



TECHNICAL INSTRUCTION DOCUMENT

Instructions For:

Modulux EXT 12 & 24 Month Maintenance Kits

Kit Part Number 58086-TAB

This kit instructions apply to the following Modulux EXT Maintenance Kits:

12 Month Maintenance Kit Numbers

Kit #	Models
58086-01	EXT 321
58086-02	EXT 450/481
58086-03	EXT 600/641, EXT 1500/1530
58086-04	EXT 800/802, EXT 1912
58086-05	EXT 962, EXT 2295/2300
58086-06	EXT 1100/1123, EXT 2600/2677
58086-11	EXT 3000/3060

24 Month Maintenance Kit Numbers

Kit #	Models
58086-12	EXT 321
58086-13	EXT 450/481
58086-14	EXT 600/641
58086-15	EXT 800/802
58086-16	EXT 962
58086-17	EXT 1100/1123
58086-18	EXT 1500/1530
58086-19	EXT 1912
58086-20	EXT 2295/2300
58086-21	EXT 2600/2677
58086-22	EXT 3000/3060

12 Month Maintenance Kit Contents

Item#	Qty.	P/N	Description
1	1 per Burner	95250624	Ignitor
2	1 per Burner	95251274	Flame Detector

24 Month Maintenance Kit Contents

				Applies To Kit Numbers:	
Item#	Qty.	P/N	Description	58086-12 to -17	58086-18 to -22
1	1 per Burner	95250624	Ignitor	✓	✓
2	1 per Burner	95251274	Flame Detector	✓	✓
3	1 per Burner	95261173	Burner Gasket	✓	
4	1 per Burner	95251632	Burner Gasket		✓

Initial Release: 10/04/2017

Technical Support

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1. Introduction

This Technical Instruction Document (TID) provides instructions for installing the Modulex EXT 12 and 24 month Maintenance kits

2. Tools Required

- # 2 Phillips head screwdriver
- Nut driver
- Adjustable/ socket/open end wrenches

3. Preparing the Unit for Installation

Complete the following steps to prepare the unit for the installation:

INSTRUCTIONS: Preparing the Unit for Installation

1. Remove power from the unit by shutting off electrical power upstream from the boiler.

WARNING!

A VOLTAGE OF 120 VAC IS USED IN MODULEX EXT UNITS. IT IS REQUIRED THAT ALL POWER IS REMOVED FROM THE BOILERS BEFORE PERFORMING THE PROCEDURES DESCRIBED IN THIS DOCUMENT. USE EXTREME CARE WHEN ACCESSING CIRCUITS AND ELECTRICAL CONNECTIONS WITHIN THE EQUIPMENT. SERIOUS PERSONAL INJURY OR DEATH MAY OCCUR IF THIS WARNING IS NOT OBSERVED.

OBSERVE LOCAL REQUIREMENTS AND LOCKOUT PROCEDURES WHEN WORKING ON THE BOILER.

2. Turn off the gas supply upstream from the unit.
3. Unlatch the top lid and raise the lid.
4. Remove screws from top of the unit holding the front and side panels in place.



Figure 1: Removing Front & Side Panels

5. Remove the panels by tilting away from unit, then lifting up and out. Note, the front and rear panels must be removed before the side panels can be removed.

INSTRUCTIONS: Preparing the Unit for Installation



Figure 2: Removing Front & Side Panels

4. Replacing the Ignitors & Flame Detectors – 12 Month Kits

Complete the instructions below to install the new Ignitors & Flame Detectors, included with the kit. This step is recommended every 12 months.

You must repeat these instructions once for each burner in the unit.

