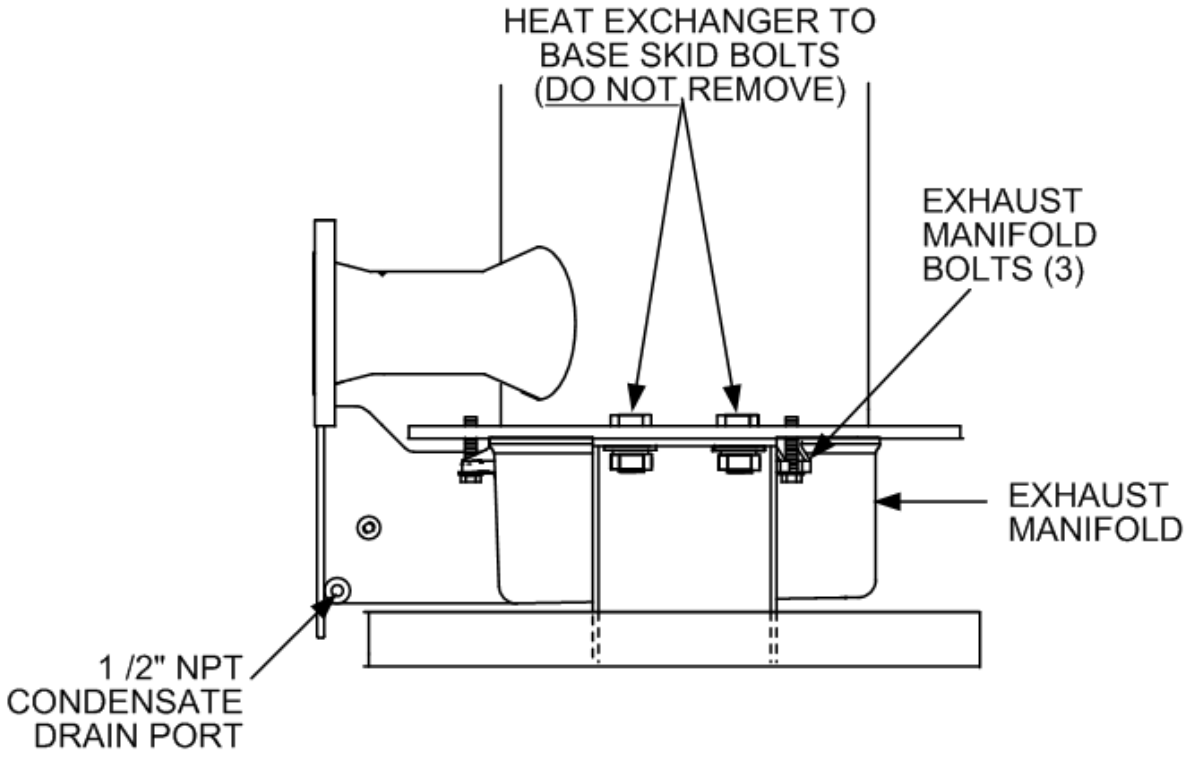

Figure 9: Benchmark 2.0LN Exhaust Manifold Location

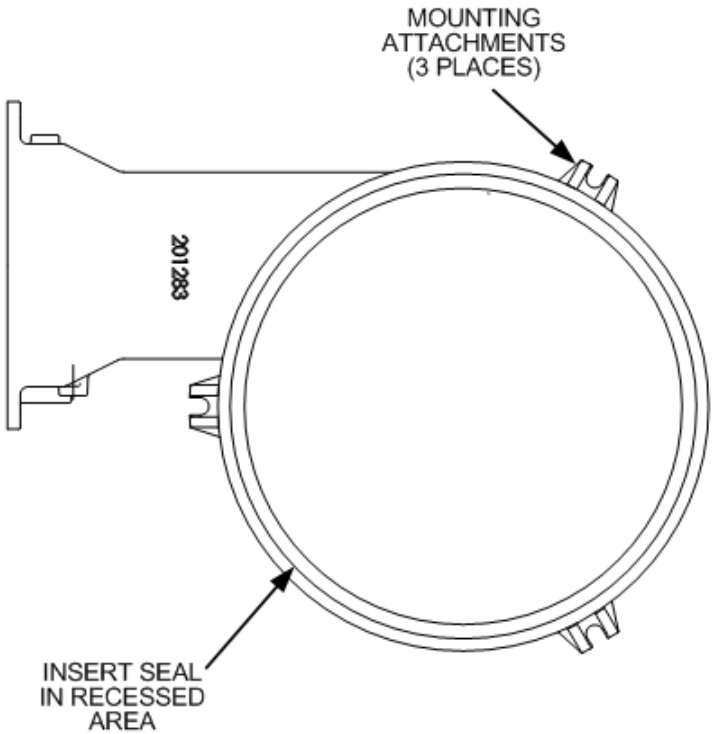

Figure 10: Benchmark 2.0LN Exhaust Manifold

6.2.3 Condensate Trap Component Replacement

For Benchmark 2.0 boilers, the Condensate Trap (P/N 24060) is attached to the connecting manifold drain pipe using a special adapter (Figure 11).

NOTE

The Condensate Trap should already be disconnected from the Exhaust Manifold of the unit during the Exhaust Manifold inspection procedure in section 6.2.1.

NOTE

There are two slightly different types of Condensate Traps that may be used in your configuration; an older style with a separate inlet adapter, and a newer style with a built-in adapter (see Figure 11). Maintenance is the same, except that the newer style does not need an orifice gasket (Step 5).

This trap should be disconnected from the connecting manifold and serviced as follows:

Condensate Trap Component Replacement Instructions

1. Remove the connections on the inlet and outlet sides of the Condensate Trap shown in Figure 12.
2. Refer to Figure 11 and loosen the four (4) thumbscrews securing the cover on the Condensate Trap. Remove the cover.
3. Remove and discard the O-ring gasket currently installed in trap. It will be replaced with the new O-ring included in the Maintenance Kit during reassembly.
4. Remove the float (with float guide attached) from the Condensate Trap.
5. For ***Old Style*** Condensate Trap, remove, discard, and replace the currently installed orifice gasket from the trap with the one provided in the kit (Figure 11). **New Style Trap** does NOT use an orifice gasket, so this step is not necessary for that type.
6. Thoroughly clean the trap and float. Also inspect the drain piping for blockage. If the trap cannot be thoroughly cleaned, replace the Condensate Trap.
7. Check the condensate drain port on the Exhaust Manifold (Figure 12) to ensure it is clear of blockage.
8. After the above items have been inspected and thoroughly cleaned, replace the orifice gasket (use new gasket) and float in the Condensate Trap. Replace the O-ring (use new O-ring) and replace the trap cover.
9. Reassemble all piping and hose connections to the Condensate Trap inlet and outlet. Reconnect trap to condensate drain connection on the connecting manifold.

