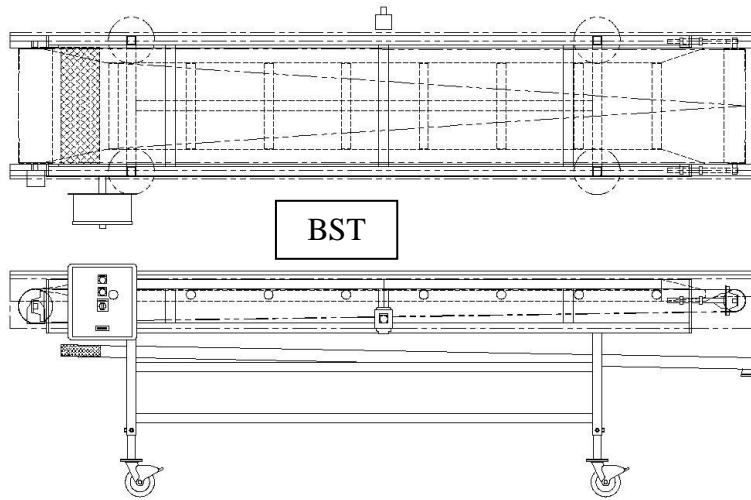


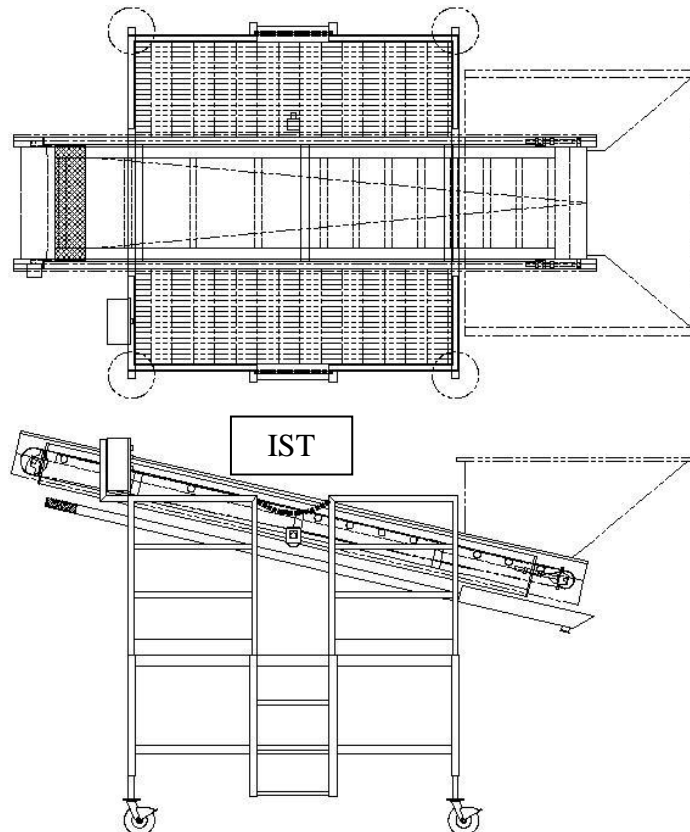


# ***P&L SPECIALTIES***

*MANUFACTURING THE FINEST STAINLESS STEEL EQUIPMENT*



## **BERRY SORTING TABLE (BST) AND INCLINED SORTING TABLE (IST) OPERATION MANUAL**



**SERIAL NO.** \_\_\_\_\_ **DATE OF MANUFACTURE** \_\_\_\_\_

## **EQUIPMENT DESCRIPTION**

### **BERRY SORTING TABLE (BST)**

The Berry Sorting Table is a horizontal belted sorting device. It is designed for post destemmer hand sorting for the removal of unwanted stem jacks, sheared stems, rejected berries or MOG (Material Other than Grape) from the destemmed fruit.

This device can be integrated into the sorting system underneath or downstream from the destemmer to deliver fruit to a bin, fermenter, pump or small press.

The berry sorting table features include: all stainless steel construction for ease of cleaning, a programmable VFD (Variable Frequency Drive) for a complete range of speed control, food-grade internally-driven pulley, raised side walls to contain valuable liquid and an integrated juice pan for liquid collection.



### **INCLINE SORTING TABLE (IST)**

The Incline Sorting Table is a belted sorting device. It is designed for pre-destemmer hand sorting to remove unwanted clusters, vineyard material or MOG (Material Other than Grape) from the picked fruit.

