
ROAD GRADER & BACKHOE

Road Grader

1. Before operating the grader, ensure it is properly equipped. Consult your supervisor for details.
2. Do not permit riders in or on the grader. Grader is a one person piece of equipment.
3. Before backing up, use extra care to ensure people and vehicles are clear of the grader.
4. Know and use hand signals required for particular jobs.
5. Know who has the responsibility for signaling
6. If the grader is equipped with a back-up alarm and/or lights, ensure they are working properly. Never disconnect the back-up alarm or lights.
7. Ensure that your grader is properly equipped for emergencies. Equipment such as a fire extinguisher, first aid kit, and flares may be required. Locate and know how to use this equipment.
8. Ensure the snow wing is fully raised when not in use and secured with the proper chains.
9. Walk around the grader and warn all personnel who may be servicing the grader or are in its path prior to starting. Do not start until all personnel are clearly away from the grader.
10. Perform a "Pre-start Check" of the grader.
11. Adjust the seat and fasten the seat belt.
12. Start and operate the grader only from the operator's seat.
13. Use jumper cables only in the recommended manner. Improper use can result in battery explosion or unexpected movement of the grader.
14. Park the grader on level ground whenever possible and apply the hand brake. On grades, park the grader with the wheels securely blocked.
15. Before operating the grader, test the: 1) brakes; 2) transmission; 3) clutch; 4) controls.
16. Drive the grader at speeds compatible with working conditions. Do not coast downhill.
17. Select a gear that will prevent excessive speed when going downhill.
18. Note and avoid all hazards and obstructions such as overhangs, ledges, slide areas, electrical lines, underground cable water mains or gas lines.

Loader/Backhoe

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

Pre-start inspection/Walk Around:

- Check for loose or worn parts and repair or replace immediately.
- Inspect hydraulic line connectors and hoses for leaks before applying pressure to the system. Use paper or cardboard, not hands, to search for leaks.

Caution: *Hydraulic fluid escaping under pressure can penetrate skin and do serious bodily harm.*

- Check all controls for proper function and ensure they move freely.
- Check tires for cuts, bulges, irregularities, abnormal wear and proper inflation.
- Check oil levels and add as needed. Engine must be shut off.
- Check coolant level.

Burn Hazard: *Never open the radiator cap when the engine is hot.*

Keep machines clean:

- Clean windshield, mirrors and lights.
- Remove all oil, grease or mud from grab irons, handrails, steps, pedals, and floor. In winter remove snow.
- Remove or secure any loose items such as tools, chains, or lunch boxes from the operator's compartment.

Know the work area:

- Check the work area for underground cables, gas lines, and water mains.
- Know work area clearances.
- Never approach overhead or underground wires with any part of the machine.
- Inspect work area for hidden holes, drop-offs, or obstacles that could be dangerous.

Mount properly:

- Never use the controls or steering wheel as a handhold, always use handrail, ladders, and steps when mounting.
- Don't get on or operate the machine with wet or greasy hands or muddy shoes.
- Never mount a machine in motion.

4. Starting and testing:

Safe Starting:

- When starting the machine in an enclosed area be sure the area is properly ventilated. Exhaust fumes are dangerous.
- Always fasten your seat belt and adjust the seat for the most comfortable position.
- Controls should be in neutral and the parking brake set before starting engine.
- Start the engine from the operator's seat only.
- Warn personnel in the area that you are starting the engine.
- Check all gauges, instruments, and warning lights to assure that they are operable and the readings are within the correct operating range.

Test First:

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

5. Safe Operation:

General Safety Precautions:

- This is a one-man machine, **NO RIDERS ALLOWED.**

- Operate at a ground speed consistent with working conditions and terrain.
- Move slowly in congested areas, so you are in complete control at all times.
- Always give the right of way to loaded equipment on haul roads or in pits.
- Use caution when braking on loose gravel or dirt.
- Avoid soft edges and deep holes.
- When crossing exposed railroad tracks, ditches, ridges, or curbs reduce speed and cross at an angle.
- Never move or swing a load above the heads of other workers.
- Stay in gear when traveling downhill. (Do not shift into neutral.)
- Maintain engine RPM for control.
- 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.
- Know the pinch points and wrap points on the loader/backhoe.
- 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.
- Ensure backhoe has an adequate rear counterweight.
- During operation carry the bucket low for maximum visibility and stability.
- When back filling, use extreme caution, weight of the material plus the weight of the machine could cause the new construction to collapse.
- When working along high banks or slopes keep away from the outer edge.
- Before entering underpasses, tunnel or bunkers, check for hazards or obstructions.
- When operating with poor visibility conditions, keep speed to a minimum.
- Keep work area level; avoid developing ruts by occasionally back dragging the bucket to smooth the surface.

Backhoe Safety Precautions

- Before operating the backhoe, lower stabilizers so that rear wheels are just off the ground and machine is level.
- Clear everyone from the bucket swing area.
- Always operate the backhoe from the correct seated position – NEVER from the ground.
- Never dig under the backhoe stabilizers; a cave-in may result.
- Never swing the bucket over the truck cab.
- When operating on a slope, swing to the uphill side.
- Before dismounting, be sure your backhoe is in its transport mode and the bucket is lowered to the ground.
- 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.
- Lift excessively heavy objects to the rear of the backhoe to prevent tipping.
- When lifting heavy objects, ensure they are properly balanced to prevent swaying.
- Never leave a load hanging.

Rules of the Road

- When turning, always use hand or turn signals.
- Obey all traffic regulations.
- When backing up traffic, pull over and allow vehicles to pass safely.

Transporting Procedures

- Refer to owner's manual and check local regulations.
- When roading the loader/backhoe, be sure the proper clearance flags, lights and warning signs are used.
- When hauling, check owner's manual and check for proper clearances and weight limits for the hauling equipment.

6. Shut Down

Safe Parking

- Park your machine on level ground if possible.
- When parking on a grade, position at right angles to a slope, block the wheels, and set the parking brake.
- When parking, place buckets in the transport mode or lower them to the ground.

7. Maintenance

Fire and Explosive Hazards

- Never smoke while refueling or handling fuel containers.
- Always shut off engine and any electrical equipment when fueling and use extra care if engine is hot.
- Ground funnel or fuel nozzle against filler neck to avoid sparks when refueling.
- Never use gasoline or diesel fuel for cleaning parts.
- Always use non-flammable solvent.
- Never smoke near a battery.
- Never check electrolyte level with an open flame. Hydrogen gas from the battery may explode and cause severe injury.
- Never check battery charge by placing a metal object across the posts.
- Know where fire extinguishers are located.

Safe Engine Maintenance

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

Date