

EXCAVATOR SOP

ACRONYMS

LOTO - Lockout/Tagout.
PPE - Personal Protective Equipment.
SOP - Safe Operating Procedure.

HAZARDS - What can cause harm?

- ▲ Noise
- ▲ Overhead/underground services
- ▲ machine roll-over
- ▲ Fluid under pressure
- ▲ Fire/explosion
- ▲ Falling objects
- ▲ Static positions

PPE



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PRECAUTIONS

- All operators are to be trained and competent to operate an excavator safely. Operator training should include:
 - Workplace induction
 - Safe operating procedures
 - Manufacturer's instructions
 - Nature of hazards
 - Fitting of PPE
 - Manual handling
 - Housekeeping
 - First Aid



MAINTENANCE

- Follow LOTO procedures record service/repairs information in Maintenance Log. Maintenance is to be conducted as per manufacturers' instructions and by qualified persons only
- When the machine is being taken out of service for maintenance:
 - Shut off and isolate the power supply
 - The power supply is clearly labelled/tagged "do not use."



Machine Licensing: When the excavator is to be operated on public roads, it must be registered and/or licensed as required by the relevant State or local authority. Over-dimension vehicles require an over-dimension permit & must comply with permit conditions.

EQUIPMENT CLEARANCE DISTANCES

- Equipment travelling under or near a power line must:
 - Have a lowered boom/mast and support system
 - Obey minimum clearance distances
 - Reduce speeds to minimize breaching
 - Use a dedicated spotter if closer than 6m/20 feet
 - Illuminate or identify the power lines at night
 - Identify and use a safe path of travel.

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OPERATION

1. Operate in accordance with manufacturers' instructions
2. Wear prescribed PPE
3. **Conduct Pre-start checklist** before starting operations. Inspect:
 - a. Excavator
 - b. Quick-hitch device
 - c. Attachment
4. **Mount & dismount** the machine safely:
 - a. Face the machine whenever you mount & dismount the machine
 - b. Use provided steps/handholds when entering or exiting the cabin
 - c. Maintain a three-point contact with the steps & with handholds
 - d. Before start-up, make sure:
 - i. To adjust the seat to operators' desired position
 - ii. The seat belt is fastened correctly
 - iii. The lock levers are in the "Lock" position & all control levers & pedals are in their neutral positions
5. **Start up** from inside the cabin in a seated position
 - a. Start engine
 - b. Carry out warming operations
 - c. Disengage parking brake
 - d. Check the area is safe, clear of personnel obstacles & sound the horn before moving
6. **Stopping:**
 - a. Give yourself plenty of space when stopping. Try to stop on flat hard ground, if this is not possible & you have to stop on a slope place blocks under the track shoes
 - b. Always set the safety lock lever to the LOCK POSITION to avoid accidental movement
 - c. Do not stop the engine suddenly when operating with heavy loads or at maximum speed



Take care when reversing & remain aware of the machine blind spots.



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- d. Never bring the engine to a sudden stop except in the case of a true emergency
- 7. **Driving on slopes:**
 - a. Raise the bucket approximately 20-30 cm/8-12 in. off the ground as you move the machine
 - b. Avoid reversing downhill
 - c. When operating through hollows or crossing obstacles, keep the attachment close to the ground & drive slowly
 - d. Do not steer or operate across slopes;
 - i. Change your operating direction on level ground. This may take more time but is a safer operating technique
 - e. Make sure you can safely stop the machine if it starts to skid or becomes unstable
 - f. Slewing on slopes may cause the machine to lose balance & tilt. Avoid whenever possible:
 - i. Slewing with a full bucket is especially dangerous. Should this be necessary, create a platform of level ground so that the machine can work on the flat level surface
 - g. Do not operate on slopes over 15°
 - h. If the sliding blocks slip as you operate uphill & if it is no longer possible to move on with the force of the tracks alone, do not apply pressure with the boom to ease on the machine
- 8. **Connect attachments** as per manufacturer's instructions:
 - a. Remove non-essential persons from the area
 - b. Ensure attachment is on a flat, level surface
 - c. With attachment facing excavator, operate the excavator into proper position
 - d. Connect hydraulic hoses as required. Tighten bolts/cap to proper torque
 - e. Ensure all locking pins are secured in place
 - f. Check correct flow & pressure (as per manufacturer's instructions)
 - g. Operator to raise excavator arm slowly & test attachment is secured for use
 - h. Check for oil leaks
- 9. **On completion:**
 - a. Park in a safe area (flat, firm ground, clear of obstructions, traffic, waterways, hazardous or sensitive areas). If this is not possible, park across the slope
 - b. Lower attachments to the ground, turn/lock-off all hydraulic valves. Idle engine down. Activate swing lock. Switch battery disconnect to



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OFF position. Remove keys & apply the park brake

- c. Inspect for any damage/leaks. If damage is detected – report immediately & take out of service.

HAZARD CHECKLIST (POWERED MOBILE MACHINERY)

Make, Model, ID No.:

Names of HSE Representatives/Workers involved:

Date:

| | Y | N | NA | | Y | N | NA | | Y | N | NA |
|--------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------------------------|--------------------------|--------------------------|--------------------------|----------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| Risk assessment completed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The passenger seat in good condition | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Flashing lights functional | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Daily Inspection conducted | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Operator restraints available | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Tracks aligned with no missing sections | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Daily logbook completed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Operator restraints functional | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | WLL displayed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Instruction manual available | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Passenger restraints available | | | | Correct attachment for the job | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SOP available | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Passenger restraints functional | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The attachment has sufficient WLL | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Maintained within a year | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ROPS installed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Quick hitch engaged properly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The operator has a license | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ROPS installed by a competent person | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Attachments suitable size for machine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| No unauthorised alterations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ROPS meets relevant standards | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Attachments are manufacturer-approved OR deemed safe by a competent person | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Intended for use as designed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ROPS in good condition | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Attachments secured properly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Warning devices installed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ROPS functional | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Locking pins in place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Warning devices positioned for best effect | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Safe access/exit from the cabin | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Controls labelled correctly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Passengers have the same level of protection as the operator | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Cabin clean, free of clutter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Controls located for easy access | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Danger areas guarded: | | | | Cabin ventilated / AC | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Safe access/egress to the site | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Moving motor parts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Clear visibility from cabin windows | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Speed Limitres installed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PTO shafts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The body of machinery is in good condition | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Spotters used where required | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hydraulic hoses/valves etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wheels are the correct type | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | TMP developed & implemented | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hot engine/muffler parts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wheels do not have cracks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LOTO procedures in place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Others? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wheels have adequate tread depth | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Where "No" is selected, check with your | | | |



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| Operator seat in good condition | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Wheels correct & equal pressure | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | supervisor. |
|---------------------------------|--------------------------|-------------------------------------|--------------------------|---------------------------------|--------------------------|-------------------------------------|--------------------------|-------------|