Food Processing
Conveyor Guidelines
IMPORTANT
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 warrantees 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 process.

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: ____________________________

DYNAMIC CONVEYOR CORPORATION
5980 Grand Haven Road
Norton Shores, Michigan 49441
USA
231.798.1483 x 106
Service@DynamicConveyor.com

Find videos and additional assembly information on our website at www.DynamicConveyor.com

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

<table>
<thead>
<tr>
<th></th>
<th>OK to use</th>
<th>Use According to Manufacturers Directions, some discoloration and/or shrinkage may occur</th>
<th>Will result in significant shortening of component life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>Post Sanitation 200 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continuous or Intermittent 50 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quaternary Ammonium</td>
<td>Post Sanitation Any Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peracetic Acid</td>
<td>Post Sanitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continuous or Intermittent</td>
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</tbody>
</table>

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.
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.
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.
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.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belt not running straight</td>
<td>Belt is running under tension</td>
<td>Remove tensioning device and run the belt loose.</td>
</tr>
<tr>
<td></td>
<td>Belt is insufficiently contained</td>
<td>Check that removable retaining walls are properly seated. On flat conveyors, make sure belt is running under belt containment guides</td>
</tr>
<tr>
<td></td>
<td>Conveyor frame and/or components are not level or square</td>
<td>Adjust conveyor frame. Check shaft alignment after any adjustment of frame.</td>
</tr>
<tr>
<td></td>
<td>Sprockets are not aligned correctly on the shaft</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Return rollers are not level or square to conveyor frame</td>
<td>Inspect and correct any return roller that is not level or square with conveyor frame.</td>
</tr>
<tr>
<td>Belt not engaging with drive sprockets</td>
<td>Position limiters are not installed, or are installed with too large of a gap</td>
<td>Install limiters in the correct position, maintaining the proper gap between the seated belt and the limiter.</td>
</tr>
<tr>
<td></td>
<td>Belt is running under tension</td>
<td>Remove tensioning device and run the belt loose.</td>
</tr>
<tr>
<td></td>
<td>Sprockets are not aligned correctly on the shaft</td>
<td>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.</td>
</tr>
<tr>
<td>Excessive belt wear</td>
<td>Belt is running under tension</td>
<td>Remove tensioning device and run the belt loose.</td>
</tr>
<tr>
<td></td>
<td>Belt is too wide for the conveyor dimensions</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Binding of belt in conveyor frame</td>
<td>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</td>
</tr>
<tr>
<td>Sprockets move laterally to center or edge of belt</td>
<td>Retainer rings are not properly utilized or are missing</td>
<td>Replace missing rings and/or add rings as necessary.</td>
</tr>
</tbody>
</table>
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight wear or damage</td>
<td>Flights contacting obstructions on conveyor frame, returnway or adjacent equipment</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>High impact in infeed area</td>
<td>Reduce or eliminate impact on belt by adding an &quot;impact plate&quot; 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.</td>
</tr>
<tr>
<td></td>
<td>Improper flight support on returnway</td>
<td>Flighted belts should be supported on each side of belt (on the &quot;indent&quot;) 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.</td>
</tr>
<tr>
<td>Failed splice</td>
<td>Incorrect installation of lacing rod</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Belt is running under tension</td>
<td>Adjust the tailstock plates to achieve catenary sag(s) in designated area(s).</td>
</tr>
</tbody>
</table>