

TRENCHMASTER®

INTRODUCTION

You are now the owner of a Brown TRENCHMASTER®. The TRENCHMASTERS® are very versatile trenchers which, when properly equipped, will trench in almost any soil condition. The TRENCHMASTER® is an inexpensive alternative to the much heavier, more bulky and less maneuverable trenchers on the market.

This TRENCHMASTER® was manufactured by Brown Products, Inc. which has been in the development and production of quality farm equipment, right-of-way maintenance equipment and outdoor power equipment since 1943. Brown is proud of the reputation it has earned for quality products and customer service.

If you have any questions or problems with your TRENCHMASTER®, please contact your dealer or distributor. If they cannot answer your questions or solve your problem, feel free to call:



376 County Road 563, Midland City, AL 36350

(800) 897-3726 • Fax: (334) 983-1606

<http://www.brownproducts.com>

01/2008

WARRANTY STATEMENT

STATEMENT OF POLICY

In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice.

ENGINE WARRANTY

Warranty of all engines and engine parts is the sole responsibility of the particular engine manufacturer. See engine warranty in the engine manual. Engine problems must be checked and approved for warranty by an authorized engine manufacturers service center. Brown Products, Inc. is not an authorized service center for any engine manufacturer and accepts no responsibility for engine warranties, either express or implied.

WARRANTY BY MANUFACTURER

Dealer/distributor understands and agrees that the manufacturer extends only the following warranty to its customers. In the event dealer/distributor extends any additional warranty such as enlarging the scope or period of warranty or undertaking a warranty of fitness for any particular purpose or obligation not encompassed in manufacturer's warranty, dealer/distributor shall be solely responsible therefore and shall have no recourse against manufacturer with respect thereto.

WARRANTY

LIMITED WARRANTY

Brown Products, Inc. hereby warrants that Brown's TRENCHMASTER® products will be free from defects in material and workmanship under normal use according to the provisions and limitations herein set forth. All parts, specifically EXCLUDING expendable "wear" parts, that become unserviceable within one year (12 months) from date of purchase, shall be repaired or replaced at Brown's option - at no cost to purchaser.

LIMITATIONS

The obligation of Brown for breach of warrant shall be limited to products manufactured by Brown (1) that are installed, operated and maintained according to Brown's instruction furnished and/or available to the purchaser upon request, (2) that are installed according to all other applicable Federal, State and local codes or regulations, and (3) that the purchaser substantiates were defective in material and workmanship notwithstanding that they were properly installed and correctly maintained as set forth and were not abused or misused. The obligation of Brown shall be limited to replacing or repairing the defective product, at the option of Brown. Brown shall not be responsible for any labor or cost of removal or reinstallation of its products and shall not be liable for transportation costs to and from its plant in Midland City, Alabama. Use of parts for modification or repair of TRENCHMASTERS® or any component part thereof not authorized or manufactured by Brown specifically for the TRENCHMASTERS® shall void this warranty. This warranty shall not apply to any damage to or defect in TRENCHMASTERS® that is directly or indirectly caused by (1) FORCE MAJEURE, Act of God or other accident not related to an inherent product defect, of (2) abuse, misuse or neglect of the TRENCHMASTER®, including any damage caused by improper assembly, installation, adjustment, service maintenance or faulty instruction of the purchaser. Other than as expressly set forth hereinabove, Brown makes no other warranty, express or implied, with respect to the TRENCHMASTER®, including but not limited to any warranty of merchantability or fitness for a particular purpose. And in no event shall Brown be responsible for any incidental or consequential damages of any nature suffered by purchaser or any other person or entity caused in whole or in part by the TRENCHMASTER®. Any person or entity to whom this warranty extends and who claims breach of warranty against Brown must bring suit thereon within one year from the date of occurrence of such breach of warranty or be forever barred from any and all legal or other remedies for such breach of warranty. Brown is not responsible for and hereby disclaims any undertaking, representation or warranty made by any dealer, distributor or other person that is inconsistent with or in any way more expansive than the provisions of this limited warranty. This warranty grants specific legal rights and shall be read in conformity with applicable state law. In some jurisdictions, the applicable law mandates warranty provisions that provide greater rights than those provided for herein. In such case, this limited warranty shall be read to include such mandates provisions; and any provision herein that is prohibited or unenforceable in any such jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions and without affecting the validity or enforceability of such provisions in any other jurisdiction(s).

TrenchMaster® Owner's Warranty Card

Name _____ Model _____

Address _____ Serial Number _____

City _____ Date Purchased _____

State _____ TrenchMaster® Dealer _____

IMPORTANT: TO PLACE THE BROWN WARRANTY INTO EFFECT, THE WARRANTY CARD ATTACHED BELOW MUST BE COMPLETED AND MAILED WITHIN 30 DAYS AFTER RECEIVING THIS EQUIPMENT.



