

**T E C H N I C A L B U L L E T I N**

**Installation of Belting on Spiral Systems**

**PREPARATION**

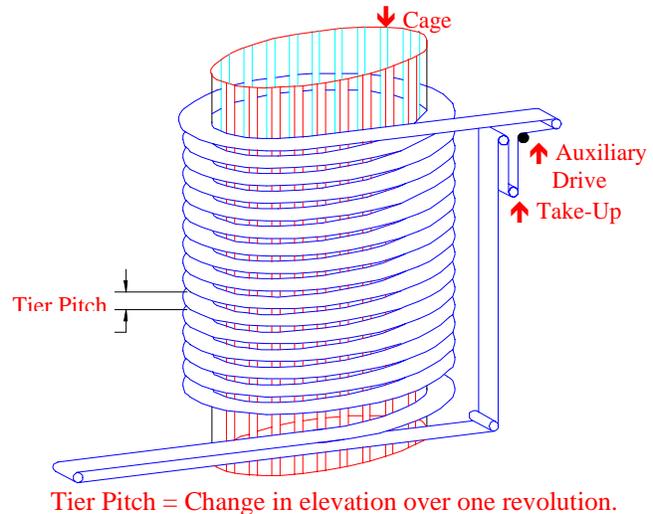
Some time spent in initial preparation will often save many frustrating hours in problem solving later on. It is much easier to take a few minutes to check the system out at the time the belt is to be installed, than to fix a problem that could have been avoided.

Before installing your new belt it is a good idea to check the wear strip material on the belt support rails. Check to see that the wear strip is clean, smooth, and free from embedded debris. It should also be checked to see that it is firmly seated on the rails and that the leading ends are firmly attached to the leading end of the rail. The leading end of all rails should be relieved or bent down to prevent catching of the belt as it comes onto the rails.

The wear strip material on the cage bars should also be checked at this time. If the cage bar caps are heavily grooved or worn, this is usually a good time to replace them. Check to see that they are firmly attached to the cage bars. They should be clean, and free from grease or oils that will reduce the driving friction of the drum. The cage bar caps should also have rounded or beveled edges where it meets the belt. This prevents the buttonhead from catching on the corner of a cage bar and temporarily eliminating all overdrive.

This is also a good time to check motor rotation in new systems and to check to see that the proper number of sprockets are on the take-up drive shaft. A short piece of belting can be used as a template to properly space these sprockets on the shaft (refer to belt assembly instructions for proper locations). This is also often a convenient time to clean all construction and repair debris from the system enclosure. Doing this now will help prevent the belt from dragging metal filings and other sharp debris into the system during installation.

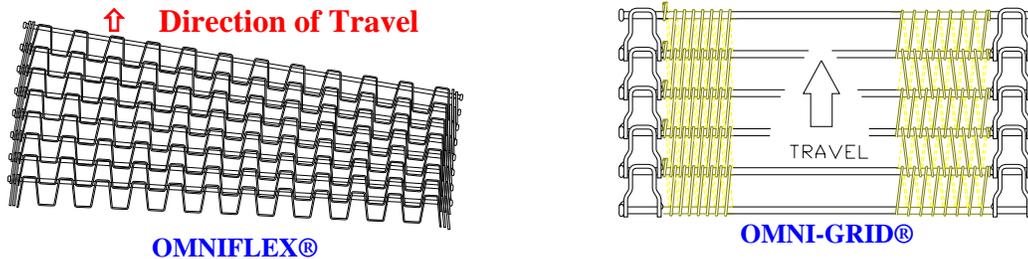
It is now time to take a few minutes to plan the actual installation. You need to determine where you will place the rolls of new belt to pull them in, and how you are going to gather up the old belt if you are removing it at the same time. Some thought should be given to how you are going to handle these several hundred pound rolls of belt. Each system is unique so no standard plan will cover all cases, however there are a few general guidelines that you can look for in getting set up.



**INSTALLATION INSTRUCTIONS**

## Installation of Belting on Spiral Systems

The new belt should be brought to the system and started in with the first belt opening at the outside edge of the belt leading the rod that closes that opening. For Omniflex belts, the formed flat strip (picket) leads the rod, and in Omni-Grid, the link leads the rod. Check to see that any drive sprockets are driving against the round rod, and not against the flat strip or link.



You can often plan on pulling the belt in from the system infeed. Once you can obtain several wraps of belt on the cage we can turn the cage on and push the belt against the cage to assist in pulling the belt through the system. Often the belt will be wrapped over the take-up drive so as to allow the sprocket drive to pull the belt from the heavy rolls and feed it to the person at the infeed. How you do this will be determined by the system layout and where you can locate the rolls of new belt. A section of rope can often be fastened to the leading edge of the belt to help pull the belt around sections of the cage where there is not room to walk around it.

