

OPERATING INSTRUCTIONS

Brown TRENCHMASTER®

BEFORE STARTING ENGINE

1. Check machine
 - a. Read and be familiar with equipment operating instructions.
 - b. Be sure you have the proper rotor for trench size and soil conditions. (See equipping your TRENCHMASTER® for varying conditions, Page 6-1.)
 - c. Check rotor retaining nut for tightness. (See Assembly Instructions)
 - d. Be sure belts and pulleys are properly aligned and adjusted.
 - e. Check hood mounting bolts and nuts for tightness.
 - f. Check set screws in pulleys & lock collars for tightness.
 - g. Check all other nuts and bolts for tightness.
 - h. Check Clutch Cable tension. Tension is adjusted using the turnbuckle so that the clutch spring stretches approximately 3/4" to 1" for 7" & 9" models or 1" to 1-1/4" for 12" models when the clutch lever is completely engaged.
 - i. If your TRENCHMASTER® is equipped with a rock rotor, the points must be loose and free to rotate. There should be 3/32" - 1/16" clearance between nut and point socket. (See Illustration on page 3-3.)
2. Check machine



CAUTION: NEW ENGINES SHIPPED WITH MACHINES ARE NOT SERVICED. ADD OIL TO CRANKCASE BEFORE STARTING.



WARNING: Gasoline is extremely flammable and highly explosive under certain conditions. Always stop the engine and do not refill tank while you are smoking or near open flame or sparks.



WARNING: Never start or run the engine while in an area where fumes may collect. Carbon monoxide from the exhaust is an odorless and deadly gas which must have adequate space or ventilation to allow rapid dispersal.

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- a. Be familiar with manufacturer's operating and safety instructions for engine.
 - b. Check oil level with dipstick and add if necessary. Do not overfill.
 - c. Check air filter and clean if necessary. Clean frequently if operating in dusty conditions.
 - d. Use only clean fuel. Unleaded fuel is recommended in all engines.
 - e. Be sure muffler and exhaust deflector are installed, are in proper position, and are in good operating condition. (Deflector should exhaust to left, away from the air intake.)
3. Start engine
 - a. Be sure clutch lever is in disengaged position and no tension is on drive belts.
 - b. Turn ignition switch to "ON" position.
 - c. Close choke if engine is cold.

Starting Engine Continued

- d. Pull start cord rapidly.
- e. When engine starts, gradually open choke and let engine warm up at about 1/4 speed.



WARNING: Do not operate machine without rotor hood installed and secure.



WARNING: Do not operate the machine within a 50' radius of people, animals, automobiles or glassed areas which might be damaged by projectiles.



WARNING: Operator must wear eye protection when operating the TRENCHMASTER®.



WARNING: Operator must locate and stay clear of all underground gas, electric, water and communications lines before starting trenching operation.

CALIFORNIA PROPOSITION 65 WARNING: Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

4. Operation
 - a. **To start trenching, set throttle full open.** Before engaging the clutch lever, the handle must be pushed toward the ground enough to allow the rotor to turn without hitting the ground. When rotor attains operating speed, the handle should be raised slowly so that the rotor engages the ground and gradually digs to trench depth.
 - b. When trench depth is achieved, the operator should **pull the machine to the rear** at such a speed that the trencher will dig without overloading the engine.



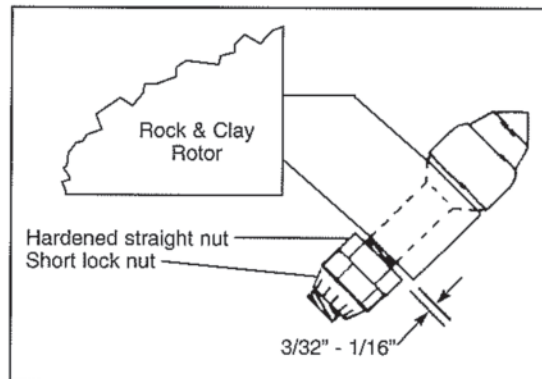
WARNING: Starting the trench is the most critical time for dangerous flying projectiles. Be especially cautious by policing the area for rocks or other possible projectiles and ensure the area is completely clear of people, animals, vehicles, etc. that may be damaged by projectiles.