This device can be integrated into the sorting system upstream from the destemmer or deliver fruit to a bin, fermenter, pump or a small press.

The Incline Sorting Table features include: all stainless steel construction for ease of cleaning, a programmable VFD (Variable Frequency Drive) for a complete range of speed control, food-grade internally-driven pulley, raised side walls to contain valuable product and an integrated juice pan for liquid collection.



## **INSTALLATION, START UP AND OPERATION**

### **! WARNING**

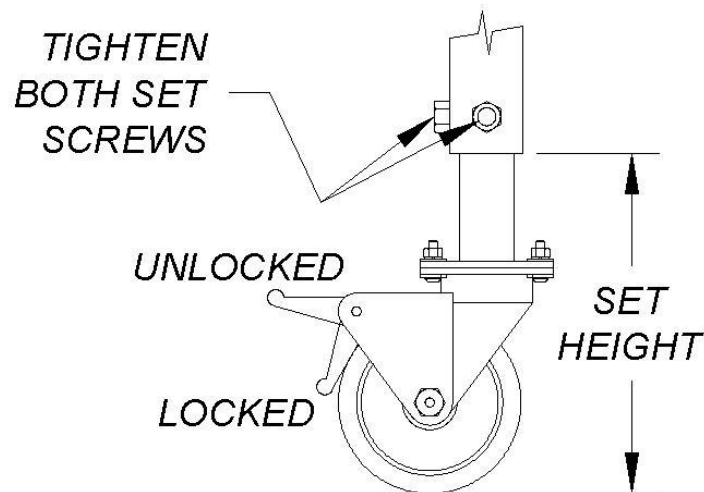
Prior to start up, disconnect the power to the unit and inspect the inside of the control panel for accumulated water or moisture. Ensure that the desiccant packs are dry and that all components are free from electrical short circuit. NEVER open the panel with the unit connected to power. Lock Out Tag Out procedures MUST be followed to properly lock out power before control panel is opened.

1. Visually inspect the unit for any signs of damage, cracks, fatigue or loose components. Any damaged components should be repaired or replaced immediately. See P&L Specialties' contact information on the last page of this manual.
2. Visually inspect the internal area of the unit for any foreign objects that may have accumulated on the belt surface during shipping. To do so, remove the side access panels by lifting up and pulling out. After inspection, replace side covers.

### **! WARNING**

Never operate unit unless ALL side covers and guards are in place and ALL wheels are in the locked position.

3. Position and level the unit to ensure safe and stable operation. Make certain that the caster wheels are all facing the same direction and that the brake mechanisms are all in the locked position.



4. Wet the top surface of the belt with water to lubricate the belt wipers.

### **! WARNING**

Prior to start up, disconnect the power to the unit. Lock Out Tag Out procedures MUST be followed to properly lock out power before control panel is opened. Inspect the inside of the control panel for accumulated water or moisture. Ensure that the desiccant packs are dry and that all components are free from electrical short circuit. NEVER open the panel with the unit connected to power.

5. Connect the unit to the appropriate power source (voltage/phase).
6. Position the speed control on a low setting of 1 or 2.
7. Ensure that the Emergency Stop Button is pulled out.
8. Press the START button and then slowly increase the belt speed while observing that the belt is tracking true to the center of the unit (not walking up one side wall or the other).
9. If necessary, adjust the belt tracking (see Belt Adjustment and Tracking Section).
10. Allow unit to run freely for 1-5 minutes before loading any product.

### **! WARNING**

Never operate unit unless ALL side covers and guards are in place and ALL wheels are in the locked position.

**⚠ WARNING**

Always ensure that ALL personnel are free and clear of the equipment prior to and during operation. Always power down and let the unit come to full and complete stop then disconnect the power prior to performing and service or maintenance to the unit. Lock Out Tag Out procedures MUST be followed to properly lock out power before maintenance is performed or side covers/guards are removed.

**⚠ WARNING**

Long hair and loose clothing present a danger of entanglement with the machine. Ensure no clothing or hair is in close proximity with moving parts on the conveyor.

Adjust the speed control as needed to increase or decrease the flow of berries.

Once the MOG basket fills, carefully slide it out to one side and discard the contents and then reposition the basket at the discharge end of the unit.

