

Excavation Equipment Operation Safety Guidelines



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Backhoe Operations

Trained Operators – Only persons with prior training and experience are permitted to operate a backhoe. Operational training should be done under direct supervision of supervisor and documentation of the training shall be maintained by the department.

Spotter/Safety Monitor – A spotter/safety monitor must assist the backhoe operator when digging in areas of potential hazard from electrical or gas utilities or when working in high pedestrian activity areas.

Hard Hats – Workers within the caution area, as well as the backhoe operator, must wear an approved hard hat.

Workers Within the Excavation – No worker is allowed within the excavation while the end of the backhoe arm is also within the excavation. Workers must exit to a safe location while materials are being positioned above or lowered into the excavation. While a person is within the excavation, the backhoe arm shall be positioned away from the top edge of the excavation, so that the end of the arm cannot reach the worker, in case of an inadvertent activation.

Backhoe Safety Tips: During Operation

- Reduce your speed while working in congested areas, or while traveling on rough terrain. This can prevent collisions.
- Keep your bucket low to maintain maximum visibility, especially on slopes.
- Do not allow more than one person in the cab. The backhoe is only designed for one operator.
- Back up slopes, rather than drive forward; most of the weight of the backhoe is in the rear of the machine.
- Avoid turning on slopes to prevent the machine from overturning.
- When using the loader, keep the loading surface smooth and level to reduce the odds of the machine tipping over.
- To prevent cave-ins near an excavation site, work perpendicular to it or at a slight angle. This keeps the extra weight away from the edge.
- Plan ahead if you're planning to dig a trench; contact local utility companies to locate underground wiring for safety.
- When you're setting up to dig, make sure your stabilizers have a solid base to rest on.
- Always place your spoil pile at least three feet away from your excavation site to prevent a cave-in.
- When loading trucks, never swing the excavator bucket over the truck cab. By swinging over the rear of the truck, any loose materials will fall on the ground or in the bed, rather than on the cab.
- Never attempt to clean the backhoe's buckets by striking it on the ground or against another object.

Skid Loader Operations

Trained Operators – Only persons with prior training and experience are permitted to operate a skid loader. Operational training should be done under direct supervision of supervisor and documentation of the training shall be maintained by the department.

Caution Area – A designated caution perimeter should be maintained around excavations, by using barriers, caution tape and/or signage. The size of the caution perimeter is to be 6 feet greater than (when available) the reach of the skid loader. Observers are to remain outside this perimeter at all times.

Spotter/Safety Monitor – A spotter/safety monitor must assist the backhoe operator when digging in areas of potential hazard from electrical or gas utilities or when working in high pedestrian activity areas

Skid Loader Safety Tips: During Operation

- Never permit riders in the bucket, cab, or anywhere else on the machine. Skid loaders only have one seat, which is meant for the operator.
- Never attempt to operate the skid loader unless you are sitting in the seat and in full control.
- Before moving the machine, be sure all persons or vehicles are clear of the machine path.
- Prevent material rollback by securing loads in the bucket and filling the bucket only to rated levels.
- Reduce the skid loader's speed when working on rough terrain or within congested areas.
- Carry the bucket low to the ground during transport. This will increase visibility and machine stability.
- Back up slopes with an empty bucket, rather than drive forward; most of the weight of the skid loader is in the rear of the machine.
- Drive straight up and down slopes with the heavy end of the loader facing uphill
- Avoid turning on slopes to prevent the machine from overturning.
- Avoid working with an embankment or pile that is taller than the machine. A collapse could cause the operator station to become buried.
- When loading trucks, never swing the skid loader bucket over the truck cab.
- Never attempt to clean the skid loader's bucket by striking it on the ground or against another object.

Excavator Operations

Trained Operators – Only persons with prior training and experience are permitted to operate an excavator. Operational training should be done under direct supervision of supervisor and documentation of the training shall be maintained by the department.

Caution Area – A designated caution perimeter should be maintained around excavations, by using barriers, caution tape and/or signage. The size of the caution perimeter is to be 6 feet greater than (when available) the reach of the skid loader. Observers are to remain outside this perimeter at all times.

Spotter/Safety Monitor – A spotter/safety monitor must assist the excavator operator when digging in areas of potential hazard from electrical or gas utilities or when working in high pedestrian activity areas.

Workers Within the Excavation – No worker is allowed within the excavation while the end of the backhoe arm is also within the excavation. Workers must exit to a safe location while materials are being positioned above or lowered into the excavation. While a person is within the excavation, the backhoe arm shall be positioned away from the top edge of the excavation, so that the end of the arm cannot reach the worker, in case of an inadvertent activation.

Excavator Safety Tips: During Operation

- Never permit riders in the bucket, cab, or anywhere else on the machine. Excavators only have one seat, which is meant for the operator.
- Never attempt to operate the excavator unless you are sitting in the seat and in full control.
- Reduce the excavator's speed when working on rough terrain or within congested areas.
- Carry the bucket low to the ground during transport. This will increase visibility and machine stability.
- When moving the excavator around the job site, select a route that is as flat as possible.
- Steer the machine as straight as possible and only make small gradual changes in direction when turning is needed.
- Travel directly up slopes vertically instead of diagonally.
- When propelling up slopes, the boom and the arm should be extended with the bucket carried low and rolled out. This will allow you to drop the bucket and prevent the equipment from sliding if necessary.
- When propelling down a slope, the bucket bottom should be low and parallel to the ground.
- In very steep or slippery conditions, you can use the boom and arm to help move up and down the slope. When going up a steep slope, extend the boom and arm, and when needed, lower the bucket and retract the arm to help pull the machine up. When traveling down a steep slope, position the bucket with the flat surface resting on the ground. While retracting the arm, raise the boom and propel the machine until the front of the tracks reach ground level.
- When using the excavator for trenching, make sure the machine is level by placing dirt underneath the tracks. Being level will make the trench vertical and will help to avoid cave-ins.
- For better stability, work with the propel motors to the rear of the machine.
- Dump spoil piles as far away from the excavation as possible to avoid cave-ins.
- When doing excavation jobs on slopes, level the machine by digging a shelf (or bench cut). Material removed from the upper slope can be used to build up the lower slope and create a level surface.
- On steep bench cuts, cut enough away from the upper bank to allow for adequate swing clearance when casting downslope.
- Never dig underneath the excavator.
- When backfilling a cave-in, the excavator's tracks should be at a 90-degree angle to the excavation with the propel motors to the rear of the machine.
- When loading trucks, never swing the excavator bucket over the truck cab. By swinging over the rear of the truck, any loose materials will fall on the ground or in the bed, rather than on the cab.
- Never attempt to clean the excavator's bucket by striking it on the ground or against another object.