INSTRUCTIONS: Replacing the Ignitors & Flame Detectors

1. Disconnect the electrical cables from both the Ignitor and Flame Detector.

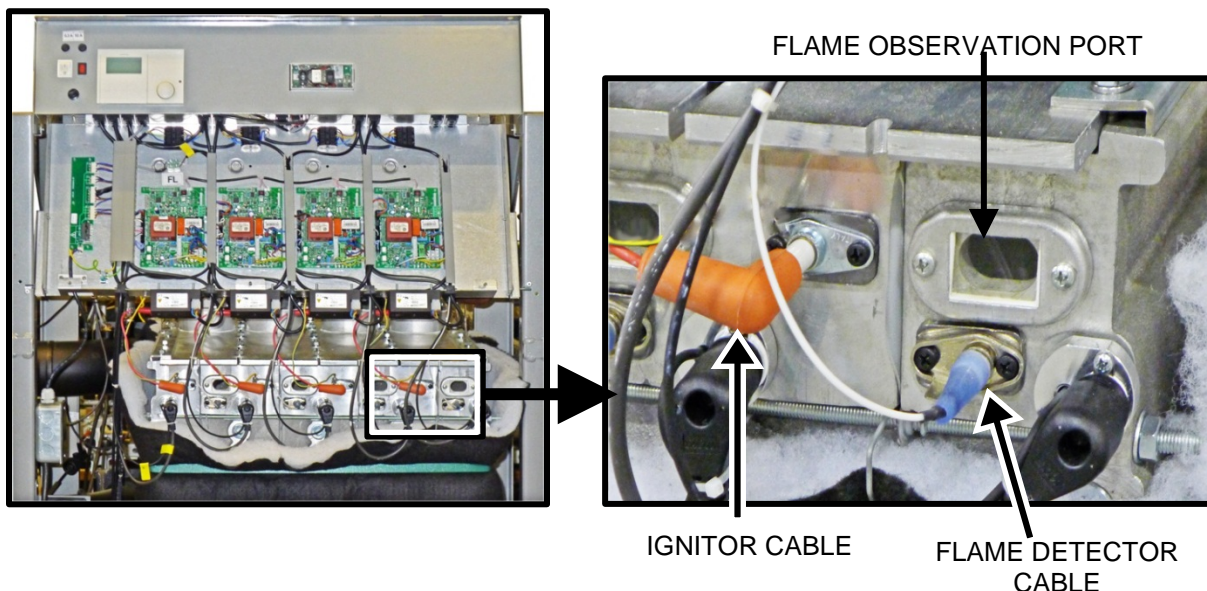


Figure 3: Ignitor & Flame Detector Locations

2. Using a Phillips head screw driver, remove both the Ignitor (P/N **95250624**) and Flame Detector (P/N **95251274**), and replace them with the new ones in the kit.
3. Replace the electrical cables on the Ignitor and Flame Detector.
4. Repeat the last three steps on each burner in the unit.
5. If you are performing 24 month maintenance, complete the instructions in the Section 5 – Replacing the Burner Gaskets. If you are performing 12 month maintenance, skip Section 5 and proceed to Section 6: Returning the Unit to Service.

5. Replacing the Burner Gaskets – 24 Month Kits

Complete the instructions below to replace the burner gasket (P/N **95261173** in kit numbers 58086-12 to 58086-17 or P/N **95251632** in kit numbers 58086-18 to 58086-22). This step is recommended every 24 months.

These instructions are not the full 24 month servicing instructions. They simply provide instructions for replacing the burner gaskets. Full servicing instructions are in Modulux EXT Commercial OMM-0095 (GF-139) and Modulux Light Commercial OMM-0087 (GF-143).

5.1 Disassembling the Unit

Complete the instructions below to expose the burner gaskets.

