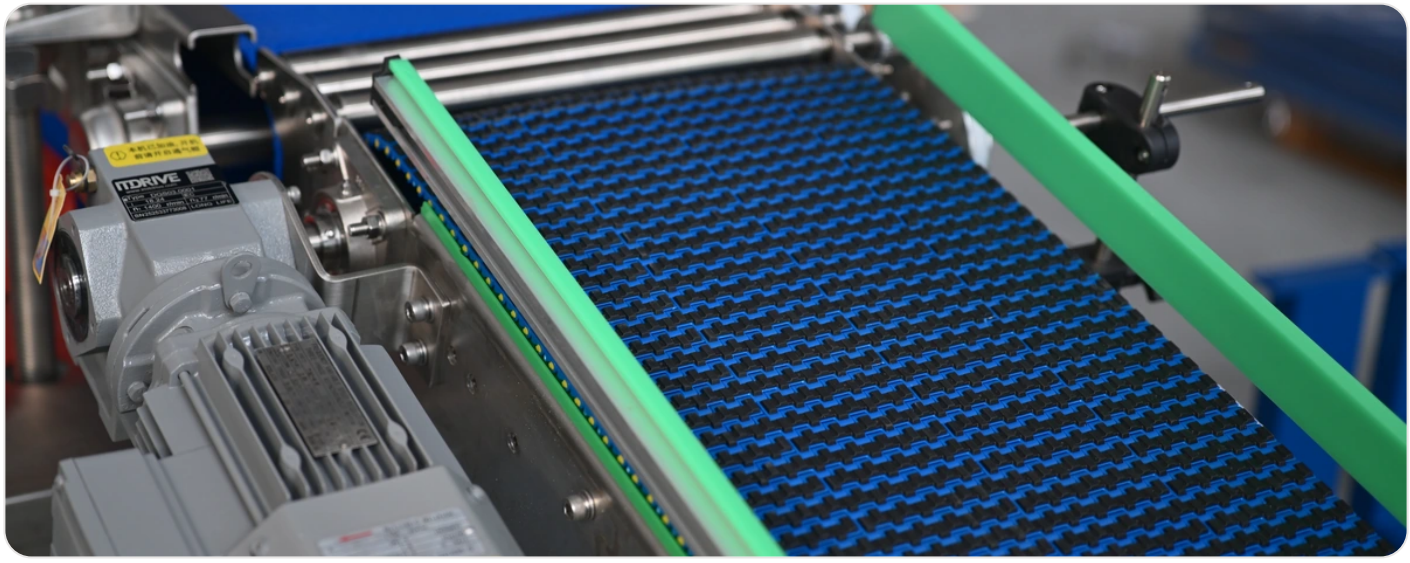
ARTICLE

Installing a Modular Conveyor Belt: First-Run Checklist

Check belt fit, sprocket alignment, clearances, and rod retention. Use a first-run checklist to record unloaded checks, product transfer, and retests.

By CSTRANS · 2026-11-19 · 6 min read · 1236 words



Before the first run, match the plastic modular belt, hinge rods, and sprockets to the installation drawings. With the conveyor isolated, verify sprocket alignment, clearance along the belt path, and rod retention at the closing joint. Restore the guards before the approved test. Use the first-run record to log what you measure with the conveyor stopped and what you observe once it runs.

Match the Belt and Its Installation Documents

Record the equipment ID, belt model and surface, finished width, direction of travel, hinge rod, and drive parts. Match the delivered parts to the belt drawing, the conveyor assembly drawing, and the rod installation instructions. Put the drawing number and revision in the record so the next shift can check the same specifications.

The 2720A flat-top belt and 2720C raised-rib belt both have a 27.2 mm pitch, measured between successive hinge axes. The 2720A uses a 4.6 mm diameter pin. The 2720C uses a 5 mm pin. Use the full model number to match the rod diameter, material, and retention details. Check the travel arrow against the installed direction and note any ribs, flights, or sidewalls that change the space the belt needs.

Isolate the Conveyor Before Hands-On Checks

Before opening guards, fitting the belt, or making hands-on measurements, have authorized personnel follow the site's energy-control procedure for that conveyor. Include connected equipment that can move the conveyor or feed material into the work area. Isolate the energy sources, restrain or release stored energy as the procedure specifies, and verify isolation before starting work.

For work covered by OSHA 29 CFR 1910.147, follow paragraphs (d) and (e) for applying and releasing energy control. If covered work requires temporary energization for testing or positioning, follow paragraph (f)(1). Deenergize and reapply energy control before that work resumes.

Check the Drive, Carryway, and Return Against the Drawing

Shafts, Tooth Phase, and Sprocket Position

Check the shaft positions against the drawing's reference points. Compare the drive and idle shafts, and verify their alignment to the specified belt path. At the drive, check where the belt leaves its support and enters the sprocket teeth. A support that extends too far can interfere with the belt as it bends into engagement.

