



**DYNAMIC CONVEYOR  
CORPORATION**

# **Sanitary Conveyor Assembly & Cleaning Guidelines**



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**Revision 4: 2021**

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## IMPORTANT INFORMATION

The information contained in this manual is provided only as an aid and service to our customers. Dynamic Conveyor Corporation does not warrant the accuracy or applicability of such information and is not specifically responsible for property damage and/or personal injury inflicted directly or indirectly, or for damages and/or failures caused by improper application, installation, operation, abuse and/or misuse of its products whether or not based on information contained herein.

## WARRANTY

Dynamic Conveyor Corporation warrants products of its own manufacture for a period of five (5) years on the DynaClean® product line. Dynamic Conveyor Corporation will repair or replace any products that have failed under normal use due to faulty material or defective workmanship. Components, products and conveyors not manufactured by Dynamic Conveyor will be covered by the manufacturer's warranty. No other warranty is expressed or implied unless otherwise set forth in writing and approved by representative duly authorized to extend such approval by Dynamic Conveyor Corporation.

Additional note: Any Dynamic Conveyor Corporation equipment/systems that are physically altered without direct authorization from Dynamic Conveyor Corporation shall be termed "Product altered without authorization: no warranty or liability applies to that altered equipment/system".

## LIMIT OF LIABILITY

In no event shall Dynamic Conveyor Corporation be liable for any special, indirect, incidental, or consequential damages of any character, including but not limited to loss of production facilities or equipment, lost profits, property damage, lost production, or any consequential downtime, whether suffered by distributor or third party, irrespective of whether claims or actions for such damages are based upon contract, warranty, tort (including negligence), strict liability, or otherwise.

## FOR YOUR RECORDS

Thank you for your investment in a DynaClean Conveyor. We believe our product will become a vital step in your production.

Please take the time to complete the following information as thoroughly as possible. It will prove helpful when you contact customer service in the event you have any questions about assembly, installation or operation.

Date of Shipment: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

## PRODUCT SUPPORT & SERVICE

Dynamic Conveyor Corporation  
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[Service@DynamicConveyor.com](mailto:Service@DynamicConveyor.com)

Find additional support on our website at  
<https://www.dynamicconveyor.com/products/food-conveyor/parts-service/>



## INSTALLATION

The packing slip will be accompanied with assembly instructions and a drawing of your conveyor configuration.

Lifts, hoists and/or other rigging equipment may be needed to safely erect your conveyor.

## OPERATION

DynaClean Conveyors are designed to operate continuously in a forward direction, i.e., product is conveyed toward and discharged off of the motorized module (Drive Module).

## CHEMICAL EXPOSURE

Continuing chemical exposure over time will degrade plastics. Factors affecting the degree of degradation are, dwell time, product, chemical and environment temperatures, polymer choice, chemical concentration, conveyor design and application factors. The purpose of this document is to give general guidelines. Actual conditions will vary in every plant and application. Refer to the **Cleaning Recommendations** section.

## MAINTENANCE

DynaClean Conveyors are designed to be easy to clean, maintain and repair. To ensure proper operation, we recommend periodically inspecting the frame, motor, and belt for wear and damage. Refer to the **Preventative Maintenance Checklist**. The belt should not be tensioned. The belt catenary sag on the underside of the conveyor is intentional and is necessary to prevent tracking issues and to prolong the life of the belt. Refer to the **Belt Removal & Installation** section.

No lubrication of the conveyor, components, or belt is needed.

Necessary steps should be taken to correct any problems as soon as they are discovered. Any questions or concerns may be directed to your local sales representative and/or our customer service department.

# Preventative Maintenance Checklist

## 1. Low Tension Inspection

- ☐ Ensure belt setup (including catenary sag) is low tension -- NOT tensioned or pre-tensioned.
- ☐ Confirm that belt can be moved laterally on the drive/idle shaft.
- ☐ Confirm that belt has one or more areas for returnway accumulation (due to load or temperature).

## 2. Field/Factory Splices Inspection

- ☐ Look for cracks, voids, or signs of failure.
- ☐ Confirm that belt edges at splice are flush.
- ☐ Confirm that splice beads have been removed from edge and surface (top & bottom).

## 3. Surface and Belt Edge Wear Inspection

- ☐ Inspect surface for deformation, cracks, scratches or grooves.
- ☐ Inspect belt edge for shavings, blue dust or cracks.
- ☐ Inspect surface and edge for belt discoloration.
- ☐ If wear patterns are identified: Inspect the conveyor for catch points, sharp edges, etc.

