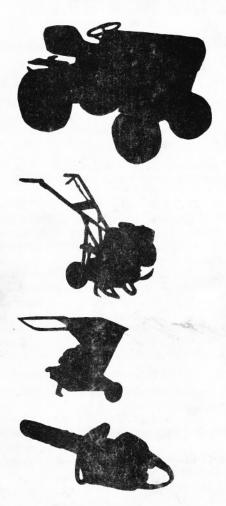
OWNER'S MANUAL

18 H.P. TWIN HYDRO GARDEN TRACTOR MODEL NUMBER T8338AR



LAWN AND GARDEN POWER EQUIPMENT



OUTDOOR POWER PRODUCTS

DIVISION OF ROPER CORPORATION

CONGRATULATIONS . . .

on your purchase of a Roper 18 Twin-Hydro Garden Tractor. It has been designed, engineered and manufactured to give you dependability and performance. Should you experience any problem you cannot easily remedy, please contact your nearest authorized Roper dealer. He has competent, well-trained technicians and the proper tools and parts to service or repair this unit.

Please read and retain this manual. Following the "Rules For Safe Operation", "Assembly", "Operation", and "Maintenance" instructions will help you achieve a long, safe, service life for your Garden Tractor.

LIMITED WARRANTY ROPER OUTDOOR POWER PRODUCTS

Roper Corporation warrants to the original consumer purchaser that this product is free from defects in materials and workmanship. For a period of one (1) year from date of purchase, we will repair or replace, at our option, without charge, any part except for the engine which we find to be defective due to materials or workmanship. This warranty is subject to the following limitations:

- 1. Engine Warranty: All engine powered Roper products have a separate Engine Warranty extended by the individual Engine Manufacturer. The Engine Warranty must be referred to in the event of an engine problem.
- 2. Battery Warranty: On products equipped with a battery, Roper will replace, without charge to you, any battery which we find to be defective during your first ninety (90) days of ownership. After ninety (90) days, we will exchange the battery charging you 1/12 of the price for a new battery for each full month from the date of the original sale.
- 3. The warranty period for any products used for rental or commercial purposes is limited to 45 days from the date of original purchase.
- 4. This warranty applies only to products which have been properly assembled, adjusted and operated in accordance with instructions found in the Product Literature for your product. This warranty does not apply to any product which has been subjected to alteration, misuse, abuse, improper assembly or installation or delivery damage.
- 5. In the event you have a claim (other than an engine claim) under this warranty, you must return the product to an authorized Roper Outdoor Products service dealer.

Should you have any unanswered questions concerning this warranty, please contact:

Roper Outdoor Power Products Division of Roper Corporation Service Department 1905 West Court Street Kankakee, Illinois 60901

giving the model number, serial number and date of purchase of your product and the name and address of the authorized Roper dealer from whom it was purchased.

This warranty does not apply to incidental or consequential damages and any IMPLIED WARRANTIES ARE LIMITED TO THE SAME TIME PERIODS STATED HEREIN FOR ROPER'S EXPRESSED WARRANTIES. Some states do not allow the limitation of consequential damages or limitations of how long an implied warranty may last, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

This is a LIMITED WARRANTY within the meaning of that term as defined in the Magnuson-Moss Act of 1975.

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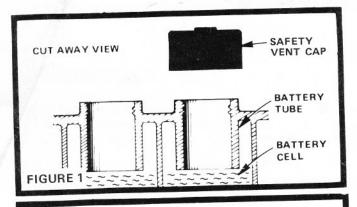
RULES FOR SAFE OPERATION

