

	Rerouting IR Furnace Process Gas	DOC NBR: TEC-435
		APRVD: CR 12/3/14
Field Modification		PAGE 1 OF 6

1.0 Application

All LCI and RTC infrared closed atmosphere belt furnaces.

2.0 Scope

To change routing of process gas from flowmeters to furnace chamber or other destinations. The procedure involves cutting and installing tube couplings that will direct gas flows to the new destinations.

3.0 Verification

Starting from the destination connection, trace each process gas tubing line to its source flowmeter. To assure clarity, with a felt-tip marker or label periodically mark each line with its destination label.

4.0 Tools

The following tools are required:

- (2) Tube Couplings per pair of lines switched
- (2) Open-end wrenches
- (1) Tube cutter
- (1) Tube bender (optional, only required if lines to be switched are not adjacent and parallel)

5.0 Method Summary

Tuning the furnace involves the following steps.

1. Identify and mark the lines to be switched.
2. Determine best location for couplings to be inserted for each pair of gas lines.
3. Cut tubing on each pair of lines.
4. Install a tube coupling on source each line.
5. Connect destination line to new source location.
6. Tighten fittings and test.

6.0 Procedure

Example:

Gas line (numbered 5) zone 1-2 top will switch with gas line (numbered 9) zone 5-6 top. (see figure 6-1. Flowmeter panel reference)

Gas line (numbered 6) zone 1-2 bottom will switch with gas line (numbered 10) zone 5-6 bottom.

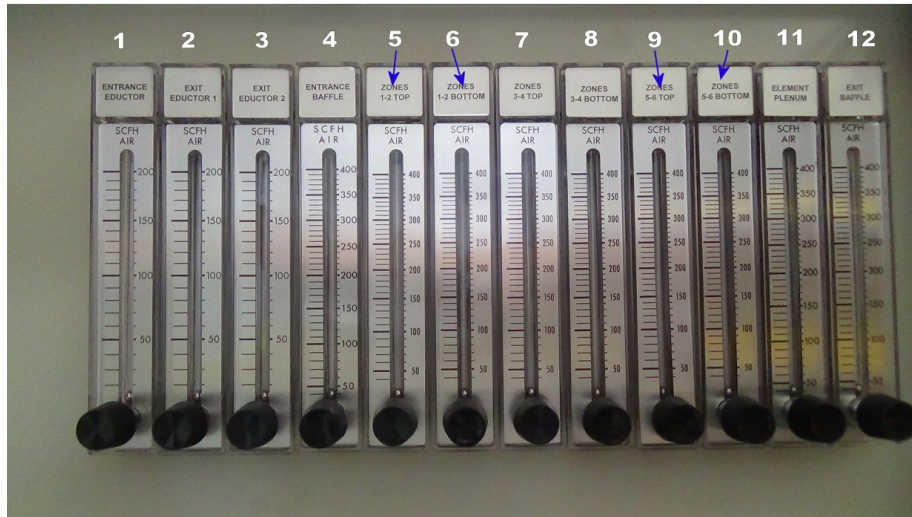


Figure 6-1. FLOWMETER PANEL REFERENCE

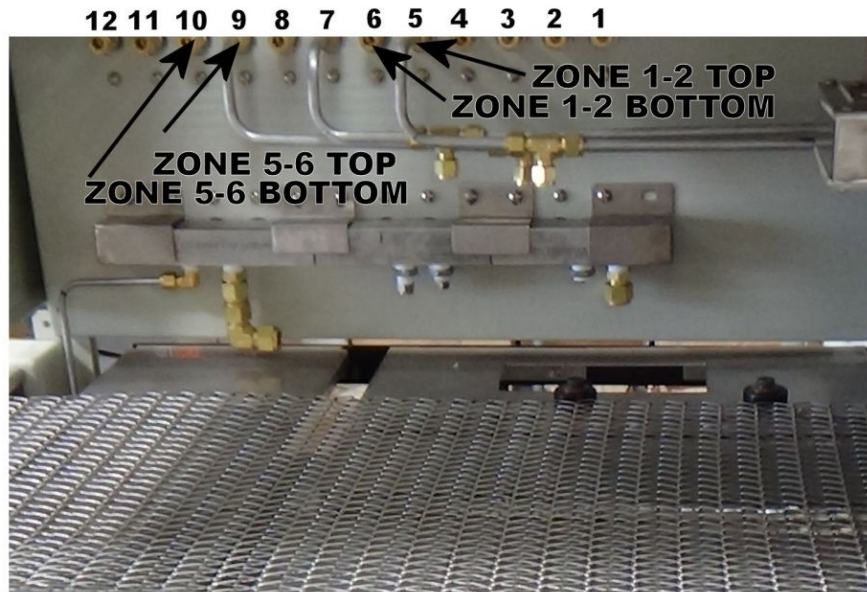


Figure 6-2. BACK OF FLOWMETER PANEL
SHOWING NUMBERING (FOR REF ONLY)

