

1. Supervisor will identify authorized operators and supply training.
2. Personal Protective Equipment is mandatory and may include the following: boots or safety shoes, long pants; hearing protection, eye/face protection, hard hat, and gloves.
3. Before Operation
 - a. Pre-start inspection/Walk Around:
 - i. Check for loose or worn parts and repair or replace immediately.
 - ii. Inspect hydraulic line connectors and hoses for leaks before applying pressure to the system. Use paper or cardboard, not hands, to search for leaks.
 1. **Caution:** Hydraulic fluid escaping under pressure can penetrate skin and do serious bodily harm.
 - iii. Check all controls for proper function and ensure they move freely.
 - iv. Check tires for cuts, bulges, irregularities, abnormal wear and proper inflation.
 - v. Check oil levels and add as needed. Engine must be shut off.
 - vi. Check coolant level.
 1. **Burn Hazard:** Never open the radiator cap when the engine is hot. Keep machines clean.
 - vii. Clean windshield, mirrors and lights.
 - viii. Remove all oil, grease or mud from grab irons, handrails, steps, pedals, and floor. In winter remove snow.
 - ix. Remove or secure any loose items such as tools, chains, or lunch boxes from the operator's compartment.
 - b. Know the work area:
 - i. Check the work area for underground cables, gas lines, and water mains.
 - ii. Know work area clearances.
 - iii. Never approach overhead or underground wires with any part of the machine.
 - iv. Inspect work area for hidden holes, drop-offs, or obstacles that could be dangerous.
 - c. Mount properly:
 - i. Never use the controls or steering wheel as a handhold, always use handrail, ladders, and steps when mounting.
 - ii. Don't get on or operate the machine with wet or greasy hands or muddy shoes.
 - iii. Never mount a machine in motion.
4. Starting and Testing:
 - a. Safe Starting:
 - i. When starting the machine in an enclosed area be sure the area is properly ventilated.
 1. Exhaust fumes are dangerous.
 - ii. Always fasten your seat belt and adjust the seat for the most comfortable position.
 - iii. Controls should be in neutral and the parking brake set before starting engine.
 - iv. Start the engine from the operator's seat only.
 - v. Warn personnel in the area that you are starting the engine.

- vi. Check all gauges, instruments, and warning lights to assure that they are operable and the readings are within the correct operating range.

b. Test First:

- i. Test steering, right and left.
- ii. Test brakes against ground speed to be certain there is no malfunction.
- iii. Ensure all implement controls are operating properly.
- iv. Check all lighting systems and safety devices to be sure they are functioning properly.
- v. Check the clutch or neutral position on machines with power shift transmissions to assure proper speed control.

5. Safe Operations:

a. General Safety Precautions:

- i. This is a one-man machine, NO RIDERS ALLOWED.
- ii. Operate at a ground speed consistent with working conditions and terrain.
- iii. Move slowly in congested areas, so you are in complete control at all times.
- iv. Always give the right of way to loaded equipment on haul roads or in pits.
- v. Use caution when braking on loose gravel or dirt.
- vi. Avoid soft edges and deep holes.
- vii. When crossing exposed railroad tracks, ditches, ridges, or curbs reduce speed and cross at an angle.
- viii. Never move or swing a load above the heads of other workers.
- ix. Stay in gear when traveling downhill. (Do not shift into neutral.)
- x. Maintain engine RPM for control.
- xi. Use the same gear range for traveling up or down a grade. While operating, two men should work together; one operating the machine and the other directing the operator and watching for dangers.
- xii. Know the pinch points and wrap points on the loader/backhoe.
- xiii. When operating the loader be sure the backhoe is in the transport position and that all chains and locks are secured to prevent backhoe swing.
- xiv. Ensure backhoe has an adequate rear counterweight.
- xv. During operation carry the bucket low for maximum visibility and stability.
- xvi. When back filling, use extreme caution, weight of the material plus the weight of the machine could cause the new construction to collapse.
- xvii. When working along high banks or slopes keep away from the outer edge.
- xviii. Before entering underpasses, tunnel or bunkers, check for hazards or obstructions.
- xix. When operating with poor visibility conditions, keep speed to a minimum.
- xx. Keep work area level; avoid developing ruts by occasionally back dragging the bucket to smooth the surface.

b. Backhoe Safety Precautions:

- i. Before operating the backhoe, lower stabilizers so that rear wheels are just off the ground and machine is level.
- ii. Clear everyone from the bucket swing area.

- iii. Always operate the backhoe from the correct seated position – NEVER from the ground.
 - iv. Never dig under the backhoe stabilizers; a cave-in may result.
 - v. Never swing the bucket over the truck cab.
 - vi. When operating on a slope, swing to the uphill side.
 - vii. Before dismounting, be sure your backhoe is in its transport mode and the bucket is lowered to the ground.
 - viii. When trenching in sandy, muddy or unstable soil, use a platform under the rear wheels and stabilizers to lessen the possibility of a cave-in.
 - ix. Lift excessively heavy objects to the rear of the backhoe to prevent tipping.
 - x. When lifting heavy objects, ensure they are properly balanced to prevent swaying.
 - xi. Never leave a load hanging.
- c. Rules of the Road:
- i. When turning, always use hand or turn signals.
 - ii. Obey all traffic regulations.
 - iii. When you are backing up traffic, pull over and allow vehicles to pass safely.
- d. Transporting Procedures:
- i. Refer to owner's manual and check local regulations.
 - ii. When loading the loader/backhoe, be sure the proper clearance flags, lights and warning signs are used.
 - iii. When hauling, check owner's manual and check for proper clearances and weight limits for the hauling equipment.
6. Shut Down
- a. Safe Parking:
- i. Park your machine on level ground if possible.
 - ii. When parking on a grade, position at right angles to a slope, block the wheels, and set the parking brake.
 - iii. When parking, place buckets in the transport mode or lower them to the ground.
7. Maintenance
- a. Fire and Explosive Hazards:
- i. Never smoke while refueling or handling fuel containers.
 - ii. Always shut off engine and any electrical equipment when fueling and use extra care if engine is hot.
 - iii. Ground funnel or fuel nozzle against filler neck to avoid sparks when refueling.
 - iv. Never use gasoline or diesel fuel for cleaning parts.
 - v. Always use non-flammable solvent.
 - vi. Never smoke near a battery.
 - vii. Never check electrolyte level with an open flame. Hydrogen gas from the battery may explode and cause severe injury.
 - viii. Never check battery charge by placing a metal object across the posts.
 - ix. Know where fire extinguishers are located.
- b. Safe Engine Maintenance:

- i. Work in a well-ventilated area.
- ii. Set brakes.
- iii. Block wheels
- iv. Lower attachments
- v. Place all controls in neutral
- vi. Work as a two-man team
- vii. Do not service, lubricate or repair a machine without shutting off the engine and disengaging the PTO if so equipped.