**IN THE EVENT OF MALFUNCTION**

If the machine malfunctions in any way (clogging, entanglement, belt misalignment, etc.), immediately stop the machine either by turning it off at the control station or by depressing the emergency stop button at either side of the machine. **Before removing any guards, the machine must be properly locked out of power as described in the Lockout/Tagout procedure.**

**EMERGENCY STOP OPERATION**

If an emergency or malfunction occurs, depress an emergency stop button. These stops are large, red and say “Emergency” on them. They are located at the center of both sides of the machine. Upon pressing the emergency stop button, the machine will power down. After the situation is resolved, the emergency stop button must be reset. **If maintenance is required or the guards are removed, the machine must first be properly locked/tagged out.**

## **LOCK OUT TAG OUT REQUIRED**

Always comply with all ASME, NFPA and OSHA guidelines for the proper **Lock Out Tag Out** procedures. This piece of equipment must be **Locked Out and Tagged Out** before and during any cleaning and/or removal of the guards (side covers) without exception.

This equipment is equipped with a flexible power cord and will have had your specific plug installed on the end of the power cord. This is the plug that must be removed from the power receptacle as part of the **Lock Out Tag Out** procedure. As said above follow all applicable **Lock Out Tag Out** procedures and ensure only trained personnel perform this task. It is the owner/operators responsibility to ensure all operators are trained properly in **Lock Out Tag Out** and that only trained personnel operate this machinery and perform the **Lock Out Tag Out** procedure.

## **SERVICE AND MAINTENANCE**

### **! WARNING**

Always ensure that ALL personnel are free and clear of the equipment prior to and during operation. Always power down and let the unit come to full and complete stop then disconnect the power prior to performing and service or maintenance to the unit. Lock Out Tag Out procedures **MUST** be followed to properly lock out power before maintenance is performed or side covers/guards are removed.

## **CLEANING**

The cleaning procedure is as follows:

- 1) Disconnect and lock out power to unit.
- 2) Ensure all wheels are locked.
- 3) Remove side access covers.
- 4) Wash unit as necessary (water, ozonated water, and  
detergents are acceptable cleaning agents).
- 5) While cleaning, do not spray electrical or control boxes.
- 6) Allow sorting table to dry thoroughly, inspect unit to ensure electrical and control boxes are dry.
- 7) Once dry, replace side covers.
- 8) Follow startup procedure as outlined above.



### **! WARNING**

Never power wash the control panel or emergency stop button station.

## MAINTENANCE

### DAILY:

Visually inspect the unit for any signs of damage, cracks, fatigue or loose components. Any damaged components should be repaired or replaced immediately. See P&L Specialties' contact information on the last page of this manual.

Remove any accumulated or loose material from the unit.

### WEEKLY:

Clean the belt surfaces as well as all of the rollers and pulleys (See cleaning instructions above). Inspect the belt for any damage or loose lacings. Check the tension of the belt (see the Belt Adjustment and Tracking section below). The Motorized Drive Pulley and Tail Pulley are sealed units and require no service or maintenance.

### MONTHLY/SEASONAL:

Monthly and at the end of the season it is recommended that the belt tension be released. Also the unit should be covered with a UV-protection drop cloth in order to prolong the life of the belt. **Coverage in outdoor and/or humid climates may cause condensation to accumulate. After storage inspect unit for condensation build up and ensure unit is thoroughly dry.**