Check tooth phase and axial position separately. **Tooth phase** is the angular alignment of corresponding teeth across the shaft. Check it against the reference tooth or mark called out in the instructions. If one sprocket engages a row before the others, it can lift one side of that row. **Axial position** is the location along the shaft. Record the spacing and check which sprockets the drawing locates and which it allows to float.

The CSTRANS 2720 catalog lists injection-molded drive sprockets with 9, 12, or 18 teeth and identifies their bore sizes by part number. Use those fields to identify the delivered sprocket, then check its shaft fit and position against the conveyor drawing. The sprocket identification guide covers tooth count, bore, and mounting details.

Support, Edge Clearance, and Return Space

Check that wear strips support the belt through their joints and that fasteners and guides clear the belt path. Measure left and right edge clearance at the drawing's reference points. Record the location and belt temperature when clearance depends on temperature. At a transfer, compare the moving belt, including any ribs or flights, with the fixed plate and receiving edge.

On the return run, check clearance around projecting modules and where the belt bends back over supports. The belt's minimum backflex radius governs how tightly it can bend in reverse. If the design calls for a hanging span, record the span, sag depth, and clearance to the nearest fixed part separately. Sag depth measures the vertical drop from the support reference line to the belt's lowest point. Clearance tells you how much space remains between the belt and a crossmember or guard. See the guides to modular belt conveyor design and measuring catenary sag for the layout and measurement references.

Join the Belt and Confirm Rod Retention

With the conveyor isolated, confirm the belt direction and row pattern at the closing joint. Support and align the adjoining rows using the equipment procedure. Check the rod, entry side, and edge retainer against the instructions for that belt model before fitting the rod.

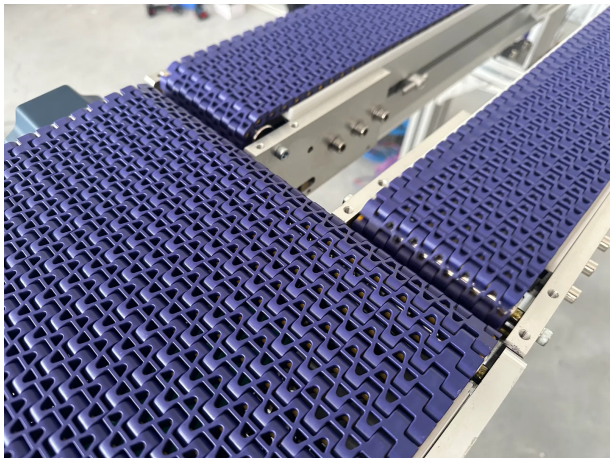
After seating the rod, inspect both edges. Check that the rod ends sit at the specified positions and that the retaining feature is engaged. A rod can pass through every hinge opening and still shift sideways if its retainer has missed its seat. Record the drawing reference and the condition of both edges. For a belt already in service, see replacing modules and hinge rods.

Observe the Belt on the Approved First Run

Empty Belt Observations

Remove tools and loose parts, restore guards, and confirm people are clear. Follow the site's procedure for releasing energy control, notifying affected employees, and approving the test. Use the run direction, speed, duration, and stopping criteria specified for the equipment. Observe from the designated positions outside the guarded area.

During the empty run, watch for a row lifting at the drive, a belt edge rubbing a guide, or the return touching a fixed part. If you see rubbing or a snag at a transfer, record which moving or stationary edge it occurs at. Note whether the problem stays at a fixed point or moves with the same belt row. Stop and re-isolate the conveyor before reaching into it or making an adjustment.



At a junction with several belt ends, record the specific receiving edge where contact occurs.

Product Transfer Under the Approved Load

Where the approved procedure calls for a loaded test, begin once the empty run meets its acceptance criteria. Record the test product or load and observe the same drive, transfer, and return locations. At discharge, follow the product base as it crosses onto the receiving surface. Look for a leading edge that catches, a base that loses support, or a product that changes orientation at the handoff.

Use the observation to choose what to check once the conveyor is isolated again. Contact that follows the closing joint points you to the row pattern and rod ends. Contact at the same frame location as different rows pass points you to the guide, support, or transfer at that location. After correcting the problem, repeat the affected test under the same approved conditions and record the outcome.

Record the Installation and First-Run Results

Fill in the record for this conveyor. Enter the actual drawing or procedure revision beside each requirement. Add locations and units to measurements, and note the test conditions with each run. Assign an owner to any open item and record the correction and retest before signing off the affected check.

Equipment ID: **Date:** **Belt model:**

Assembly drawing and revision: **Test procedure and revision:**

Check point	Drawing or procedure and revision	Expected	Measured or observed	Result, correction, and retest
Belt, direction, and parts				
Shafts and sprockets				
Carryway, edge clearance, and return				
Closing joint and rod retention				
Guards and release to test				
Empty run				
Loaded transfer, if required				

Checked by: **Accepted by and date:**

If a component needs to be matched, start with the plastic modular belt range. Include the belt model, finished width, drawing revision, and the measured dimensions at the interface in your inquiry.