NOTE: FILL IN THE ABOVE INFORMATION AND RETAIN IN YOUR MANUAL FOR YOUR RECORDS. THEN COMPLETE & MAIL THE POST CARD INSERT FOR YOUR WARRANTY REGISTRATION.

For additional information and inquiries, please contact: _____



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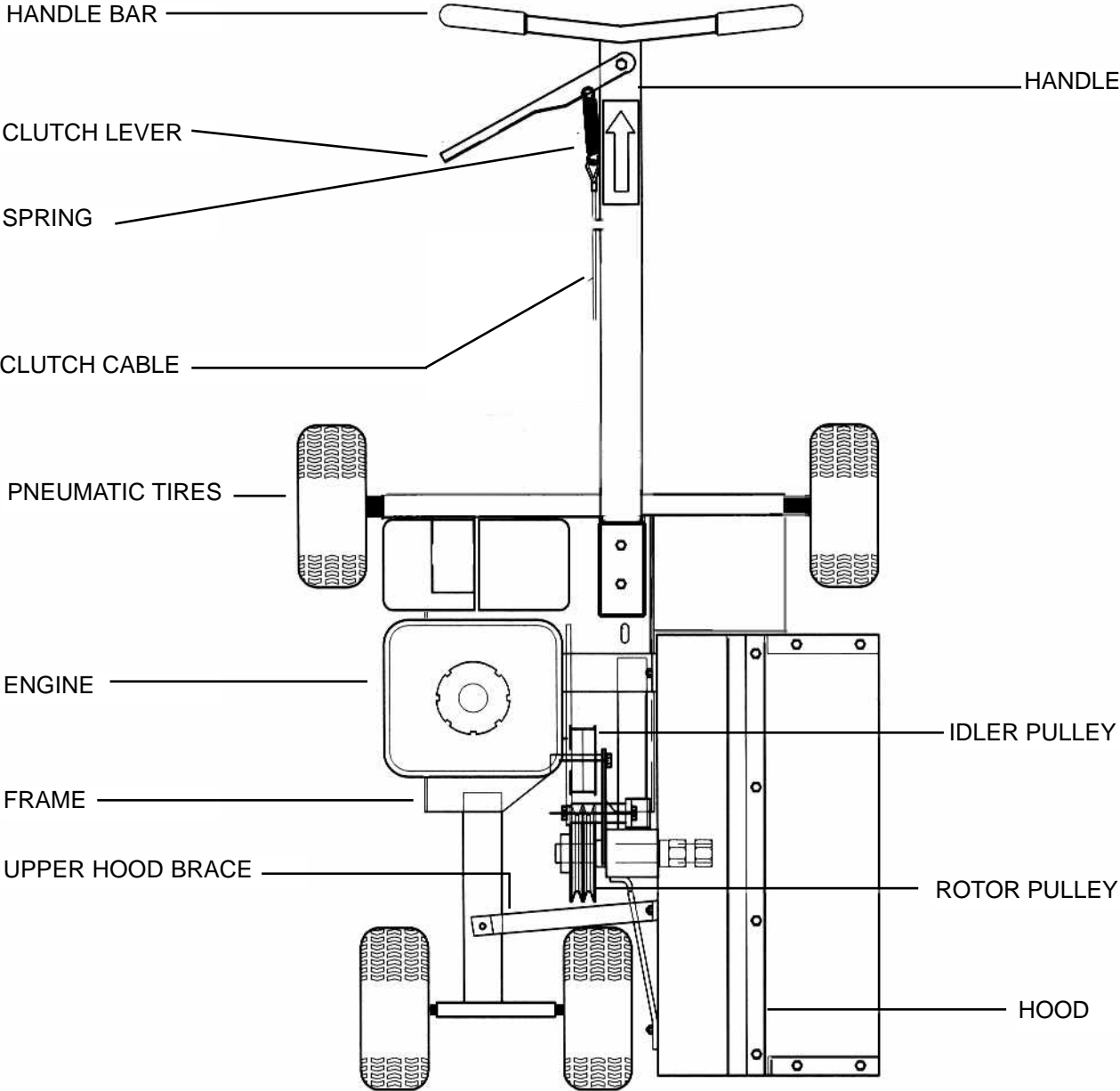
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GETTING ACQUAINTED WITH YOUR BROWN TRENCHMASTER®

FIGURE #1





WARNING

SAFETY PRECAUTIONS



WARNING: Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.

DO NOT assemble TRENCHMASTER® before reading assembly instructions.

DO NOT start TRENCHMASTER® before reading operating instructions.

DO NOT modify TRENCHMASTER® in any way.