## 4. Drive Bar Inspection

- ☐ Inspect drive bar for wear.

## 5. Drive Sprocket and Idle Support Wheel Inspection

- ☐ Inspect tooth profile and bore for wear.
- ☐ Ensure that all sprockets and support wheels are locked down and are maintaining recommended spacing.

## 6. Position Limiters Inspection

- ☐ Ensure that all limiters are in line with sprockets.
- ☐ Inspect limiters for proper clearance -- limiters should touch, but not pinch, the belt.
- ☐ Inspect limiters for wear or embedded foreign objects.
- ☐ Ensure that limiter fasteners do not come into

contact with moving belt or accessories.

## 7. Flight Inspection

- ☐ Inspect flight base for cracks (across width and indent edge).
- ☐ Inspect flight tips for surface wear.
- ☐ Inspect vertical flight sides for surface wear.
- ☐ If wear patterns are identified: Inspect the conveyor for catch points, sharp edges, etc.

## 8. Belt Support Inspection

- ☐ Inspect belt supports for wear patterns or embedded foreign objects.
- ☐ Ensure that all wear-strips are still on the conveyor and are properly secure.

## 9. Removable Retaining Walls Inspection

- ☐ Ensure that flights are not dragging against the removable retaining walls.
- ☐ Ensure that there is proper clearance above the belt surface so that the belt is not being pinched.
- ☐ Inspect belt containment guides for proper clearance.

## 10. Belt Guide Inspection on Flat Flush Belt Conveyors

- ☐ Inspect belt containment guides for unusual wear patterns or dust.
- ☐ Ensure that the belt containment guides are properly secure and in place.
- ☐ Inspect belt containment guides for proper clearance.

## 11. Snag Point Inspection

- ☐ Look for any noticeable snags or catch points throughout the entire conveyor system.

**NOTE:** Run conveyor at production temperatures to ensure smooth belt operation. Refer to steps 1-11 if you identify vibration, clicking or sprocket disengagement.

# Cleaning Recommendations

**Removable Components** -- Retaining Walls and Belt Supports should remain on the conveyor at all times except during the cleaning process. Failure to do so may cause injury.

**Lift the Belt and Clean** -- The tensionless drive aspects of the belting allow the option to clean the conveyor and belt by lifting the belt while it is on the conveyor

**Water Temperature** -- 120° - 140° F (49° - 54° C) for most protein applications; up to 165° F (74° C) for beef; room temperature for heavy flour

**Water Pressure** -- 15 - 17 bar (200 - 250 psi) optimum

**Detergents** -- Let detergent stand no longer than 20 minutes

## Sanitizers

	OK to use
	Use According to Manufacturers Directions, some discoloration and/or shrinkage may occur
	Will result in significant shortening of component life

		Belting					Conveyor Components		
		Polyethylene	Polypropylene	Acetal	Nylon	ThermoDrive	HDPE	UHMW	VHMW
<b>Chlorine</b>	Post Sanitation 200 ppm								
	Continuous or Intermittent 50 ppm								
<b>Quaternary Ammonium</b>	Post Sanitation Any Strength								
<b>Peracetic Acid</b>	Post Sanitation								
	Continuous or Intermittent								

**Post Sanitation** -- use after full cleaning performed at the end of a full production shift. Can be up to 4 times daily. Does not include soaking or exposure to sustained high temperatures.

**Continuous or Intermittent** -- applied all through production as a kill or intervention step. May or may not have direct product contact.

**Soaking** -- Not recommended. In the event components are soaked Quaternary Ammonium is the only chemical that should be used.

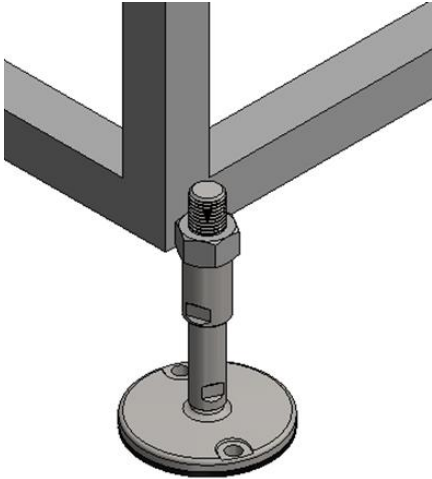
**Inspecting the Conveyor After Sanitation** -- Use all appropriate safety gear & procedures during inspections

1. Make sure that high concentrations of chemical residue are rinsed off of the entire conveyor system
2. Carryway and returnway should be properly seated onto the crossbars
3. Make sure that the belt is seated between sidewalls & the removable retaining walls (or under the belt containment guides for some flat conveyors)
4. Make sure that the belt is not tensioned (not tight) for any reason and includes catenary sag(s) in designated area(s)
5. Look for unusual wear patterns on the frame and belt. This could indicate a mechanical obstacle.

