

*Martin*

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# **IDLERS**

**INSTALLATION, MAINTENANCE,  
OPERATION & TROUBLESHOOTING**

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**CEMA C, D, E**

**SAFETY**

**STORAGE**

**INSTALLATION**

**CONVEYOR INSPECTION**

**MAINTENANCE**

**TROUBLESHOOTING**

## Warning & Safety Reminder

Safety must be considered a basic factor in machinery operation at all times. **Most accidents are the results of carelessness or negligence.** All rotating power transmission products are potentially dangerous and must be guarded by the contractor, installer, purchaser, owner, and user as required by applicable laws, regulations, standards, and good safety practice. Additional specific information must be obtained from other sources including the latest editions of American Society of Mechanical Engineers; Standard ANSI B15.1. A copy of this standard may be obtained from the American Society of Mechanical Engineers at 345 East 47th Street New York, NY 10017 (212705-7722).

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate the parts or components manufactured and supplied by *Martin* Sprocket & Gear, Inc., in such a manner as to comply with the Williams-Steiger Occupational Safety Act and with all state and local laws, ordinances, regulations, and the American National Standard Institute Safety Code.

## Caution

**All OSHA Lock Out/Tag Out procedures are to be properly followed prior to removal of any guards, access doors or covers for inspection or general maintenance. Failure to follow these instructions may result in severe personal injury and/or property damage.**

## Notice

Troubleshooting guidelines are to be used as a general rule of thumb to fix common problems associated with power transmission and material handling equipment using *Martin* products. These guidelines are in no way intended to replace, supersede or override equipment manufacturer's installation and operating guides. *Martin* publishes this information to be used by trained professionals. There is no warranty or guarantee either expressed or implied with respect to the troubleshooting guidelines. In no event shall *Martin* be held liable for any damage to equipment arising from the use of these guidelines, or failure to follow the equipment manufacturer's installation and operating guide. **The safety reminder and cautionary note is not meant to be a comprehensive analysis of all potential safety hazards, and is provided solely to call your attention to general safety concerns when operating power transmission and material handling equipment. *Martin* accepts no responsibility for any failure to follow the safety recommendations noted above.** For specific troubleshooting recommendations concerning any product *Martin* sells, please contact *Martin*.

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## Introduction

This manual contains complete instructions, for the installation, operation and maintenance of *Martin* Idlers, along with a belt conveyor trouble shooting guide. The reliable operation and long service life of these Idlers depend on the care taken during installation and operation.


All standard Idlers are manufactured to the standard of the Conveyor Equipment Manufacturers' Association (CEMA).


Supplementary instructions should be followed for components not furnished by *Martin* Sprocket and Gear, Inc. Components installed without approval of *Martin* Sprocket and Gear, Inc. are the sole responsibility of the purchaser or final user.

# Safety Instructions

It is the responsibility of the contractor, installer, owner and user to install, maintain and operate the conveyor, components and, conveyor assemblies in such a manner as to comply with the Williams-Steiger Occupational Safety and Health Act and with all state and local laws and ordinances and the American National Standards Institute (ANSI) B20.1 Safety Code.

In order to avoid an unsafe or hazardous condition, the assemblies or parts must be installed and operated in accordance with the following minimum provisions.

 **CAUTION:** Failure to follow these precautions may result in serious **PERSONAL** injury or damage to equipment.

 **CAUTION:** Before performing any maintenance, the circuit should be opened at the switch box, and the switch should be padlocked in the **OFF** position.