DO NOT operate without all shields in place.

DO NOT operate without eye protection. Goggles are provided with each TRENCHMASTER®

DO NOT lift trencher off the ground until engine is switched off and rotor has stopped.

DO NOT drop the TRENCHMASTER® to the ground from truck tailgate or bed of trailer.

DO NOT operate unless safety area is clear of people, animals, vehicles, and glassed areas that may be damaged by possible projectiles. (See Soil & Debris Exhaust chart showing areas of possible projectiles.)

DO NOT begin operation until all underground pipes, electrical and communications lines and sprinkler lines have been located and marked. The utility companies will be glad to provide information on their facilities. A ruptured gas line or cut electrical cable may cause injury or death.

DO NOT place hands or feet near belts or rotor mechanisms while engine is running.

DO NOT operate TRENCHMASTER® without wearing proper shoes (high top leather shoes or boots are recommended).

DO NOT allow bystanders or spectators to be within 50 feet of TRENCHMASTER® while engine is running. (See Soil & Debris Exhaust chart showing areas of possible projectiles).

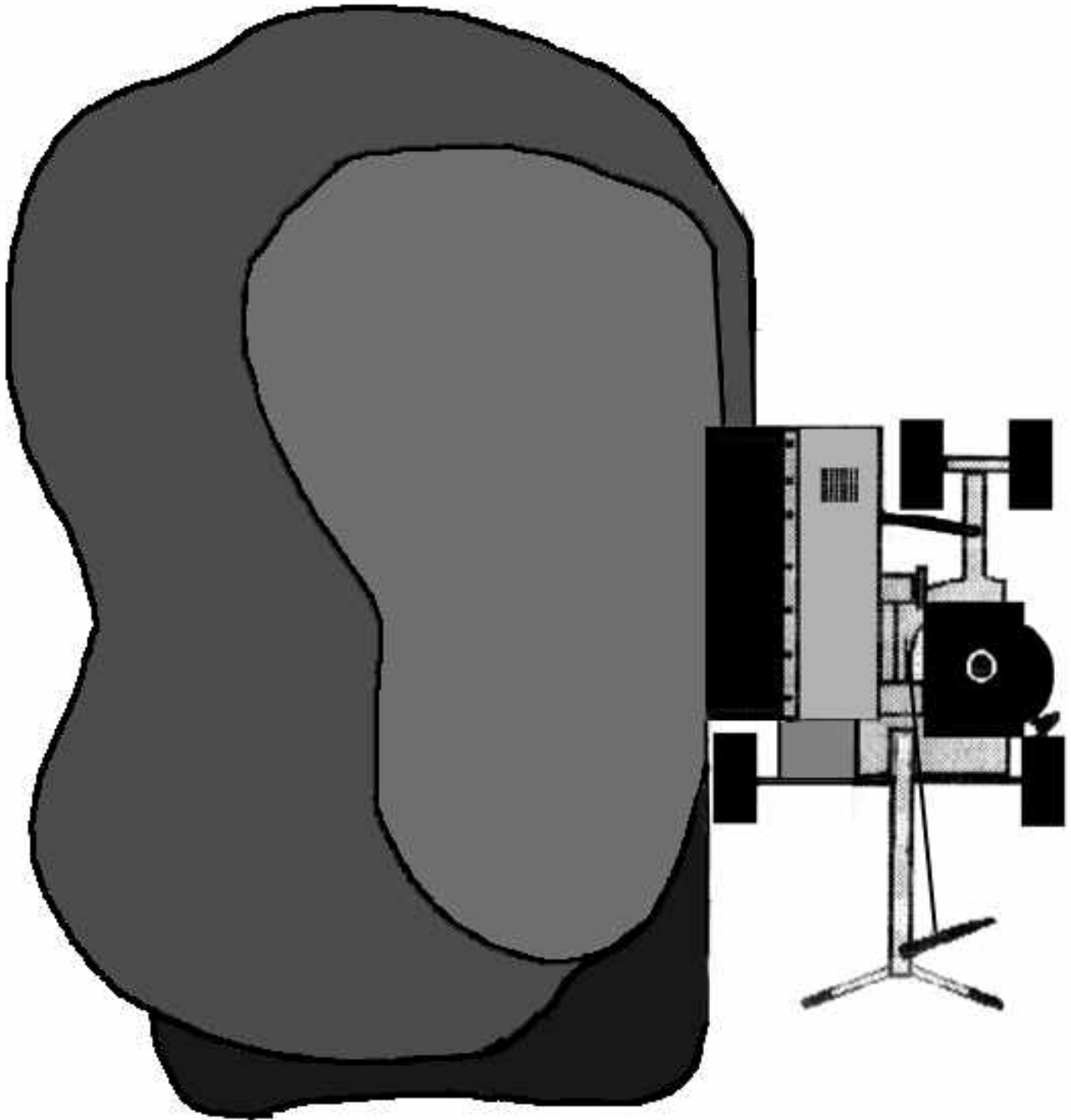
DO NOT operate TRENCHMASTER® until all surface obstructions have been cleared from area. All rocks and debris should be removed from the area.

