


WARNING
GEORIPPER MINI-TRENCHER

Any piece of equipment can be dangerous if not operated properly. **YOU** are responsible for the safe operation of this equipment. The operator must carefully read and follow any warnings, safety signs and instructions provided with or located on the equipment. Do not remove, defeat, deface or render inoperable any of the safety devices or warnings on this equipment. If any safety devices or warnings have been removed, defeated, defaced or rendered inoperable, **DO NOT USE THIS EQUIPMENT!!!**

Smart digging means calling 811 before each job. Whether you are a homeowner or a professional excavator, one call to 811 gets your underground utility lines marked for FREE.

 **WARNING:** Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize your exposure, avoid breathing exhaust, do not idle the engine except as necessary, operate and service your equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment. For more information go to www.P65warnings.ca.gov

WARNING!

- Never operate power equipment of any kind if you are tired or if you are under the influence of alcohol, drugs, medication or any substance that could affect your ability or judgment. Be alert! If you get tired while operating this equipment, take a break. Tiredness may result in loss of control.
- Provide adequate ventilation when operating this equipment. Internal combustion engines consume oxygen and give off deadly carbon monoxide gas.
- **DANGER:** This equipment has multiple pinch points that can cause dismemberment or death. Keep hands, feet and all other body parts clear at all times.
- Use extreme caution whenever operating, moving, loading or unloading this equipment. During and after operation the Muffler and other components are Extremely Hot and will cause Serious Burns.

If the person receiving this handout will not be the user of the equipment, forward these instructions to the operator. If there is any doubt as to the operation or safety of the equipment, **DO NOT USE!!! CALL A TOOL SHED IMMEDIATELY!!! FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN INJURY OR DEATH**

IMPORTANT SAFETY INSTRUCTIONS

To prevent serious injury:

All operators of the GeoRipper® minitrencher must read and fully understand this Operator's and Safety Manual prior to operating the minitrencher.

All operators must use required Personal Protection Equipment (PPE) as outlined by local or national safety codes. PPE for feet, legs, eyes, hands, face, and ears should be worn at all times while operating the GeoRipper minitrencher. At minimum, the operator shall wear safety-toe boots, safety glasses, and ear plugs.

KEEP FEET AND HANDS CLEAR OF DIGGING CHAIN AT ALL TIMES.



Before you dig: check the location of all underground services, especially electric cables. **ELECTRIC SHOCK CAN CAUSE SEVERE OR FATAL INJURY.**

Check that the powerhead, including handles, and all safety apparatus are in good working order.

Ensure that the GeoRipper® minitrencher is correctly fitted to the powerhead, the chain and belt are correctly tensioned, all nuts and bolts are tight and the belt guard is in place. Before starting the engine, remove and inspect the digging chain for any damage.

When starting the powerhead (see Fig. A below), use the correct safety starting techniques as outlined in the powerhead operator's manual and **ensure that the digging chain is clear of contact with the ground or any other object.** For extra safety, make sure the area around the digging chain is clear of loose vegetation, the digging chain may rotate upon startup of the powerhead. To stop chain from rotating, depress throttle control to increase engine RPM unlocking the throttle. After engine slows to idle, the chain should be stationary.

DIGGING CHAIN MUST BE STATIONARY WHEN POWERHEAD IS AT IDLE.