1. Conveyors shall not be operated unless all covers and/or guards for the conveyor and drive unit are in place. If the conveyor is to be opened for inspection cleaning, maintenance or observation, the electric power to the motor driving the conveyor must be **LOCKED OUT** in such a manner that the conveyor cannot be restarted by anyone; however remote from the area, until conveyor cover or guards and drive guards have been properly replaced.
2. If the conveyor must have an open housing as a condition of its use and application, the entire conveyor is then to be guarded by a railing or fence in accordance with ANSI standard B20.1.(Request current edition and addenda)
3. Feed openings for shovel, front loaders or other manual or mechanical equipment shall be constructed in such a way that the conveyor opening is covered by a grating. If the nature of the material is such that a grating cannot be used, then the exposed section of the conveyor is to be guarded by a railing or fence and there shall be a warning sign posted.
4. Do not attempt any maintenance or repairs of the conveyor until power has been **LOCKED OUT**.
5. Always operate conveyor in accordance with these instructions and those contained on the caution labels affixed to the equipment.
6. Do not place hands, feet, or any part of your body, in the conveyor.
7. Never walk on conveyor covers, grating or guards.
8. Do not use conveyor for any purpose other than that for which it was intended.
9. Do not poke or prod material into the conveyor with a bar or stick inserted through the openings.
10. Keep area around conveyor drive and control station free of debris and obstacles.
11. Eliminate all sources of stored energy (materials or devices that could cause conveyor components to move without power applied) before opening the conveyor
12. Do not attempt to clear a jammed conveyor until power has been **LOCKED OUT**.
13. Do not attempt field modification of conveyor or components.
14. Conveyors are not normally manufactured or designed to handle materials that are hazardous to personnel. These materials which are hazardous include those that are explosive, flammable, toxic or otherwise dangerous to personnel. Conveyors may be designed to handle these materials. Conveyors are not manufactured or designed to comply with local, state or federal codes for unfired pressure vessels. If hazardous materials are to be conveyed or if the conveyor is to be subjected to internal or external pressure, manufacturer should be consulted prior to any modifications.

# Safety Instructions

CEMA insists that disconnecting and locking out the power to the motor driving the unit provides the only real protection against injury. Secondary safety devices are available; however, the decision as to their need and the type required must be made by the owner- assembler as we have no information regarding plant wiring, plant environment, the interlocking of the belt conveyor with other equipment, extent of plant automation, etc.

Other devices should not be used as a substitute for locking out the power prior to removing guards or covers. We caution that use of the secondary devices may cause employees to develop a false sense of security and fail to lock out power before removing covers or guards. This could result in a serious injury should the secondary device fail or malfunction.

There are many kinds of electrical devices for interlocking of conveyors and conveyor systems such that if one conveyor in a system or process is stopped other equipment feeding it, or following it can also be automatically stopped.

Electrical controls, machinery guards, railings, walkways, arrangement of installation, training of personnel, etc., are necessary ingredients for a safe working place. It is the responsibility of the contractor, installer, owner and user to supplement the materials and services furnished with these necessary items to make the conveyor installation comply with the law and accepted standards.

Conveyor inlet and discharge openings are designed to connect to other equipment or machinery so that the flow of material into and out of the conveyor is completely enclosed.

One or more warning labels should be visible on conveyor housings, conveyor covers and elevator housings. If the labels attached to the equipment become illegible, please order replacement warning labels from the OEM or CEMA.

The Conveyor Equipment Manufacturers Association (CEMA) has produced an audio- visual presentation entitled "Safe Operation of Screw Conveyors, Drag Conveyors, and Bucket Elevators." CEMA encourages acquisition and use of this source of safety information to supplement your safety program.

# Storage Instruction

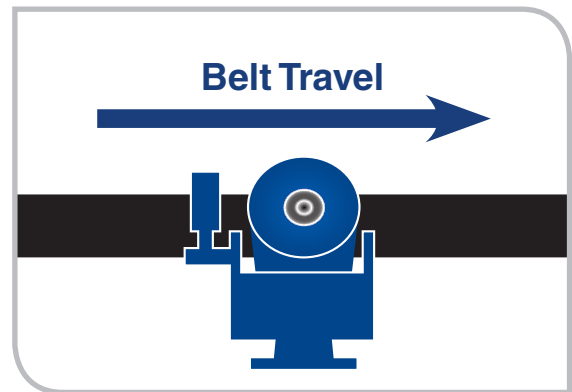
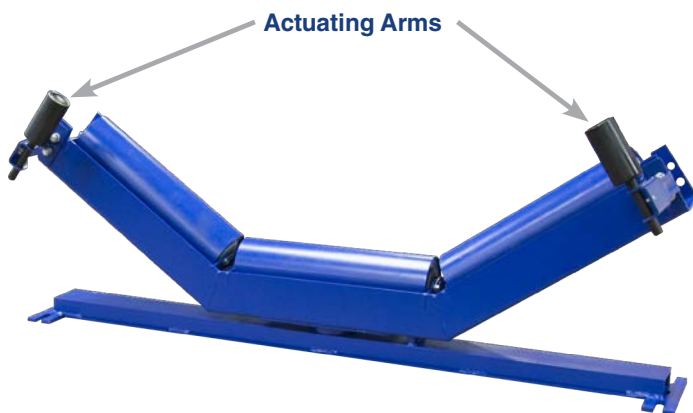
Belt conveyor Idlers are usually mounted on pallets for shipment to their destination. Since they frequently arrive well in advance of their installation date, they should be stored under cover to protect them from exposure to the weather and other adverse conditions.