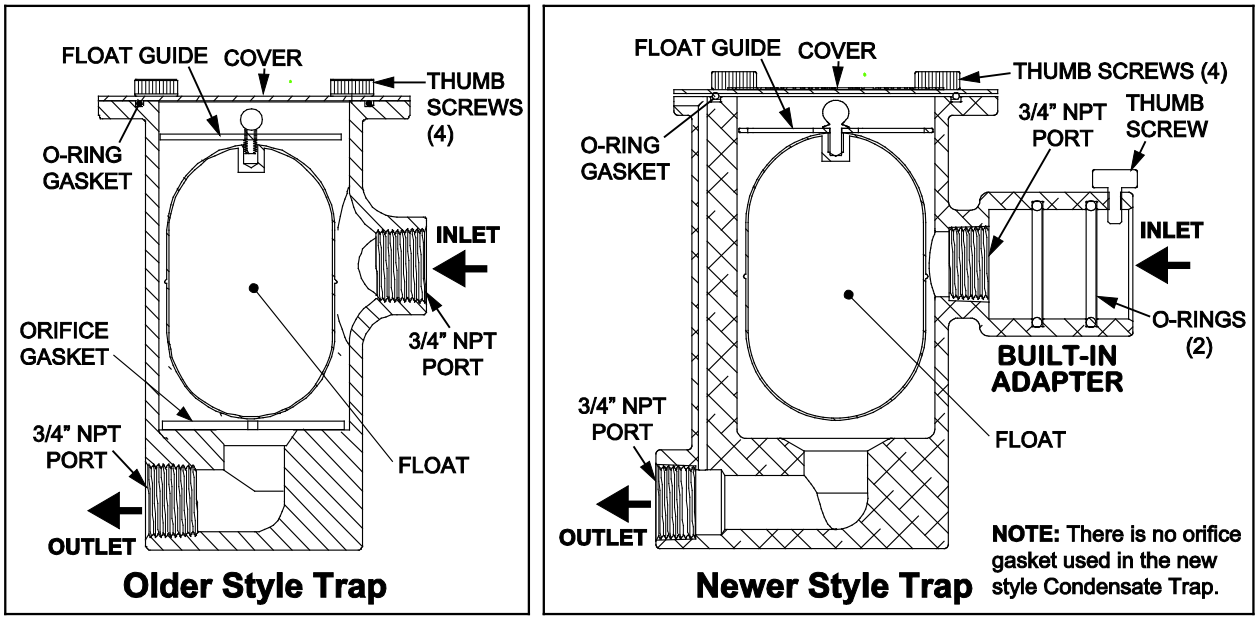

Figure 11: Condensate Trap P/N 24060 (Old and New Styles)

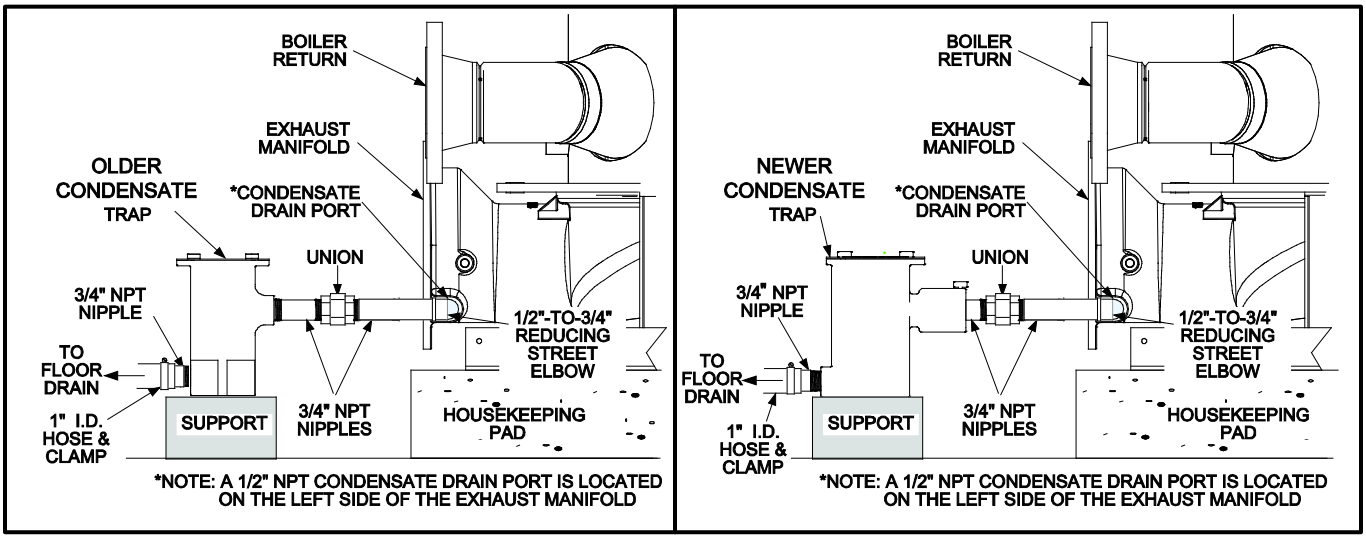

Figure 12: Exhaust Manifold Condensate Drain Location. Old (left) and New (right) Style Trap – BMK2.0LN Partial Left Side View