INSTRUCTIONS: Disassembling the Unit

1. On each side of the air intake manifold, unlatch spring clips holding it in place.

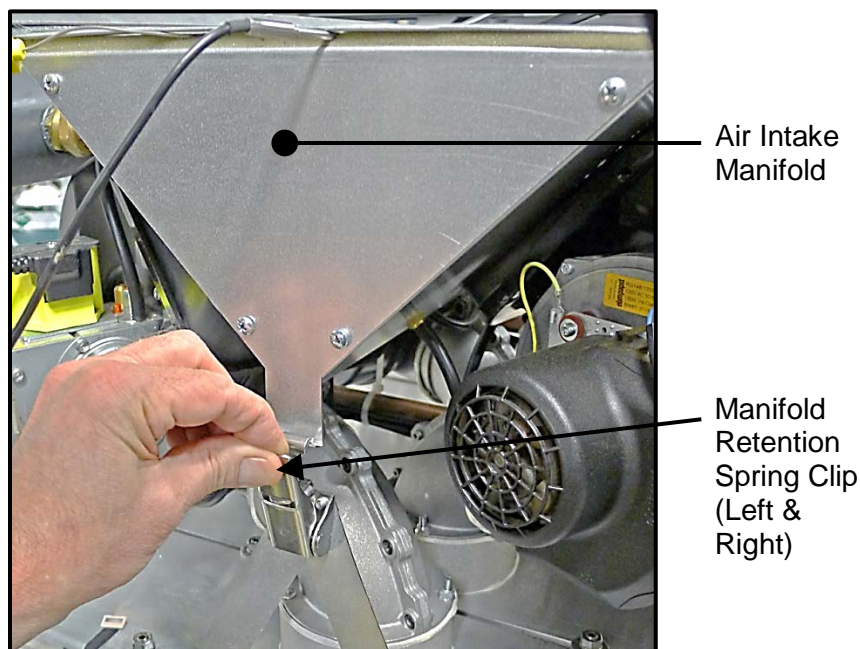


Figure 4: Unlatch Spring Clips from Left and Right Side of Manifold

2. Remove the rubber hoses (quantity depends on model) from the bottom side of the manifold (highlighted below), then lift entire intake manifold from the unit.

INSTRUCTIONS: Disassembling the Unit

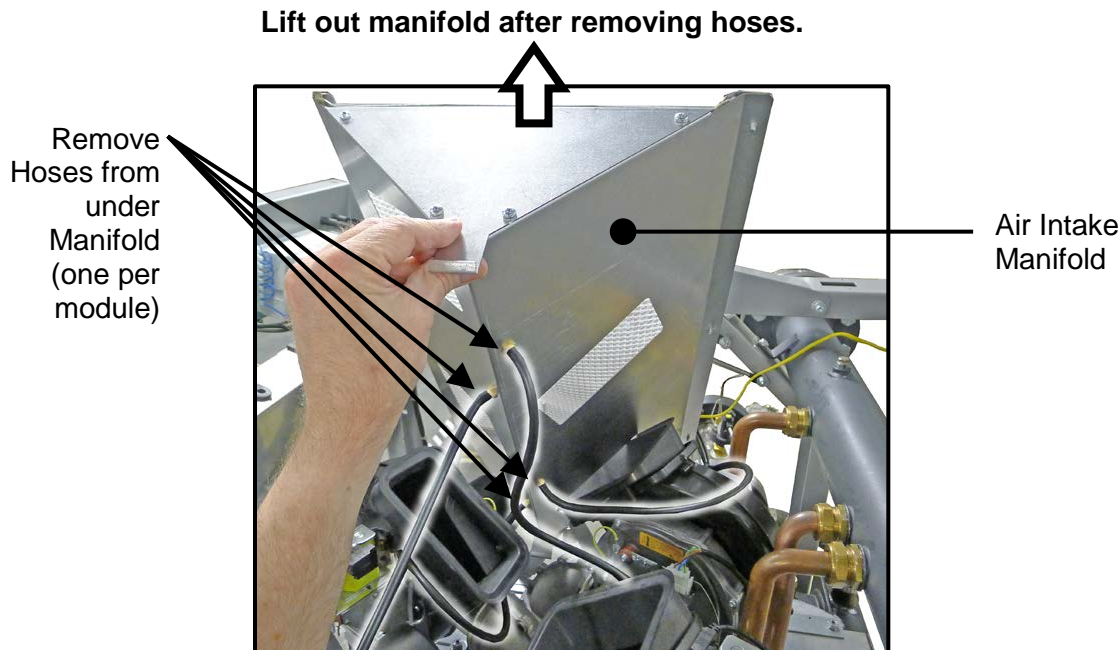


Figure 5: Removing Red Hoses and Manifold from Unit

3. Burner maintenance may be performed on all burner modules simultaneously or on each one separately, as described in a) and b) below:
 - a) **All Modules:** Use a 13mm wrench to remove all “A” and “C” nuts (surrounded by horizontal dotted lines in Figure 6, below). Leave the “B” screws affixed so all burner plates may be lifted together. You must now complete the remainder of the instructions in this section.