Prior to installation, check all Idlers for evidence of damage to the rolls or frame due to mishandling. Check all rolls to make sure that they turn freely. Idlers should be cleared of any foreign matter that may have accumulated during transit or storage. Foreign matter on Idler rolls can cause damage to the belt.

# Idler Installation

**CAUTION: ALWAYS LIFT IDLERS BY THE FRAME, NEVER BY THE ROLLS.**


1. Establish the conveyor centerline by use of a wire or string.
2. Remove mud, stones, burrs, or any other debris from the stringers so that the pulleys and Idlers will sit squarely in position. This precaution will help prevent belt training problems.
3. Mount pulleys level with the plane of the conveyor and perpendicular to the line of belt travel. Do not adjust the pulleys after they have been accurately positioned.
4. Position Idlers perpendicular to the line of belt travel. **THE MIDDLE OF EACH CENTER ROLL MUST BE ON THE CENTERLINE OF THE CONVEYOR.** Tighten all four mounting bolts securely.
5. Rotate each roll to be sure it turns freely. If a roll is tight, look for some external interference or evidence of damage to roll or frame.
6. Install training Idlers with the same care and accuracy used in mounting the basic carrying and return Idlers.
7. To prevent damage during shipment, the actuating arms of positive action training Idlers are **NOT** mounted in operation position at the factory. Bolt the arms to the swivel frame so they extend **TOWARD THE APPROACH SIDE OF BELT.**



8. Inspect roll surfaces and remove any foreign material, especially abrasive dust, to prevent damage to the underside of the belt.
9. Install belt.


NOTE: All *Martin* Idlers are permanently lubricated at the factory before shipment.

# Belt Training

 **CAUTION:** Before performing any maintenance, the circuit should be opened at the switch box, and the switch should be padlocked in the **OFF** position.

After the Idlers and belt have been installed, the system should be started while empty and checked for alignment. A properly aligned conveyor has the belt running evenly in the center of the Idlers and as a result, prevents injury to the belt edges from contact with supporting structures or other objects. If a misalignment problem exists, it is not advisable to attempt correction by readjusting the head or tail pulley because undue strains on the pulleys, bearings, belt, belt splice or joint or the conveyor may result. Pulleys should be carefully aligned when installed and should not be adjusted for purposes of belt training.

1. Check the alignment of the entire system by operating the conveyor with the belt completely empty. If all components are properly aligned, the belt will run evenly in the center of the Idlers.
2. If misalignment exists and the empty belt does not run true, **DO NOT** attempt to correct the problem by adjusting the head or tail pulley. This causes undue stress on bearings, belt splices, and conveyor frames without correcting the problem.

 **CAUTION:** Failure to follow these precautions may result in serious **PERSONAL** injury or damage to equipment.

If one section of belt consistently runs out of line, either the belt is not straight or the splice is not square.

Proper alignment is achieved by loosening the mounting bolts on several Idlers on the upstream side and skewing them slightly. When one side of an Idler is shifted ahead of the other, the belt shifts to the side that is behind. To make adjustments use the following steps:

Loosen the mounting bolts and shift the run-out side forward until the belt runs true.

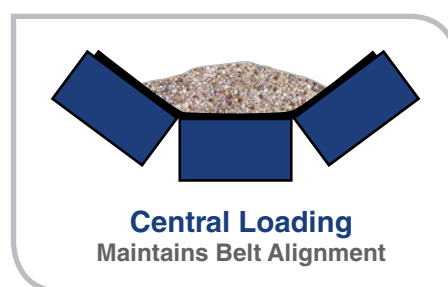
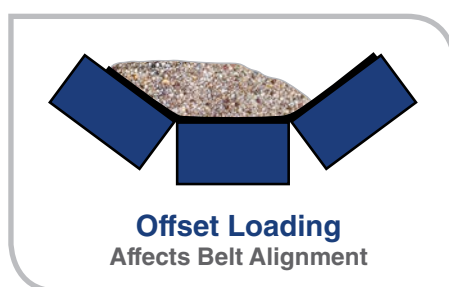
Retighten mounting bolts, restart conveyor, and check entire system.