6.3 Replacing the LWCO Probe/Capacitor Assembly

The replacement LWCO probe sensor comes with a capacitor assembly attached. This procedure replaces an old probe assembly with a new probe assembly (P/N 69126).

Replacing the LWCO Probe/Capacitor Assembly

1. Cut the shell harness wire just below the female spade connector (Figure 13). The new LWCO assembly includes a new female connector to crimp onto the shell harness wire.

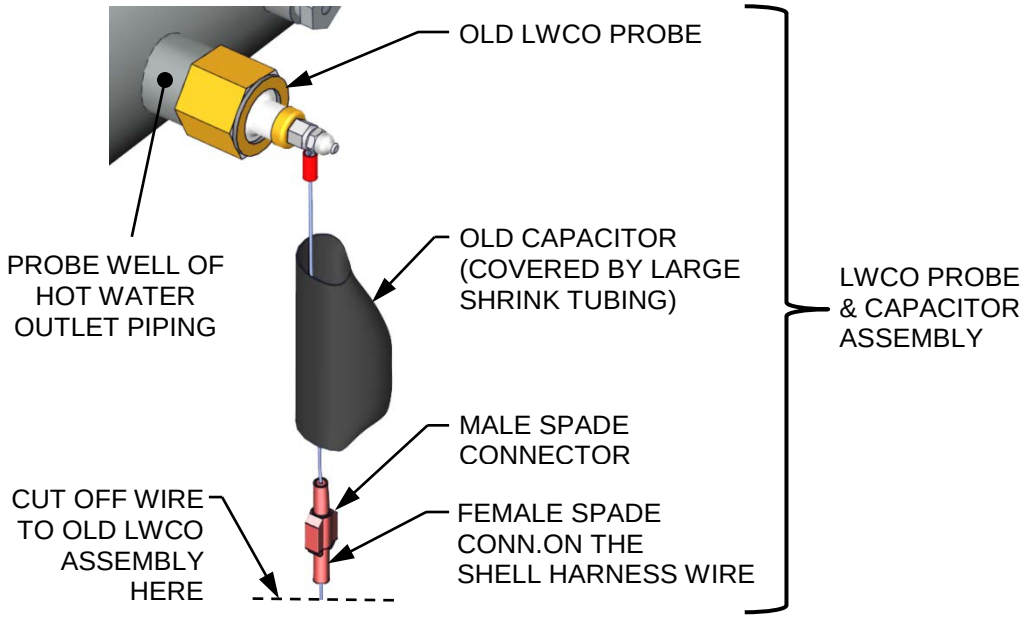

Figure 13: Removing Old LWCO Probe/Capacitor Assembly

2. Remove the LWCO probe from the recess well on the hot water outlet piping by unscrewing the brass coupling to which it is attached.
3. Retrieve the new LWCO probe from the kit and sparingly apply an NSF approved pipe dope to the threads of the brass coupling (Do NOT use Teflon tape) and install into the probe well vacated by the old LWCO probe.
4. The new LWCO assembly comes with a spare female connector already inserted into the male connector, and this should be crimped onto the stripped end of the shell harness wire.

6.3.1 Low Water Cutoff (LWCO) Capacitor Integrity Test

The LWCO capacitor should be tested for electrical shorts after it has been replaced. The LWCO Capacitor test consists of two parts as described in the next two sections. The first procedure explains how to test for electrical shorting of the LWCO probe capacitor, while the second procedure instructs how to perform the standard Low Water Cutoff test using the C-More controls.