DO NOT disconnect oil alert on engines. To do so may void your engine warranty.

**TRENCHMASTER®
SOIL & DEBRIS EXHAUST CHART**

FIGURE #2

SAFETY PRECAUTIONS



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.

-
- 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.



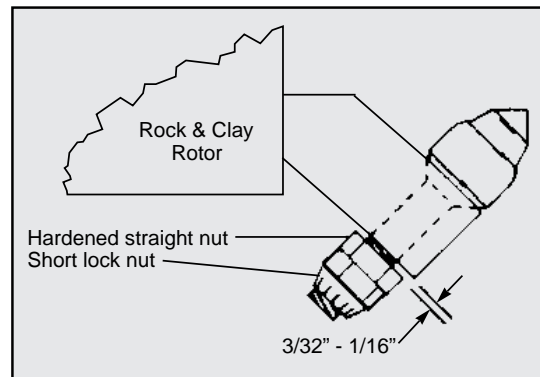
WARNING: Starting the trench is the most critical time for dangerous flying projectiles. Be especially cautious by policing the area for rocks or other possible projectiles and ensure the area is completely clear of people, animals, vehicles, etc. that may be damaged by projectiles.

-
- 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.

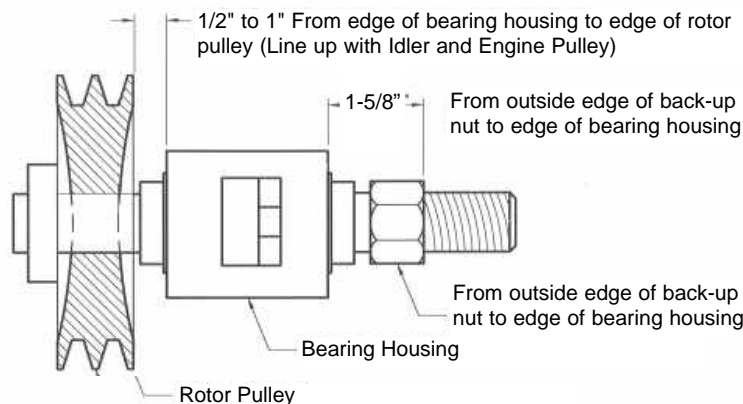
OPERATING INSTRUCTIONS (CONTINUED)

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.

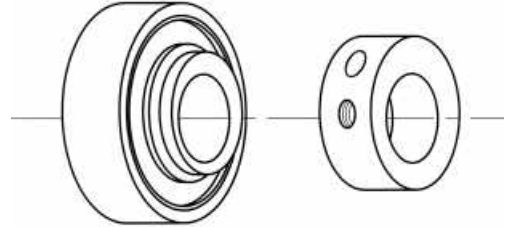


- j. Bearing and/or Spindle replacement - To replace the spindle and bearings it is advisable to remove the clay hood. Before loosening the lock collars you must remove the rotor pulley. The pulley is cast iron and is easily broken if impacted on the outer edges. Use a hammer and punch (or $3/4"$ bolt) 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.

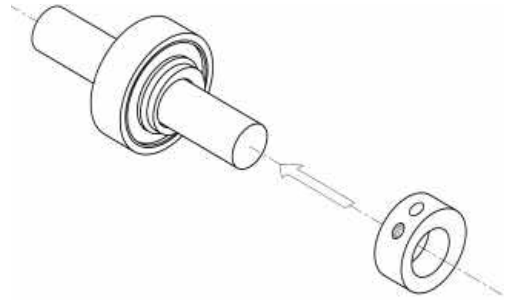
HOW TO INSTALL THE SELF-LOCKING COLLAR

The Self-Locking Collar originated in 1925. It was designed to facilitate the mounting of wide inner ring ball bearings by eliminating the need for locknuts, washers, shoulders, sleeves and adapters. This collar made the wide inner ring ball bearings easiest of all to install. The inside of the locking collar has a counter-bored recess which is made eccentric with the bore. The collar and the end of the bearing inner ring with which it engages are both machined to act as mating cams on the shaft. When the collar is engaged to the inner ring, it grips the shaft tightly with a positive binding action that increases with use. No adjustments of any kind are necessary and it is impossible to cramp or overload the bearing in mounting.