Belt straightness, squareness of splices, and Idler alignment are of vital importance when a belt conveyor operates in both directions.

3. Training Idlers are permanently adjusted so that their upper base can swivel 10° in either direction.

Check belt alignment under full load conditions. A properly aligned and loaded belt will run in the center of the Idlers and will **NOT** require corrective action from the trainers. This capability is reserved to compensate for occasional off-center belt loading, the effects of wind, concentration of lumps, and other variations which cause temporary belt misalignment.

Recurrent or continuous misalignment is usually caused by off-center belt loading. Adjust chute so load is distributed as evenly as possible in the center of the belt.





# Conveyor Inspection

Costly interruptions in production can often be avoided by a program of regularly scheduled inspections of the system and all components.

Many operators and maintenance supervisors find it economical to inspect the belt daily for breaks in the rubber covering or signs of edge rubbing. It is better to make this inspection before the system is operated and while the belt is empty.

1. After start-up, check belt loading. Chutes should deliver an even flow of material and load it centrally on the belt.
2. Check for unusual vibrations, they can loosen mounting bolts, allow Idlers to shift and cause misalignment. If this condition occurs, eliminate the cause; then realign all loose Idlers and retighten the mounting bolts.
3. Be sure spilled materials do not interfere with swiveling of training Idlers, or the free rotation of Idler rolls. Good housekeeping is essential to high operating efficiency.
4. If an Idler is sluggish, but its movement is not retarded by material buildup, a choked interior or an impending bearing failure is indicated. The latter condition is almost always signaled by an unusual noise, generally a high-pitched squeal. Sluggish, noisy, or completely stalled rolls require immediate attention because they waste power and cause excessive belt wear. If stalled rolls remain in the system, the outer shell will eventually wear through and the resulting sharp edges will severely damage the belt. When a faulty roll is discovered, tag the Idler immediately and remove it from the conveyor as soon as the system is shut down.

## Idler Maintenance


### Lubrication

*Martin* Idlers are factory greased and sealed for life and therefore will not require any additional grease during their life cycle.

For high ambient temperature ranges, consult *Martin* Sprocket and Gear, Inc. or your lubricant supplier for recommendations.

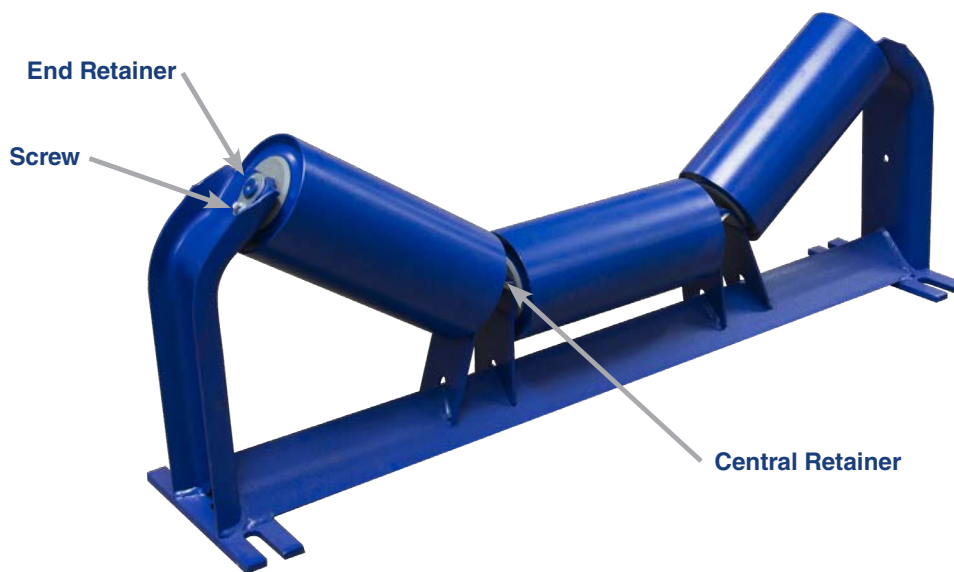


# Idler Removal

 **CAUTION:** Before performing any maintenance, the circuit should be opened at the switch box, and the switch should be padlocked in the **OFF** position.