At the end of each roll, you need to stop to splice on a new roll of belt (see Technical Bulletin on belt assembly). It is a good idea to know how much the drive(s) coast after the stop button is pushed when the drive is being used to assist with pulling the belt. The embarrassment of losing the end of the belt is bad enough, but the difficulties of trying to splice on a new section in a relatively inaccessible area can cause long delays. The splices should always be made with the preformed buttonhead at the inside edge of the belt. The nut goes on the outside edge of the belt. Any excess thread should be trimmed off the rod and the rod and nut should be welded together. This is all that is needed for an Omniflex type belt, but Omni-Grid type belts **require** that both the button head and nut be welded to the link. The rod also needs to be welded to the inside of the link at both edges of the belt. This is to prevent the possibility of one of the links (usually at the inside edge) from "tenting up". At this point it is a good idea to file or grind these splices and welds smooth to prevent cutting of the cage bars.

As the installation progresses, you need to watch closely that the belting is not catching on any framework, baffles or doors. On tall systems you may need ladders or other means of observing and guiding the belt as it gets higher and higher off the floor. People should never stand on the support rails or the belt as this can damage the rail and/or belt. It is also a good idea to be sure that the leading edge of the belt does not catch on the ends of wear strip sections and pull these loose. Remember that this loose end may bend up or down, and is much more likely to hang up than other areas of the belt.

Once you have completed pulling the belt into the system, you will make it endless. At this time the leading edge should be checked for damage that may have occurred during installation. If there is any doubt about the end of the belt, it is best to remove a few pitches. The final splice should be made when the take-up is slightly above the mid-point. New belts normally lengthen out during the first few weeks of operation, so you want to start with the belt slightly short of the mid-point of the take-up.

## Installation of Belting on Spiral Systems

Another case that often occurs is when you install a replacement belt. When only the belt is replaced, the new belt can be joined to the old belt (assuming that the new belt is the same specification as the old) somewhere just after the sprocket drive. The system can then be operated to remove the old and pull in the new belts. Again be sure to check for how much the drives drift after the stop button is pushed. Continue adding new sections and removing old sections until the installation is complete.

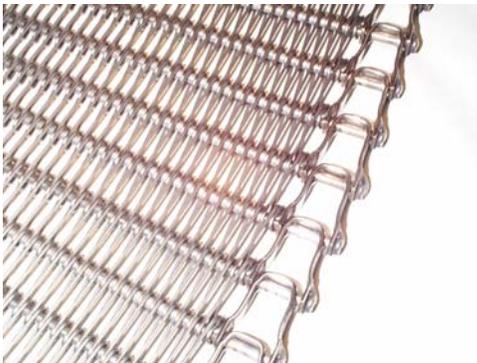
### AFTER INSTALLATION

Once you have the belt in place there are several items that should be checked before the belt is run. First check the system carefully for catch points. Especially check the area around the belt edges. Often in the infeed and outrun areas the belt will swing wide, so checking for possible obstructions in these areas is essential. Be sure to check that any flanges on enclosure doors are not going to catch on the belt when the doors are closed. While going over the system, look to see that flip-up detectors or product height detectors are not going to impinge on the belt. If there are any hold down rails on the system, be sure that there is adequate clearance between the belt and these rails. It would be advisable to have a feeler gage of approximately 1/4 to 3/8-inch thickness that can be slid between the belt and hold-downs throughout the system. This is also a good time to check the location of the drive and any idler sprockets. Be sure that they are centered in the belt or link opening and are locked down to the shaft. Any filler rolls should also be checked to ensure that they are set in place and are of the proper size to work with the sprockets.

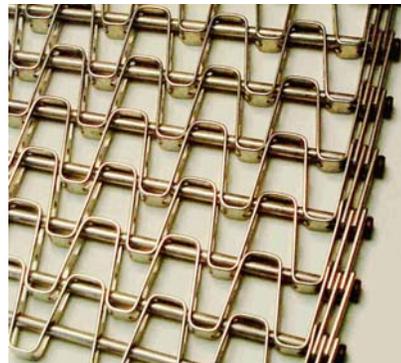
After you have checked all of this we are ready to operate the system. Start the system out at slow speed and continue to monitor the sprocket placement. Listen for any indication of belt impingement on the framework, and observe to see that the belt is not catching on the frame or other parts of the system. Note the take-up position at start-up and watch whether it rises or falls as the system operates. A take-up roll that raises indicates a lowering of belt tension. A take-up roll that is lowering tells you that the system tension is going up. The take-up roll should quickly stabilize. Once the system has operated for a few complete turns, check the overdrive by following the procedure outlined in the Technical bulletin on this subject. Adjust the overdrive if necessary to achieve the lowest possible belt tension without objectionable surging.

If possible the system should be operated for several hours before cleaning and loading. This will help the belt components to polish each other and reduce the chances of excessive internal wear.

**Omni-Grid® belt**



**Omniflex® belt**



*This document contains confidential information and trade secrets of Ashworth Bros., Inc. It may not be reproduced in whole or in part, or used for the benefit of anyone other than Ashworth Bros., Inc.*