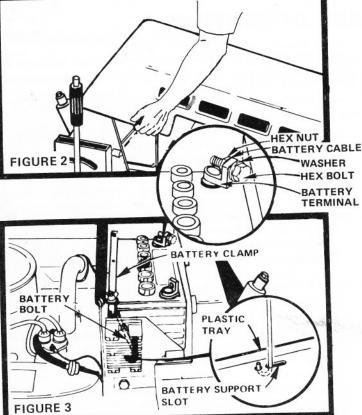
- Know the controls and how to stop quickly. READ THE OWNER'S MANUAL.
- 2. Do not allow children to operate the vehicle. Do not allow adults to operate it without proper instruction.
- Do not carry passengers. Keep children and pets a safe distance away.
- Clear the work area of objects which might be picked up and thrown.
- Disengage all attachment clutches and shift into neutral before attempting to start the engine.
- Disengage power to attachments and stop the engine before leaving the operator's position.
- Disengage power to attachments and stop the engine before making any repairs or adjustments.
- Disengage power to attachments when transporting or not in use.
- 9. Take all possible precautions when leaving the vehicle unattended, such as disengaging the power-take-off, lowering the attachments, shifting into neutral, setting the parking brake, stopping the engine, and removing the key.
- Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of slopes (not greater than 15°); never across the face.
- Reduce speed on slopes and make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.
- 12. Stay alert for holes in the terrain and other hidden hazards.
- 13. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweights or wheel weights when suggested in this owner's manual.
- 14. Watch out for traffic when crossing or near roadways.

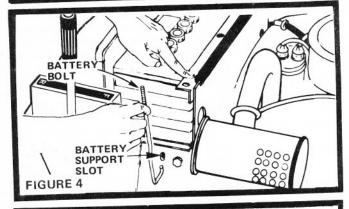
- 15. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the vehicle while in operation.
- 16. Handle gasoline with care it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.
 - c. Open doors if the engine is run in the garage exhaust fumes are dangerous. Do not run the engine indoors.
- Keep the vehicle and attachments in good operating condition, and keep safety devices in place.
- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- 19. Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
- To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
- 21. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
- 22. Do not change the engine governor settings or overspeed the engine.
- 23. When using the vehicle with mower, proceed as follows: (1) Mow only in daylight or in good artificial light.
 - (2) Never make a cutting height adjustment while the engine is running if the operator must dismount to do so.
 - (3) Shut the engine off when removing the grass catcher or unclogging chute.
 - (4) Check the blade mounting bolts for proper tightness at frequent intervals.
- 24. Check the grass catcher bags frequently for wear or deterioration. Replace with new bags for safety protection.

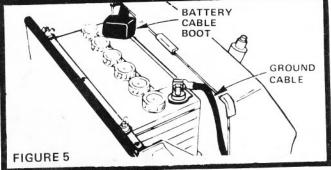


LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS. IT MEANS -- ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.









To assemble and adjust your Tractor you will need: two 7/16", one 9/16" and one 3/4" Wrenches.

ASSEMBLY

- 1. Remove Shipping Wires, Battery, Steering Wheel and Bag of
- 2.Filling and charging Battery (before installing): NOTE: SEE DETAILED INSTRUCTIONS PACKAGED WITH BAT-TERY



WEAR EYE AND FACE SHIELD.

 Fill Battery with electrolyte to bottoms of tubes in cells (Fig. 1). NOTE: DO NOT OVERFILL. OVERFILLING WILL RESULT IN DAMAGE TO TRACTOR.



WASH HANDS OR CLOTHING IMMEDIATELY IF ACCIDENTALLY IN CONTACT WITH ELECTROLYTE.

- b. Check level of electrolyte after 30 minutes. Add additional electrolyte if necessary. NOTE: Press Safety Vent Caps down securely in place.
- Charge Battery at a rate not exceeding three amperes for about two and one half hours.



DO NOT SMOKE. FUMES FROM CHARG-ED ELECTROLYTE ARE EXPLOSIVE.

- d. Neutralize excess electrolyte for disposal by adding it to four inches of water in a five gallon plastic container. Stir with a wooden or plastic paddle while adding baking soda until the addition of more soda causes no more foaming.
- 3. Install Battery using:



Battery Clamp, two Wing Nuts, two Battery Bolts,



four Flat Washers, two Hex Bolts and two Hex Nuts found in Bag of Parts.