1. Locate gas line destination for zone 1-2 top, zone 1-2 bottom, zone 5-6 top and zone 5-6 bottom.
2. Trace each line all the way back to origin at flowmeter and verify which lines need to be switched, if any. (see reference pictures of locations).
3. Follow top zone lines and locate the best place for cutting and switching lines. (see reference pictures of locations).

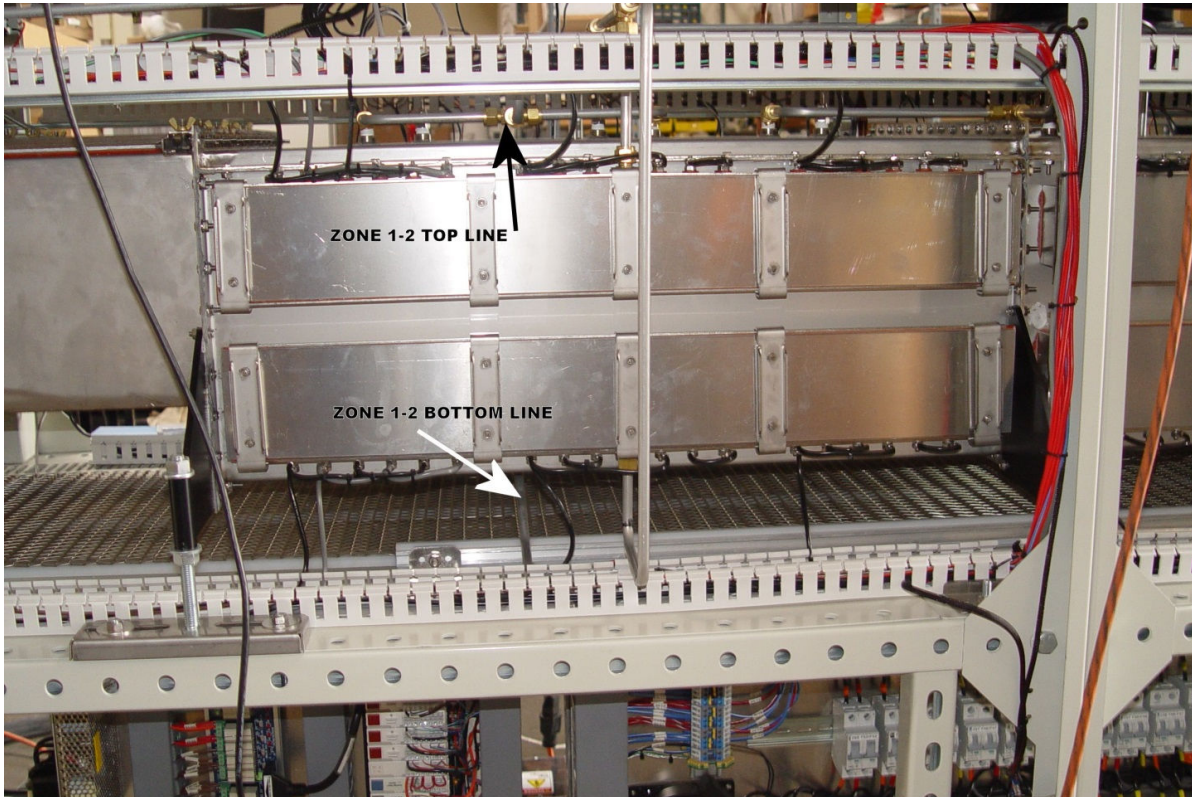


Figure 6-3. REFERENCE PICTURE OF LOCATION OF DESTINATION OF GAS LINES

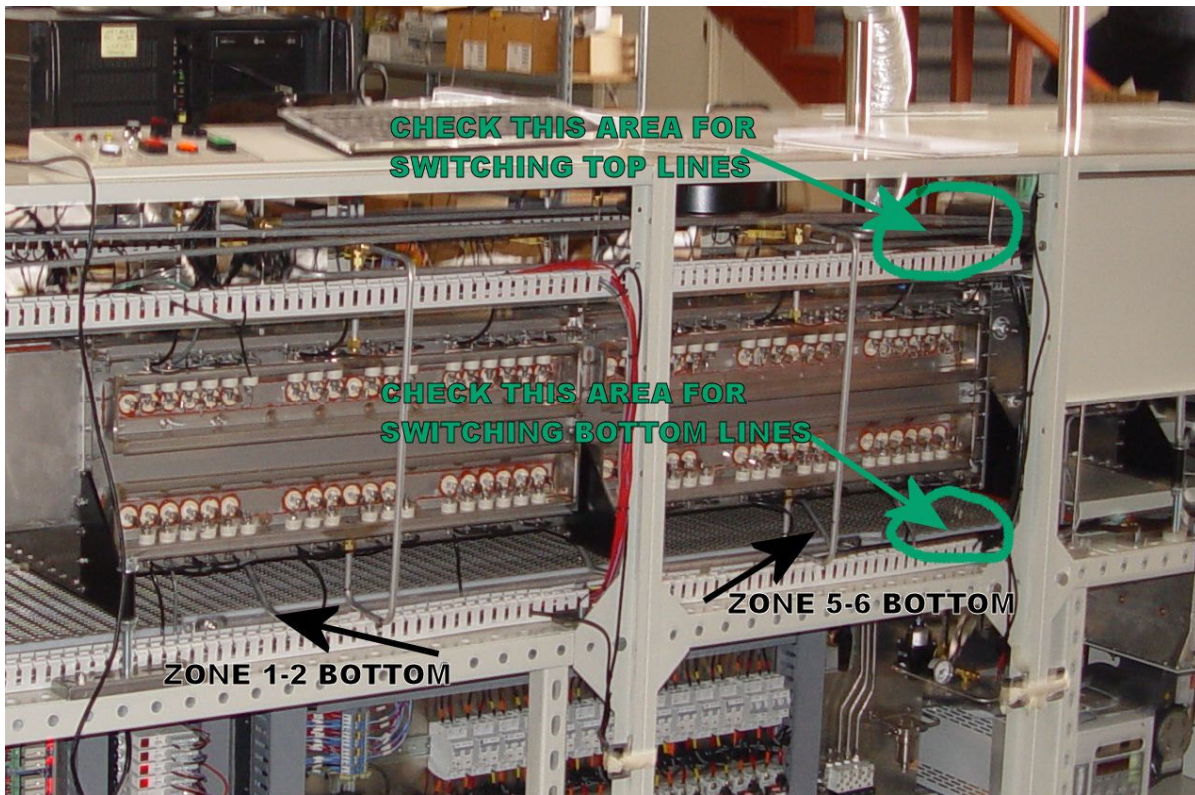


Figure 6-4. BEST PLACE TO SWITCH LINES

