

## BURNER INSTALLATION INSTRUCTIONS - UML/LRF CHIMNEY VENT OIL FURNACES

### **⚠ WARNING**

Fire, explosion, asphyxiation and electrical shock hazard. Improper installation could result in death or serious injury. Read these instructions and understand all requirements, including requirements of authority having jurisdiction, before beginning installation. Installation not complete until appliance operation verified per Installation, Operation & Maintenance Manual provided with furnace.

### Wiring Harnesses

This burner kit is furnished with multiple wiring harnesses. **UML** wiring harnesses are installed on the burner. **LRF** wiring harness is provided loose in the box.

Application for **UML** furnace, proceed to **Installation Procedure**.

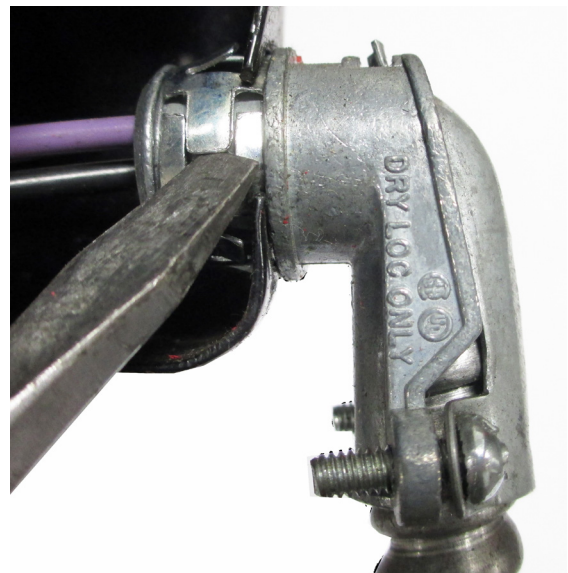
Application for **LRF** furnace, change burner wiring harnesses as follows:

1. Remove low voltage **UML** wiring harness.
  - a. Disconnect Blue and Yellow wires from TR-TW (or T1-T2) terminals on primary control.
  - b. Discard wiring harness.
2. Remove line voltage **UML** wiring harness.
  - a. Disconnect Black, White and Violet wires from primary control or terminal strip.
  - b. Remove flexible conduit connector from burner. To remove Arlington type Snap-Tite connectors, insert small screwdriver under the tab on the spring clip. Expand the spring clip until it pops off the connector. See Figure 1.
  - c. Remove wiring harness from burner.
  - d. Discard wiring harness.
3. Install **LRF** wiring harness into burner junction box or burner housing in place of **UML** harness. Use provided strain relief bushing.
4. Connect burner wiring per wiring diagram found on inside of blower door or in Installation, Operation & Maintenance manual.
  - a. Connect Black, White and Violet line voltage wires as the wires removed in step 2 above. For Carlin applications it may be necessary to cut off terminals on black and violet wires and strip the ends to make connections with the wire nuts.
  - b. Connect Blue and Yellow low voltage wires as the wires removed in step 1 above.
5. For Beckett and Carlin burners, low voltage Blue and Yellow wires are routed from the junction box to the primary control TR-TW (or T1-T2) terminals as shown in Figure 2 (Beckett) or Figure 3 (Carlin).
6. Proceed to Installation Procedure.

### Installation Procedure

1. Burner is factory equipped for 0.65 USGPH firing rate. If that is the desired firing rate then burner setup is complete. Go to Step 3.
2. Setup burner for other desired firing rate per charts on page 2. Insure burner electrodes remain aligned per manufacturer's specification.
3. Place furnished burner mounting gasket on burner mounting studs on furnace.
4. Place burner on burner mounting studs on furnace. Insure burner is in upright position for installed flow configuration of furnace (i.e. upflow, downflow, horizontal left, horizontal right).
5. Install furnished 3/8"-16 flange nuts on studs.
6. Connect burner wiring to furnace control.
  - a. **UML:**
    - i. Connect 6 pole burner wiring plug to 6 pole receptacle on front of furnace.
    - ii. Connect Blue/Yellow burner wiring harness to 2 pole receptacle on front of furnace.
  - b. **LRF:**
    - i. Connect 6 pole burner wiring plug to 6 pole receptacle from control box.
7. Highlight installed model and firing rate on Alternate Input Chart on furnace rating plate.
8. Burner installation is complete.
9. Follow startup and adjustment procedures in Installation, Operation & Maintenance manual provided with furnace.

**Figure 1 - Arlington type Snap-Tite Connector - Spring Clip**



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Figure 2 - Beckett Control



Figure 3 - Carlin Control



## BECKETT AFG70MPSS PRELIMINARY OIL BURNER SETTINGS

Furnace Model	Firing Rate [USGPH]	Firing Rate [BTU/Hr]	Delavan Nozzle	Pump Pressure [PSIG]	Head	Air Setting
UML(V)65A LRF(V)65	0.55	77,000	0.50-45°W	140	L2	4
UML(V)80A LRF(V)80	0.65	91,000	0.50-45°W	175	L2	5
UML(V)90A LRF(V)90	0.75	105,000	0.60-60°W	175	L2	7
UML(V)100A LRF(V)100	0.85	119,000	0.65-60°W	175	L2	8

## RIELLO 40F3 PRELIMINARY OIL BURNER SETTINGS

Furnace Model	Firing Rate [USGPH]	Firing Rate [BTU/Hr]	Delavan Nozzle	Pump Pressure [PSIG]	Head Setting	Air Setting
UML(V)65ARF LRF(V)65RF	0.55	77,000	0.50-90°B	125	0	1.6
UML(V)80ARF LRF(V)80RF	0.65	91,000	0.55-80°B	140	0	2.1
UML(V)90ARF LRF(V)90RF	0.75	105,000	0.65-80°B	133	1	2.5
UML(V)100ARF LRF(V)100RF	0.85	119,000	0.75-80°B	128	2	3.0

## CARLIN EZ-LF PRELIMINARY OIL BURNER SETTINGS

Furnace Model	Firing Rate [USGPH]	Firing Rate [BTU/Hr]	Delavan Nozzle	Pump Pressure [PSIG]	Air Band	Head Bar	Air Setting
UML(V)65AC LRF(V)65C	0.55	77,000	0.50-70°B	125	Single Slot	0.60/0.65	35%
UML(V)80AC LRF(V)80C	0.65	91,000	0.50-70°B	170	Single Slot	0.60/0.65	65%
UML(V)90AC LRF(V)90C	0.75	105,000	0.65-70°B	135	Two Slot*	0.75	45%
UML(V)100AC LRF(V)100C	0.85	119,000	0.65-70°B	170	Two Slot*	0.85/1.00	45%

\* Burner is factory equipped with single slot air band. Replace with furnished two slot air band for 0.75 and 0.85 USGPH firing rates.

Above settings are preliminary settings only. Final adjustments must be made using combustion test instruments as outlined in the Installation, Operation & Maintenance manual provided with furnace.