- a. Grasp each side of Hood at rear and pull outward and upward (Fig. 2).
- b. Remove tape from Plastic Tray. Position Plastic Tray so that drain hole in Tray is over round hole of Battery Support.
- c. Place Battery in Plastic Tray (Battery Terminals to rear of Tractor) (Fig. 3).
- d. Hook one Battery Bolt into slot on the left side of Battery Support (Fig. 3). Fasten Battery Clamp (inner slot) to Battery Bolt with a Flat Washer and Wing Nut.
- e. Hook remaining Battery Bolt to right side of Battery Support and fasten Battery Clamp to it with a Flat Washer and Wing Nut (Fig. 4). Tighten Wing Nuts securely.
- f. Place a Flat Washer over the end of a Hex Bolt. Secure RED Battery Cable to Positive (+) Battery Terminal with a Hex Bolt (Washer attached) and Hex Nut (Fig. 5). Tighten Nut securely. Place Boot over Terminal.



POSITIVE TERMINAL MUST BE CONNECTED FIRST TO PREVENT SPARKS FROM ACCIDENTAL GROUNDING.

g. Place remaining Flat Washer over the end of the remaining Hex Bolt. Secure BLACK Ground Cable to Negative
 (-) Battery Terminal with Hex Bolt (Washer attached) and Hex Nut (Fig. 5). Tighten Nut securely.

- 4. Install Steering Wheel using: Flat Washer, Lockwasher, and Hex Bolt assembled on end of Steering Shaft; Woodruff Key, and Steering Wheel Insert found in Bag of Parts.
 - Remove Hex Bolt, Lockwasher and Flat Washer from Steering Shaft (Fig. 6).
 - b. Insert Woodruff Key in Keyway of Steering Shaft and slide Steering Wheel over Shaft and Key. NOTE: BE SURE WOODRUFF KEY IS SECURE IN STEERING SHAFT.
 - c. Fasten with Flat Washer, Lockwasher and Hex Bolt (Fig. 6). Tighten securely.
 - d. Press Steering Wheel Insert in place.

INITIAL ADJUSTMENTS

- **1.** Reduce Tire pressure to 12 pounds in front and rear Tires. (Tires were overinflated for shipping purposes).
- 2. Seat position may be adjusted forward or backward by loosening Nut in Seat Plate (Fig. 7). NOTE WHEN RE-TIGHTENING NUT AFTER ADJUSTMENT, MAKE SURE SEAT PLATE HAS NOT TWISTED OUT OF ALIGN-MENT WITH SEAT SPRING.
- 3. The By-Pass Valve Handle (Fig. 8) slides in and out, and rotates so that Handle will engage the notch in Rotating Plate. Moving the Handle up or down with Handle engaging notch will open or close By-Pass Valve.

The By-Pass Valve must be in closed position (rotate down tight) for tractor to operate with engine running. Index handle up at least four notches if it becomes necessary to push tractor with engine stopped.

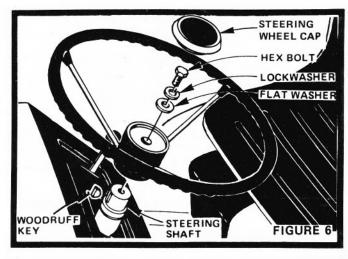
NOTE: Do not force Valve.

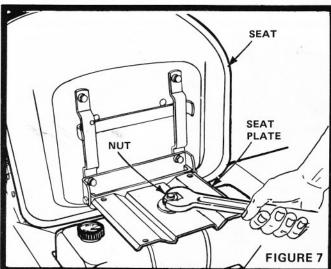


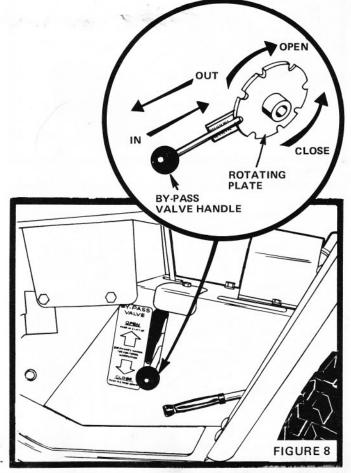
THIS TRACTOR IS EQUIPPED WITH SAFETY SWITCHES TO PREVENT STARTING OF THE TRACTOR ENGINE WHILE THE ATTACHMENT CLUTCH PEDAL IS IN THE "ON" POSITION (FIG. 11) AND THE DRIVE CONTROL LEVER IS IN "F" FORWARD OR "R" REVERSE POSITIONS (FIG. 12).