## Supports Assembly & Installation

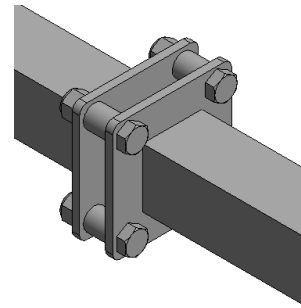
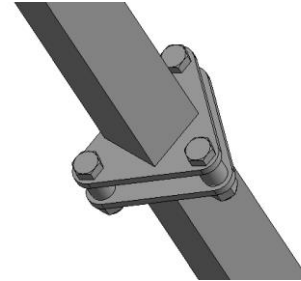
### Installing the Foot Treatments

Standard foot treatments (casters and leveling pads) are threaded in a 1.25" x 7 UNC



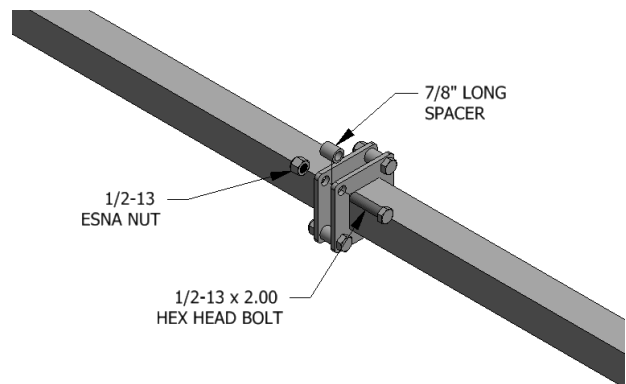
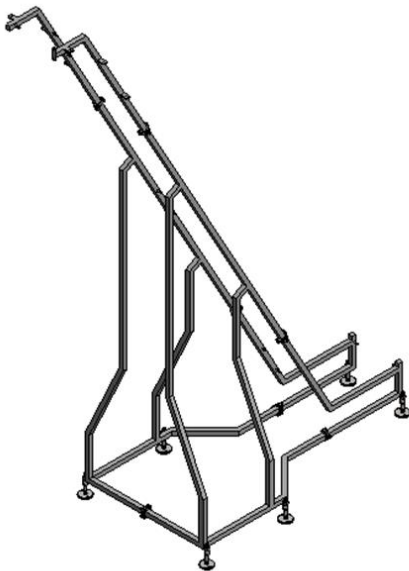
There are 2 types of joiner plates and they are secured with 1/2-13 hardware and a 7/8" spacer between the plates.

The nut and bolt require a 3/4" wrench or socket.