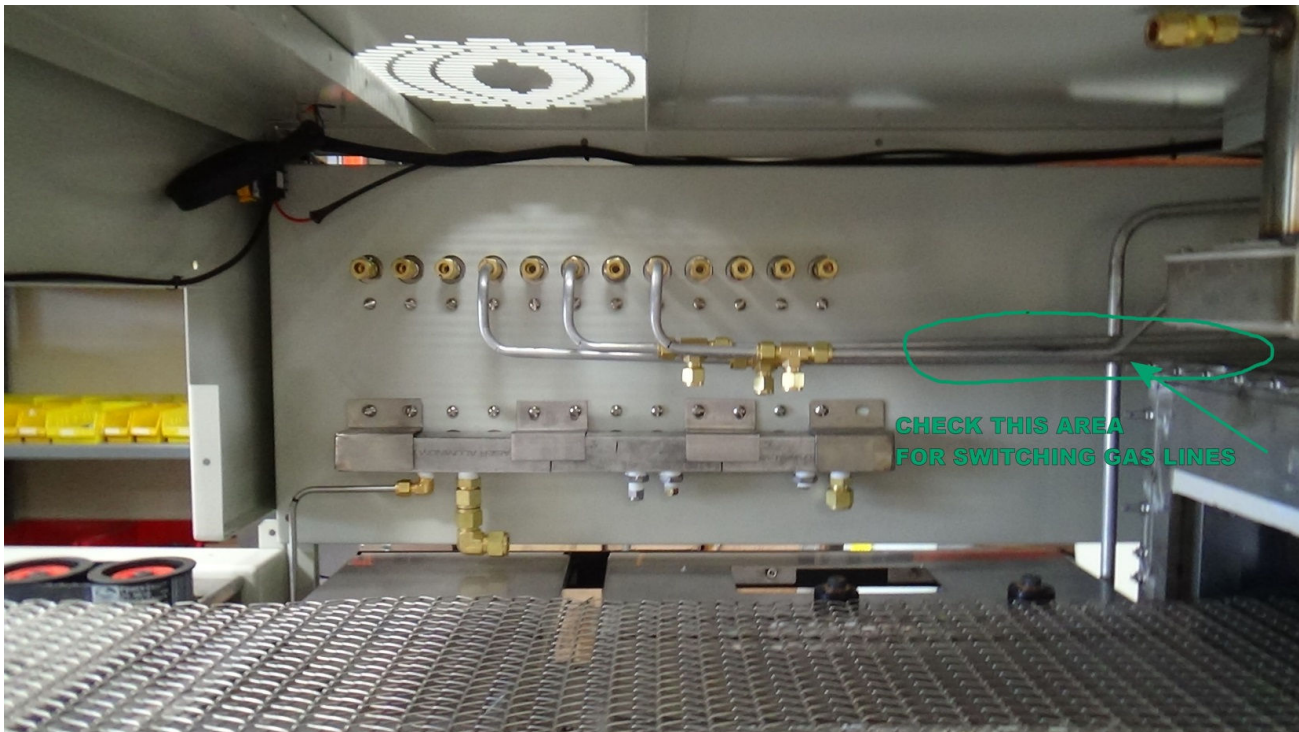


Figure 6-5. ALTERNATE PLACE TO SWITCH LINES

4. After locating the lines and places where you will cut the lines, mark each line with the correct number for positive identification.

(zones 1-2 top zones 5-6 top & zones 1-2 bottom zones 5-6 bottom)

5. Cut each line with the tube cutter supplied with kit. Each pair of cuts should be in line and next to the other. Only one cut needs to be made per tube line. There should be enough slack to accommodate the tube coupling. *(complete top lines first then go back to step 3 for bottom lines)*