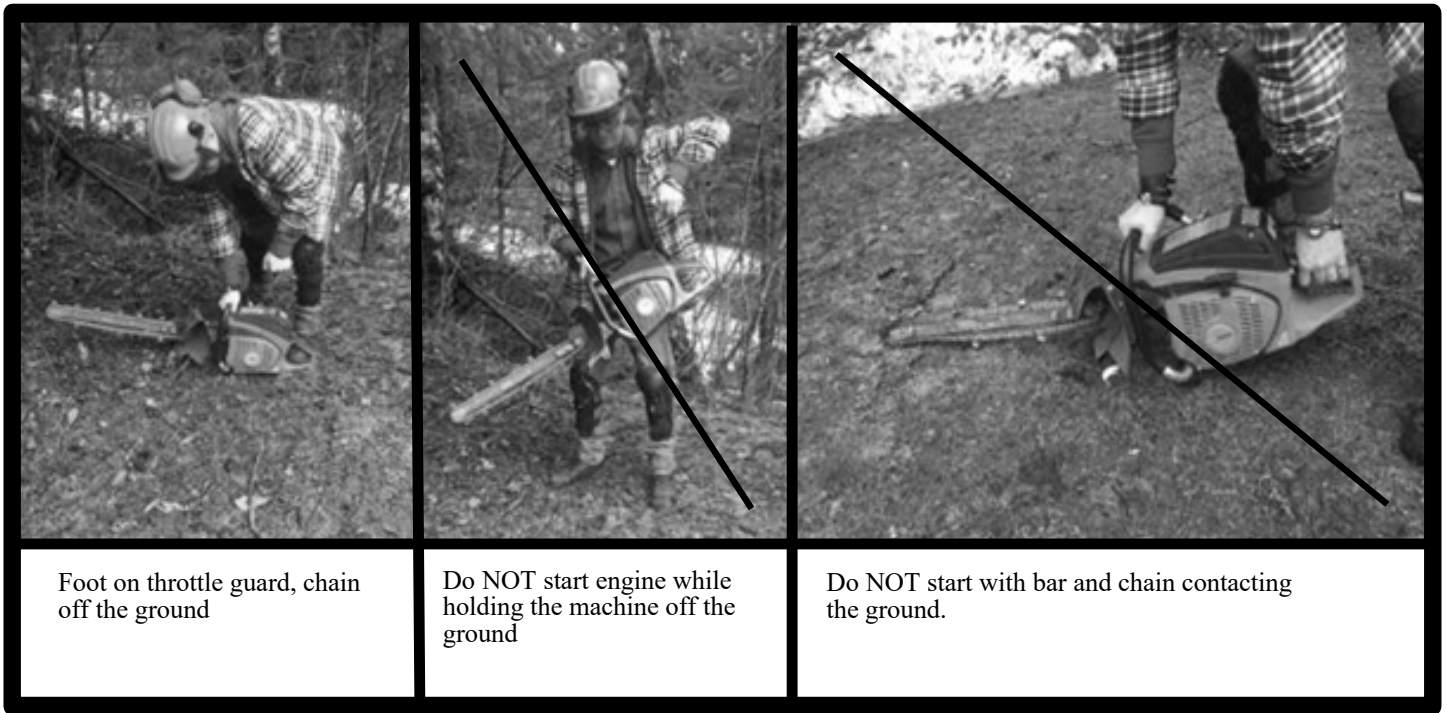


Fig. A

Maintain firm footing and a firm grip on the powerhead during digging. For easiest trenching, it is recommended to position the blade at an angle (25 to 30 degrees from vertical.)

Digging with the blade vertical should be avoided. Operating GeoRipper vertically allows the digging chain to be dangerously close to the operator's feet and legs. A vertical orientation will also increase operator fatigue.



Fig. B

When trenching on an incline, always stand downhill of the GeoRipper minitrencher (Fig. B) or with discharge chute facing downhill. (Fig. C) In slippery conditions, always maintain firm footing. Operator shall be aware of surroundings and stand so a sudden loss of balance will not bring body into contact with the trencher.

Minors shall not operate the GeoRipper® minitrencher.

The digging blade may kick back if the bar and digging chain contacts hard, solid ground or other obstructions.



Fig. C

When starting or testing the minitrencher, be sure to point the blade away from yourself and others. The chain will rotate at high speed without warning. People and animals shall be kept at a safe distance.

Rocks and debris can be ejected from the trencher behind and to the left of the operator (6 – 9 O’Clock.) Keep people, windows and other property clear of these positions.

Loose clothing shall not be worn when operating minitrenchers.

When operating GeoRipper minitrenchers, dirt guards can become hot to the touch. Be careful to not touch dirt guard with bare hands as it will be hot and could burn.

DIGGING CHAIN INFORMATION

Soil Type	Adjustment (Sag at midpoint)
Hard	1 inch
Clay	1 inch
Stoney	1 ½ inch
Clean	1 inch
Easy	1 inch
Abrasive/Sand	1 ½ inch

In rocky soil, decrease engine R.P.M. typically, 3/4 engine throttle is necessary for maximum productivity.

