

TST #177-A

## Injection Injuries

Injection injuries that occur on the job can be very serious and cause tissue damage, amputation or even death. For sawing and drilling contractors, recognizing hazards that could result in injection injuries and correction actions required to protect employees should be included in every pre-task plan and job hazard analysis (JHA).

Preventive maintenance and daily equipment inspection is the key to preventing injection injuries. Hydraulic fluid and grease used under pressure on power generators, power packs, skid steers can escape from pinhole leaks in hoses. These leaks can be caused by factors such as age, incompatible fluids, twisted hoses or minimum bend radius violations. Pressurized fluids and grease travel at extremely high speeds and can penetrate deep under the skin. An injection injury may only feel like a pricking sensation or a minor electric shock. The result may look like nothing more than a minor puncture wound, but the injury can be potentially life threatening. Rarely does the initial pain indicate the actual severity of the injury. It should be noted that injection pressures from diesel-powered saws can exceed 15,000 psi.

Hydraulic and diesel fluids contain a wide range of chemical compounds that are highly toxic when mixed into the bloodstream. When present in the bloodstream, hydraulic fluid can rapidly destroy skin tissue and lead to gangrene; and gangrene may eventually require the cutting away of the infected tissue. If an injection injury occurs, immediate medical attention should be sought. In addition, simply rushing the injured person to the nearest hospital emergency room may not be enough. Medical professionals classify an injection injury as a surgical emergency. Because the initial presentation of the wound may appear harmless, the treatment protocol is often given a low priority—by mistake. The sooner treatment is received, the less chance long term disability will occur.

To prevent injection injuries, the following precautions are suggested:

- Perform scheduled preventive maintenance and daily equipment inspections and replace any damaged fitting or hose.
- Avoid being in close proximity to fluid power components, like hoses and fittings, while the power system is pressurized.
- Shut the system down completely, allowing pressure to be relieved fully, before performing a visual inspection of the equipment and hoses.
- Do not use hands or fingers to detect leaks. Even thick gloves will offer little protection against a pressurized and concentrated flow of hydraulic liquid.
- In hard-to-see areas of the equipment, use a pole or stick with an attached piece of cardboard to check for leaks.
- Never combine components from different manufacturers to create a hose assembly.
- Wrap up hoses neatly, taking care not to kink, twist or exceed the minimum bend radius.

The following actions are suggested to include in emergency action plans for treatment should an injection injury occur.

- Include the treatment of injection injuries in your first aid policy.
- Locate the nearest emergency medical facility and have directions ready to avoid delays in getting an injured person there quickly and safely.
- Have a form or card ready to record critical information about any injury that does occur. Details that should be recorded include the type, amount and pressure of the fluid injected, the exact time of the incident and the body location and angle of penetration.

# Injection Injuries Quiz

The following statements should be answered with "True" or "False." Answers below.

1. Injection injuries that occur on the job can be very serious and cause tissue damage, amputation or even death.
2. Preventive maintenance and daily equipment inspection have very little impact in preventing injection injuries.
3. Even a minor puncture wound resulting from an injection injury can be potentially life threatening.
4. You should always stand as close as possible to fluid power components like hoses and fittings while the power system is pressurized.
5. Knowing the location of the nearest emergency medical facility is important to avoid delays in getting an injured person quick and prompt treatment.

**Employee Name:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Answers:**

1. True
2. False
3. True
4. False
5. True