TomBeard COMPANY

The Innovative Barrel Processing Source Since 1983

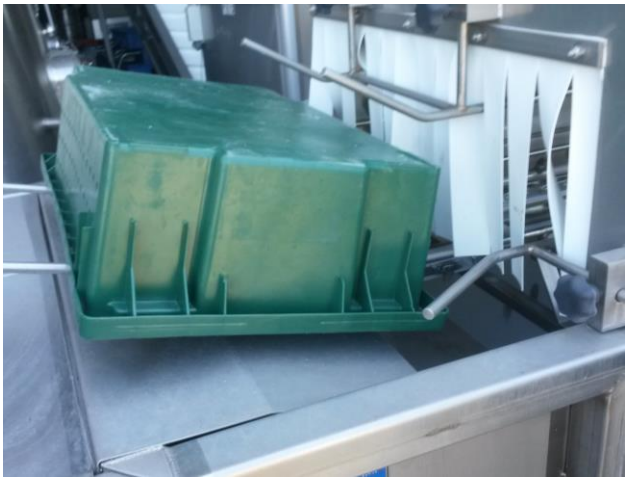
HARVEST LUG WASHER OPERATION MANUAL

SERIAL NO._____ DATE OF MANUFACTURE_____

EQUIPMENT DESCRIPTION

The Harvest Lug Washer is a multi-stage conveyor washing system for 35-lb grape and/or berry lugs (FYBs). It is designed for convenient, water-efficient and thorough cleaning of FYBs.

Its features include: all stainless-steel construction for durability and ease of cleaning, a programmable VFD (Variable Frequency Drive) for a complete range of speed control, fully enclosed wash booth, optional heated rinse-water, and e-stop switches for convenience and safety.



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 or inside the washer and/or tanks during storage or shipping. Remove any foreign objects before energizing machine.

⚠WARNING

Never operate unit unless ALL side guards are in place and unit is in a stable, level position.

3. Position and level the unit to ensure safe and stable operation.

4. Fill the wash and rinse tanks with clean tap or well water using the valve located in the rear of the machine. Water will spill through the overflow ports when full. Full tanks should provide enough water for an 8-hour shift of continual washing and rinsing.

5. Connect the unit to the appropriate power source (voltage/phase).

6. Ensure that the Emergency Stop Buttons are pulled out and main power dial on the control panel is turned to ON.

7. If heated rinse water is desired, flip the HEATER switch to ON. Typical rinse water temp is 180°F.

8. Dial the CONVEYOR SPEED to 0.

9. Press the SYSTEM START button to start machine.

10. Slowly increase conveyor speed to desired level.

Operation Controls

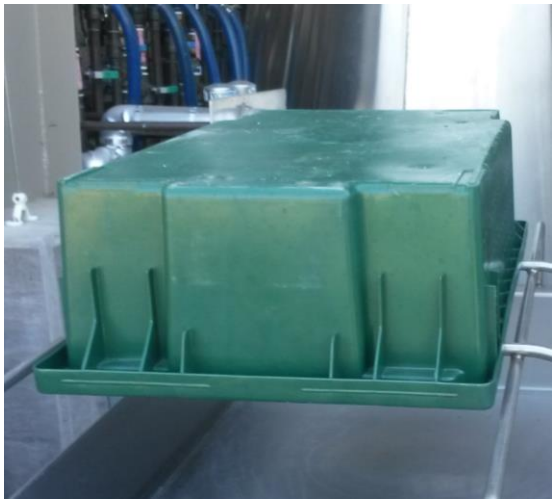
Sensor/Warning Lights

11. Allow unit to run freely for 1-5 minutes before loading any FYBs. Check that machine is running properly.

12. If starting after seasonal storage, run for 1 hour with clean water to flush tubes, drain tanks completely and refill with clean water.

⚠WARNING

Do not add detergent or chemicals containing surfactant to wash or rinse tanks.



13. Load FYBs upside-down ensuring that the metal tabs on the conveyor belt engage and push the FYBs.

14. In the event of a jam or clog, shut the machine down before opening wash booth doors to clear the jam/clog.

15. Allow the FYBs to go through the wash cycle. Pick or stack the FYB the end of the cycle.

⚠WARNING

Never open washing booth while water is spraying. Spray water is heated and under pressure. Always shut washer down before opening doors.

16. Do not adjust the variable-frequency drive (VFD). If VFD adjustments are necessary, or in the event of a malfunction, contact Tom Beard Company for maintenance.

SHUT DOWN AND STORAGE

1. To stop machine, press the SYSTEM OFF button and then press the E-stop button on the control panel or on the exit end of the wash booth.

2. If stopping for a shift change or prolonged period, turn the CONVEYOR SPEED dial to the slowest setting and turn the main power switch on the control panel to OFF.

3. Disconnect machine from power by following the accepted lockout/tagout procedure.

4. Remove sediment screen doors from front of wash booth and empty/spray sediment off both screens.

5. If shutting down for a prolonged period (more than 24 hours), drain tanks by opening valves on ports at bottom of each tank. Water may be hot. Allow sufficient cooling time before opening valves.

6. To further clear sediment from bottom of tanks, ports may be opened to allow scooping of sediment.

WARNING

Water exiting the drain valves may be hot. Allow sufficient cooling time before water drainage.

7. If storing machine, close ports and cover openings of wash booth to repel moisture, dust and foreign objects from entering.

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.

IN THE EVENT OF MALFUNCTION

If the machine malfunctions in any way (clogging, entanglement, 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.

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 leveling feet are stable and locked.
3) Wash unit as necessary (water, ozonated water or slightly corrosive detergents are acceptable cleaning agents).
4) While cleaning, do not spray electrical or control boxes.
5) After washing, allow all components to dry thoroughly, inspect unit to ensure electrical and control boxes are dry.

⚠WARNING

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

MAINTENANCE

DAILY:

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. If rinse water is heated, allow time for water to cool to below 100°F. Drain wash and rinse tanks.

WARNING

Allow rinse water tanks to cool before opening any valves or ports. Rinse tank water is hot and can scold the operator.

3. Remove any accumulated or loose material from the unit.

WEEKLY:

1. Wash the inside of the hopper.

2. Lubricate where applicable.

MONTHLY/SEASONAL:

1) Ensure water is not present in tanks, valves or tubing.

2) Inspect nozzles for mineral and/or debris buildup. If clogged, clear blockage or replace nozzle(s).

3) Lubricate zerk fittings on bearings in the rollers at each end of the conveyor belts.

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.

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Sources Cited in Lug washer 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 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
4) California Building Codes (CBC) Title 24
    - In Chapter Sec. 3000 p.417
5) ASME/ANSI B20.1-2012, Safety Standard for Conveyors and Related Equipment.
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