6. Slide coupling onto end of one of the cut lines, make sure it is all the way on the tube.



Figure 6-6. Tube Coupling

7. Tighten nut on tube as shown.

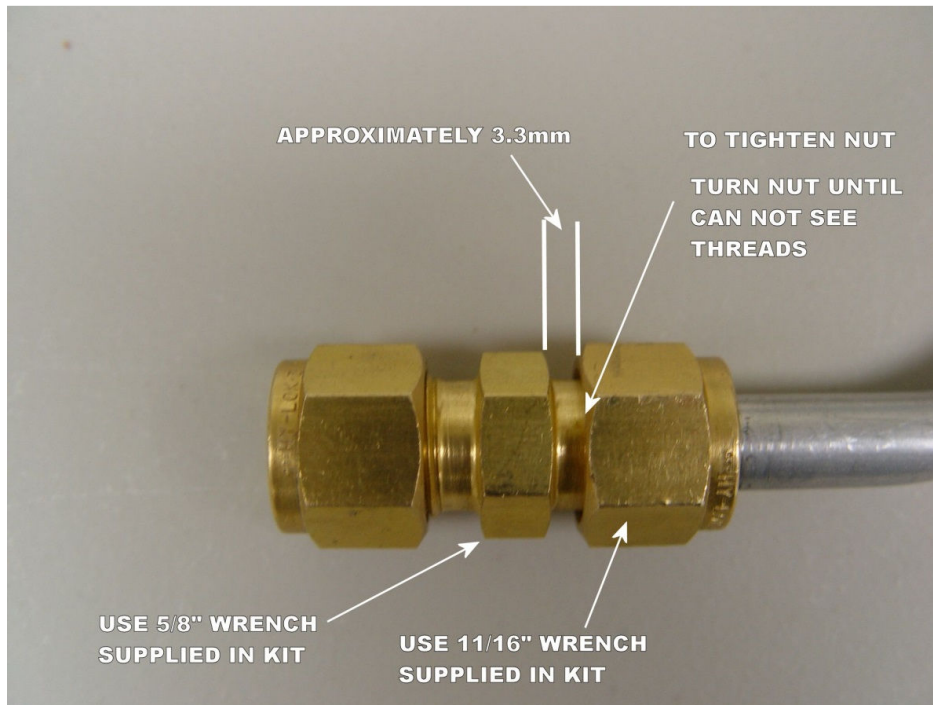


Figure 6-7. Tightening Tube Coupling

8. Switch lines per verified locations and slide tube into open end of coupling.



Figure 6-8. Coupling connected at both ends

9. Tighten nut the same as the first end.

10. Repeat process from step 3 for bottom lines.

7.0 Test

Turn on process gas flowmeters and check for leaks.