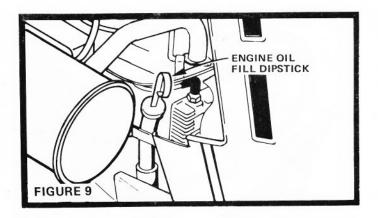


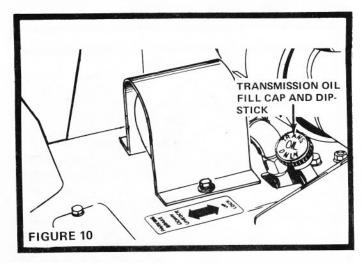
IMMEDIATELY REPLACE SWITCHES THAT ARE NOT IN PROPER WORKING ORDER. DO NOT ATTEMPT TO DEFEAT THE PURPOSE OF THESE SWITCHES.

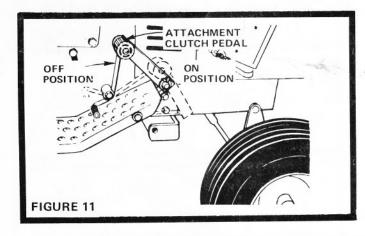


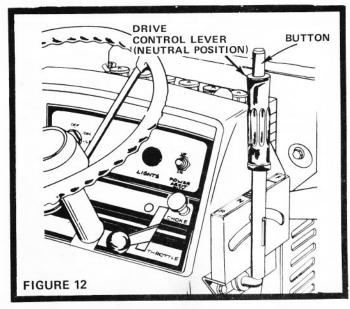












INITIAL SERVICE

NOTE: BE EXTREMELY CAREFUL NOT TO ALLOW DIRT OR FOREIGN PARTICLES TO ENTER THE HYDRAULIC SYSTEM OR ENGINE WHEN CHECKING OR ADDING OIL, HYDRAULIC FLUID OR FUEL.

- 1. Check Engine Oil Level with Tractor on level ground. Wipe dipstick (Fig. 9) clean, push it in tight for a few seconds, remove and read Oil Level.If necessary, add Oil until "FULL" mark is reached. In summer use S.A.E. 30 (SC, SD or SE) Oil. In winter (below 32°F.) use S.A.E. 10W30 (SC, SD or SE) or 10W40 (SC, SD or SE). In extreme cold (below 0°F.) use S.A.E. 5W20 (SC, SD or SE). NOTE: DO NOT OVERFILL.
- 2. Check Hydrostatic Transmission Fluid Level (Fig. 10) with engine running (See Starting Engine Section) and Drive Control Lever (Fig. 12) in neutral position. Add fluid if necessary to bring level up to "SAFE" mark on dipstick. NOTE: Cap and Dipstick must be screwed in tight to check fluid level. Do not fill above "SAFE" mark on dipstick. Use automatic transmission fluid "TYPE F" only.
- 3.Fill Fuel Tank (Fig. 13) with fresh regular grade lead-free or leaded gasoline. Capacity is 2 gallons. NOTE: DO NOT SWITCH FROM LEADED TO LEAD-FREE GASOLINE.



FILL TO BOTTOM OF GAS TANK FIL-LER NECK. DO NOT OVERFILL. WIPE OFF ANY SPILLED OIL OR FUEL.

OPERATION



DO NOT OPERATE THE MOWER WITH-OUT EITHER THE ENTIRE GRASS GRASS CATCHER, ON MOWERS SO EQUIPPED, OR THE DEFLECTOR SHIELD IN PLACE.



CAUTION

Keep all shields in place.

2.Before leaving operator's position:

a. Shift transmission to neutral

b. Set parking brake

Disengage attachment clutch

d. Shut off engine

e. Remove ignition key

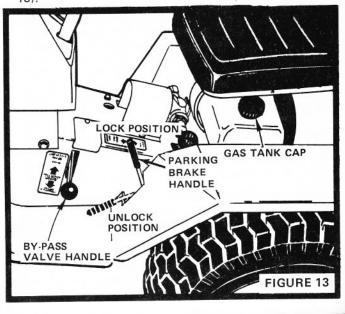
3. Wait for all movement to stop before servicing machine.