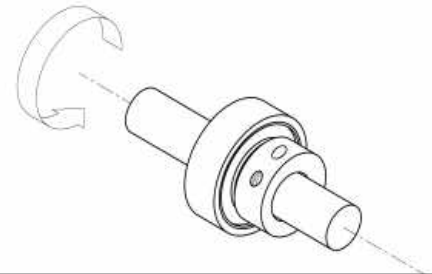
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1. Observe cam design of wide inner ring and self-locking collar. use the punch in the unthreaded hole.



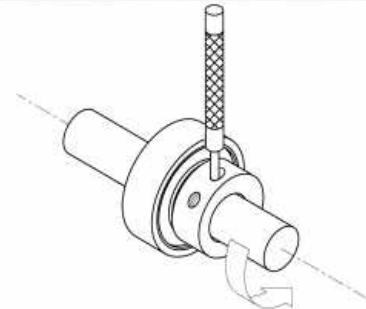
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2. Mate cam of collar with cam of bearing inner ring.



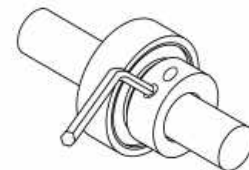
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3. Pressing collar lightly against inner ring, turn collar **in direction of shaft rotation** until engaged.



-
4. With drift pin in collar hole, strike **in direction of shaft rotation** to lock.



-
5. Tighten set screw in collar **after applying Locktite Threadlocker #242 to the set screw threads.**



SCHEDULED MAINTENANCE

Good maintenance practices are critical if you are to enjoy trouble free operation and long life from your Brown TRENCHMASTER®. Most required maintenance procedures are shown in this section. However, other common sense maintenance practices such as cleanliness and storage must be followed.

1. See manufacturers operating and maintenance instructions for engine maintenance procedures.
2. Check all bolts and nuts for tightness before operation and periodically thereafter.
3. Check all set screws in belt pulleys and bearing lock collars before operation and periodically thereafter. If set screws are vibrating loose, Loctite's "Threadlocker" #242 should be applied to the threads and the set screws retightened.
4. Check drive belts for proper tension before operation. Adjust if necessary. Adjust belt tension using the turnbuckle to ensure the spring stretches approximately 3/4" to 1" for 7" & 9 " models or 1" to 1-1/4" for 12 " models when clutch lever is engaged. Keep belt free of dirt and grease at all times.
5. Rotor points must be checked for wear before operation and periodically thereafter. Check at least every 200 feet initially. When working in difficult soil conditions, they should be checked more often. In good soil conditions, they may be checked less often but never less than each 500 feet of trenching.
6. Check rock rotors before operation and periodically thereafter. Points on the rock rotors should be loose in the socket and should rotate freely to prevent uneven wear or breakage. The nut on the point should have between 1/16" and 3/32" clearance (a nickel is 1/16" thick) between the nut and the socket (See Figure on page 3-3)
7. Check rotor bearings for wear every 2000 feet. This is done by lifting the front of the machine off the ground so that the rotor may be turned by hand. Then grasp the end of the rotor firmly and try to move it from side to side. If there is more than 1/4" movement from side to side, the bearings must be replaced.
8. Check the idler pulley for wear before operation and replace if necessary.
9. Periodically check the idler arm for lateral movement. If the pivot bolt is badly worn, or the bolt is loose, the idler arm may have enough lateral movement to cause the belts to come off the pulley. The pivot bolt should be tight enough to prevent lateral movement, but not so tight that it restricts free pivoting of the idler arm.
10. See page 3-4 for instructions on how to use the eccentric lock collar on rotor bearings.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Burning belts	Improper tension on belts	Adjust belt tension Using the turn buckle on the clutch cable. Spring should stretch approximately 3/4" to 1" when clutch lever is fully engaged.
	Pulleys not aligned	Align pulleys
	Pulleys worn excessively	Replace pulleys
	Pulleys broken or burrs on pulley	Replace pulleys
	Wrong type belts	Replace with industrial belts
Excessive vibration	Rotor bearings worn excessively	Replace bearings
	Rotor points broken or missing	Replace points or rotor
	Rotor bent	Replace rotor
Rotor striking	Rotor too close to hood	Loosen eccentric lock collars on spindle and move rotor away from hood. CAUTION: Use thread lock on all set screws and tighten securely. (See page 4-1, Paragraph 3)
	Eccentric lock collars loose	Tighten eccentric lock collars and secure set screws with thread lock. (See page 3-4)
	Rotor bent	Replace rotor
	Nuts on point loose	Align points and tighten nuts.
Pulleys coming off shaft	Pulley set screw not tight	Remove set screws and apply thread lock to set screws then tighten very firmly.
	Eccentric lock collars set screws not tight	Remove set screws from eccentric lock collars, reset lock collars, apply thread lock and tighten very firmly. (See page 3-4)
	Eccentric lock collars worn excessively	Replace eccentric lock collars (See page 3-4)

EQUIPPING YOUR TRENCHMASTER® FOR VARYING CONDITIONS

There are several options available which enable you to adapt your TRENCHMASTER® to perform well under varying conditions.

