

Automated Conveyor Sortation Belt Tracking Adjustment

1.0 Maintenance Objective & Frequency

The objective of this procedure is to correct belt tracking on automated conveyor sortation systems to prevent edge fraying, uneven wear, and premature belt failure. Proper tracking ensures consistent product flow and reduces unscheduled downtime. This PM is to be performed every 500 operating hours or when visual inspection reveals belt drift exceeding 3 mm from the center of the pulley face.

2.0 Lockout/Tagout (LOTO) & Safety

- Electrical Isolation: Disconnect main power to the conveyor control panel and apply a personal lock and tag.
- Pneumatic Isolation: Close the shut-off valve for any pneumatic diverters or stops and bleed residual air from the system.
- Mechanical Lockout: Engage the conveyor belt tension lockout mechanism if equipped.
- Mandatory PPE: Safety glasses, steel-toed boots, and cut-resistant gloves.

3.0 Required Tools, Parts & Lubricants

- 13 mm combination wrench
- 17 mm combination wrench
- Adjustable crescent wrench (up to 1.5 inch capacity)
- Straightedge (1 meter length)
- Dial indicator with magnetic base (0.01 mm resolution)
- Torque wrench (10-50 Nm range)
- Chalk or marker for reference marks
- Replacement belt (if required, per OEM part number)
- Anti-seize compound (nickel-based)

4.0 Step-by-Step Maintenance Procedure

1. Perform LOTO as per Section 2.0 and verify zero energy state by attempting a start command at the operator panel.
2. Remove all product and debris from the conveyor surface. Clean the belt and pulley surfaces using a lint-free cloth and approved industrial cleaner.
3. Inspect the belt for edge damage, cracks, or delamination. If damage exceeds 10% of belt width, replace the belt per OEM procedure before proceeding with tracking adjustment.
4. Using the straightedge, check the alignment of the head and tail pulleys. Measure the distance from the straightedge to the pulley face at both ends. Acceptable deviation is 0.5 mm per meter of pulley length. If out of spec, shim the pulley mounting brackets accordingly.

5. Mark the current position of the tracking adjustment bolts on both sides of the tail pulley with chalk or marker for reference.
6. Loosen the locking nuts on the tail pulley adjustment bolts using the 17 mm wrench. Do not remove the bolts.
7. Turn the adjustment bolts incrementally (1/4 turn at a time) in the direction required to move the belt toward the center. For a belt drifting to the right, tighten the right-side bolt or loosen the left-side bolt, depending on the conveyor design. Refer to OEM manual for specific direction.
8. After each adjustment, rotate the belt manually by hand through one full revolution to observe tracking. Repeat adjustments until the belt runs centered within 3 mm of the pulley face edge.
9. Tighten the locking nuts to 25 Nm using the torque wrench. Apply anti-seize compound to the adjustment bolt threads to prevent galling.
10. Using the dial indicator, measure belt tension at the center of the unsupported span. Deflection should be 6 mm when a 5 kg force is applied. Adjust tension via the take-up mechanism if necessary.
11. Reinstall all guards and safety interlocks. Verify that no tools or debris remain on or near the conveyor.

5.0 Verification & Return to Service

1. Remove LOTO devices and restore power to the conveyor system.
2. Run the conveyor at full speed for 5 minutes with no load. Observe belt tracking and listen for unusual noise or rubbing.
3. Run the conveyor under a light load (e.g., 10% of rated capacity) for an additional 5 minutes. Verify that the belt remains centered within 3 mm of the pulley face.
4. Measure belt tracking at three points along the conveyor length using the straightedge. Record measurements in the PM log.
5. If tracking is stable and within spec, sign off on the PM work order in ServiceGrid. If issues persist, escalate to the maintenance supervisor for further diagnosis.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.