4.Keep people and pets a safe distance away from machine.

STARTING THE ENGINE

1. Place Attachment Clutch Pedal in "OFF" position (Fig. 11).
2. Move Drive Control Lever to "N" neutral position (Fig. 12).
3. Move By-Pass Valve Handle to "CLOSE" position (Fig. 13).

4. Pull up on Parking Brake Handle to "LOCK" position (Fig.



- 5. Push Clutch-Brake Pedal into "BRAKE" position (Fig. 14).
- 6. Move Throttle Control Lever to middle position (Fig. 15).
- 7. Pull Choke out (Fig. 15).
- 8. Turn Ignition Key to "START" position until Engine starts (Fig. 15). Release key into "ON" position.

NOTE: DO NOT RUN STARTER CONTINUOUSLY FOR MORE THAN THIRTY SECONDS AT A TIME. If engine does not start after several attempts, move throttle Control Lever to "F" fast position, wait a few minutes, and try again.

NOTE: The Power Assist Lift Switch (Fig. 15) raises or lowers an attachment when used with an Electric Three Point Hitch (optional equipment).

WARMING UP THE ENGINE

Move Throttle Control Lever to "S" slow position. Push Choke in as engine warms. NOTE: ALLOW ENGINE TO WARM UP FOR A FEW MINUTES BEFORE OPERATING.

When restarting a warm engine, move Throttle Control Lever in middle position, Choke may not have to be used.



ALWAYS WEAR SUBSTANTIAL FOOT-WEAR AND AVOID LOOSE FITTING CLOTHING THAT COULD GET CAUGHT IN MOVING PARTS.

LEARN TO START, STOP AND REVERSE YOUR TRACTOR IN A LARGE, OPEN SPACE.

TRACTOR OPERATION

- 1. With engine running and warm, move Throttle Control Lever to middle position.
- Push down on Parking Brake Handle to "UNLOCK" position.
- 3. Press Button (Fig. 12) on Drive Control Lever and slowly move Lever forward and tractor will begin to move.



THE DRIVE CONTROL LEVER IS SEN-SITIVE TO THE SLIGHTEST MOVEMENT. MOVE DRIVE CONTROL LEVER SLOW-LY.

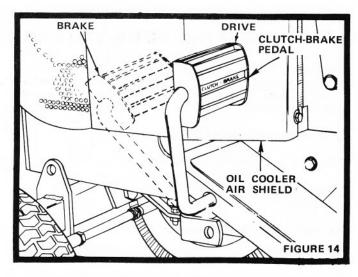
4. Adjust Throttle Control Lever to desired engine speed so that engine is not overloaded.

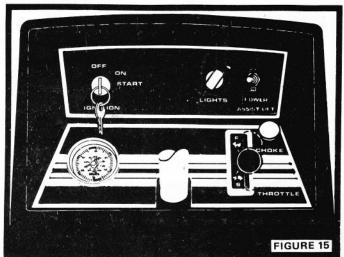
NOTE: Always operate power-driven equipment such as Rotary Mower, Snow Thrower, etc. at full Throttle speed unless otherwise specified in the attachment Owners Manual. Always select a safe ground travel speed that will suit the terrain and the attachment being used.

5. To back-up, return Drive Control Lever to "N" neutral position and tractor will stop. Reduce Throttle Control Lever to "SLOW" position, pull Drive Control Lever back slowly.



NEVER PLACE YOUR HANDS OR FEET IN OR UNDER ANY POWERED ATTACHMENT OR NEAR ANY MOVING PART WHILE TRACTOR OR ANY POWERED ATTACHMENT IS RUNNING.





STOPPING YOUR TRACTOR

- 1. Return Drive Control Lever to "N" neutral position.
- 2. Reduce Throttle Control Lever to "S" slow position.
- **3.** Place Attachment Clutch Pedal in "OFF" position.
- **4.** Place Parking Brake in "LOCK" position.



MAKE SURE PARKING BRAKE WILL HOLD TRACTOR SECURE.