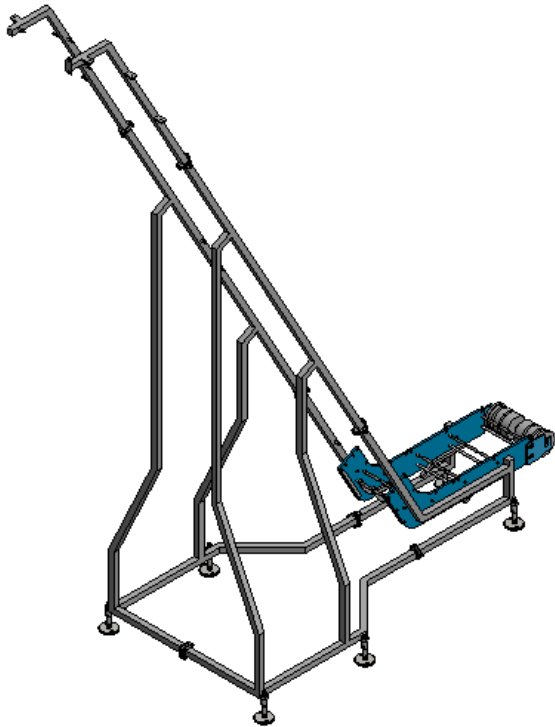


### Assembling the Supports

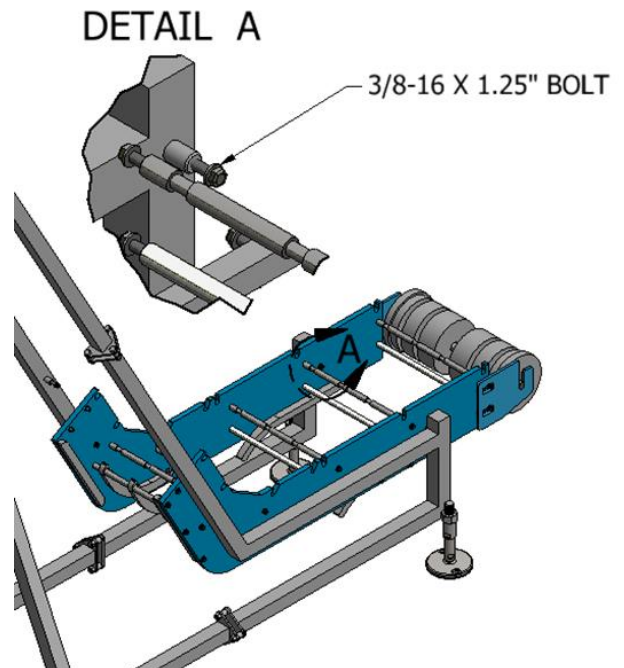
**NOTE:** Assembly of the Support is only needed if the Support comes in multiple sections.



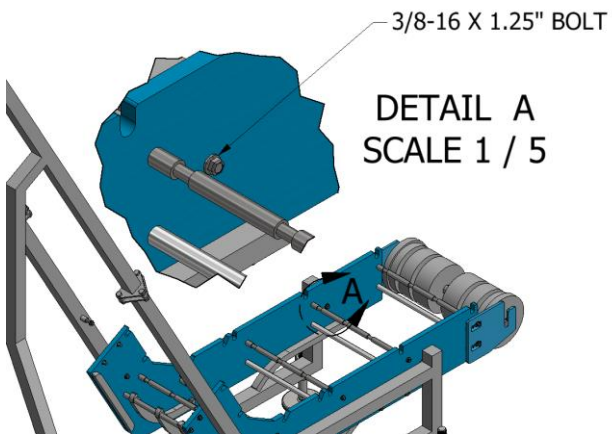
Attach the modules to the assembled support with 3/8-16 bolts through the sidewall into the standoff on the support.



**NOTE:** Typically it's easier to start at the bottom and work up to the drive end.



**NOTE:** The sidewall is not visible in order to show the support stand-off

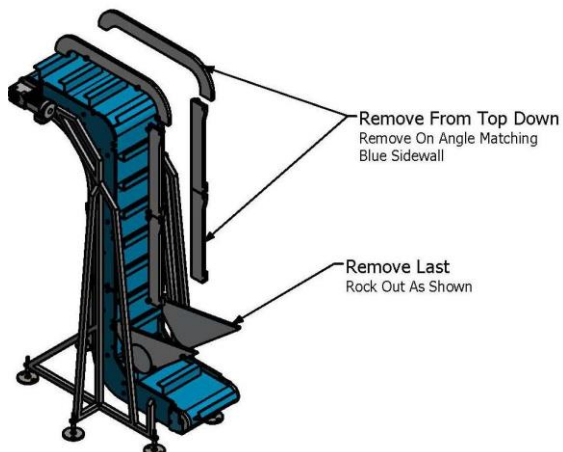
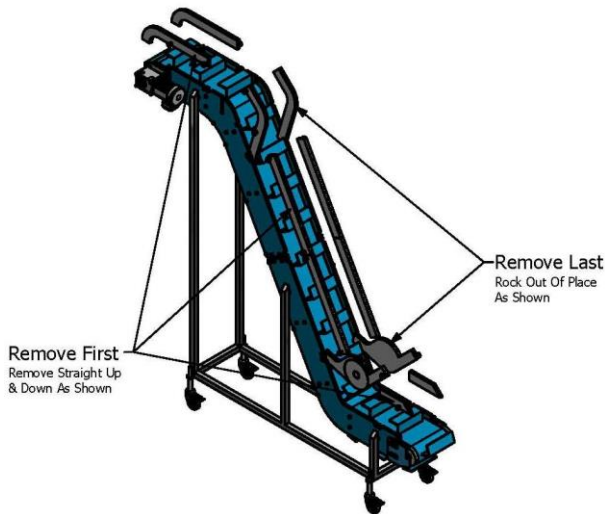
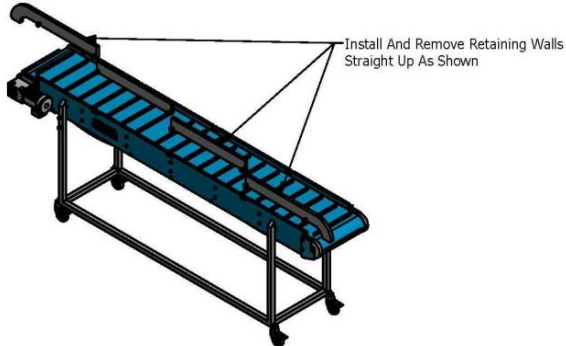