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- c. When trenching, **if trencher strikes an underground object, stop immediately** to determine what the object is. Investigation should be done visually since touching an exposed electric wire could be fatal.
 - d. When trencher strikes a rock either the trench or rock should be moved unless your trencher is equipped with the rock rotor. If it has the rock rotor, then proceed slowly with a constant pressure against the rock. If the rock doesn't begin to crush or move after a few seconds, it may be necessary to remove the rock because the rock rotor can't cut through rock requiring more than 10,000 P.S.I. to crush.
 - e. When digging in extremely hard clay or other difficult soils, it may sometimes be necessary to use an oscillating action by applying and releasing pressure on handlebar, front to rear, alternately.

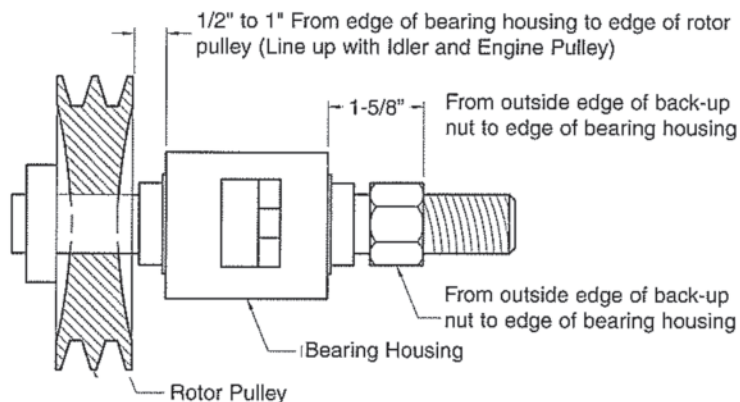
OPERATING INSTRUCTIONS (CONTINUED)

NOTE: Use the smallest rotor possible when trenching in hard clay, rocky or other difficult soils. Most cable TV or satellite dealers use a 4" or 5" deep rotor instead of the 7". By using a smaller rotor you may trench faster, you have less dirt to clean up and the rotors will last longer.

- f. As a safety consideration, where the soil has a large content of gravel and small rocks, it may be necessary to dig a hole by shovel to start the trench. This may preclude property damage or an injury from flying debris. (This would apply when near buildings or populated areas).
- g. If you encounter an unusual vibration when trenching, stop and shut off the engine immediately. Inspect to make sure that a point has not been broken. If a point is missing or broken, replace the point if it is a rock rotor or replace the rotor if it is a clay rotor.
- h. When installing points on rock rotors, the points must be loose and free to rotate to prevent uneven wear and breakage. The flat nut must go on first. When the flat retaining nut is tightened to the end of the threads there should be a gap of $1/16"$ to $3/32"$ (thickness of a nickel) between the socket and the flat nut. Use two wrenches to jam the lock nut against the flat retaining nut. See diagram below.



- i. The diagram below provides guidance for positioning components when replacing spindle, bearings or pulley on all models.



- j. Bearing and/or Spindle replacement - To replace the spindle and bearings it is advisable to remove the clay hood. Before loosening the lock collars you must remove the rotor pulley. The pulley is cast iron and is easily broken if impacted on the outer edges. Use a hammer and punch (or $3/4"$ bolt) against the thick center portion of the pulley. Soaking with penetrating oil will help. When the pulley is removed, loosen the set screws on the lock collars. Drive the shaft out from the pulley side. The back-up nut on the spindle is fixed and should not be loosened. Each bearing seats against a shoulder in the housing. They must be removed by placing a punch through the housing from the opposite side.