

1.0 SCOPE

- 1.1 Instructions for the removal and replacement of conveyor belt on an existing infrared belt furnace.

2.0 EQUIPMENT AFFECTED

- 2.1 Applies to infrared belt furnaces manufactured by TPS, LCI or RTC from 1972 to present.



Figure 1-1 Furnace Front View

2.2 TOOLS

- 2.3 Diagonal cutters, long nose pliers.
- 2.4 When replacing the transport belt it will be helpful to have an assistant for the task.

3.0 Furnace Status

- 3.0.1 Set furnace to cool down mode. (No heat).
- 3.0.2 Set belt speed to zero

3.1 Shut off Utilities

- 3.1.1 Shut of process gas supply.

3.2 Orientation

- 3.2.1 Place the new belt roll at the entrance end of the furnace and orient as shown in the figure below. Note the weave pattern. Orient belt with the top of the triangles pointing in the direction of travel.

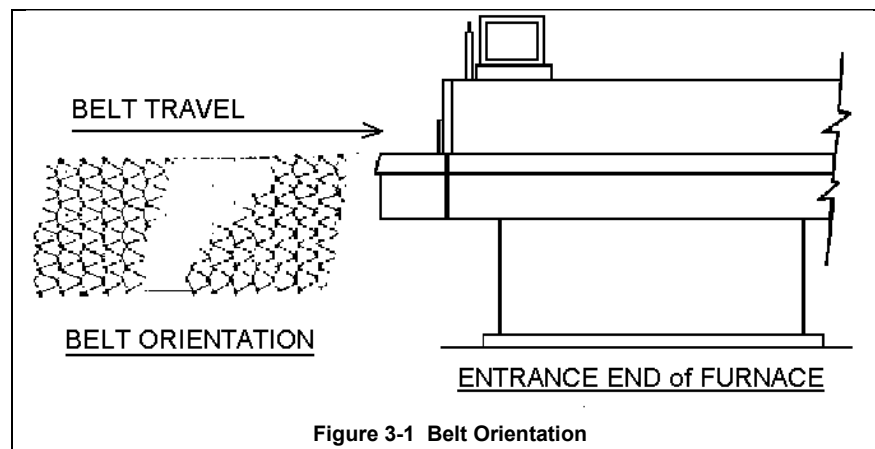


Figure 3-1 Belt Orientation

3.3 Sever Old Belt

3.3.1 At the entrance, cut one of the cross-section wires travelling the width of the belt. Snip both ends of the wire.

3.3.2 Remove the wire by pulling straight through the belt.

3.3.3 Separate the belt.

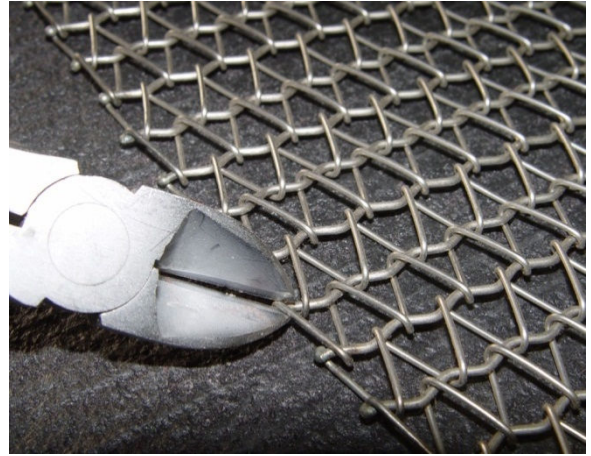


Figure 3-2 Cut Wire at Ball Joint



Figure 3-3 Second Cut at Opposite Side

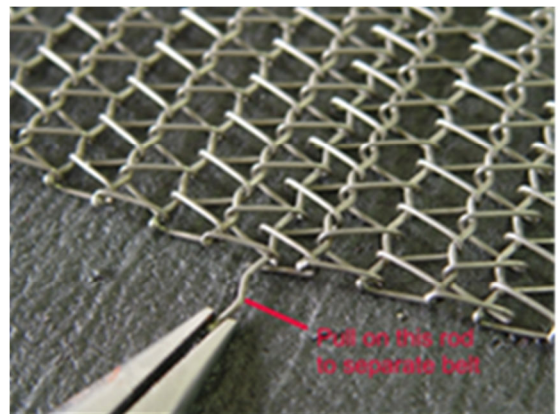


Figure 3-4 Remove belt wire

3.4 Remove Old Belt, Thread New Belt

3.4.1 At the entrance of the furnace, use the belt splice wire (from Figure 3-4) to attach the leading edge of the new belt to the old belt. See Figure 3-5 for example of splicing belts with different weaves. See Figure 3-6 for belt orientation and direction of travel.