6.3.1.1 Low Water Cutoff (LWCO) - Capacitor Electrical Short Test

This test determines if there is an electrical short between the LWCO capacitor and the heat exchanger. Perform the capacitor electrical short test as described below.

LWCO Capacitor Electrical Short Test

1. Turn OFF AC power to the unit.

> --WARNING! -
>
> High voltages are used to power these units and so it is required that power applied to these units is removed first before performing the procedure described in this instruction. Serious personal injury or death may occur if this warning is not observed.

2. Remove the Shell Harness Cable (male) connector from the P-5 (female) connector on the rear panel of the C-More controller (see Figure 14).

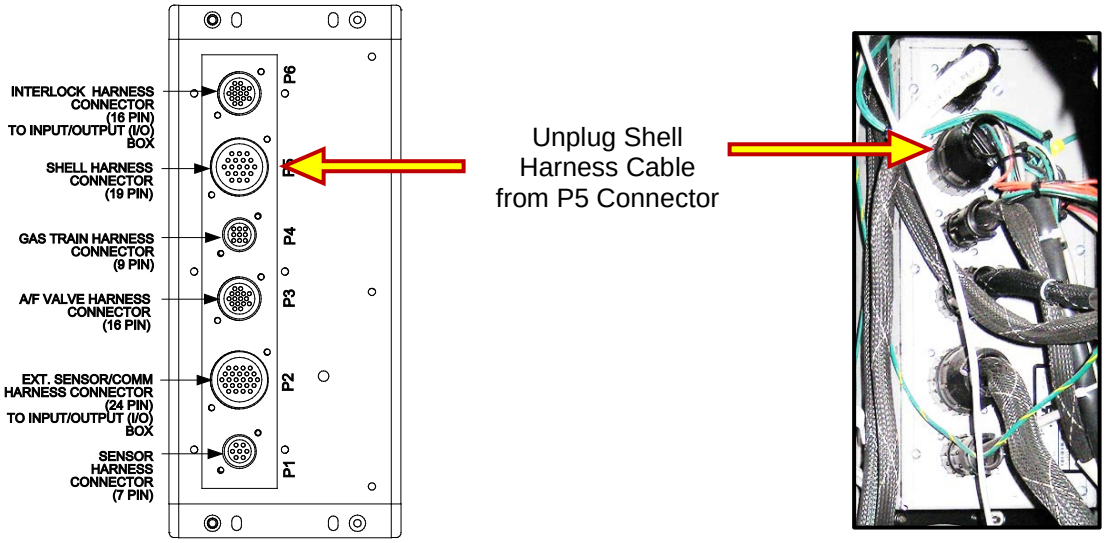

Figure 14: Removing Cable from P5 Connnector

3. Using an ohmmeter, connect one ohmmeter probe to the LWCO capacitor terminal on the unit shell as shown on left in Figure 15.
4. Connect the second ohmmeter probe to Pin #6 of Shell Harness Connector (removed from the C-More controller) as shown on right in Figure 15.