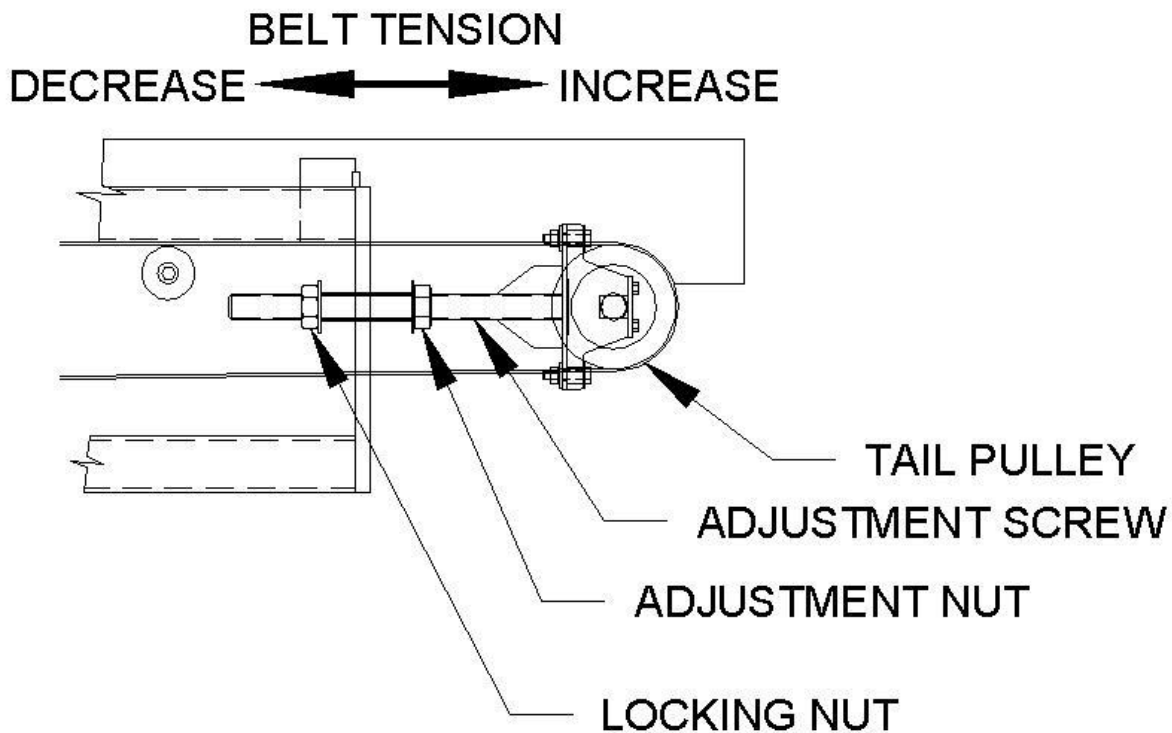


## BELT ADJUSTMENT AND TRACKING

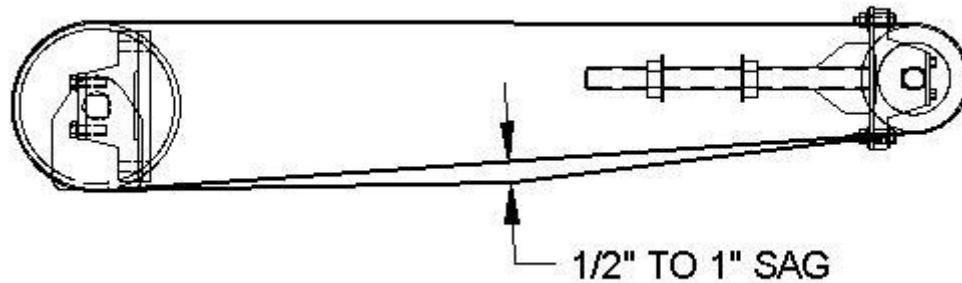
### **WARNING**

Always ensure that ALL personnel are free and clear of the equipment prior to and during operation. Always power down and let the unit come to full and complete stop then disconnect the power prior to performing and service or maintenance to the unit. Lock Out Tag Out procedures MUST be followed to properly lock out power before maintenance is performed or side covers/guards are removed.

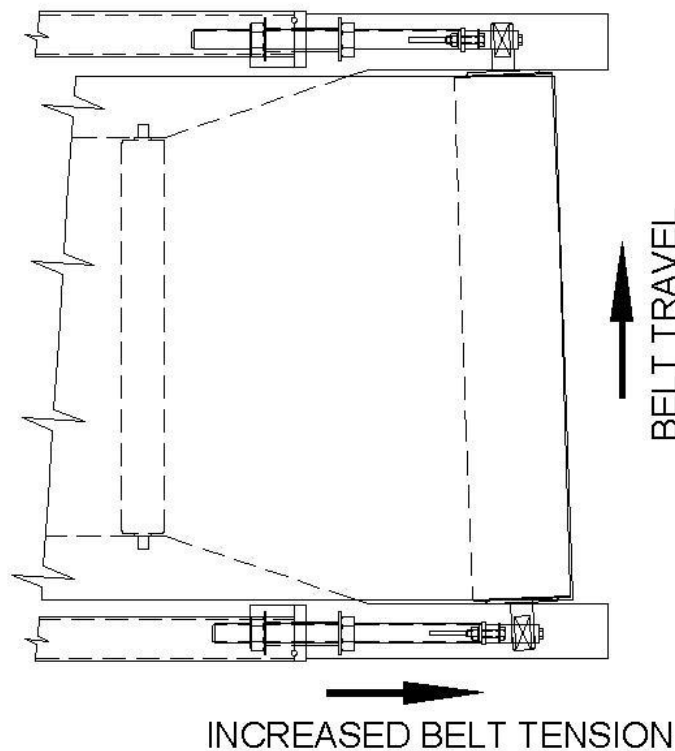
1. The belt adjustment and take-up is accomplished through the use of two (2) adjustment screws at the rear of the unit attached to the tail pulley. Belt adjustment should be made by moving the tail pulley shaft to the rear increasing the belt tension and take-up.