INSTRUCTIONS: Disassembling the Unit

- b) **Separate Modules:** Use a 13mm wrench to remove only the “A” and “C” nuts on either side of the module in question (vertical dotted lines in Figure 6), then remove the “B” Phillips screw at the end of the burner module. You can now skip the remaining steps in this section and continue with section 5.2 - Cleaning the Burner Module and Combustion Chamber.

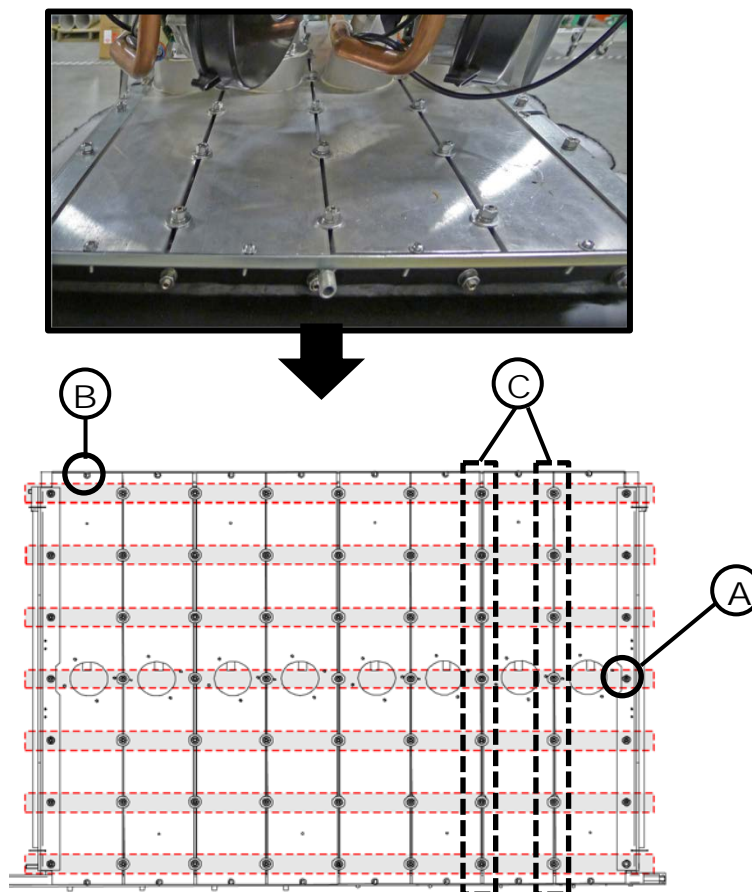


Figure 6: Removing the Burner Module Plate Covers

4. Use a 36 mm wrench to disassemble all the gas pipes from the gas manifold, as shown in Figure 7.



Figure 7: Removing the Gas Pipes from Gas Manifold

INSTRUCTIONS: Disassembling the Unit

5. Unplug the two blower harnesses and one gas valve harness from each module.
6. In order to hold up the burner assembly in place, lift up the front of the burner assembly until the two lift pins are aligned with the left and right side tab holes (see Figure 8).

