



Causes of Cut Errors on Corrugated Rotary Cut Offs

1. Line Speed Variation

If line speed varies more than about 5 to 10 fpm, cut accuracy can fall out of tolerance. Some typical causes are double backer slippage and double backer drive train problems like loose drive belts or motor mis alignment. Pull rolls and slitters can cause line speed variations if their speed and torque settings are mismatched with the knife operation.

2. Pull Roll Problems

Pull roll speeds and torque settings should be within spec. as defined by the machine builder. Also if the pull roll has clutches they need to be set to spec. Excessively worn or out of parallel pull rolls can also cause length variations by causing erratic pulling of material.

3. Slitter Speeds

Slitter speeds should be set to tolerance specified by their manufacturer.

4. Board Wheel Problems

The board wheel surface must be clean. Surfaces by design have some kind of non-smooth surface so the wheel can track more accurately. These surfaces must not be worn smooth or covered with a coating that leads to a smooth service. Wheels have various means to obtain down pressure. Unico wheels use down air pressure, and typically require 10 to 15 lbs. for accurate tracking. Other designs use weight and have mechanical adjustments to control downward movement. It is important that essential down pressure is maintained. Worn bearings can affect the ability to track the board which can lead to length variations.

5. Material Problems

In some cases the product material itself can impose challenges to cut accuracy. Coatings on board can cause measuring wheel slipping. Clay white has also caused such problems. The best option to control this is to keep the surface clean and ensure adequate wheel down pressure is provided.

6. Encoder Problems on the Unico Control System

Both the motor encoder and board wheel encoder need to be operating correctly for accurate cutting in normal running. In addition, the pull roll mounted encoder must be working properly for tailout operation and accuracy.

On Unico 2400 Embedded RCO drives, encoder fault detection that is very sensitive is available. Make sure the MARKER FAULTS are enabled on the MOTOR, FOLLOW, and LOAD sockets. These settings can be found by going to the SET UP / FAULT / MASK section of the drive. The MARKER FAULT is the most sensitive fault detection to determine if an encoder is not working at 100 % capacity.

Fault detection on early Unico 2400 drives and the DC analog drives that preceded them have less sensitive fault detection. If an encoder is suspect it should be changed to rule it out.

7. Drive Tuning Less than Optimum

Tuning on Unico 2400 drives is all digital and does not degrade. Original settings that worked on start up should work at any later date. Verify that drive tuning and other set ups have not been changed from original settings. Use an archive on record to verify the settings.

8. Knife Reference Set Up

The Unico drive system uses some kind of reference signal along with a REFERENCE POSITION set up to tell the drive controller where the knife blades are. The reference signal can be from an infrared switch, a prox switch, or a pulse generator marker pulse. If this is not set correctly, length variations can occur. Other symptoms of this are knife buckling and jamming – sometimes only when running certain speeds and lengths. The reference set up varies with different knives and different vintages of Unico controls. If the reference set up is suspected, contact Unico with your Unico SO number for details on how to check and adjust the reference for your particular system.