1. Remove mounting bolts.
2. Tip Idler forward or backward, whichever is more convenient, until it rests on decking. If the installation does not include decking, additional precautions must be taken to prevent the Idler from falling through to the return run and causing damage or injury. A suitable plank might be used to support the Idler when it comes to rest.
3. Slide the Idler out from under the belt.

**NOTE:** When Idler is reinstalled, be sure it is accurately aligned and securely bolted in place.



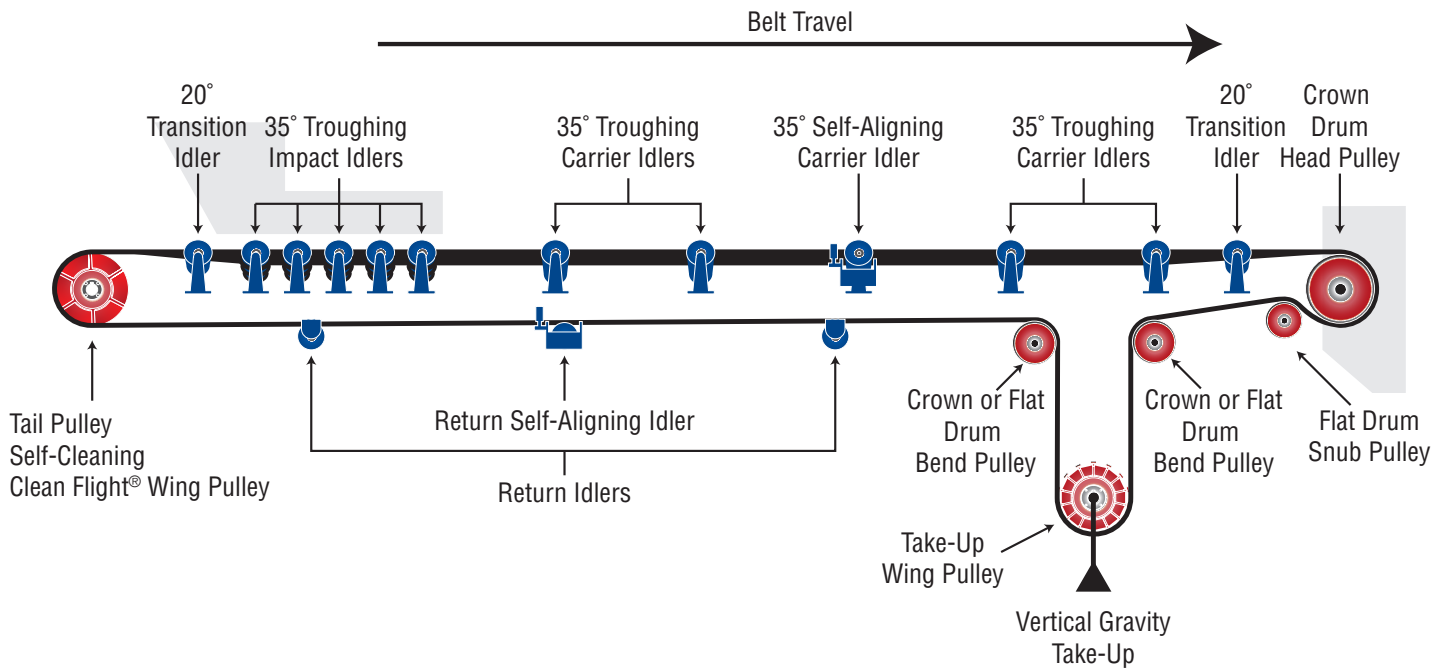
## Roll Removal

1. Remove end and center retainer clips.
2. Remove both end rolls. It may be necessary to tap the rolls to free them from the brackets. Use a rubber head mallet.
3. Lift Idler rolls out of the frame.

## Roll Installation

1. Place center roll in Idler frame.
2. Install end rolls and secure with end and center retainers. **NOTE:** End and center retainers are an integral part of the Idler assembly and must be installed.

# Belt Conveyor Troubleshooting



Belt conveyors are one of the best, most cost effective ways to convey bulk solids. While many belt conveyors experience a high percentage of up-time, issues can arise. Downtime of a belt conveyor can be very costly. Many of the issues that arise are preventable, with proper maintenance. Below is a general guide to belt conveyor troubleshooting.

