# SAFETY INSPECTION CHECK LIST
## Quick Lock Closure

**Note: Periodic maintenance and inspections performed by qualified technicians are necessary to secure reliable and safe operation of any equipment. Since plant processes vary widely as well as machine usage, amount and types of chemicals used, etc. these maintenance suggestions must be applied by each customer to suit his particular operating conditions.**

All checks except number 1 should be made on a monthly basis or more often as conditions indicate. Item number 1 need only be made at initial installation and at any time the lid is suspected of being out of position as evidenced by movement of lid while locking band is being closed, by an out of balance lid, or by a change in closing force.

**Note:**

**Kiers may be equipped with manually or hydraulically operated locking band closures. These instructions note the specific steps to follow if there is any difference in the inspection procedure between manually or hydraulically operated locking band closures.**

**⚠ WARNING ⚠**

Observe all OSHA and plant regulations for Confined Space Entry and Lockout/Tagout procedures.

### 1. LID POSITION

- Observe the position of the closed lid with the locking band open. Then close the locking band and observe the action of the lid during the process of closing and opening the locking band. When the lid is properly positioned, the outside face of the kier and lid flanges will be flush with each other and the gap between them should be uniform in width throughout the circumference.
- If closing the locking band causes lateral movement of the lid (Slight movement is normal as the band rounds the extrusion.), this is an indication that the lid is improperly positioned and hinges or lid mount need to be adjusted to center lid with kier. Gasket must be in place and settled in.

### 2. LID MOUNT

- Inspect lid mount to see that all mounting bolts are present and are tight. A loose lid mount can allow the lid to shift out of position and result in malfunction of the closure.

### 3. LOCKING BAND

**⚠ CAUTION ⚠**

**Failure to keep band and extrusions lubricated will result in premature wear on toggle assembly.**

- **Lubricate band with molybdenum disulfide grease.**
- Inspect closed and locked lid for fit of locking band to shell and lid flanges. Edge of flanges of locking band should fit within 1/16 inch or closer to flange hub on both kier shell and lid around entire circumference.
- Inspect locking band and retainer brackets with locking band open. Outside of band should be in contact with or very close to all retainer brackets. Inside edge of locking band should be the same distance from the edge of the kier and lid flanges around the entire circumference. Inspect all welds on locking band.
- Inspect mating faces of flanges and locking bands. Faces should be free of nicks, dents, and gall marks. Any such marks should be removed with a file and fine oil stone to prevent future, more serious trouble.

### 4. TOGGLE LOCKING MECHANISM

- Inspect toggle assembly for strained, bent, or deformed members, and for missing or damaged parts such as cotter pins, etc.
- Check bushings and pins for excessive wear.
- Bushings should be replaced at any time the safety pin will not freely extend and retract within the locking members or anytime excessive wear or loose motion is noted between bushing and pins. (See Quick Lock Closure schematic.)

### 5. SAFETY LOCK PIN

- Inspect safety lock pin to assure that pin goes fully and freely “home” through all members that it is designed to go through, and that it does not “hang up” on withdrawing.

## 6. LOCKING PIN CYLINDER

- Check to be certain that cylinder is firmly fastened to its mounting bracket.
- Check to be certain that hose connections are secure.
- Check cylinder for air leakage. (With air applied to one end of cylinder, remove air line from opposite end. No air should blow by.)
- To prevent nut rotation and cylinder removal, use square nut on cylinder.

## 7A. LIMIT SWITCH (Manually Operated Locking Band)

- Check set point of limit switch. Switch should make only when safety lock pin is within 1/16 inch to 3/32 inch of fully home position.

## 7B. PROXIMITY SWITCHES (Hydraulic Operated Band)

- Hydraulicaly operated closures have bracket mounted proximity switches, one to indicate fully retracted safety pin position, the other to indicate fully home safety pin position. Verify that switches are sensing and indicating proper position of safety pin.

