



CAMBRIDGE

ENGINEERED SOLUTIONS

CamEdge Belt Installation Guidelines

Purpose:

To provide general instructions and guidelines for the proper field installation of a CamEdge spiral conveyor belt.

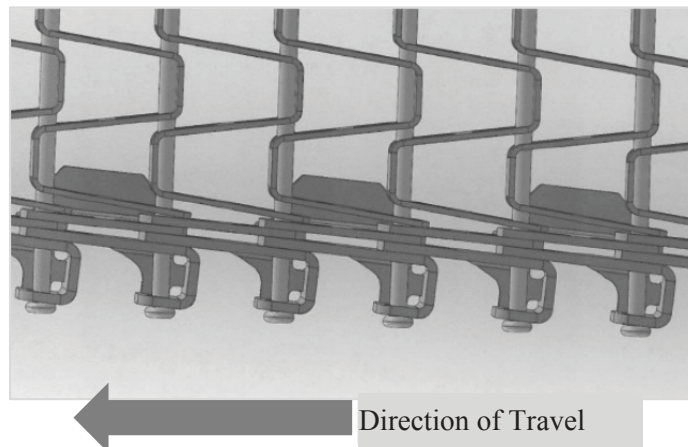
General Information:

CAUTION: Portions of the conveyor drive may be exposed during belt installation resulting in 'pinch-points' that can severely endanger personnel. Extreme care must be taken at all times when working around sprocket-driven equipment such as a spiral conveyor.

The general design of the CamEdge belt is based on a derivation of the DuraLite spiral cage belt. As such, many of the installation guidelines commonly used for that belt as well as any typical flatwire spiral cage belt may also likely pertain to the CamEdge belt.

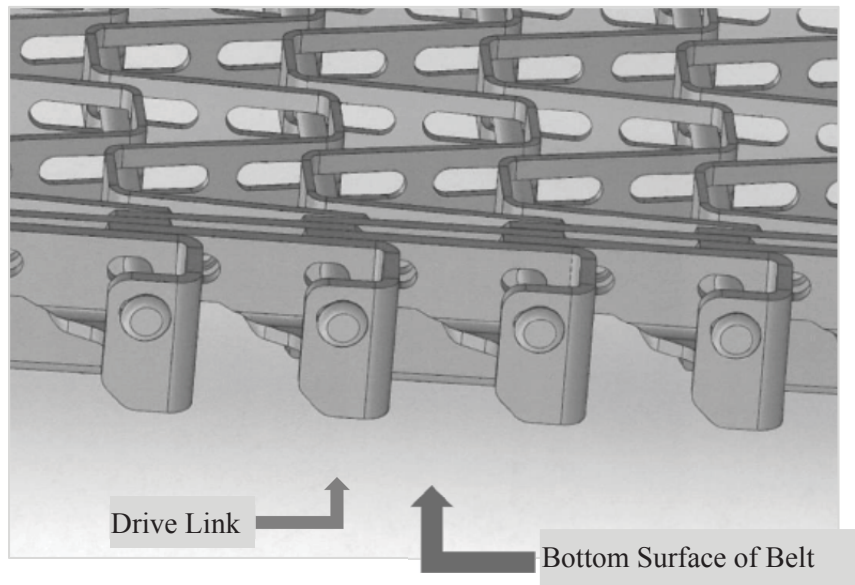
As the CamEdge belt is a tier-based, edge-driven belt, the proper engagement of the belt with each of the sprockets is the most important factor in the overall belt installation.

CamEdge belts may be manufactured in symmetric or asymmetric patterns depending on the application. Symmetric belts will have drive links on both belt edges, while asymmetric belts have drive links on only one edge and are made for a specific direction of travel – clockwise or counterclockwise on the spiral conveyor, (see following sketch). One should carefully note the intended direction of travel for CamEdge belts of the asymmetric pattern.



Though this may not be immediately apparent, each CamEdge belt has been manufactured for a specific collapsibility range. Belts produced for spiral conveyors with a collapsibility below the normal standard may have two, one, or no sidebars on the inside belt edge.

CamEdge belts are not capable of being flipped. These belts have a defined top and bottom surface as is evidenced by the position of the drive link. The drive link is level with the top support surface of the belt and extends beneath the bottom surface as does the hold-down clip, (see sketch).



