

During any operation the temperature of components and status of the safety devices is constantly monitored.

Startup protocol

1. Test all sensors to ensure they are functioning properly
 - a. Temperature sensors
 - b. Encoders
 - c. Safety interlocks
 - d. IR sensors
 - e. Safety door interlocks
 - f. Load cells
 - g. Velocity sensors
 - h. Lock sensors
2. Verify component temperatures are within specification
3. Verify all safety door interlocks are secured

Normal operation during acceleration and deceleration phase

1. Guide rollers receive a constant acceleration profile
2. Take-up spool receives a constant acceleration profile
3. Guide pulley encoders reads and measure velocity mismatch
 - a. Velocity adjustments are made according to the mismatch
4. Wire tension is monitored
5. Dancer pulley position is monitored
 - a. Take-up and supply spool speeds adjust according to dancer pulley position
6. Work piece movement fixture speed is monitored constantly

Normal operation during continuous velocity phase

1. Guide roller motors receive a constant velocity signal
2. Take-up and supply spools receive a constant velocity signal based on the spool speed and diameter
3. All Encoders read and measure velocity mismatch
 - a. Velocity adjustments are made according to the mismatch
4. Wire tension is monitored
5. Dancer pulley position is monitored
 - a. Take-up and supply spool speeds adjust according to dancer pulley position
6. Work piece movement fixture speed is monitored constantly