The most common conditions requiring special adaptation are listed below and recommended options are listed with each condition.

1. Soil type

- a. Sand, sandy loam, swampy & river soils - Use clay rotor.
- b. Sticky clay or wet soils - Use clay rotor.
- c. Rock, stone & heavy gravel - Use rock rotor.
- d. Scattered rock, small gravel, asphalt and hard clay - Use clay rotor.

SPECIAL NOTE: Rock rotor points should not be used in sand. Sand may jam the points and cause extremely rapid wear.

2. Soil moisture

- a. Wet sand and damp abrasive type soils - Use the clay rotor.
- b. Wet clay or wet heavy soils & any soil that is adhesive or cohesive - Use the clay rotor.

3. Depth and width of trench

Choose the smallest trench that is practical for the job. Digging a smaller trench will save you time and money in three ways:

- a. You will be able to trench faster.
- b. You will have less soil to clean up.
- c. your digging rotors will last longer.

4. Root Pruning - Use root pruner rotors.

5. Selecting the proper rotor for your TRENCHMASTER® (See the rotor compatibility list on page 10-1)

TRENCHMASTER® MODEL F-1202

ASSEMBLY INSTRUCTIONS

Model F-1202 TRENCHMASTERS® are shipped assembled except for attaching the handle and the control cable. (See note below for exception).

STEP #1

Lay out the assembled handle and the hardware.

STEP #2

Slide the handle into the handle mount on the frame and align holes. Place the two 5/16" x 2 1/4" bolts through the holes. Start and tighten the two 5/16" lock nuts.

STEP #3

Attach the cable to the idler assembly and adjust the cable tension by turning the turnbuckle. The cable tension should cause the spring to stretch at least 1" to 1 1/4" when handle is locked. Tighten jam nut against end of turnbuckle.

Step #4

To install the digging rotor, remove the outside nut [#18] on the spindle (**the inside nut is fixed to the spindle**). When looking under the hood, the rotor turns counter clockwise. Therefore, place the rotor on the spindle with the points facing up on the end of the rotor nearest the handle. Replace the nut [#18]. This nut does not need to be put on extremely tight. Tighten to about 100 foot pounds of torque. Hand tighten with a 14" wrench. **CAUTION:** If using an impact wrench, do not over tighten because it may be very difficult to remove the nut when changing rotors.