## BELT MISTRACKING AT TAIL PULLEY

Troubleshooting	Corrective Action
<b>Belt running off center around the tail pulley and through the loading area.</b>	Install training idlers, prior to the tail pulley, on the return run of the conveyor.
<b>Material spillage and build-up.</b>	Improve loading and transfer conditions, install cleaning devices or improve maintenance.
<b>Idlers or pulleys out of square with the center line of the belt.</b>	Readjust the idlers in the affected area.
<b>The return rolls are dirty, misaligned or seized.</b>	Remove accumulated material or use self-cleaning return rolls.
<b>There is not enough belt tension.</b>	Add counterweight or increase the screw take-up tension to the proper value.
<b>Misalignment switch is not functioning.</b>	Adjust or replace the misalignment switches.

## PARTICULAR SECTION OF THE BELT RUNS OFF TO ONE SIDE AT ALL POINTS OF THE CONVEYOR

Troubleshooting	Corrective Action
<b>The belt is not spliced squarely.</b>	Remove the affected splice and re-splice.
<b>The belt is bowed.</b>	For a new belt, this condition should disappear during the break in period. In rare instances the belt must be straightened or replaced. Check the storage and handling of the conveyor belts.
<b>The belt has a worn edge.</b>	Use an edge pressing tool to repair the belt edge or replace the belt.

# Belt Conveyor Troubleshooting

## BELT RUNS OFF ONE SIDE FOR A LONG DISTANCE OR THE ENTIRE LENGTH OF THE CONVEYOR

Troubleshooting	Corrective Action
Belt running off center around the tail pulley and through the loading area.	Install training idlers, prior to the tail pulley, on the return run of the conveyor.
Off-center or improper loading.	Adjust chute to place load on the center of the belt or discharge material in the direction of the belt travel at or near the speed of the belt.
Build-up of material on idlers.	Install cleaning devices; improve maintenance.
Idlers or pulleys out of square with the center line of the belt.	Readjust the idlers in the affected area.
Conveyor structure is not straight.	Adjust structure in affected areas.
The return rolls are dirty, misaligned or seized.	Remove accumulated material or use self-cleaning return rolls.
Belt is strained on one side.	Remove strained section of the belt and re-splice.
Idlers not centered on the conveyor.	Readjust the idlers in the affected area.

## BELT RUNS OFF ONE SIDE AT A SPECIFIC POINT OF THE CONVEYOR

Troubleshooting	Corrective Action
Build-up of material on idlers.	Install cleaning devices; improve maintenance.
Off-center or improper loading.	Adjust chute to place load on the center of the belt or discharge material in the direction of the belt travel at or near the speed of the belt.
Build-up of material on idlers.	Install cleaning devices; improve maintenance.
Idlers or pulleys out of square with the center line of the belt.	Readjust the idlers in the affected area.
Conveyor structure is not straight.	Adjust structure in affected areas.
The return rolls are dirty, misaligned or seized.	Remove accumulated material or use self-cleaning return rolls.
Conveyor structure is not level.	Level the structure in the affected areas.
Idlers not centered on the conveyor.	Readjust the idlers in the affected area.

## BELT IS SLIPPING

Troubleshooting	Corrective Action
The pulley lagging is worn.	Replace the pulley lagging or send to have the pulley re-lagged.
Insufficient traction between belt and drive pulley.	Lag the drive pulley or increase belt wrap.
Material spillage and build-up.	Improve loading and transfer conditions, install cleaning devices or improve maintenance.
The idlers are seized.	Replace idlers and ensure they spin freely.
The pulleys are too small.	Use larger diameter pulleys.
There is not enough belt tension.	Add counterweight or increase the screw take-up tension to the proper value.

# Belt Conveyor Troubleshooting

## BELT RUNS OFF AT HEAD PULLEY

Troubleshooting	Corrective Action
The pulley lagging is worn.	Replace the pulley lagging or send to have the pulley re-lagged.
Idlers or pulleys out of square with the center line of the belt.	Readjust the idlers in the affected area.
Idlers not centered on the conveyor.	Readjust the idlers in the affected area.
Misalignment switch is not functioning.	Adjust or replace the misalignment switches.

## BELT RUNS TRUE WHEN EMPTY AND OFF CENTER WHEN LOADED

Troubleshooting	Corrective Action
Off-center or improper loading.	Adjust chute to place load on the center of the belt or discharge material in the direction of the belt travel at or near the speed of the belt.
Variations in the nature and formation of the material.	Use a notched chute to keep the peak of the load in the center of the belt.
The belt is not making good contact with all of the idlers.	Adjust the height of the idlers so they contact the belt.

