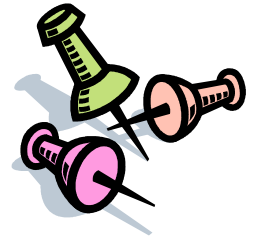




Safety Note

UNIVERSITY OF CALIFORNIA
AGRICULTURE AND NATURAL RESOURCES
ENVIRONMENTAL HEALTH AND SAFETY



Safety Note # 16

HYDRAULICS SAFETY



Farm equipment frequently utilizes hydraulic systems to perform tasks such as raising and lowering implements, powering components, and controlling steering and braking systems. Modern farm equipment is capable of developing pressures from 1,000 to 3,000 psi within the hydraulic system. At these pressures, a fluid leak from the hydraulic system could occur at approximately 600 fps and a punctured, broken, or unintentionally decoupled hydraulic hose can cause burns, contusions, abrasions, and lacerations from whipping hoses or ejected parts, and fluid injection into soft tissue. Moreover, failed hydraulic systems may result in crushing or dismemberment injuries due to rapid collapse of equipment components.

Pre-Use Activities

- Thoroughly review and understand information provided in the equipment operator's manual with particular attention given to descriptions of safety procedures.
- Prior to use, always inspect hydraulic hoses and fittings for defects or leaks and to assure they are securely attached at connection points. Confirm that low-pressure hoses or fittings are not connected to a high-pressure hydraulic system or pump.
- If a hydraulic system fails the pre-use inspection, notify your supervisor and remove the equipment from service by attaching a red tag that states "DO NOT USE." Complete red tag with appropriate information.
- Annual agriculture equipment training is required by California regulations (Title 8, Section 3441 a) and should include discussion of any hydraulic systems.

Operating Precautions

- Before starting the engine, look to see that people and obstructions are clear of the equipment.
- Never walk beneath any implement or component that is supported by hydraulics.
- Always shut the engine off and relieve all hydraulic pressure before disconnecting hydraulic hoses or performing maintenance or repairs.
- Prior to initiating maintenance or repairs, always use supports, jacks, stands, or blocks to prevent movement of hydraulic implements or components.
- When hydraulic systems are operating, hydraulic fluid temperatures range from 165° to 185°F due to the high pressure and represent a potential burn hazard.
- Hydraulic oil is a fire hazard and when ignited can cause severe burns or fatalities.
- Never search for a pinhole leak by running your hand or finger along a hydraulic hose. Hot hydraulic oil at high pressure can puncture gloves and penetrate several inches into soft tissue. Hydraulic oil injected into tissue must be surgically removed.
- Search for pinhole leaks using a piece of cardboard or wood.
- Always lower hydraulic components to the ground before shutting off the engine and dismounting the equipment.