



Causes and Symptoms of Cut Errors on Sheeters

1. Brake Pressure Problems on Roll Stands

Roll stand pressure must be stable and within the machine manufacturer recommended ranges to prevent excessive speed fluctuations and slippage at the draw roll.

2. Out of Round Roll

Rolls that are too severely out of round can lead to a pushing and pulling at the draw roll which can produce excessive speed variation and slippage.

3. Slitter Speeds

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

4. Draw Roll Pressure

Draw roll pressure must be within tolerance. Too little pressure can lead to slipping. Too much pressure can cause the draw roll speeds to be unstable. Also, excess pressure can compress the material which can create symptoms of a draw roll calibration problem.

5. Encoder Problems on the Unico Control System

Both the draw roll encoder and knife encoder need to be operating correctly for accurate cutting. In addition, some sheeters have two encoders on the draw roll and the knife for added performance. In those situations all encoders must also be functioning correctly.

On Unico 2400 Embedded drives, encoder fault detection is very sensitive. Make sure the MARKER FAULTS are enabled on all encoders used. This is the most sensitive fault detection to determine if an encoder is not working at 100 % capacity. On Unico 2400 drives there are 3 encoder sockets. There is the MOTOR socket, which is the on board socket on the DSP board. In addition there is a LOAD and FOLLOW socket, each of which requires a piggy back module on the DSP board. The LOAD socket is mounted to the right, and the FOLLOW to the left, if they are used. Depending on the drive configuration, you are using one or more of those sockets on each drive. For all encoders used on both the draw roll and knife, verify that the appropriate MARKER faults are enabled. Set up for this can be found at SET UP / FAULT / MASK on the drive display. 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.

6. 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 to verify the settings.

7. Knife Reference Set Up

A Unico Sheeter may be a “Cyclic” sheeter or “Constant Velocity.” A cyclic sheeter is typically a double fly cutter, and synchronizes the knife to line speed during the cut but over or under speeds outside the cut zone to cut the correct length. A constant velocity sheeter is commonly a flat bed sheeter where the knife runs at a constant speed. The cyclic sheeter uses a reference signal to know when the blades are in the cut zone. The signal may be something like an infrared switch or a marker fault on a knife cylinder mounted encoder. This works along with a software parameter called REFERENCE POSITON to tell the knife where the blades are. 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.

Constant velocity sheeter typically do not have reference inputs. Whether they do or not, set up is generally not a cause of length variation problems.