

Mini Excavator Rake

User Manual



Read Carefully Before Use
Keep for Future Reference

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Safety Information

Symbol Guide

The following symbols and safety signal words are used in this manual. **DO** obey the accompanying messages to avoid possible injury or death.



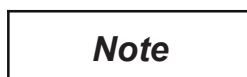
Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.

General Safety



- **ALWAYS** follow federal, state, and local laws, codes, and regulations concerning the use of construction machinery.
- Follow all other applicable instructions and precautions as stated in your excavator's manual.
- Read this manual before actually attaching this hydraulic rake to your compatible excavator. Familiarize yourself with the instructions that provide crucial information on the installation, operation, and maintenance.
- **ONLY** use with compatible excavator models. Though this hydraulic rake has a wide fitment, **DO** research compatibility before actually mounting this hydraulic rake. For details, see **Specifications**.
- **ALWAYS** use personal protective equipment (PPE) suitable to your task. Always wear ANSI and OSHA-approved eye, breathing, and hand protection while using this product. Nonslip and steel-toe footwear is also highly recommended. Other equipment such as ear, head, and body protection may also be necessary depending on your work, work environment, and other equipment.
- **DO NOT** operate, inspect, or maintain the excavator when your faculties or judgment are impaired by alcohol, drugs, medicines, fatigue, or lack of sleep. **NEVER** allow any persons under such conditions to operate, inspect, or maintain this heavy machinery.
- Operating heavy equipment requires your full attention. Avoid distractions and remain focused on the task at hand.
- **IMMEDIATELY** cease to use and contact Customer Service if the hydraulic rake shows any sign of anomalies or malfunctions, say noise, vibration, breakage, etc. **NEVER** attempt to resume use if the issues remain unsolved.

Operation Safety

Danger

- Never carry riders on the attachment or power machine.
Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, falloff and be run over, etc.
- **ALWAYS** remain focused on the task at hand. Operating heavy equipment requires your full attention.
- Use two or more persons to attach the rake to the excavator's arm.
- **ONLY** operate the rake from the excavator's cabin.
- **NEVER lift heavy objects above the excavator's cabin.**
- **NEVER** operate the excavator in an area with people present. You should maintain at least 100 yards of distance between the rake and people, animals, or property.
- Be extremely careful when working on inclines or near loose fill, rocks, and holes as they can cause tipping or upsetting which may result in serious injury or death.
- Be certain to avoid overhead electrical wires when operating the excavator. Contact with power lines may cause serious injury or death.
- Do not drive up to anyone or an animal in front of a fixed object such as a wall or bench. Never assume that the machine will stop in time.
- Always secure the rake with solid, non-concrete supports before working under it. Never go under it supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to hydraulics is off.

Warning

- Immediately shut down the rake and skid steer loader when the rake is not operating properly or needs adjustment.
- **DO NOT** drop the rake rapidly toward an object. Sudden impact may result in structural failure and possible serious injury or death.
- **DO NOT** operate underwater. Do not allow the excavator's cylinder to go underwater. Otherwise, the cylinder **WILL** be damaged from chronic rust.
- **DO NOT** dismount from a moving excavator with this rake or leave the excavator with this rake unattended with the engine running.
- Stop the excavator, place all the control rods in neutral, set the parking brake, shut off the engine, and make sure **ALL** moving parts have been stopped before dismounting the excavator for any reason.
- Keep all bystanders away from the work area, especially children.

- Transport the excavator with the rake at the slowest speed possible, and with the excavator boom at the lowest position to avoid tipping or upsetting, which may result in serious injury or death.
- Do not abuse equipment. Incorrect use of the attachment can damage equipment structurally and cause serious injury or death.
- Backup alarm must be in good working order to warn others. Use a backup camera or rear-view mirror that is in good condition to ensure the area behind the unit is clear. Drive at a slower speed to compensate for blind spots.
- Consult your power machine's Manual for operating capacity, lifting capacity, and operating specifications. Exceeding rated capacities and specifications can result in loss of control, roll-over or other serious hazard.
- Do not use this attachment as a lifting device for people or as a work platform. It is not properly designed or guarded for this use.
- Do not use this attachment to lift, carry, push, or tow other equipment or objects. It is not properly designed or guarded for this use. The operator could lose control resulting in equipment damage and/or tipping hazard.
- Do not use this attachment to pull and/or pry objects out of the ground or for digging into the ground. It is not properly designed or guarded for this use.
- Do not use this attachment to lift the front or back of the power machine off the ground. Doing so can damage the attachment, power machine, and/or cause serious injury or death.

