

Mechanic Crushed by Bin Destacker

Industry: Postharvest Crop Activities

Task: Replacing a bin destacker cylinder

Occupation: Mechanic

Type of Incident: Crushed by machinery





FATALITY NARRATIVE

In December 2014, a 34-year-old mechanic doing maintenance on a bin destacker at a fruit packing plant died when part of the machinery came down, crushing him. He had worked for his employer, a grower and packer of tree fruits, for nearly a year.

On the day of the incident, he was working alone changing a hydraulic cylinder on a fully automated bin destacker. The hydraulic cylinder raised and lowered the machine's forklift assembly. It was located on the right side of the forklift assembly where the control panel was located.

He was not supposed to be changing this cylinder by himself. He had never changed this cylinder before; he had only observed another employee doing it. He turned the machine off before starting work, but there was residual energy in the hydraulic line to the forklift assembly.



FATALITY NARRATIVE

For an unknown reason, he raised the forks and climbed onto the rollers to access the pressure fitting on the hydraulic line to the forklift assembly. It was not necessary for him to be on the rollers under the forklift assembly. The fitting was located under the rollers and behind the cylinder he intended to replace. Both could be accessed from the outside of the destacker on its right side.

He did not use any method of restraining the forks. The employer required that a chain be wrapped around the assembly to anchor it to the destacker frame for work under the forklift assembly. As he kneeled on the rollers underneath the forklift assembly, he used a wrench to release a pressure fitting that then disconnected the hydraulic line. Without the hydraulic pressure, the forklift assembly, weighing between 600 and 700 pounds, came down and crushed his neck and shoulders.



FATALITY NARRATIVE

The coroner reported that the victim died of “traumatic asphyxia due to mechanical compression of torso.”

Investigators found that: there were no written procedures for mechanics at the plant on how to perform lockout/tagout for specific equipment; not all mechanics were provided with energy control procedures training; and the victim did not make sure that there was no stored energy on the forklift assembly when he loosened the fittings on the hydraulic hose.

FATALITY NARRATIVE



The mechanic was kneeling on the rollers underneath the destacker forklift assembly when he disconnected a hydraulic line that caused the assembly to fall and crush him.



The bin destacker in the fruit packing plant. The red arrow points to the forklift assembly that crushed the mechanic. The white arrow indicates the area behind the yellow guard gate where the mechanic should have accessed the hydraulic hose and cylinder.

FATALITY NARRATIVE

1.



2.



4.



3.



5.



When doing maintenance work under the bin destacker forks mechanics are supposed to:

1. First lockout and tagout the bin destacker.
2. Then secure with a chain the raised forklift assembly to the destacker frame, or
3. put a board on the rollers for the lowered forks to rest on (though in this case the forks needed to be raised for the mechanic to access the cylinder.)
4. Then open the yellow guard fence.
5. Open the fitting that is on the other side of the cylinder and underneath the rollers.

FATALITY NARRATIVE



Hydraulic hose fitting located under the rollers that the mechanic disconnected, which released the hydraulic pressure and caused the bin destacker forklift assembly to fall on him.

