

Safety Alert of THE MONTH

PLEASE PASS THIS ON TO PEOPLE AND ORGANIZATIONS IN BC'S FOREST INDUSTRY

November 2015

Hydraulics Safety

A supervisor and maintenance mechanic were severely injured as a result of an incident that occurred while disassembling a large hydraulic cylinder.

In their attempt to remove the rod/gland assembly, they pressurized the cylinder with approximately 100 PSI compressed air with the objective of pushing the gland out. This attempt failed.

In addition to applying force with compressed air, they applied heat around the circumference of the cylinder tube with an acetylene torch. They thought that this would expand the cylinder tube, and possibly release the tube's grip on the gland assembly.

Within minutes of their applying heat to the tube, the gland assembly unexpectedly blew out with a deafening explosion that was heard throughout the complex.

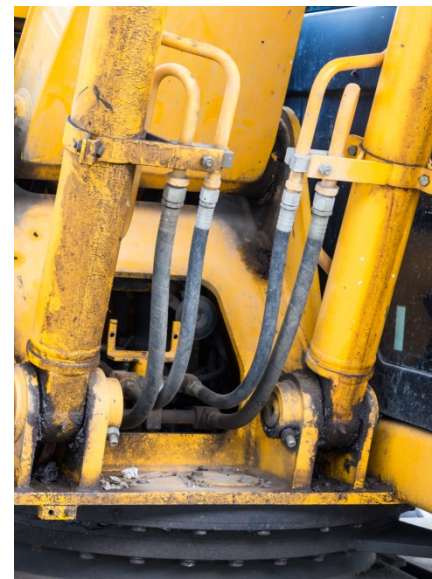
The air/oil mixture in the cylinder was ignited by the torch's open flame. Both men were knocked to the ground by the force and covered with hydraulic oil which ignited. The workers survived but suffered serious injuries and burns.

Removal of Stubborn Hydraulic Rods

- Do not use hydraulic pressure to remove stuck rods, the packing heads will let go suddenly if they are forced out under pressure. Take the cylinder to a service provider; they are equipped to do the repair safely.

Safe Maintenance

- Lock out or tag out equipment before starting the repair.
- Always ground all implements and put the machine cylinders in a "at rest condition" (no pressure in either direction).
- Always wear safety glasses and gloves.
- Hydraulic oil can be very hot when it is up to operating temperature. Check the temperature of the component before starting the repair.
- Never put yourself in a pinch point or hazardous area, if stored hydraulic energy is released, the implements can shift or fall.
- Ensure parking brakes are applied and always chock the wheels on rubber tired vehicles.
- Install articulation locks or other safety locks or devices if available.



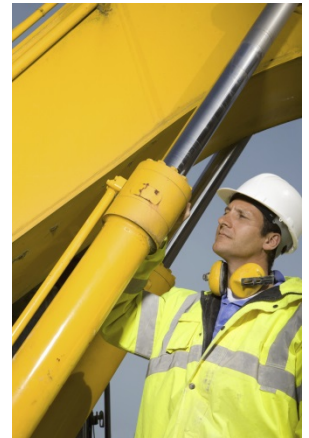
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- Accumulators must be bled off before servicing components in that system. Refer to the operator's manual.
- Always drain the air pressure off the hydraulic tank before doing hydraulic system maintenance.
- Spilled hydraulic oil can create very slippery conditions. Use absorbent pads to minimize the spill.

Injection Injuries

- Never use your hands or fingers to search for hydraulic leaks. The source of the leak or the fluid streaming from it may be very small and difficult to see. Use a long piece of cardboard or wood to detect leaks.
- Seek medical attention immediately for a suspected injection injury. These injuries often don't cause any immediate reaction but the fluid spreads rapidly through the circulatory system and tissue damage occurs quickly, often leading to amputations.



Fire Hazards

- Hydraulic fluid spray from leaking hoses can be very flammable. Inspect hoses regularly and replace when necessary. Consider using fire resistant hydraulic oil to reduce the fire hazard.
- Replace hoses when any area has the wire reinforcement exposed. The corrosion of the exposed reinforcing wire will weaken the hose significantly.

Resources

1) Free Posters from the International Hydraulic Safety Authority

<http://www.hsac.ca/safety-posters/>

2) Safety Alert – Injection Injury During Helicopter Logging Maintenance

<http://www.bcforestsafe.org/node/2734>

3) Hazard Alert - Worker crushed while dump truck box was lowering

http://www2.worksafebc.com/i/posters/2015/ha2015-5_dump_truck.html

4) Hazard Alert - Hydraulic Fluid Fire

http://www2.worksafebc.com/i/posters/2015/ws15_14.html