BEFORE YOU START TRENCHING

1. Visually inspect trencher before starting/restarting.
2. Ensure all nuts, bolts and screws are tight and secure.
3. Carry out all safety instructions as listed on pages 2 & 3.
4. Check with local authorities for any underground services.

CALL 811 BEFORE YOU DIG

In rural areas, check with landowners who may have a detailed knowledge of utility location.

In many locations (along road sides and near subdivisions) surface re-grading may have occurred after utilities were laid. This can result in cables or other utilities appearing unexpectedly at shallower depths than regulations require. Stop trenching if something doesn’t look or feel right.

5. Check along the desired trench line, clearing any obstructions, branches, large stones and other obstructions that could cause the operator to slip or loose footing.

USING THE GEORIPPER® MINITRENCHER

WARNING!

DO NOT ALLOW DIGGING CHAIN TO JAM OR SLOW TO A STOP WHILE HOLDING THE THROTTLE ON. TURN OFF ENGINE, DISCONTINUE OPERATION AND INVESTIGATE. RUNNING ENGINE AT MORE THAN IDLE WITH CHAIN JAMMED WILL CAUSE SEVERE CLUTCH AND/OR BELT DAMAGE.

If GeoRipper® minitrencher has an adjustment screw for the belt tension, the tension must be readjusted after the first hour of operation to prolong belt life.

1. Start the powerhead per the manufacturer's Operator's manual. Start trenching with the GeoRipper® minitrencher on the ground and tip the blade into the ground. Once the digging bar and chain are in the ground, the operator can choose to stand and cut through the ground backwards along their desired line or continue to "drag back and tip in." Keep the angle of the digging bar at 25-30 degree angle from vertical for comfortable operation. In lighter soils, it may be necessary to make second pass through the trench to clear out any spoils that fell back in.
2. Most powerheads are designed to operate best and develop maximum power near 3/4 throttle. Depending on soil type, best operating speeds will be from 3/4 to full throttle. For greater control at shallow depths [8 inches or less] a 1/2 to 3/4 throttle will improve trenching safety.
3. When trenching in difficult soils, the "drag back and tip in" method is recommended.
4. If you strike solid obstacles (large rocks, concrete, or large roots or buried timber) remove the obstacle before continuing. The GeoRipper® minitrencher is designed to dig earth, not large stones or tree roots over 3 inches in diameter.
5. For wider trenches [2-3 inches], rotate blade along the long axis of the blade while trenching. For anything over 3 inches, make a second trenching cut at the outside of the desired width and remove the soil between the two trenches.
6. Regular checking/adjustment of digging chains will extend chain life.
7. At the end of the job, and periodically during the project, brush the loose dirt off the digging chain and around the digging sprocket. Inspect the digging teeth for any damage.
8. To trench down an incline, always stand downhill of the trencher.
9. To trench laterally across an incline, always direct the discharge chute downhill. This will keep the spoils from falling downhill back into the trench.
10. Cut grass before trenching to help recover spoils.

SPECIAL SITUATIONS

1. The GeoRipper® minitrencher is not designed to trench in solid rock.
2. For digging in light or sandy soils containing fine, hard stones, GeoRipper® minitrenchers should be at full speed prior to contacting the ground. When trenching is complete, lift the digging bar and chain clear of the trench prior to throttling down. This will greatly reduce the occurrence of rock jams. Decreasing tension on the chain will also improve trenching in these conditions.
3. When digging at full depth in difficult, wet, pliable clays, it is recommended to make two half-depth passes in opposite directions. This will reduce operator fatigue, reduce engine strain, and reduce the possibility of jamming the digging chain with mud.
4. When cutting curves or radiuses, it is advisable to use several shallow passes rather than a single, full-depth cut.
5. When trenching across a roadway, it is recommended to first loosen the compacted gravel/stones along the desired line. Removing larger rocks before trenching will also increase productivity and avoid damaging the digging chain.
6. If digging chain is slowing or stopping because of excessive soil buildup, periodically stop the machine and clear the material for the chain, sprockets, and discharge chute. Some soils will buildup on the sprocket and add tension to the chain. Loosening the chain can help. Keeping engine speed high and constant can also help.