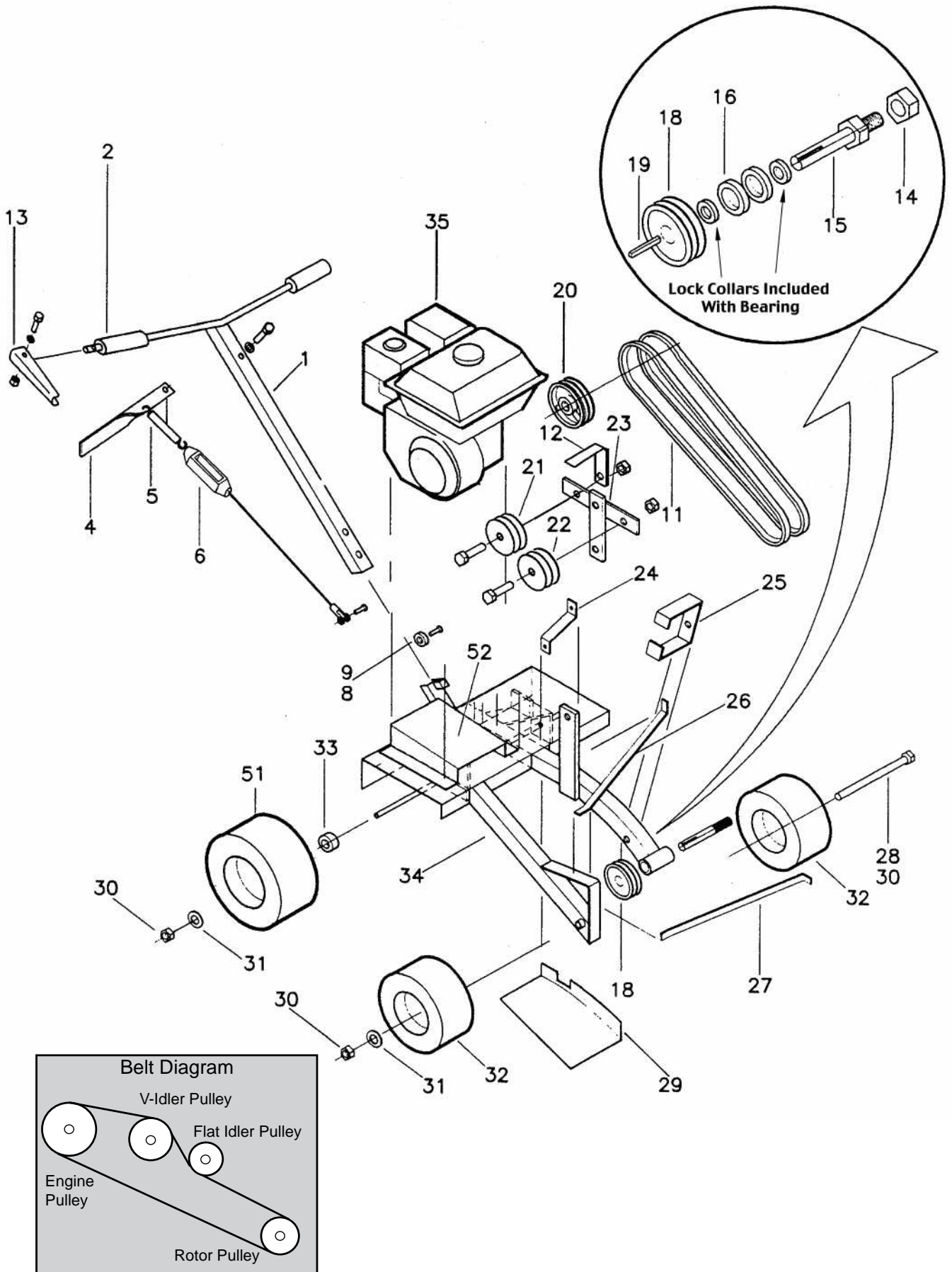


CAUTION: If the spring tension is too low, it will allow the belt to slip during operation and may cause rapid disintegration of the belt.

