

Hydraulic Injection Injuries

About 8 minutes to deliver

A pinhole leak you cannot see, a fluid stream that goes through skin, and a wound that looks like nothing and costs a finger.

A hydraulic system runs at two to five thousand psi. A pinhole in a hose puts out a stream of fluid you can barely see — and that stream will go through a leather glove, through skin, and inject oil into your hand.

WHY IT IS SO DANGEROUS

The wound looks like a pinprick. It often does not bleed. It may not hurt much for the first hour. So people wrap it and keep working.

Underneath, the fluid has been driven along the tissue planes, sometimes the whole length of a finger or into the palm. It is toxic to tissue, it carries contamination in with it, and the swelling that follows cuts off the blood supply. Left more than a few hours it commonly ends in amputation.

Injection injuries are surgical emergencies. The same is true for grease guns, diesel injectors, airless paint sprayers and water jetting.

IF IT HAPPENS

- Go to an emergency room now. Not the end of the shift.
- Say the words "high pressure injection injury" and say what the fluid was. It looks trivial and it is routinely under-triaged — those words are what changes the response.
- Take the SDS for the fluid if you can.
- Do not put heat on it, do not try to squeeze it out, and do not wait to see how it feels in the morning.

FINDING LEAKS SAFELY

- Never run your hand along a hose to find a leak. This is the single most common way this injury happens.
- Use a piece of cardboard or wood held at arm's length, with gloves and eye protection on.
- Look for the spray pattern on the machine instead — the mist marks the surfaces around it.

BEFORE YOU GO NEAR THE SYSTEM

- Shut it down, lock it out, and relieve the pressure. 1910.147(d)(5) requires stored and residual energy to be relieved, disconnected or restrained after the lock goes on. Hydraulic pressure is exactly that energy, and a locked-out machine can still hold thousands of psi.
- Lower the attachment to the ground or crib it. A raised bucket, blade or bed is held up by pressure, and pressure leaks.
- Let it cool. Hydraulic oil at working temperature will burn you before it injects you.
- Replace a weeping hose. A seep is the announcement that a burst is coming.

ASK THE CREW

- Is any machine here weeping oil, and is it booked in or just being watched?
- Has anyone ever run a hand down a hose looking for a leak?
- If someone got a pinhole in the hand this afternoon, would they go to hospital or wrap it?

29 CFR 1910.147 • 29 CFR 1926.20

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ATTENDANCE RECORD

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Date

Job / site

Delivered by

Company

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I delivered this talk and determined it was suitable for this crew and this work.

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