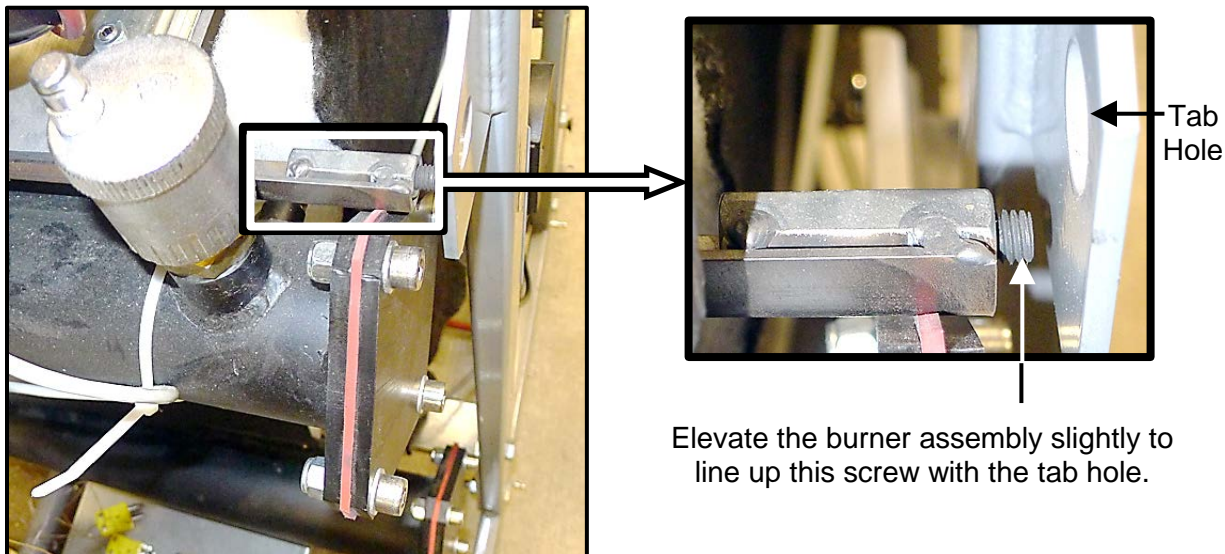


Figure 8: Location of Burner Assembly Lifting Screw

7. Use a 4mm hex wrench to adjust the screw until it extends into the tab hole (Figure 9 & 10).



Figure 9: Unscrewing Lift Screw into Tab Hole

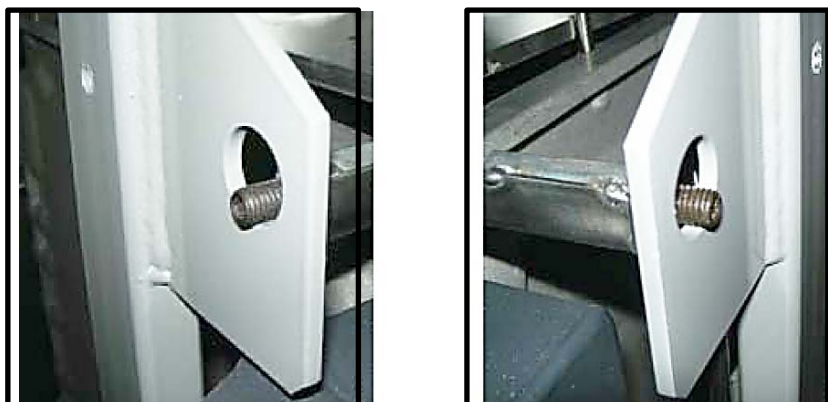


Figure 10: Left and Right Lift Screws Extended into Tab Holes

INSTRUCTIONS: Disassembling the Unit

8. Refer to Figure 11, lift up the burner plates to expose the burner modules, and latch it in place. On the MLX EXT 1500 – 3060, a burner lifting latch is included with every unit to hold the burner plates in position.



Figure 11: Lifting Burner Plates (Left) to Expose Burner Modules (Right)

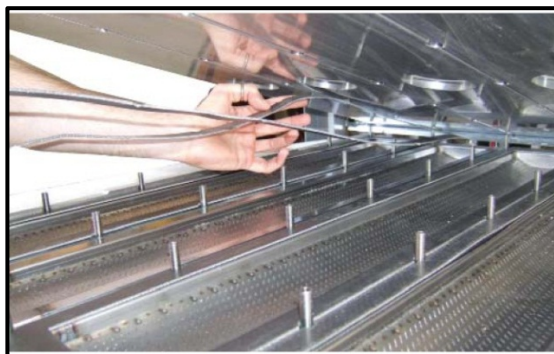


Figure 12: Exposing Burner Modules (Left) and Removing (Right)

INSTRUCTIONS: Disassembling the Unit



Figure 13: Exposed Combustion Chambers under Burner Modules

NOTE:

The check valve (1 in Fig. 14) should be checked at this time to ensure that it moves freely and closes properly.