2. With the power locked out and side covers removed, adjust the belt tension first by tightening the adjuster screws equally until the lower portion of the belt has between  $\frac{1}{2}$ " and 1" of sag. At no time is belt sag to be such that the belt comes in contact with any fixed metal surface.



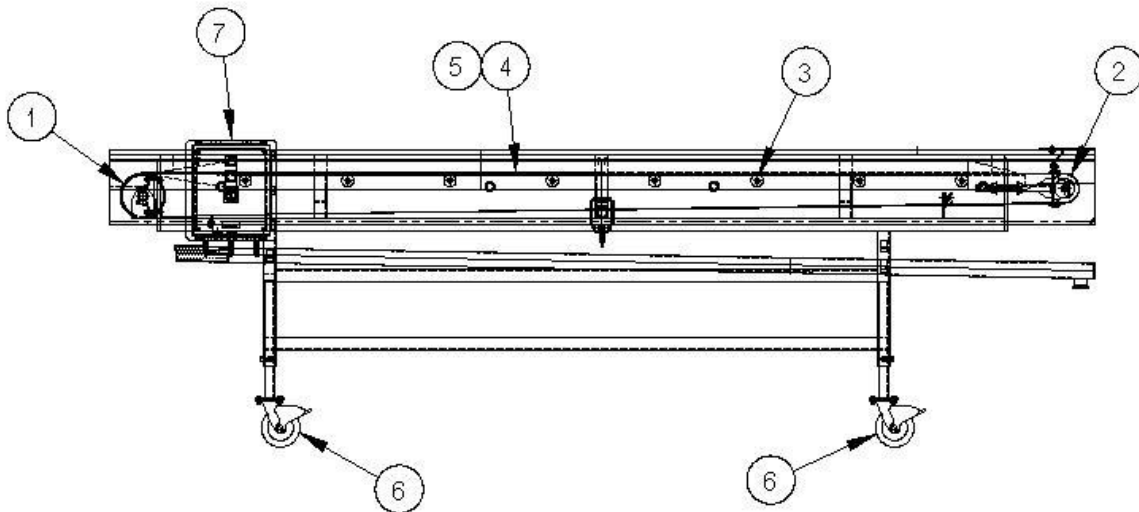
3. Once the proper tension has been achieved, **install the side covers and guards** and connect the unit to the appropriate power source. Turn unit on slowly and observe the tracking. Never adjust the Incline Sorting Table or Berry Sorting Table with the side covers and/or guards removed and/or the unit running. Lock Out Tag Out procedures must be followed when removing the guards to adjust.
4. The belt tracking adjustments should be made by pulling one side of the pulley shaft towards the front of the conveyor, leaving the other side as is. The belt will move away from the side being pulled. The more that one side of the pulley shaft adjustment is increased over the other side, the more the belt will move away from the longer side.