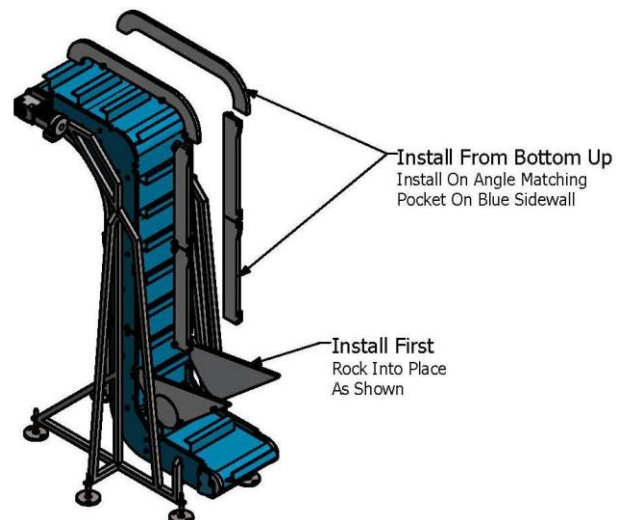
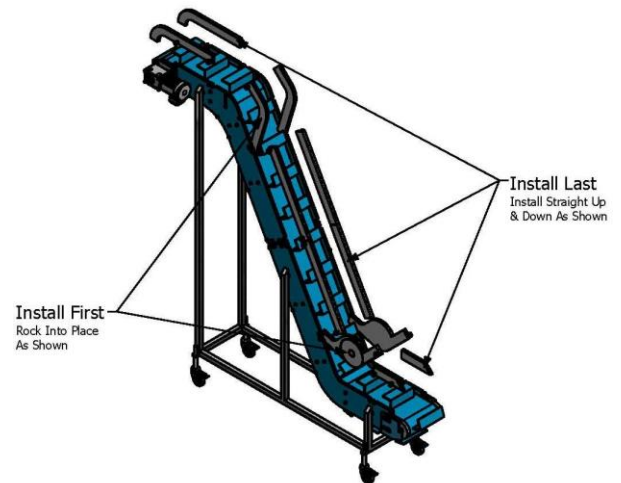
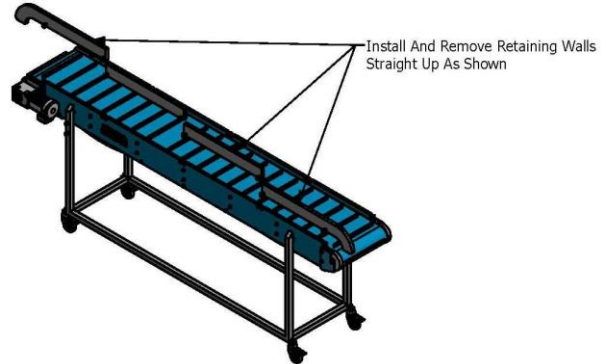
# Retaining Walls Removal & Installation

## Removing the Retaining Walls

**NOTE:** Retaining Walls and Belt Supports should remain on the conveyor at all times except during the cleaning process. **Failure to do so may cause injury.**



## Installing the Retaining Walls



# ThermoDrive® Belt Removal & Installation

## Removing the ThermoDrive Belt

1. Remove the rod by flexing the rod retention feature upward exposing the installed plastic rod. Using a spare plastic rod or similar, dull object, push against the installed rod until it begins to push against the opposite flush edge.