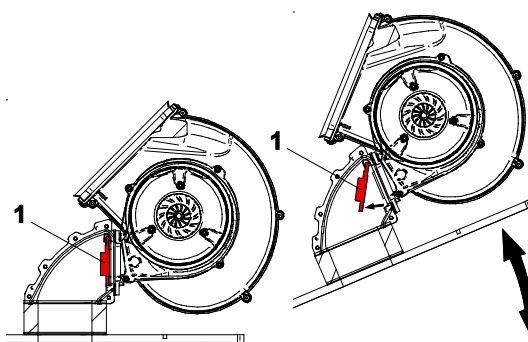


Figure 14: Lifting Burner Assembly and Location of the Check Valve

5.2 Cleaning the Burner Modules and Combustion Chamber

After completing the previous section, the individual burner modules are exposed and available to be cleaned. Follow the instructions to clean the burner modules.

INSTRUCTIONS: Remove Existing Burner Gaskets

1. Carefully lift each burner module from its position. Remove both the module and the gasket. Discard the used gasket, as each one will be replaced at reassembly.
2. Use only compressed air to clean the burners by blowing into the “flame” side of the burner mesh. See Figure 15.

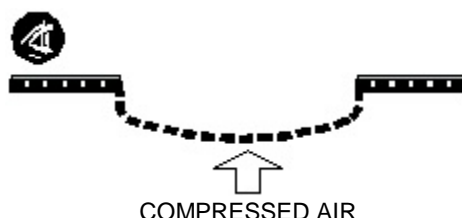


Figure 15: Burner Module Profile Compressed Air Orientation

INSTRUCTIONS: Remove Existing Burner Gaskets

3. Visually inspect burner mesh and the spot welds at the L profile (where the mesh is welded to the frame) for integrity. If welds are compromised or the burner mesh is damaged, the entire burner module should be replaced.
4. Once all the burner modules are removed, wash the combustion chamber underneath with water. Avoid getting the electrical harnesses and components wet.
5. During this operation, inspect to the condensate drain pipe to determine if it is free of obstructions; wash water should drain freely from the condensate drain pipe.
6. Blow the combustion chamber with compressed air and attempt to remove any dirt clogging the aluminum pins of the combustion chamber wall.
7. Once the washing of the aluminum sections is finished, make sure the condensate siphon is free of obstructions. Clean them if necessary.
8. Inspect the flue exhaust section, including the exhaust piping.

5.3 Reassembly of the Burner Modules

Follow the instructions to reassemble the burner modules with new burner gaskets:

INSTRUCTIONS: Reassembling the Burner Modules

1. After the cleaning of the boiler combustion chamber and/or the burners, reposition the burners in their proper positions.
2. Position the new gaskets (P/N **95261173** or P/N **95251632**, depending on Modulex model and kit number – see chart on front cover) onto each burner module and ensure proper positioning. Make sure all surfaces are smooth and free of debris.

IMPORTANT!

The burner gaskets *MUST* be replaced at every cleaning.

3. Proceed with reassembly, performing whichever disassembly operation was chosen (all or individual method) in reverse order.
 - a) Lower burner assembly
 - b) Reinstall gas collector tubes to the gas manifold tube.
 - c) Reinstall nuts “A,” “C” and “B” screws to secure burner assembly to boiler body.

NOTE

Tighten the burner bolts with a torque of **13 Nm**.

- d) Reconnect the two blower wiring harnesses and one gas valve harness on each module.
- e) Reassemble rubber hoses to the air intake manifold, place manifold onto the blowers, then reattach tension spring clip to left and right ends of manifold.

6. Returning the Unit to Service

Complete the instructions below to return the unit to service.

INSTRUCTIONS: Returning the Unit to Service

1. Replace the front and side panels.
2. Reattach and then lower the lid.
3. Before lighting the boiler, make sure the condensate line has been filled with water.
4. Reopen the gas supply upstream from the unit.
5. Turn electrical power back on.

-- END --

CHANGE LOG:

Date	Description	Changed by
06/21/2017	Rev A: Initial release	
10/03/2017	Rev B: DIR 17-008: Updated to reflect new MLX EXT model numbers	Chris Blair



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