

TROUBLESHOOTING GUIDE

EDON LINE-TRACKERS:

A-4480

A-6011

A-8586/8157

A-10788

A-11396

A-11420

A-12272

REMOTE ENCODER ENCLOSURES

**(ALL OTHER HEAVY & LIGHT DUTY
LINE-TRACKERS)**

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EDON LINE-TRACKER TROUBLESHOOTING GUIDE

EDON Line-Trackers are designed to provide accurate conveyor tracking at a specified design resolution. Failure of a mechanical component, improper installation or improper adjustment can cause tracking inaccuracies. When troubleshooting a Parasitic Line-Tracker, in addition to visual inspection, one must first determine the type of line tracking being applied (i.e., job space tracking, conveyor sync control or incremental conveyor tracking). One must then determine the actual job position relative to the reference signal or position. In other words:

Verify if the job is ahead or behind the reference position ...

- If the job is ***ahead*** of the reference position you are losing pulses. Thus, you should be looking for slippage of some form; i.e., conveyor chain slop, loose or broken EDON drive-train components (i.e., bad universal joints, worn clutches on linear units, loose or missing setscrews or keys).
- If the job is ***behind***, you are gaining pulses. Thus, you should be looking for some action which is adding pulses; i.e., conveyor pulsation, EDON dog chains stretched or worn, dogs snapping ahead on conveyor chain engagement due to misalignment or similar erratic motion of the drive train, non-quadrature counting if incremental encoder is used.
- Before proceeding verify that conveyor/encoder scale factors have been determined properly and that all automation is calibrated accordingly. Further, determine if the out-of-sync problem is consistent, as this will help in the troubleshooting.

A. Troubleshooting – “Cat” Type Line-Trackers

1. Review the Line-Tracker installation verifying that all supports are in place, fasteners tight and in place and the Line-Tracker is properly leveled and aligned. Ideally, the Line-Tracker should be installed on the same side of the conveyor that the conveyor drive is on. This is especially important on systems where there is excessive build-up of foreign materials on the conveyor chain, such as paint, wax, etc. The reasoning is that the drive will extrude the foreign material build-up to the opposite side of the conveyor chain and if the Line-Tracker is installed on that side it will not be able to accurately register the dog chain to the conveyor link.
2. Check tension of EDON chain. If equipped with a spring tensioner make sure it is on the downstream side of the Line-Tracker. If a manual tensioner is on the Line-Tracker make sure that it is tensioned. When tensioned properly there should be approximately $\pm 1/4$ " of lateral chain play between pinion sprocket and idler sprocket. Check dogs on EDON chain; are the dogs in place and held tightly to the EDON chain?
3. On heavy-duty units equipped with manual tensioner make sure chain tension adjustment bolt is tight and the locknut tightened.

4. Make sure the dog chain support rub-rail is secure and that chain is straddling the rail and not dropping off the rub-rail.
5. Check that the idler arm and sprockets are firmly attached and that the sprockets rotate freely. Also, verify that the tension arm pivot bearing is free (light duty units) and does not have excessive slop.
6. On heavy-duty units check that the cam followers, which support the main plate, are ALL in place and firmly attached. ***This is critical since the cam followers locate the “cat-plate” and hold it in position.***
7. Check the tension springs which hold the “cat-plate” tight to the front side of the frame. They maintain dog chain engagement with the conveyor. If they are weak or missing the cat may disengage from the conveyor. Properly tensioned springs will hold 75-100 lbs. of pressure on the plate forcing it forward within the frame towards the conveyor.
8. Check the 8-tooth pinion sprocket for signs of wear and proper alignment. Are the setscrews tight? Is the shaft key in place?
9. On Linear Line-Trackers (A-11420) check condition of spline shaft and spline nut. Are they worn? Are there teeth missing? Check for excessive slop on drive shaft universal joints.
10. On A-11420 Line-Trackers are the drive shaft universal joint setscrews in place and tight? Are the setscrews contacting the two (2) ground flats on the shaft? Is the line shaft held firmly and the clutch miter gear located properly by the lock collars? Are the lock collars in place and tight?
11. Check that the conveyor chain is held firmly as it passes thru the EDON cat. The conveyor chain should not have excessive lateral play (1/4" or more would be excessive). Some systems require a back-up bar to support the backside of the conveyor chain as it passes thru the Line-Tracker.
12. Make sure the EDON cat is firmly attached and all bolts are tight; and, that it is level and square with the conveyor. The height should be adjusted so that the EDON dogs are positioned in the center of the height of the conveyor link opening.
13. Make sure that the conveyor chain is tight passing thru the EDON cat. When tracking queues are involved (i.e., paint finishing) check that the conveyor through the entire booth is also tight. If either section is sloppy, tracking will be seriously affected.
14. Verify EDON dog engagement over the entire length (every conveyor link) of the conveyor chain.
15. Has new chain been added to a section of the conveyor? If so, tracking will be off for that section if a single Incremental cat is used. If this is a problem you may want to consider using a Linear Line-Tracker, which compensates for conveyor stretch and wear, in lieu of an Incremental unit.

16. Make sure that the EDON dog chain does not touch the conveyor chain; only the dogs should contact the conveyor chain. There should be approximately 1/8" to 1/4" clearance between EDON chain and conveyor chain. Units manufactured after 2004 have gauge bars that set the spacing of the dog chain to the conveyor.

B. Troubleshooting Remote Encoder Drives

1. On remote encoder enclosures check all the drive line universal joints for wear and excessive rotational free-play. If universal joints are pinned to shafts, check roll-pins for wear. Make sure that all pins are in place and in good shape. If the roll-pins are steel versus stainless they may be corroded and broken. If universal joints are set-screwed only, make sure setscrews are in place and tight and also that they contact the shaft flats.
2. Check all drive line components for alignment and that all retainer pins and setscrews are tight.
3. Check Crown right angle (if included in your system). If an input/output shaft fails internally it may still operate, but slip intermittently.
4. On remote encoder enclosures, check the input shaft connection. Is it tight? Are shaft keys in place?
5. Check ALL gears/couplings internal to the enclosure. Are all setscrews tight, shaft keys in place, gear meshes correct?