## 8. KIER PRESSURE SWITCH

- Check switch for operation.
- With machine empty, lid open, and with toggle pin pulled, a simple check for the correct functioning of the electrical and pneumatic components can be made by inserting a piece of 1/4 inch rubber or plastic tubing into the pressure port inside the kier and blowing lightly through it with your mouth. This should cause the locking pin to rise to the locked position and retract when pressure is removed. Use this check only to confirm that the pressure switch and associated circuitry is operative. A pressure switch or any other component which fails to operate consistently under this test should be replaced immediately. This test must not be used to adjust the pressure setting on the pressure switch.
- Switch should be set at 4" water column. Switch should be set at 8" water column on Futura 3000 machines. Both settings should be on decreasing pressure.

## 9. SAFETY TEST VALVE

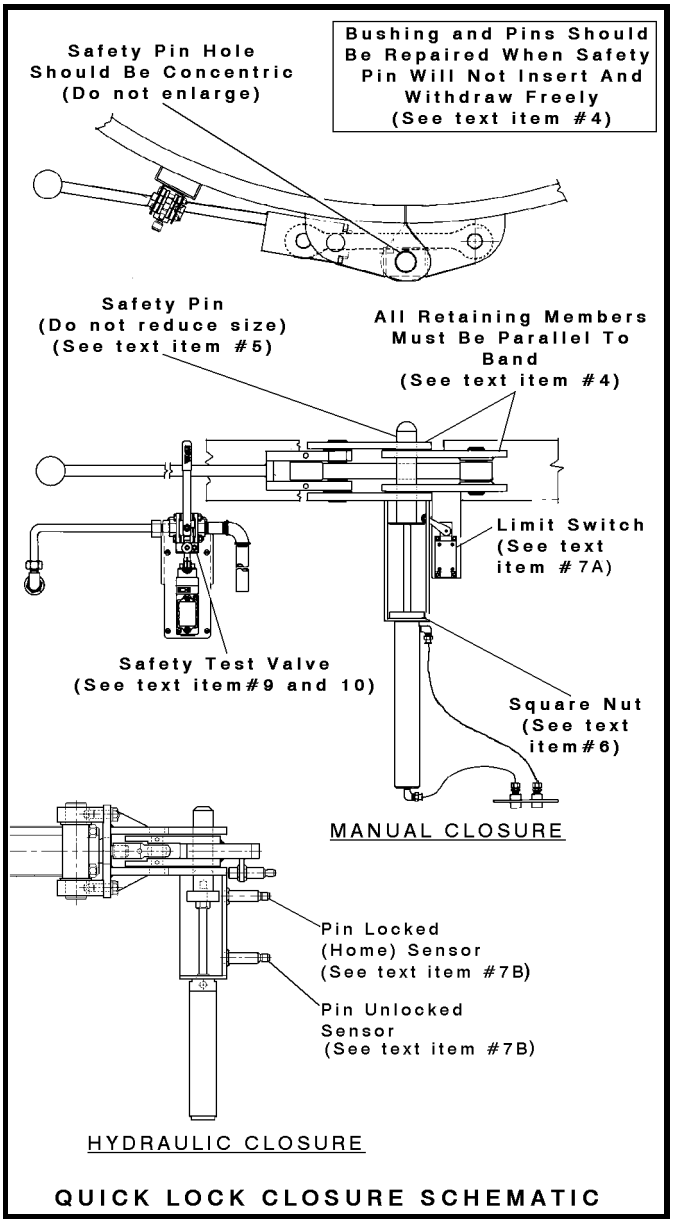
- Check that manual test valve operates correctly and its opening is not blocked by yarn or foreign matter. Also ensure that test valve discharge opening is not hidden from the operator's view. Operator must be able to see and or feel any discharge when valve is opened.

## 10. SAFETY TEST VALVE WITH LIMIT SWITCH

- Check that valve operates properly and does not contact limit switch until valve is fully open.
- Check that time delay is set for 15 seconds.
- Check for wiring integrity.
- **Hydraulic operated closures do not have a limit switch.**

## 11. WARNING SIGNS

- Inspect and replace any that are damaged or illegible.




QUICK LOCK CLOSURE SCHEMATIC