

Eye-Flex[®] Conveyor Belting

Installation Guidelines

Tools you will need:

- Safety glasses
- Flat end pliers
- Side cutting pliers
- Grinder or alternately a hacksaw
- Heavy duty cable ties/wire/rope (optional)
- Pulling rope (for long new conveyor installations)
- Manual pulley or powered winch system (for long heavy weight belt systems only)
- Necessary tools for conveyor belt take up adjuster
- Welding set to complete the belt edge cross rod join(s)

Preparation

Before installing a new belt, always check the conveyor structure;

- Shafts to be at 90° to direction of travel, and horizontal.
- Rollers to be free to rotate.
- Sprockets to be correctly positioned, and aligned.
- Belt supporting surfaces are smooth and level with adequate belt edge clearance.
- Check that there are no parts of the structure that can catch the belt.
- If a take-up mechanism is fitted, ensure that it is functioning correctly.

Installation Procedure

1. First ensure that the electrical supply to the conveyor is turned off and the power supply locked out.
2. Release any conveyor belt tension take up mechanism to allow maximum adjustment during use.
3. The top surface of the belt is flat with the cross rod/link ridges on the underside.
4. There is no direction of travel to this style of belt (unless overlapping side guards or cross flights are fitted).
5. The belting should be pulled through the conveyor circuit until the two ends meet. (There are 2 approaches to this, see page 2)
6. Temporarily, the two ends can be tied together; this may make assembly easier.

6. The adjacent join position wire links/plates and side chains (if fitted) can then be layered together. Check that all links, plates & chains are maintaining the pattern of assembly before re-inserting the joining cross rod. Then connect the ends by inserting a supplied cross rod through the mating links/plates and chains to make the belt endless. Re-attach the split ring to the rod head as previously described. It may help to lay a board under the join positions to ensure that the wire links and plates lay flat when inserting the cross rod. Then finally check that the pattern of assembly is maintained across the join position(s) before proceeding.
Note! A correctly assembled belt will always have an even number of pitches, in its' length.
8. Finish the rod(s) by welding in place the split ring(s) to the rod head to complete the join. Note! Care should be taken not to weld the rings to the edge plates or side chains. Then check to ensure the belt still articulates freely after joining.
9. Re-connect the geared motor to the belt drive shaft if it had been disconnected during the belt fitting process.
10. The take-up, or tensioning, should be adjusted in accordance with the manufacturer's instructions. Generally, a correctly set-up conveyor will have small catenary loop in the belt return path and just enough tension to ensure that the belt engages with the sprockets and continues to drive.
11. After a few hours of process running check the tension and adjust if required.

Notes

Sometimes a belt can show signs of surging, hunting or jerking. What could be happening may be an effect sometimes referred to as "slip-stick" which can afflict some longer conveyors (with any type of belt). The belt can act something like a spring. The idle end of the belt can remain stationary until belt tension increases to the point that static friction is overcome; the belt can then surge ahead and the resulting drop in tension may then allow the belt to slow, or even stop. The cycle of surging can then become repetitive; if this problem persists then consult the designer or manufacturer of the conveyor.

Procedures for pulling the belt through the conveyor

Existing Belt Installation

In this instance the existing belt would be cut on the non-drive carry way surface (normally idle infeed end) by grinding or cutting off a cross rod head and then withdrawing the rod.

Important Note: Before doing this, check the lead edge of the new belt to ensure you will maintain the in/out pattern of assembly when the ends of the belt (new and old) are connected.

Then temporarily attach the lead of the new belt roll to the lagging end of the existing belt using the supplied joining cross rod. With the cross rod fully inserted clip onto the plain rod end the supplied split ring. Tap the ring in position whilst supporting the opposite end rod head. If the belt is supplied in more than one length you will need to repeat this attachment procedure. Then by means of supporting the new belt (whether on a roll or layered on a pallet) you will be able to carefully drive the belt (operate at slow speed) into the conveyor using the existing belt – always maintain suitable belt tension to ensure there is no belt slip on the drive sprockets. Whilst the belt is being driven in the old belt should be collected at the underside infeed end and layered carefully onto a pallet or such like for disposal. Once the lead edge of the new belt has been pulled through the circuit to the infeed end, remove the first temporary fix cross rod and split ring, taking care to collect the split ring. Then layer the leading belt edge over the trailing edge of the new belt and mark the cross rod cutting point to maintain the in/out pattern of assembly. The excess belt should then be removed by grinding or cutting off the appropriate rod head and withdrawing the rod, whilst maintaining the correct in/out repeat pattern of the belt edge. Then continue on from step 6 above.

New Conveyor Installation

If fitting the belt to a conveyor, where there is no existing belt (such as a new installation), the belt will have to be fed through the conveyor circuit by hand. For long heavy belt weight conveyors where it is not possible to pull the belt through by hand the process will be different.

First insert through the belt leading edge links, plates and side chains (if fitted) a supplied cross rod. With the cross rod fully inserted temporarily clip onto the plain rod end the supplied split ring. Tap the ring in position whilst supporting the opposite end rod head.

Then attach a steel drilled pulling bar of your own supply (see below) using cable ties, wire or similar. To this bar attach a pulling rope which is then fed through the conveyor carry way to the discharge. From here the belt can be pulled through the carry way part of the circuit.

For long heavy belt systems it may be possible to pulley wrap the rope around the drive shaft to give assistance in pulling the belt – ensure that the drive is controlled and operated at slow speed.

Check that the lead edge of the belt and cross bar does not catch on any part of the conveyor framework. Once the lead edge of the belt is at the discharge end the rope should then be fed back through the return way of the belt circuit to the infeed end (after first removing the rope from the drive shaft if a pulley wrap of rope was used). The belt can then be pulled through the return way (maybe with slow speed drive assistance) to the infeed end.

For long heavy belt weight systems a manual pulley or powered winch cable attached to the cross bar/rope may be required. However if you are not able to control the speed of the belt drive shaft and the pulley/winch system together then we suggest that you disconnect the geared motor drive from the drive shaft allowing the drive shaft to freely rotate in its bearings.

Take care to ensure the lead edge of the belt does not catch on any part of the conveyor framework during this operation. Once the lead edge of the new belt has exited the return way at infeed, remove the cross bar, rope and any pulley or winch cables used. Then remove the leading edge temporary fix belt cross rod and split ring, taking care to collect the split ring.

Next layer the leading belt edge up and around the infeed idle roller and over the trailing edge of the new belt (on the carry way) and mark the cross rod cutting point to maintain the in/out pattern of assembly. The excess belt should then be removed by grinding or cutting off the appropriate rod head and withdrawing the rod, whilst maintaining the correct in/out repeat pattern of the belt edge. Then continue on from step 6 on page 2.

Note: It may be more practical to remove the existing belt and fit the replacement by hand on short, light duty conveyors.