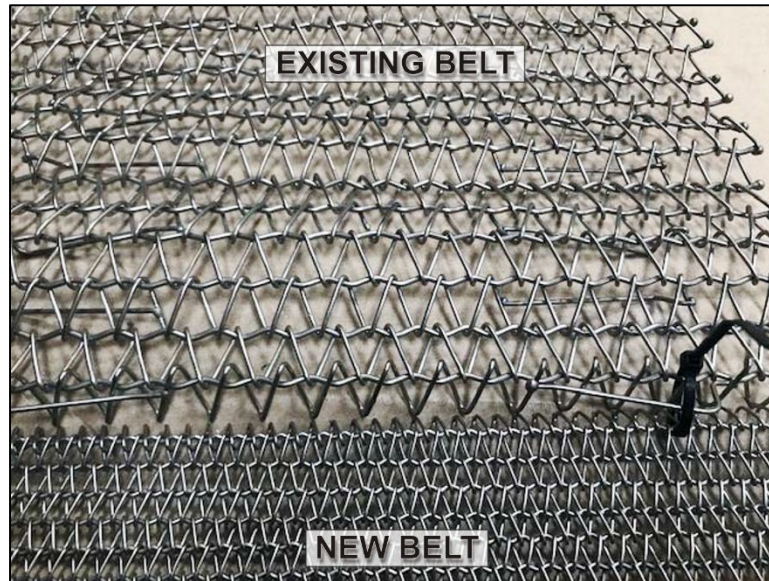


Figure 3-5 Splicing new heavy belt to existing standard belt

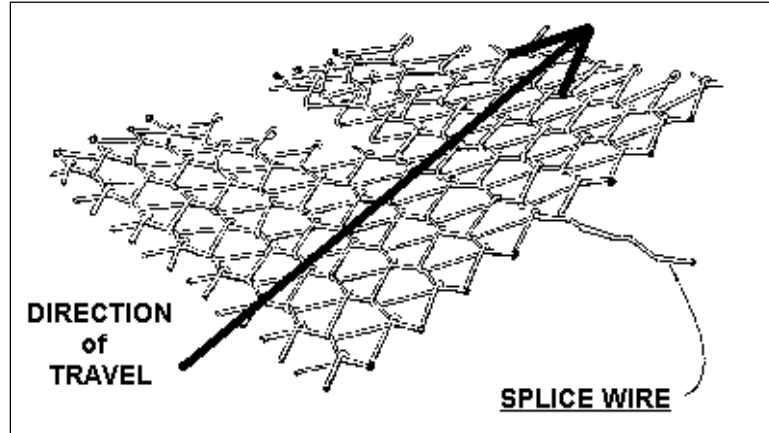


Figure 3-6 Belt Orientation & Direction of Travel

3.4.2 Set the belt speed to 10 to 12 ipm, to pull the belt slowly

3.4.3 At the entrance end of the furnace. Grasp the old belt on either side of its width and pull evenly and firmly to pull the old belt from the furnace as the new belt travels in.

3.4.4 Roll the old belt until it is free of the furnace chamber area.

3.4.5 Remove the splice joining the new belt and the old belt.

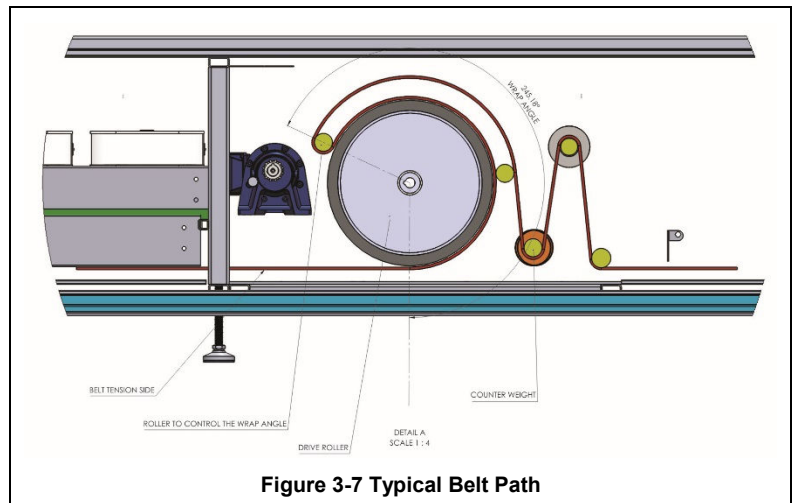
3.5 Splice the New Belt

3.5.1 Now that old belt is out of the way, line up the ends of the new belt so they are parallel and slightly overlapping.

Note: Before splice the belt, we must check the Ultrasonic cleaner Tank for the correct clearance between the bottom of the tank / belt. Gap must be 2 to 3”

3.5.2 Splice the belt by inserting one of the cross-section splice wires through the belt mesh across the width of the belt as shown in the figure.

3.5.3 The wire should be even and parallel and aligned with the belt edges. The cross-section splice wire will stay in place without any finishing at either end.



3.6 Final Steps

3.6.1 Replace Belt weight if applicable. Lower into belt weight enclosure to tension belt.

3.6.2 Turn on furnace power.

3.7 Condition New Belt

3.7.1 Turn off process gas flow to all flowmeters except exhaust stack(s).

3.7.2 Adjust flow to all exhaust stack flowmeters to maximum.

3.7.3 Set belt speed to 5-6 ipm.

3.7.4 Set all zones to 450C for standard (stainless steel), 600C for high temperature (nichrome-V).

3.7.5 Operate belt 4-6 hours until belt is an even brown color.

3.7.6 Return belt speed and all flowmeter settings to normal for profiles being run.

3.7.7 The Furnace System is now ready for normal processing.