

Installation, Maintenance & Troubleshooting Guide

Problem : Conveyor runs to one side at given point on structure

Cause : Buildup of material on idlers

Solutions : Remove accumulation; improve maintenance; install scrapers or other cleaning devices

Cause : Sticking idlers

Solutions : Free idlers and improve maintenance and lubrication

Cause : Idlers or pulleys out-of-square with center line of belt

Solutions : Readjust idlers in affected area

Cause : Conveyor frame or structure crooked

Solutions : Straighten in affected area

Cause : Idler stands not centered on belt

Solutions : Readjust idlers in affected area

Cause : Structure not level

Solutions : Level structure in affected area

Problem : Particular section of belt runs to one side at all points on the conveyor.

Cause : Belt not spliced/joined squarely

Solutions : Remove affected splice and re-splice

Cause : Bowed belt

Solutions : For a new belt, this condition should disappear during break-in; in rare instances, belt must be straightened or replaced; check storage and handling of the belt rolls

Problem : Belt runs to one side for long distance or entire length of the conveyor

Cause : Belt running off-center around the tail pulley and through the loading area

Solutions : Install training idlers on the return side prior to the tail pulley

Cause : Off-center or poor loading

Solutions : Adjust chute to place load on center of belt; discharge material in direction of belt travel at or near belt speed

Cause : Buildup of material on idlers

Solutions : Remove accumulation; improve maintenance; install scrapers or other cleaning devices

Cause : Idlers or pulleys out-of-square with center line of the belt

Solutions : Readjust idlers in the affected area

Cause : Conveyor frame or structure crooked

Solutions : Straighten in affected area

Cause : Idler stands not centered on belt

Solutions : Readjust idlers in affected area

Problem : Belt runs off at the tail pulley

Cause : Belt running off-center around the tail pulley and through the loading area

Solutions : Install training idlers on the return side prior to the tail Pulley

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Idlers or pulleys out-of-square with center line of the belt

Solutions : Readjust idlers in the affected area

Problem : Belt runs off at the head pulley

Cause : Pulley lagging worn

Solutions : Replace the pulley lagging

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Idlers or pulleys out-of-square with center line of the belt

Solutions : Readjust idlers in the affected area

Cause : Idler stands not centered on the belt;

Solutions : Readjust the idlers in the affected area

Problem : Belt slip

Cause : Insufficient traction between the belt and pulley;

Solutions : Lag the drive pulley; increase the belt wrap; install belt-cleaning devices

Cause : Pulley lagging worn

Solutions : Replace the pulley lagging

Cause : Counterweight too light

Solutions : Add counterweight or increase the screw take-up tension to value determined from calculations

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions

Cause : Sticking idlers

Solutions : Free idlers and improve maintenance and lubrication

Problem : Excessive belt stretch

Cause : Improper initial positioning of the counterweight in its carriage, causing apparent excessive belt stretch

Solutions : Check the Continental Davis Industrial Handbook of Belting for the recommended initial position

Cause : Tension too high

Solutions : Increase belt speed at same tonnage; reduce tonnage, maintain same belt speed; reduce friction with better maintenance and replacement of damaged idlers; decrease tension by increasing arc of contact or go to lagged pulley; reduce the counterweight to minimum amount

Cause : Counterweight too heavy

Solutions : Lighten counterweight to the value required by calculations

Cause : System under belted

Solutions : Recalculate belt tensions and select proper belt

Problem : Grooving, gouging or stripping of the top cover

Cause : Skirt boards improperly adjusted or wrong material

Solutions : Adjust the skirt board supports to a minimum of 1" between metal and belt, with gap increasing in direction of belt travel; use skirt board rubber, not old belt

Cause : Material hanging up in or under the chute

Solutions : Improve loading to reduce spillage; install baffles; widen chute

Cause : Impact of material on the belt

Solutions : Reduce impact by improving the chute design; install impact idlers

Problem : Excessive top cover wear, uniform around the belt

Cause : Dirty, stuck or misaligned return rolls

Solutions : Remove accumulation; install cleaning devices; use self-cleaning return rolls; improve maintenance and lubrication

Cause : Cover quality too low

Solutions : Replace with a belt of heavier-cover gauge or higher-quality rubber

Cause : Material spillage or buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Off-center loading or poor loading

Solutions : Adjust the chute to place the load on the center of the belt; discharge material in the direction of belt travel at or near the belt speed

Cause : Excessive sag between idlers causing the load to work and shuffle on the belt as it passes over idlers

Solutions : Increase tension if unnecessarily low; reduce idler spacing

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Problem : Severe pulley cover wear

Cause : Sticking idlers

Solutions : Free idlers; improve maintenance and lubrication

Cause : Slippage on the drive pulley

Solutions : Increase tension through screw take-up or add counterweight; lag the drive pulley; increase arc of contact

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Material trapped between the belt and pulley

