

# Heavy Equipment – General Safety



## Introduction

Improper procedures used by our employees can cause injury, disability, or death. By outlining and following safe operating procedures for use of heavy equipment, we learn to prevent injury and safeguard ourselves and our coworkers.

## Goals

To ensure all employees know and understand the safe operating procedures for the safe operation and maintenance of Heavy Equipment.

## Purpose

To reduce the risk of a work related injury or death by maximizing personal safety during Heavy Equipment operation.

## General Safety for Heavy Equipment

***Only trained and authorized operators shall be permitted to operate the designated equipment.***

1. Personal protective equipment is mandatory and may include the following:
  - Boots or safety shoes
  - Eye/face protection
  - Long pants
  - Hard hat
  - Hearing protection
  - Gloves
2. Pre-start/Walk around inspection
  - Check for loose or worn parts and repair or replace immediately.
  - Check all fluid/coolant levels.
    - Caution: Open the radiator cap only when the engine is cooled.
  - Inspect hydraulic line connectors and hoses for leaks before applying pressure to the system. Use paper or cardboard, not your hands, to search for leaks.
    - Caution: Hydraulic fluid escaping under pressure can penetrate skin and cause serious bodily harm.
  - Check tires for cuts, bulges, irregularities, abnormal wear and proper inflation.
  - A fire extinguisher and first aid kit shall be mounted in the cab.
3. Machine Maintenance
  - When servicing equipment, fasten a Do Not Operate tag on the steering wheel.
    - ***Review Lock Out/Tag Out Procedures prior to servicing any equipment.***
  - Ensure the cab area is clean and free of debris and tools.
  - Clean windshield, mirrors and lights.
  - Remove all oil, grease or mud and snow from grab irons, hand rails, steps, pedals, and floor to prevent slips and falls.

- Remove or secure any loose items such as tools, chains, or lunch boxes from the cab.
4. Work Site
- Check and mark the area for underground cables, gas lines, and water mains.
  - Know work area clearances - watch for overhead or underground objects, holes, drop-offs, and partially hidden obstacles and wires.
5. Mount properly
- **Do not get on or off a machine that is in motion**
  - Maintain a 3-point contact with the steps and hand rails while getting on/into the machine
    - Do not use the controls or steering wheel as a handhold.
  - Do not operate the machine with wet, greasy, or muddy hands or shoes.
6. Starting and Testing
- **Exhaust fumes are dangerous – always have a running machine in a well-ventilated area.**
  - Fasten your seat belt and adjust the seat prior to starting.
  - Controls should be in neutral and the parking brake set before starting engine.
  - Start the engine only from the operator's seat.
  - Warn personnel in the area that you are starting the engine.
  - Check all gauges, light, instruments and warning devices to assure that they are functioning properly and the readings are within normal range.
  - Test steering right and left.
  - Test brakes against ground speed to be certain there is no malfunction.
  - Ensure all implement controls are operating properly.
7. Machine Operation
- **Smoking is prohibited at all times.**
  - Acquaint yourself with the controls before operating the machine.
  - Only the operator is permitted to ride on the machine.
  - While backing up use extra care and sound the horn to clear the area.
  - If a malfunction is observed, "DO NOT OPERATE" until the proper repairs have been made.
  - Drive at speeds compatible with working conditions.
  - Do not coast downhill. Select a gear that will prevent excessive speed when going downhill.
  - Do not park on a steep incline.
  - Know the stopping distance at any given working speed.
  - Do not permit anyone to stand or pass under the bucket or lift arms.
  - Follow the manufacturer's load capacity limits. Identification plates are attached to all machines.
  - If the machine is stuck, back it out or stop engine and get help.
  - Do not make mechanical adjustments while the unit is in motion.
  - Always follow the manufacturer's recommendations for pulling or towing.
  - Lower all the hydraulic equipment before shutting down or getting off the machine.
  - During snow removal, be alert for any obstructions covered by snow.

8. Ether - Cold Start Precautions

- Diesel cold start systems contain ether which is explosive. Keep away from heat, sparks, and open flames. Work in a well-ventilated area.
- If swallowed, breathed or contacted on skin or eyes seek medical attention immediately. Follow recommendations on the MSDS sheets.
- Point the openings of the valve, tube or atomizer away from yourself and others while testing the diesel cold start system.
- Store replacement ether cylinders in a cool dry place away from direct sunlight. Do not keep them in the operator's compartment.

9. Operating a PTO

- Shut off the engine and wait until the PTO stops completely before getting off, disconnecting or servicing the PTO unit.
- Wear snug fitting clothing when operating the power take-off or when near rotating equipment.
- When operating stationary PTO equipment, always apply the parking brake and block the rear wheels front and back to prevent any unnecessary movement.
- PTO shields are mandatory on all PTO-driven equipment.

10. Refueling

- Shut off and cool the engine and any electrical equipment before fueling.
- Ensure the fueling area is well ventilated.
- Do not smoke while refueling. Keep open flames and sparks away from area.
- Ground the funnel or fuel nozzle against the filler neck to avoid sparks when refueling.
- Do not use gasoline or diesel fuel for cleaning parts.
- Check the battery and electrolyte levels according to manufacturer's instructions.
- Know where the fire extinguishers are located.

11. Road Rules

- When turning, use hand or turn signals.
- Obey all traffic regulations. Know local traffic laws regarding lights, warning signs, load limits, and slow moving equipment on highways/roadways.
- When backing up traffic, pull over and allow the vehicles to pass.

12. Shut Down/Parking

- Park on level ground.
- When parking on a grade, block the wheels and set the parking brakes.
- When parking, lower all loader, buckets, hydraulics to the ground.