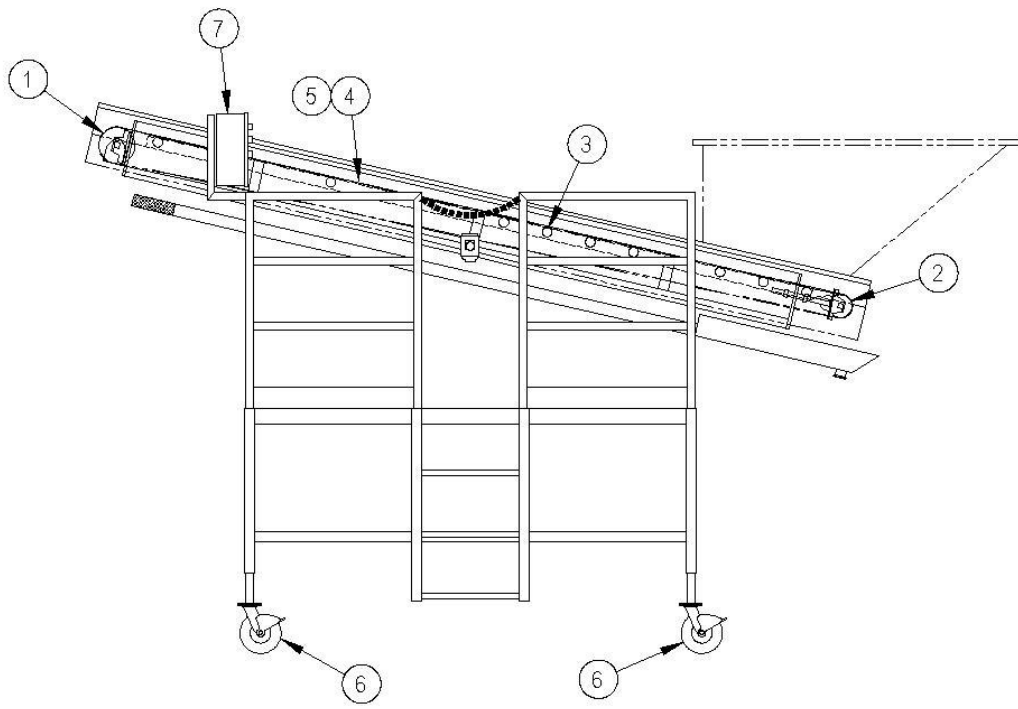


5. Adjustments should be made in  $\frac{1}{4}$  turn increments at a time. Never over tension the belt. Over tensioning will drastically reduce the life of both bearings and belting.
6. Once all adjustments have been achieved, tighten all of the locking nuts. Replace all side covers.

**⚠ WARNING**

Never operate unit unless ALL side covers and guards are in place and ALL wheels are in the locked position. Lock Out Tag Out procedures MUST be followed to properly lock out power before maintenance is performed or side covers/guards are removed.





## **SPARE PARTS LIST (BST AND IST MODELS)**

### ITEM 1

Drive Pulley - 73 FPM – dual voltage – 6.5” diameter - 23.62" face - 3 Phase 60 Hz – ¼” White Nitrile Lagging – FDA mild steel drum – Stainless Steel shaft

### ITEM 2

Idler Pulley – 4.39” diameter – 23.32” face – Stainless Steel construction - #TM113

### ITEM 3

Roller - 1.9” diameter – white high impact resistant PVC – 17-13/16” inside frame – 7/16” Stainless Steel shaft

### ITEM 4

Belt – smooth surface – 2 ply – 23-3/8" wide x 26'-6" long

### ITEM 5

Belt lacing with pin – 23-3/8” wide

### ITEM 6

Swivel Caster with brake – 6” diameter x 2” wide tread - T304 SST construction with Delrin® Bushing - Polyurethane flat tread 2 Series Tech-Lock brake

### ITEM 7

VFD Control Panel with Emergency Stop Button and 15'-0" cable  
NEMA 4X



# ***P&L SPECIALTIES***

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## **Sources Cited in BST and IST Equipment Operation Manual**

- 1) OSHA 3170-02R: Safeguarding Equipment and Protecting Employees from Amputations, p. 28-30
  - References ASME B20.1 and CEMA in safeguarding practices around conveyor equipment.
- 2) CEMA Brochure No. 201-2006, Oct. 2013 – Safety Label Guidelines
  - This publication outlines CEMA-approved safety stickers, their meanings and suggested locations.
- 3) CEMA Bulk Handling Conveyor Operation Safety Video
  - Safety video outlines label meanings and dangers associated with conveyor equipment. This video should be provided with or referenced by each new conveyor unit. It is a good operator safety training reference.
- 4) California Building Codes (CBC) Title 24
  - In the Elevator and Conveyor Chapter Sec. 3000 p.417 sums up the standard to follow as ASME B20.1.
- 5) ASME/ANSI B20.1-2012, Safety Standard for Conveyors and Related Equipment.
  - This is the building standard for conveyors
- 6) ANSI Z244.1 – American National Safety Standards for Lockout/Tagout of Energy Sources – Minimum Requirements
- 7) Title 29, Code of Federal Regulations (29 C.F.R) Part 1910.147, The Control of Hazardous Energy (Lockout/Tagout).
- 8) Title 29 C.F.R. Part 1910.147 Subpart O – Machinery and Machine Guarding
- 9) Title 29 C.F.R. Part 1926.555 – Safety and Health Regulations for Construction: Conveyors
- 10) NFPA 79 2015 – Electrical Standard for Industrial Machinery