## BELT IS SLIPPING ON START-UP

Troubleshooting	Corrective Action
The pulley lagging is worn.	Replace the pulley lagging or send to have the pulley re-lagged.
Insufficient traction between belt and drive pulley.	Lag the drive pulley or increase belt wrap.
Improper positioning of the counterweight and its carriage causing excessive belt stretch.	Check the recommended initial position of the take up counterweight assembly.
The idlers are seized.	Replace idlers and ensure they spin freely.
The pulleys are too small.	Use larger diameter pulleys.
There is not enough belt tension.	Add counterweight or increase the screw take-up tension to the proper value.
Insufficient counterweight travel.	Check for recommended minimum distances and ensure there is no interference.

## EXCESSIVE BELT STRETCH

Troubleshooting	Corrective Action
Belt tension is too high.	Increase the belt speed to achieve the same tonnage. Reduce idler friction by replacing seized idlers. Decrease tension by increasing friction or belt wrap on drive pulley.
PIW of the conveyor belt is undersized.	Recalculate belt tensions and replace with a belt with proper PIW rating.
Counterweight is too heavy.	Lighten the counterweight to the value required by the design calculations.
Insufficient counterweight travel.	Check for recommended minimum distances and ensure there is no interference.
Insufficient counterweight travel.	Check for recommended minimum distances and ensure there is no interference.

# Belt Conveyor Troubleshooting

## GROOVING, GOUGING OR STRIPING OF TOP COVER

Troubleshooting	Corrective Action
Skirt boards are improperly adjusted or are made of the wrong material.	Adjust the skirt board supports to minimum 1" between the metal and belt, with the gap increasing in the direction of the belt travel. Use appropriate skirt board rubber and not old belt.
Load jams in the chute.	Redesign the chute for the proper angle and size.
The material is hanging up in or under the chute.	Improve loading to reduce spillage, install baffles or widen chute.
Excessive impact of material on belt.	Reduce impact by improving belt design. Install impact idlers or an impact bed.
Sharp edges of material or tramp iron coming in contact with the belt top cover.	Use jingle bars, impact idlers or magnetic removal equipment.

## EXCESSIVE BELT TOP COVER WEAR

Troubleshooting	Corrective Action
Material spillage and build-up.	Improve loading and transfer conditions, install cleaning devices or improve maintenance.
Off-center or improper loading.	Adjust chute to place load on the center of the belt or discharge material in the direction of the belt travel at or near the speed of the belt.
Belt cover material quality is too low.	Replace the belt with a heavier cover gauge or higher quality rubber or other elastomer.
Excessive sag between idlers, causing the load to shift and shuffle on the belt as it passes over the idlers.	Increase tension if necessary or reduce the idler spacing.
The return rolls are dirty, misaligned or seized.	Remove accumulated material or use self-cleaning return rolls.

## SEVERE PULLEY COVER WEAR

Troubleshooting	Corrective Action
Material spillage and build-up.	Improve loading and transfer conditions, install cleaning devices or improve maintenance.
Material is getting lodged between the belt and pulley.	Install plows, scrapers. Use wing or clean flight wing pulleys.
The bolt heads are protruding above the lagging.	Tighten the bolts, replace the lagging or used vulcanized lagging.
Slippage of drive pulley.	Add counterweight or increase the screw take-up tension to the proper value. Lag the drive pulley. Increase belt wrap with a snub pulley.
Excessive forward tilt of trough rolls.	Reduce forward tilt of the idlers to no more than 2 degrees from vertical.
The idlers are seized.	Replace idlers and ensure they spin freely.

# Belt Conveyor Troubleshooting

## LONGITUDINAL GROOVING OR CRACKING OF BOTTOM BELT COVER

Troubleshooting	Corrective Action
Material spillage and build-up.	Improve loading and transfer conditions, install cleaning devices or improve maintenance.
Off-center or improper loading.	Adjust chute to place load on the center of the belt or discharge material in the direction of the belt travel at or near the speed of the belt.
The pulley lagging is worn.	Replace the pulley lagging or send to have the pulley re-lagged.
Slippage of drive pulley.	Add counterweight or increase the screw take-up tension to the proper value. Lag the drive pulley. Increase belt wrap with a snub pulley.
Excessive sag between idlers, causing the load to shift and shuffle on the belt as it passes over the idlers.	Increase tension if necessary or reduce the idler spacing.
The idlers are seized.	Replace idlers and ensure they spin freely.