As is the case for other types of spiral belts, an older belt already in place on the conveyor may be used to carefully pull a new replacement belt through the system.

1. General Belt Installation Instructions and Guidelines:

The following guidelines are intended to function as ‘general-use’ only and may or may not specifically apply to each and every CamEdge belt installation. Instances where these guidelines differ from conventional spiral belt installation guidelines will be specifically noted.

Tools Required: Wrenches, Vise-Grips, Clamps, Bolt Cutters, Hammer, Welder, Hacksaw, File or Grinder, Safety Shield.

CAUTION: Improper installation procedures can cause premature failures, damage to the belt or conveyor, reduced performance, or unnecessary downtime.

SAFETY WARNING: Never attempt installation or maintenance on a moving conveyor belt. Conveyor must be “off” with the power source locked out.

Always wear proper safety equipment when performing installation or maintenance. Keep clear of moving conveyor belts at all times.

- 1.1 Prior to installing a new belt on the spiral conveyor, check the condition of the wear strips and belt supports. Each should be clean and provide a relatively smooth path for the belt to travel throughout the entire system. Pay particular attention to transitions between lengths of separate wear strips.
- 1.2 Because the CamEdge belt utilizes hold-down clips on both the inner and outer edges, also verify that the corresponding conveyor rails and wear strips will provide free and continuous belt support without tight spots or places where the belt may become bound or jammed. This is probably best accomplished by pulling a short section of belt through the entire conveyor by hand and checking for abnormal resistance. Keep in mind that the belt will always contact the supports on the outer edge, but should make minimal to no contact on the inside rail of the conveyor.
- 1.3 Individual sections of CamEdge belting as shipped from Cambridge will be ‘lapped’ in a pallet typically in 50 ft. lengths. One should carefully note the orientation of the belt on the pallet and orient the pallet such that the belt can be correctly fed onto the spiral conveyor. As the belt is installed, each successive pallet must be likewise correctly oriented according to the manner in which the belt was placed on that particular pallet.
- 1.4 Sections of new belting should normally be fed onto the conveyor at the location of the infeed section of the unit. This allows the belt to feed from the pallet onto the conveyor in a straight (not collapsed) orientation.
- 1.5 If there is currently no belt on the spiral conveyor, the first section of new belting will have to be fed onto the conveyor by hand. In doing so, carefully position the belt on the conveyor rails such that the belt hold-down clips properly engage the corresponding rails. If an existing belt is to be utilized to pull the new belt through the system, then the new and old belts must be adequately connected together. This is best accomplished with the use of a connecting rod at the junction between the two belts.
- 1.6 Slowly but gradually feed the first new belt section onto the conveyor. As the new belt approaches the first edge-drive sprocket, make certain the belt edge and sprocket will properly engage. Re-adjust the position of the belt if necessary. Continue to feed the belt onto the conveyor until it engages the first sprocket. At this point, the sprocket can be used to pull the belt provided the speed of the drive is slow enough to permit the belt to be properly guided.
- 1.7 VERY IMPORTANT: While the sprocket is pulling new belt onto the conveyor, it is also pushing belt ahead to the next sprocket that is yet to be engaged with the belt. The belt that is being pushed must be guided by hand so that it does not collect and