Transport Safety

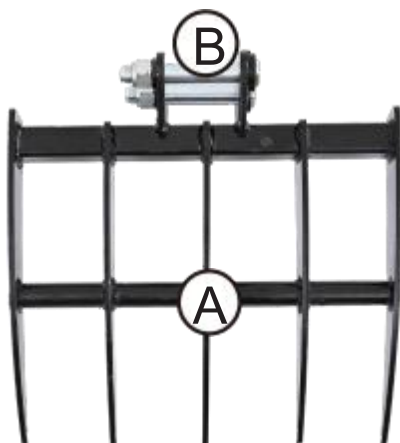
Danger

- Always transport over ramps and inclines with the heavy end of the power machine on the “uphill” side. This may require one to drive up or back down inclines.
- Always travel straight up and straight down inclines. Never make turns on the incline.
- When traveling on public roads whether at night or day, use accessory lights and other warning devices to warn operators of other vehicles. Comply with all federal, state, and local laws.

Specifications

Name		Mini Excavator Rake	
Rake	Dimensions (L×W×H)	20.28 × 19.29 × 5.91 (in.)	515×490×150 (mm)
			
	Net Weight	28.1 lb.	12.75 kg
Hinge Pin	Length (with Nut)	6.8 in.	172 mm
	Length (without Nut)	6.2 in.	158 mm
	Diameter	0.98 in.	25mm
	Hinge Pin Hole Spacing	3.62 in.	92 mm
Compatible Excavator Specs.	Arm Pin I.D.	0.98 in.	25 mm
	Arm Pin Hole No.	2	
	Weight	< 3310 pounds	< 1.5 metric tons

Package List



No.	Item	Qty.
A	Rake	1
B	Hinge Pins with Nuts	2

Installation

Removing the Current Attachment

Note: This chapter only provides general guidance on the excavator's current attachment removal. For more specific information, refer to your excavator's manual or your attachment's manual.

1. Start the engine of the excavator following the normal protocols.
2. Park the excavator on level ground as shown, with the boom horizontal, the arm vertical, and lowering the attachment to the ground.

Attachment

Boom

3. Shut off the engine.
4. Wait until the engine and hydraulic system have cooled to ambient temperature.
5. Remove the nuts from the two pins connecting the attachment



6. Tap out the pins with a hammer, keeping them clean.
7. Start the engine, raise the boom, and remove the current attachment.

Attaching the Rake

1. Remove the preinstalled hinge pins and their nuts on the rake.
2. Use 2 or more people or a hoist to stand the rake up on a level surface.
3. Start the engine of the excavator following the normal protocols.
4. Drive the excavator to the rear of the rake.
5. Align the hinge pin holes on the rake with the ones on the bottom of the excavator arm by moving the boom and arm.
6. Shut off the engine.
7. Insert the removed hinge pins through the holes and secure the pins with their removed nuts.



8. Restart the engine and test the rake by performing light operations to confirm its stability.

Operation

Warning

Be sure to read and understand all safety information in Operation Safety on page 2.

Rakes are designed for land clearing, gathering demolition debris, or sorting material.

1. Start the Engine.
2. Maneuver the mini excavator to the desired location for raking.
3. Lower the rake to the ground using the hydraulic controls.
4. Slowly move the mini excavator forward while raking the surface lightly. Avoid excessive force to prevent damage.

Use the controls to adjust the rake angle and depth as needed for optimal performance. Be cautious of any obstacles or debris that may interfere with the raking process.

5. Once raking is complete, raise the rake and shut off the engine.

Maintenance

Warning

- **ALWAYS** lower the rake to the ground and shut off the engine before any maintenance.
- **ALWAYS** wear **PPE** appropriate and adequate for maintenance.
- Periodically clean the rake, removing all mud and dirt.
- Lubricate the hinge pins with lithium grease every 10 hours of continuous operation. Shorten the schedule if the pins become unusually squeaky.
- Apply a light coating of oil to all exposed metal parts to prohibit corrosion.
- Periodically check the fasteners, retightening as needed.
- Repaint parts where paint is worn or scratched to prevent rust.
- Inspect for visible signs of wear, breakage, or damage. Replace or repair damaged components.
- Dispose of the used material and waste products from the replacement appropriately.
- Store this rake in a safe and secure place away from direct sunlight and inaccessible to children.