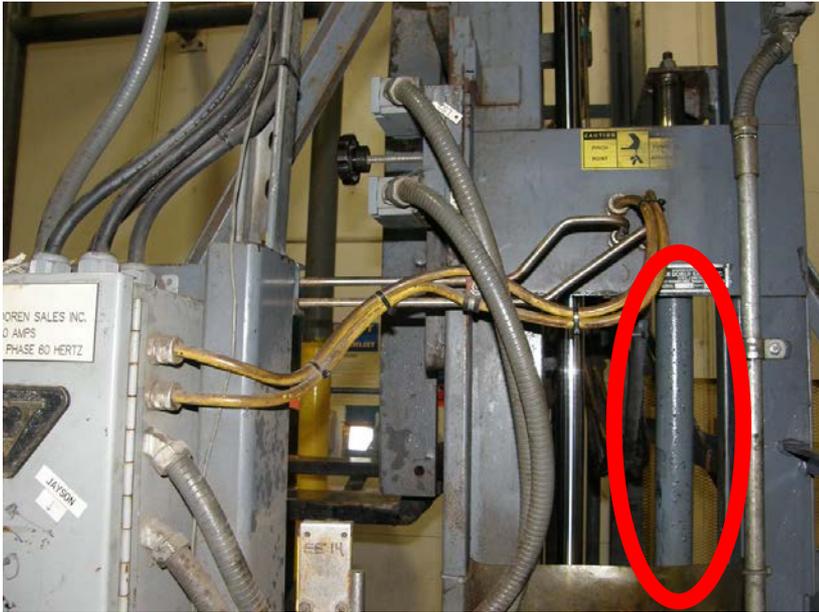


Photo 1

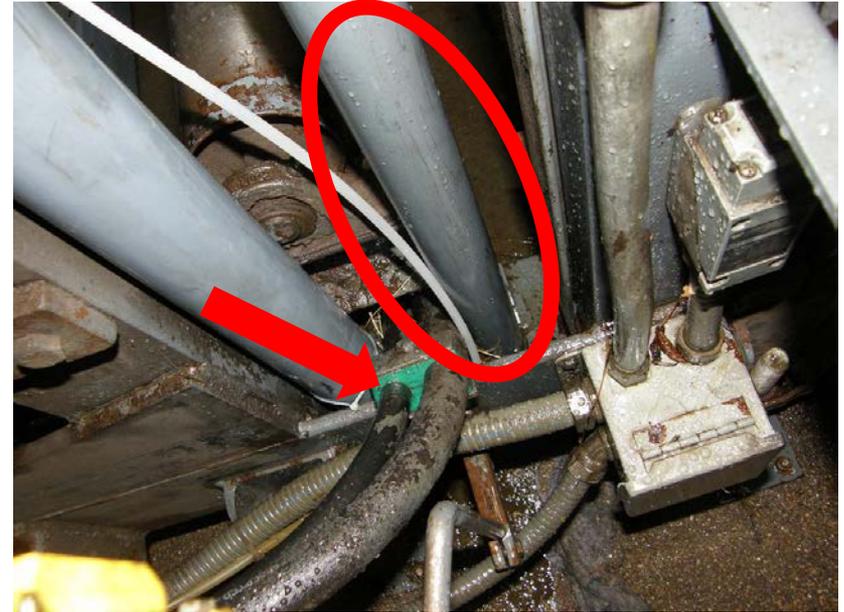


Photo 2

Photo 1. Bin destacker hydraulic cylinder (circled) which controlled the machine's forklift assembly that the mechanic was attempting to replace.

Photo 2. View from under the rollers looking toward the floor of the hydraulic cylinder (circled) and the hydraulic hose (arrow).



FATALITY NARRATIVE

Requirements

- Employers must establish an energy control program.
See [WAC 296-803-20005](#)
- Provide and document employee training on the energy control program.
See [WAC 296-803-60005](#)
- Protect employees from the hazards of stored and residual energy.
See [WAC 296-803-50025](#)



FATALITY NARRATIVE

Recommendations

- Conduct a job hazard analysis of machinery and equipment, processes, and tasks to identify potential hazards employees might be exposed to.
- Develop written standard operating procedures (SOPs) of machinery and equipment to ensure safety of employees. The SOP should include maintenance and repair work.



FATALITY NARRATIVE

Recommendations

- Develop and enforce written lockout and tagout procedures that are specific for each machine or piece of equipment.
- Ensure that employees perform appropriate lockout/tagout procedures to control hazardous energy before conducting maintenance on machinery.



FATALITY NARRATIVE

Resources

Lockout/Tagout, Control of Hazardous Energy.
Washington State Dept. of L&I.

www.lni.wa.gov/Safety/Topics/AtoZ/LOTO



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This bulletin was developed to alert employers and employees of a tragic loss of life of a worker in Washington State and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or conclusions regarding the cause of the fatality.

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