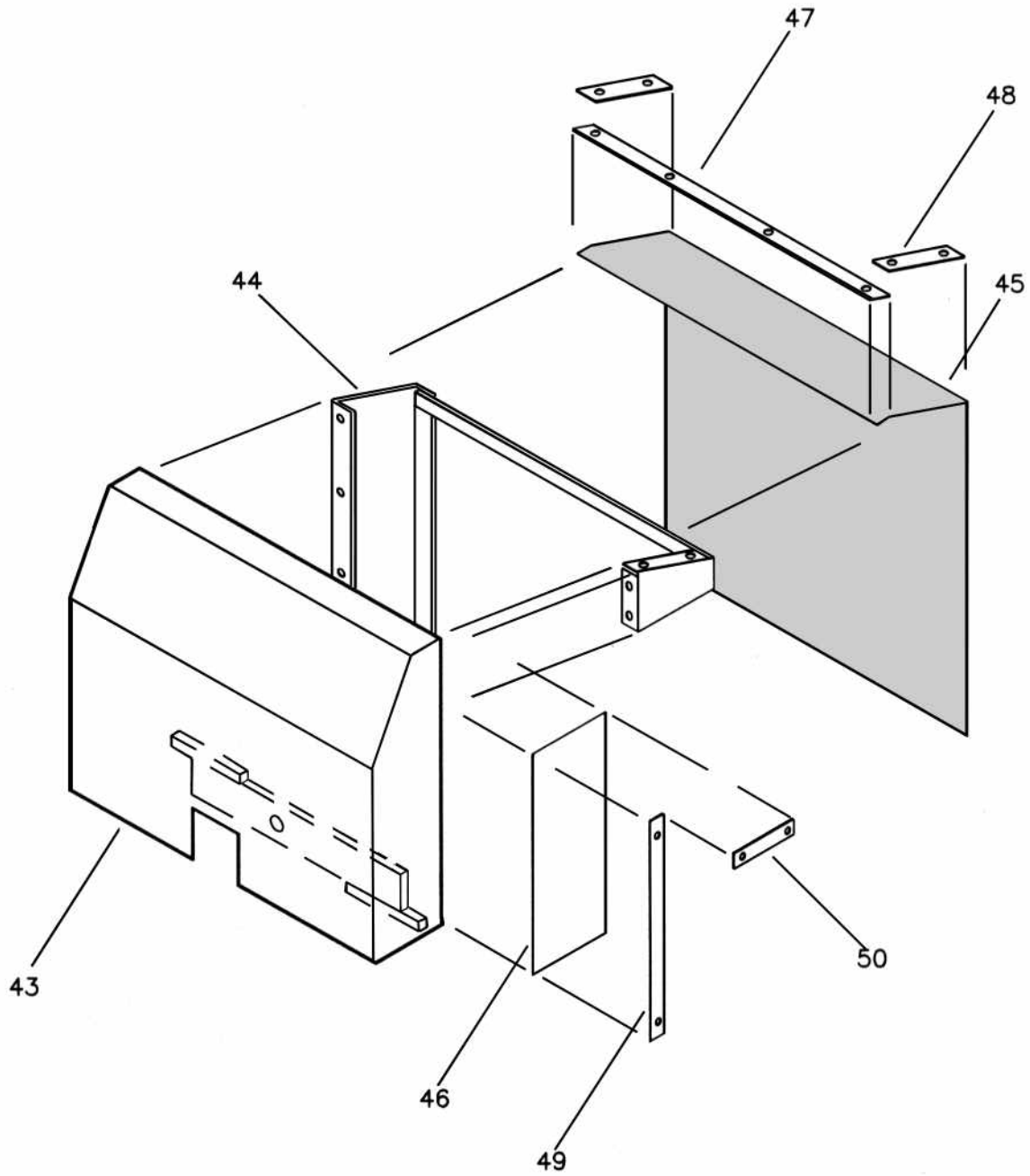


CAUTION: The engine is shipped without oil so oil must be added before starting engine.

F-1202 TRENCHMASTER® Parts Drawings



TRENCHMASTER® MODEL F-1202
Parts Drawings
42



F-1202 TRENCHMASTER® Parts List

REF.NO.	PARTNO.	DESCRIPTION	NO. REQ'D.
1	12-01	HANDLE	1 EA.
2	12-02	HANDLE GRIP	2 EA.
4	12-04	CLUTCH LEVER	1 EA.
5	12-05	SPRING (CLUTCH)	1 EA.
6	12-06	CABLE W / CLEVIS & TURNBUCKLE	1 EA.
8	12-08	CABLE SHEAVE	2 EA.
9	12-09	SHEAVE PIN W/COTTER KEY	2 EA.
11	12-11	BELT, INDUSTRIAL, BK-71	2 EA.
12	12-12A	BELT STOP (HONDA ONLY)	1 EA.
13	701-12	CLUTCH LEVER (LOCKING)	1 EA.
14	12-14	NUT, ROTOR, 1" NC, GRADE 5	1 EA.
15	12-15B	SPINDLE, ROTOR 1"	1 EA.
16	12-16	SPINDLE BEARING, ECCENTRIC, W / LOCK COLLAR	2 EA.
18	12-18-2	ROTOR PULLEY	1 EA.
19	12-19	KEY, SQUARE, 1/4"	2 EA.
20	12-20-2	ENGINE PULLEY	1 EA.
21	12-21-2	V-IDLER PULLEY	1 EA.
22	12-22-2A	FLAT IDLER PULLEY	1 EA.
23	12-23	IDLER BRACKET	1 EA.
24	12-24	REAR HOOD BRACE	1 EA.
25	12-25	BELT GUIDE	1 EA.
26	12-91	FRONT UPPER HOOD BRACE	1 EA.
27	12-92	FRONT LOWER HOOD BRACE	1 EA.
28	12-28	AXLE BOLT, 5/8" X 9" GRADE 5	1 EA.
29	12-29	DEFLECTOR	1 EA.
30	703-06	LOCK NUT, 5/8" NC, GRADE 5	3 EA.
31	12-31	WHEEL BEARING 5/8"	8 EA.
32	12-32A	PNEUMATIC WHEEL W / BEARING (FRONT)	2 EA.
33	12-33	WHEEL SPACER	2 EA.
34	12-34A	FRAME ASSEMBLY (W / SPINDLE, BEARINGS & PULLEY)	1 EA.
35	12-35	ENGINE	1 EA.
36	12-36	DECAL KIT (COMPLETE SET)	1 EA.
42	12-43A	CLAY SHROUD ASSEMBLY	1 EA.
43	12-44A	CLAY SHROUD	1 EA.
44	12-45	SHROUD OUTER FRAME	1 EA.
45	12-46	RUBBER DRAPE	1 EA.
46	12-47	RUBBER FLAP	1 EA.
47	12-48	UPPER DRAPE STRAP	1 EA.
48	12-49	END DRAPE STRAP	2 EA.
49	12-50	VERTICAL FLAP STRAP	1 EA.
50	12-51	HORIZONTAL FLAP STRAP	1 EA.
51	12-32B	PNEUMATIC WHEEL W / BEARING (REAR)	2 EA.
52	12-89	ENGINE MOUNT, HONDA ENGINE	1 EA.
52	12-89B	ENGINE MOUNT, BRIGGS ENGINE	1 EA.
	702-122	WRENCH, ROTOR NUT, W/ HANDLE	1 EA.