## BELT COVERS HARDEN OR CRACK

Troubleshooting	Corrective Action
Heat or chemical damage.	Use a conveyor belt designed for the specific application.
Improper storage or handling of the conveyor belt.	Follow the recommendations for the proper belt storage and handling instructions.

## BELT COVERS SWELL IN SPOTS OR STREAKS

Troubleshooting	Corrective Action
Spilled oil or grease.	Over lubrication of idlers. Improve housekeeping and reduce the amount of grease used. Check the grease seals.

## THE CONVEYOR BELT BREAKS AT OR BEHIND THE SPLICE FASTENERS OR THE FASTENERS PULL OUT

Troubleshooting	Corrective Action
The fasteners are too long for the pulley diameter.	Replace with smaller fasteners or increase the pulley size.
Wrong type of fastener.	Use the proper fastener and splice technique. Set up a schedule for regular fastener inspection.
The belt tension is too high for the fasteners.	Use a vulcanized splice.
Pulleys are too small.	Use larger diameter pulleys.
Interference from belt scrapers.	Adjust the belt scrapers.
Belt carcass is too light.	Replace with a stronger carcass belt.

## BELT PLY SEPARATION

Troubleshooting	Corrective Action
Insufficient transverse stiffness.	Replace with the proper belt.
The pulleys are too small.	Replace with larger pulleys.
Heat or chemical damage.	Use a belt designed for the specific application.

# Belt Conveyor Troubleshooting

## BELT CARCASS FATIGUE AT IDLERS

Troubleshooting	Corrective Action
Improper transition zone between the troughed belt and terminal pulleys.	Adjust the transition zone. Use transition idlers.
Severe convex vertical curve in conveyor.	Decrease idler spacing in the curve or increase the curve radius.
Excessive forward tilt of trough rolls.	Reduce forward tilt of the idlers to no more than 2 degrees from vertical.
Excessive gap between idler rolls.	Replace idlers or use heavier conveyor belt.
Excessive sag between idlers, causing the load to shift and shuffle on the belt as it passes over the idlers.	Increase tension if necessary or reduce the idler spacing.
Insufficient transverse stiffness.	Replace with the proper belt.

## BELT COVER IS BLISTERING

Troubleshooting	Corrective Action
Cover cuts or very small cover punctures allow fines to work under cover and cut cover away from carcass.	Make spot repairs with vulcanizer or self-curing repair material.
Spilled oil or grease.	Over lubrication of idlers. Improve housekeeping and reduce the amount of grease used. Check the grease seals.

## OLD BELT IS CUPPING (WAS OK WHEN NEW)

Troubleshooting	Corrective Action
Heat or chemical damage.	Use a belt designed for the specific application.
Spilled oil or grease.	Over lubrication of idlers. Improve housekeeping and reduce the amount of grease used. Check the grease seals.

The information in this Service Instruction Manual represents our continued interest in the profitable performance of your belt conveying system. *Martin* Sprocket and Gear, Inc. offers the assistance of experienced specialists for matters outside the scope of this publication. Arrangements for consultation may be made through *Martin* Sprocket and Gear, Inc., 3600 McCart Ave., Fort Worth, Texas 76110, (817)258-3000.



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# Martin

## Product Offering



Roller Chain Sprockets



Engineering Class  
Sprockets



Gears



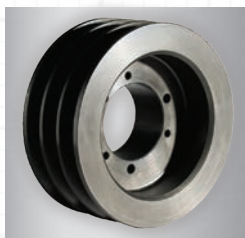
Bushings



Couplings



**NEW** Blue-Flex™  
Grid Coupling



Sheaves



MTO Sheaves



Bucket Elevators



MTO Gears



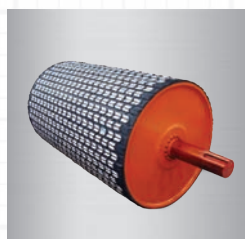
Screw Conveyors



Drag Conveyor



Heavy-Duty  
Conveyor Pulleys



Engineered Class  
Conveyor Pulleys



Clean Flight™ Wing  
Conveyor Pulley