2. Flex the opposite flush edge upward and continue pulling the rod through the lace until the rod is exposed.



3. Using pliers or your hands, grab the exposed rod and pull to remove the plastic rod from the lace. Remove any other tools used and separate the belt.

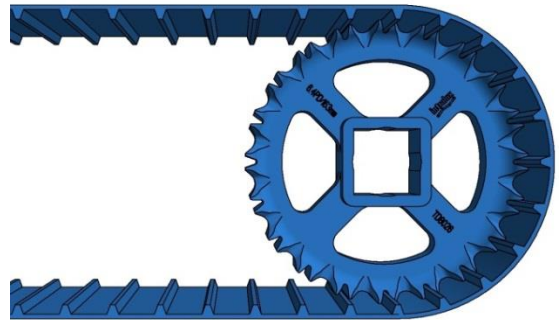


**NOTE:** Soaking the belt is not recommended.

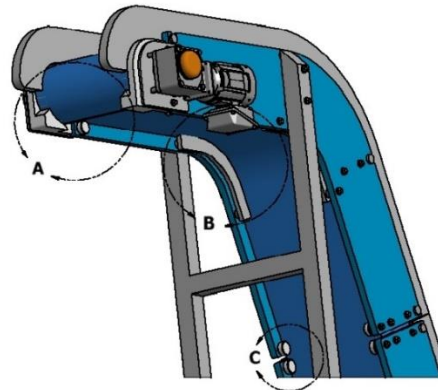
## Installing the ThermoDrive Belt

**NOTE:** Replace with a new rod if original rod is damaged in any way

1. Align the teeth of the sprocket so they are engaged with the ribs on the underside of the belt.



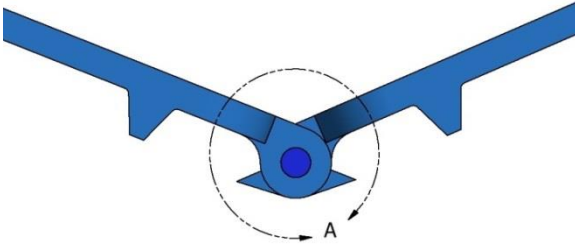
2. On the bottom of the conveyor, run the belt above the Safety Guards (Detail A) and Return Way Supports (Detail B & C).



3. Bring the ends of the belt together and interlock the laces making sure the edge of the belt is aligned



4. Orientate the small teeth (Detail A) away from the underside of the belt.



5. Flex the rod retention feature upward using your thumb while inserting the rod into the lace with your other hand.



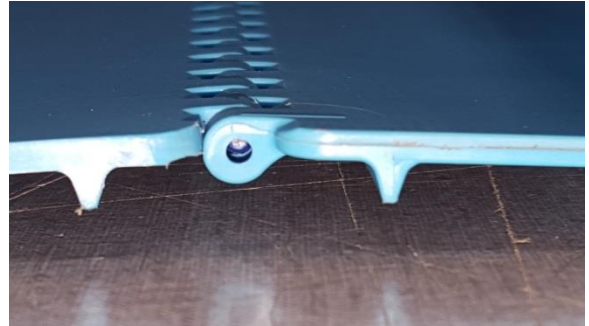
6. Insert the rod into the lace.



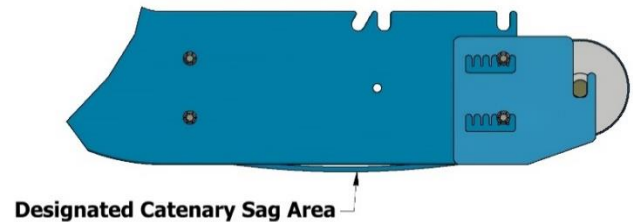
7. Continue to push the rod into the lace until it goes no further.



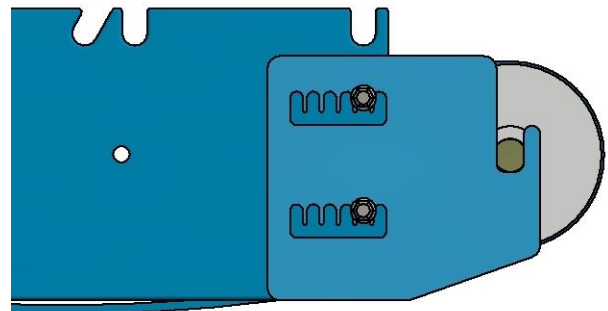
8. Proper rod retention is achieved by flexing the retention feature downward, so that it blocks the rod.



