

Guide to hydraulic hose safety after fatal incident

Bernie Napp - Fri, 25 Mar 2022

An Australasian hydraulic hose and fitting company has come out advocating a “five-minute, stop-and-think guide” to help people work safely when servicing hydraulic equipment.

Last month MinEx published a [safety alert](#) on a fatal injury that occurred in New Zealand after the main hydraulic pressure hose failed on a wheeled loader, requiring replacement.

“Residual hydraulic pressure was released from the loader’s lifting system to allow access to the main hose valve. The boom was then raised with assistance of a second machine allowing the grapple to flop to a natural position. It was then lowered and supported by the loader’s grapple tine tips.

“The mechanic was working under the boom when it slumped unexpectedly fatally pinning the mechanic,” MinEx says.



Alert to the risks

Garth Woodhouse, a trainer at Hydraulink, uses images of people who have suffered amputation from hydraulics injuries, or been crushed in incidents involving hydraulics, to raise awareness of risk, and to prevent such accidents happening.

He urges good servicing of hydraulic equipment to ensure it continues to operate safely.

“They are very good friends, but very bad enemies if not treated with the respect and professional standards they deserve. Anyone who has ever witnessed a cylinder blowing due to a faulty relief valve, or hose connector bursting even in a demonstration, will know what I mean.

“You don’t forget it. Worse, it is heart-stopping to see a big load topple due to incorrect supporting practices. That can be – and is too often – tragic,” Woodhouse says.

Check Five and Survive

The “Check Five and Survive” training course instils in workers a “conscious work process of stop, assess, think, plan, proceed”. Woodhouse’s method is, summarised:

“Knowledge – take time to understand how the system works. This will assist in finding faults and helping to identify potential risks.

Pressure – de-energise the circuit. Check for lines that may be pressure-locked, as well as accumulators and other sources of potential (stored) energy. Never assume.

Heat – Check for any heat sources, either fluid or external, such as exhausts etc. Note: the oil in a hydraulic system can reach temperatures that cause severe burns. Wear appropriate PPE.

Motion – Check for what might move – does any part of the equipment being serviced need to be secured or supported to allow access for servicing? Where practically possible, make sure any cylinder rods are either fully extended or retracted.

Safety/security – is the equipment locked-out and secure? Is the working area safe to start work? Is the surface/machinery on which you are working totally stable? Do not continue until you are satisfied it is safe to do so. Secure—Isolate—Lockout—De-energise.”

MinEx’s advice for safe hydraulic hose repair

The extractives industry health and safety council advises four steps for safe operating:

1. All items of plant and equipment are adequately stabilised and supported during maintenance.
2. All stored and residual energy is released from air and hydraulic lines prior to maintenance commencing.
3. No-one works under suspended loads or equipment being lifted.
4. All hazards are identified and controls in place before carrying out any maintenance tasks.

MinEx data on incidents with the potential to cause harm show 16 per cent (694) of all incidents result from falls, of which 233 involved equipment falls.

Oil injection injuries

Woodhouse warns people to keep hands and body clear when checking for leaks on hose assemblies.

“Use a piece of cardboard to locate a suspected pinhole leak. An oil injection injury can be traumatic and, if not treated quickly, can be fatal.”

Depending on the pressure, the velocity of fluid being forced through a pinhole can reach close to the muzzle velocities of a rifle, he says.

“If left untreated, the injury can lead to amputation – and even death. If an oil injection injury has occurred – or if you think it may have – please don’t touch it out.”