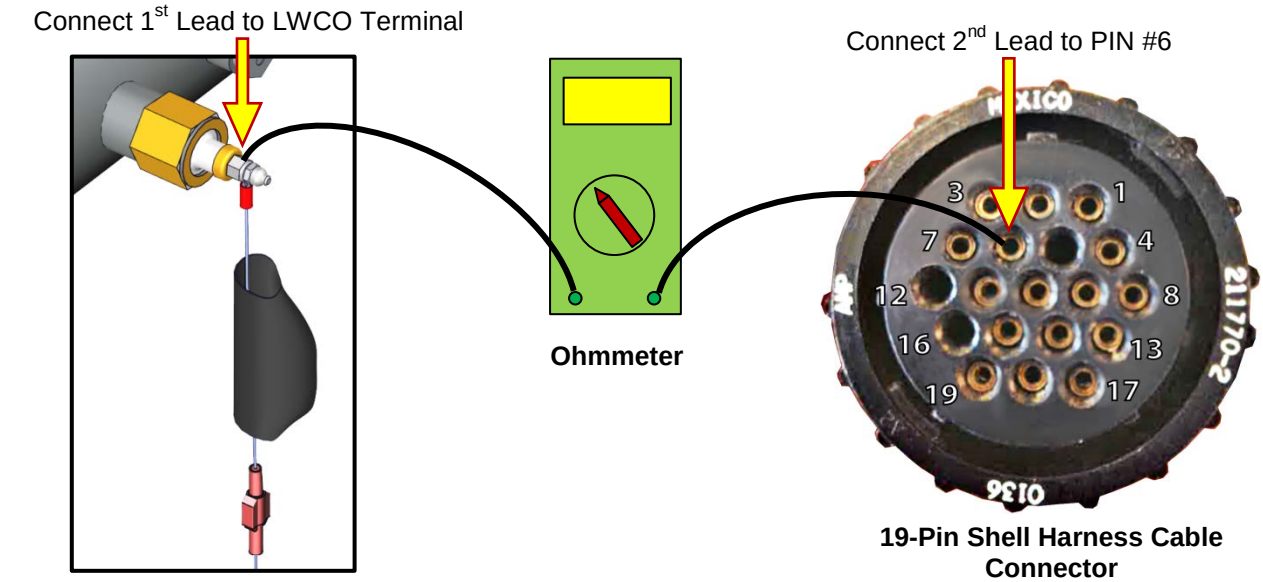

Figure 15: Connecting Ohmmeter Between LWCO Probe & Shell Harness Cable

5. Confirm that the ohmmeter does NOT read a short.

NOTE

If the ohmmeter reads a short, the capacitor assembly needs to be replaced. See section 6.3 for replacement instructions or contact AERCO technical support for more information.

6. Remove both ohmmeter probes and reconnect the Shell Harness connector to the P5 connector on the rear of the C-More controller.

6.3.1.2 Low Water Cutoff (LWCO) - Standard C-More Test

Perform the standard Low Water Cutoff test using the C-More controls as described below.

Standard Low Water Cutoff C-More Test

1. Turn on the AC power to the unit.
2. Press the TEST switch on the C-More controller and confirm that the blinking "Low Water Level" message appears on the C-More display within 4 seconds.
3. Press the RESET key, followed by the Clear button, and confirm that the "Low Water Level" message is cleared.

7. FINAL REASSEMBLY AND TESTING

Upon completion of all inspections and component replacement, reassemble the unit and perform the tests specified in paragraphs 7.1 and 7.2.

7.1 Set-Up and Reassembly After Maintenance

Following completion of the all required inspections and replacements, perform the following reassembly and setup procedures:

Setup and Reassembly After Maintenance Instructions

1. Ensure that the heat exchanger has been filled and the water supply and return valves have been opened.
2. Turn ON the external circuit breaker to the unit.
3. At the front panel of the unit, set the **ON/OFF** switch on the C-More Control Panel to the **ON** position.
4. Press the **LOW WATER LEVEL RESET** button to reset the low water cutoff.
5. Press the **CLEAR** switch to reset the fault relay. This will turn off the **FAULT** LED and clear any displayed error message.
6. Replace the unit side panels and top panels.

7.2 Final Testing After Maintenance

Upon completion of the inspections and replacements specified in this Technical Service Bulletin, perform the Combustion Calibration Tests specified in Chapter 4 of the O & M Manual GF-123, GF-123M (Massachusetts only), or GF-127 (Dual Fuel).

Following successful completion of the Combustion Calibration Tests, return the Benchmark 2.0LN Boiler to service use.

Change Log

Date	Description	Changed By
10/16/2014	Rev B: **1028-5**: Replaced Flame Detector 66020 with 66034. Added new step 7 to section 6.1.1 to replace Plug Gasket (P/N 81129) **934-99**: Added section 6.3, replacing the LWCO	Chris Blair
04/29/2015	Rev C: Front cover incorrectly stated this is for 12 Month Maintenance. No other change to document content	Chris Blair