9. Make sure that the belt is not tensioned (tight) for any reason and includes catenary sag(s)



10. If needed, the catenary sag(s) can be adjusted by loosening bolts, lifting the feed plate, repositioning and tightening the bolts on both sides of the conveyor.

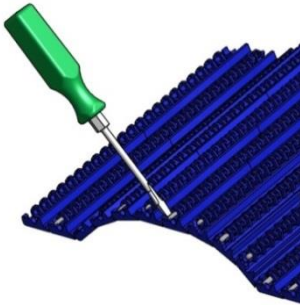




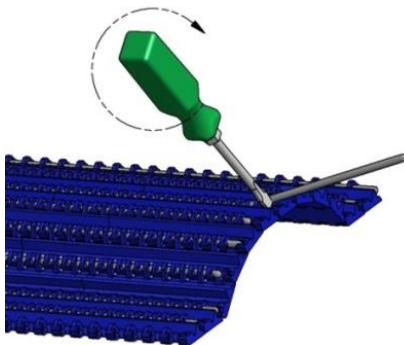
# Plastic Link Style Belt Removal & Installation

## Removing the Plastic Link Style Belt

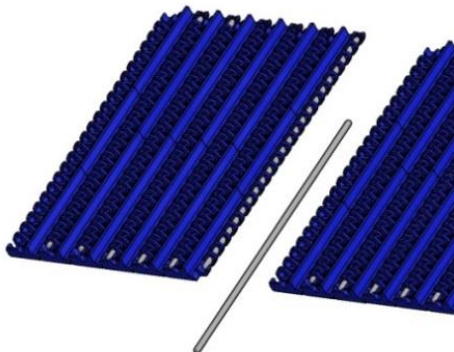
1. On the underside of the belt, use a flat-head screwdriver to wedge underneath the left side of one lacing rod near the edge on of the belt.



2. Turn the screwdriver clockwise so that the lacing rod lifts over the edge of the belt at an angle.



3. Separate the belt by pulling the lacing rod completely out.

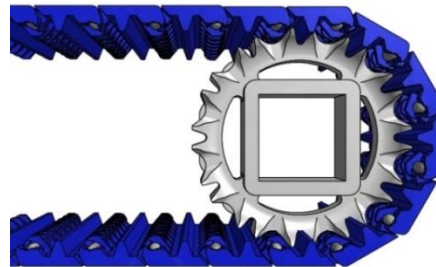


**NOTE:** Soaking the belt is not recommended.

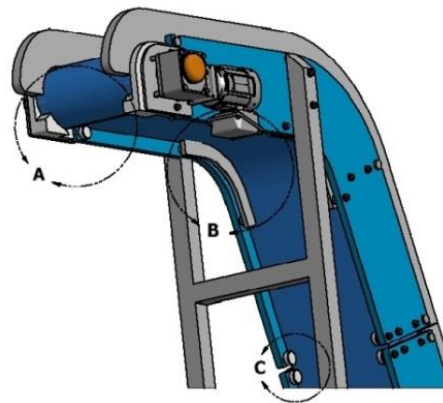
## Installing the Plastic Link Style Belt

**NOTE:** If rod is damaged in any way, then replace with a new rod

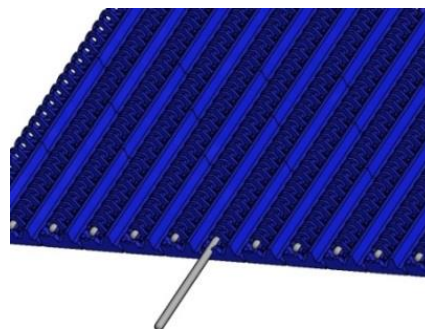
1. Align the teeth of the sprocket so they are engaged with the ribs on the underside of the belt.



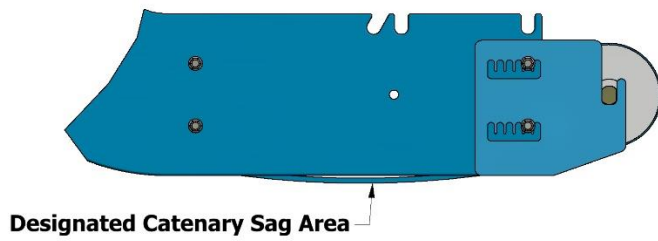
2. On the bottom of the conveyor, run the belt above the Safety Guards (Detail A) and Return Way Supports (Detail B & C).