Solutions : Install plows or scraper on return run ahead of tail pulley

Cause : Bolt heads protruding above lagging

Solutions : Tighten bolts; replace lagging; use vulcanized on lagging

Cause : Excessive forward tilt of trough rolls

Solutions : Reduce forward tilt of idlers no more than 2 degrees from vertical

Problem : Longitudinal grooving or cracking of bottom cover

Cause : Sticking idlers

Solutions : Free idlers and improve maintenance and lubrication

Cause : Slippage on the drive pulley

Solutions : Increase tension through screw take-up or add counterweight; lag the drive pulley; increase arc of contact

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Pulley lagging worn

Solutions : Replace pulley lagging

Problem : Covers harden or crack

Cause : Heat or chemical damage

Solutions : Use the belt designed for the specific condition

Cause : Improper storage or handling

Solutions : Contact us for proper storage and handling instructions

Problem : Covers swell in spots or streaks

Cause : Spilled oil or grease; over-lubrication of idlers

Solutions : Improve house keeping; reduce quantity of grease used; check grease seals

Problem : Belt breaks at or behind fasteners; fasteners pull out

Cause : Fastener plates too long for pulley size

Solutions : Replace with smaller fasteners; increase pulley size

Cause : Wrong type of fastener; fasteners too tight or too loose

Solutions : Use proper fasteners and splice technique; set up schedule for fastener inspection

Cause : Tension too high

Solutions : Increase belt speed, same tonnage; reduce tonnage, maintain same belt speed; reduce friction with better maintenance and replacement of damaged idlers; decrease tension by increasing arc of contact or go to lagged pulley; reduce the counterweight to minimum amount

Cause : Heat or chemical damage

Solutions : Use belt designed for specific conditions

Problem : Vulcanized splice separation

Cause: Pulleys too small

Solutions : Use larger-diameter pulleys

Cause : Tension too high

Solutions : Increase belt speed, same tonnage; reduce tonnage, maintain same belt speed; reduce friction with better maintenance and replacement of damaged idlers; decrease tension by increasing arc of contact or go to lagged pulley; reduce the-counter weight to minimum amount

Cause : Material trapped between belt and pulley

Solutions: Install plows or scrapers on return run ahead of the tail pulley

Cause : Improper transition between troughed belt and terminal pulleys

Solutions : Adjust in accordance with our recommendations

Problem : Excessive edge wear, broken edges

Cause : Off-center loading or poor loading

Solutions : Adjust chute to place the load on the center of the belt; discharge material in direction of belt travel at or near belt speed

Cause : Material spillage and buildup

Solutions : Improve loading and transfer conditions; install cleaning devices; improve maintenance

Cause : Belt hitting structure

Solutions : Install training idlers on carry and return run

Cause : Bowed belt

Solutions : For a new belt, this condition should disappear during break-in; in rare instances, the belt must be straightened or replaced; check storage and handling of belt rolls

Problem : Transverse breaks at belt edge

Cause : Belt edges folding up on structure

Solutions : Install limit switches; provide more clearance

Cause : Improper transition between troughed belt and terminal pulleys

Solutions : Adjust transitions in accordance with Davis Industrial Handbook of Conveyor and Elevator Belting

Cause : Severe convex (hump) vertical curve

Solutions : Decrease idler spacing in vertical curve; increase curve radius; consult us for assistance

Problem : Short breaks in carcass parallel to belt edge, star breaks in carcass

Cause : Impact of material on the belt

Solutions : Reduce impact by reducing the chute design; install impact idlers

Cause : Material trapped between belt and pulley

Solutions : Install plows or scrapers on return run ahead of tail pulley

Problem : Ply separation

Cause : Insufficient transverse stiffness

Solutions : Replace with the proper belt

Cause : Pulleys too small

Solutions : Use larger-diameter pulleys

Cause : Heat or chemical damage

Solutions : Use the belt designed for specific condition

Problem : Carcass fatigue at idler junction

Cause : Improper transition between troughed belt and terminal pulleys

Solutions : Adjust transition in accordance with Davis Industrial Handbook of Conveyor and Elevator Belting

Cause : Severe convex (hump) vertical curve

Solutions : Decrease idler spacing in curve; increase curve radius

Cause : Excessive forward tilt of troughed rolls

Solutions : Reduce forward tilt of idlers to no more than 2 degrees from vertical

Cause : Excessive gap between idler rolls

Solutions : Replace idlers; replace with heavier belt

Cause : Insufficient transverse stiffness

Solutions : Replace with the proper belt

Cause : Excess gap between idlers, causing load to work and shuffle on the belt as it passes over idlers

Solutions : Increase tension if unnecessarily low; reduce idler spacing

Problem : Cover blisters or sandblisters

Cause : Cover cuts or very small cover punctures allow fines to work under the cover and propagate between the cover and carcass

Solutions: Make a vulcanized spot repair or a self-curing repair

Cause : Spilled oil or grease, over lubrication of idlers

Solutions : Improve housekeeping; reduce quantity of grease used; check grease seals