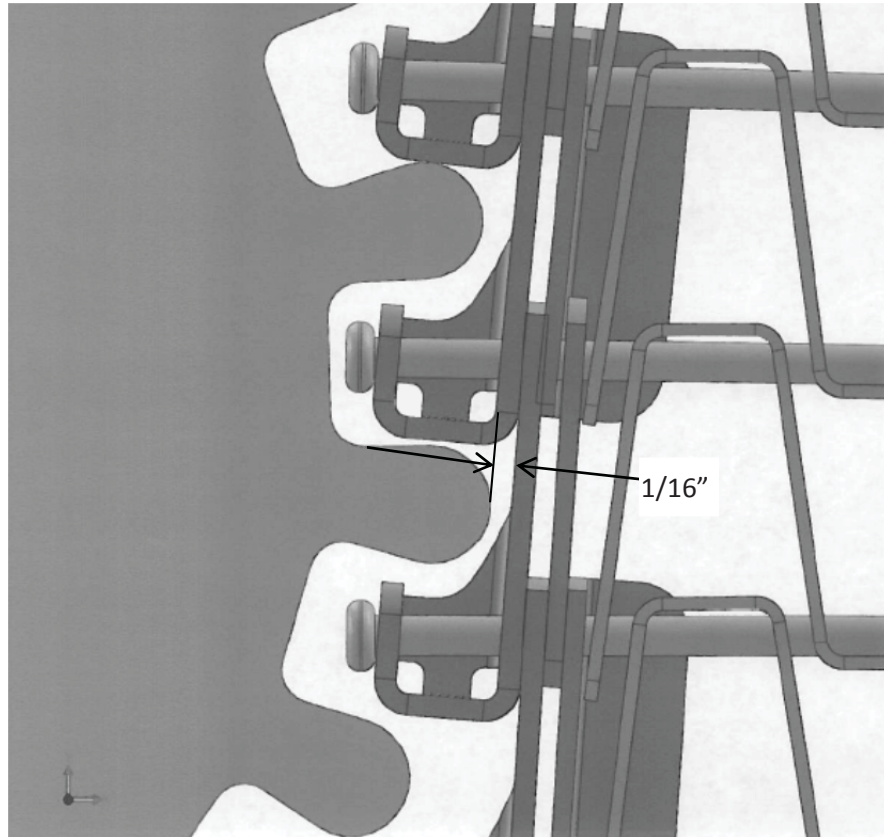
get jammed. This must be done as the leading edge of the belt engages and passes each sprocket in sequence.

- 1.8 Stop the conveyor once most of the first belt section has been loaded onto the conveyor. Bring the belt from the next pallet and align the belt edges for connection. It is very important that the links on both belt edges are properly nested together. Check for proper arrangement prior to completing the connection.
- 1.9 Insert the splice rod at the point of connection between the successive belt sections. The splice rod must be inserted such that the threaded end is directed toward the inside (collapsed) edge of the belt and away from the sprockets. (Note this is directly opposite from the practice normally associated with spiral cage belt systems.)
- 1.10 Thread the nut on the end of the splice rod and adjust to match the belt width to that of the finished belt. Double-check the proper nesting of the belt side bars on both belt edges prior to completing the splice. Weld the nut in place and remove excess rod length if necessary.
- 1.11 Continue to install successive belt sections in a similar manner until all the spiral conveyor has been fully loaded with new belt. As has been previously emphasized, it is important to check for proper belt-sprocket engagement at each sprocket location, and that the leading end of the belt is properly and sufficiently guided by hand as the belt is being pushed ahead to the next sprocket. Allowing the belt to be pushed without properly guiding it can lead to a belt jam-up and potential damage to the belt components.

2. Final Belt Connections and Adjustments:

- 2.1 For the belt to be operational it must be cut to the proper length and made endless. To set the proper length, continue to feed the new belt through the return sections of the conveyor until more than enough belt is in place to make it endless.
- 2.2 Draw the excess belt through the return until the two loose ends of the belt overlap. Measure or count the number of belt links to be removed to make the belt endless.
- 2.3 Remove the excess belt by cutting the rod through with bolt cutters. Be careful not to damage the belt pickets.
- 2.4 Check the placement of the hold-downs on the belt edges on the loose belt ends. The belt ends must not be joined endless with two hold-downs on successive pitches. If necessary remove an additional pitch of belt to properly space the links.
- 2.5 Connect the loose ends of the belt together using a splice rod, taking care to orient the rod with the threaded end toward the inside edge of the belt (away from the edge of the belt with the drive links). Complete the connection by installing the nut and welding it in place.

2.6 Prior to starting the spiral conveyor, check the position of the sprocket teeth relative to the drive links on the outside edge of the belt. For proper engagement, the outer edge of the sprocket teeth should be approximately 1/16" from the interior portion of the drive clip as shown:



2.7 Adjust the position of the vertical drive shaft(s) to most closely align each sprocket with the belt edge as shown.

2.8 Once the belt has been fully installed and the proper adjustments made, slowly start the conveyor and carefully watch the belt for several cycles. Gradually adjust the speed of the unit until operational speed has been reached. Note and correct any problems with the belt or conveyor prior to starting production with the unit.

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