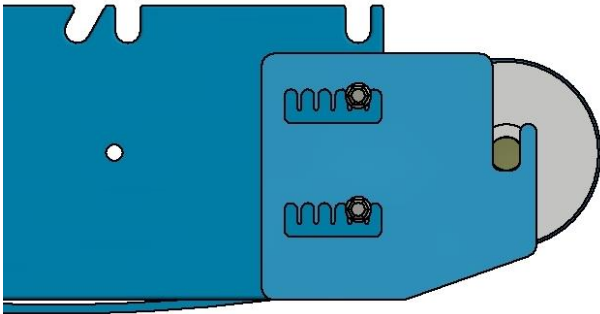
3. Push the lacing rod in at a slight angle until the rod snaps into place.



4. Make sure that the belt is not tensioned (tight) for any reason and includes catenary sag(s)



5. If needed, the catenary sag(s) can be adjusted by loosening the bolts, lifting the feed plate, repositioning and tightening the bolts on both sides of the conveyor.



# Troubleshooting

Problem	Possible Cause	Solution
Belt not running straight	Belt is running under tension	Remove tensioning device and run the belt loose.
	Belt is insufficiently contained	Check that removable retaining walls are properly seated. On flat conveyors, make sure belt is running under belt containment guides
	Conveyor frame and/or components are not level or square	Adjust conveyor frame. Check shaft alignment after any adjustment of frame.
	Sprockets are not aligned correctly on the shaft	Check sprocket alignment by laying straight edge parallel to the shaft at the base of any tooth on the sprocket to make sure that all sprockets are in the same position across the belt.
	Return rollers are not level or square to conveyor frame	Inspect and correct any return roller that is not level or square with conveyor frame.
Belt not engaging with drive sprockets	Position limiters are not installed, or are installed with too large of a gap	Install limiters in the correct position, maintaining the proper gap between the seated belt and the limiter.
	Belt is running under tension	Remove tensioning device and run the belt loose.
	Sprockets are not aligned correctly on the shaft	Check sprocket alignment by referencing the alignment nub located inside one gullet of the molded sprockets, or by laying straight edge parallel to the shaft at the base of any tooth in the sprocket to make sure that all sprockets are in the same position across the belt.
Excessive belt wear	Belt is running under tension	Remove tensioning device and run the belt loose.
	Belt is too wide for the conveyor dimensions	Replace with a belt that has been trimmed to the correct dimensions (typically 0.25 in (6 mm) trimmed from each side of the belt.
	Binding of belt in conveyor frame	Check conveyor frame to ensure it is level and square. Other considerations 1) Frame/sidewall warpage 2) Removable retaining walls are seated properly 3) Belt is running under belt containment guides on flat conveyor 4) Belt too wide
Sprockets move laterally to center or edge of belt	Retainer rings are not properly utilized or are missing	Replace missing rings and/or add rings as necessary.

# Troubleshooting

Problem	Possible Cause	Solution
Flight wear or damage	Flights contacting obstructions on conveyor frame, returnway or adjacent equipment	Eliminate obstructions to the flight travel. Check the conveyor frame to ensure it is level and square. Correct any conditions causing belt to rub or bind. Inspect for proper belt containment. Flights should never be used to contain lateral belt movement. Check for proper belt containment and clearance at the position limiter.
	High impact in infeed area	Reduce or eliminate impact on belt by adding an "impact plate" above belt to absorb initial shock. Mount plate at an angle that will direct impacting piece gently onto the belt. Other solutions include using short flights, adding full sliderbed support at the point of impact and chamfering the flight edges.
	Improper flight support on returnway	Flighted belts should be supported on each side of belt (on the "indent") and as needed across the belt width. It is recommended that flighted belts should be supported with continuous rails on the belt indents. A center support may be required depending on the width of the belt and size of application.
Failed splice	Incorrect installation of lacing rod	Lace the belting together ensuring proper alignment. Flex the rod retention feature upward using your thumb while inserting the rod into the lace with your other hand. Insert the rod into the lace. Continue to push the rod into the lace until it goes no further. Proper rod retention is achieved by flexing the retention feature downward, so that it blocks the rod.
	Belt is running under tension	Adjust the tailstock plates to achieve catenary sag(s) in designated area(s).



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**U.S. Pat. No. 8,919,541**

**U.S. Pat. No. 9,394,111**