5. Turn Ignition Key to "OFF" position.



REMOVE KEY WHEN LEAVING TRACTOR TO PREVENT UNAUTHORIZED USE.

NOTE: USE CLUTCH-BRAKE PEDAL FOR EMERGENCY STOPS ONLY. FOR NORMAL STOPS, RETURN DRIVE CONTROL LEVER TO NEUTRAL BY HAND DEPRESSING THE CLUTCH-BRAKE PEDAL HALF-WAY DECLUTCHES THE TRACTOR AS LONG AS THE PEDAL IS HELD IN THIS POSITION. WHEN FOOT IS REMOVED FROM PEDAL, TRACTOR WILL RETURN TO TRAVELING SPEED.



NEVER USE FOOT PEDAL AS A CLUTCH TO SLOW TRACTOR. ALWAYS PUSH CLUTCH-BRAKE PEDAL ALL THE WAY FORWARD SO THAT DRIVE CONTROL LEVER RETURNS TO NEUTRAL.

TRANSPORTING YOUR TRACTOR

TOWING IS NOT RECOMMENDED. As with any hydraulic power transmission, internal damage can result when vehicle is towed. Push tractor by hand only short distances with controls as follows:

- 1. Drive Control Lever in "N" neutral.
- 2.By-Pass Valve in "OPEN" position.
- 3. Parking Brake Handle pushed down to "UNLOCK" position.

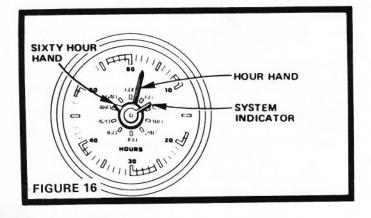
Use trailer to transport tractor for long distances.

TRACTOR OPERATION ON HILLS



DO NOT DRIVE UP OR DOWN HILLS WITH SLOPES GREATER THAN 150, AND DO NOT DRIVE ACROSS ANY SLOPE.

- 1. Avoid stopping on hills.
 - a. If slowing is necessary, pull Drive Control Lever back slowly.
 - b. If stopping is necessary, pull Drive Control Lever to neutral.
 - c. Engage Parking Brake.
 - d. To resume travel push Drive Control Lever slowly for-
 - e. Release Parking Brake as forward movement begins.
- Make all turns gradually.



STARTING YOUR TRACTOR WITH A LOW BATTERY

If your Battery is too low to start the engine, it should be recharged. If "Jumper Cables" are used for emergency starting follow this procedure. NOTE: YOUR TRACTOR IS EQUIP-PED WITH A 12 VOLT NEGATIVE GROUNDED SYSTEM. THE OTHER VEHICLE MUST ALSO BE A 12 VOLT NEGATIVE GROUNDED SYSTEM.



LEAD-ACID BATTERIES GENERATE EX-PLOSIVE GASES. KEEP SPARKS, FLAME, AND SMOKING MATERIALS AWAY FROM ALWAYS SHIELD EYES BATTERIES. AROUND BATTERIES.

- 1.Connect each end of the RED cable to the FOSITIVE (+) terminals of each battery (taking care not to short against chassis).
- 2.Connect one end of the BLACK cable to the NEGATIVE (-) terminal of "GOOD" battery.
- 3.Connect the other end of the cable to ENGINE BLOCK or good CHASSIS GROUND on tractor (away from Gas Tank or Battery).
- 4. Disconnect cables in reverse order:

 - a. Engine Block or chassis.b. Negative terminal of "GOOD" battery.
 - c. Positive terminals.



DO NOT USE YOUR TRACTOR BAT-TERY TO START OTHER VEHICLES.

MAINTENANCE

1. SERVICE HOUR METER

To keep your tractor running better, longer; perform necessary service using the following Maintenance Schedule and the Service Hour Meter (Fig. 16) on the tractor dash.

The Service Hour Meter records the number of hours of tractor operation. Read the Hour (Red Hand) on the outer dial; each mark indicating one hour of operation. Read the Sixty Hour (Yellow Hand) on the inner dial; each mark indicating sixty hours of operation. The System Indicator (White Hand) moves visibly when the Ignition Key is in the position, indicating the system operational. It is normal for this hand to continue to turn for a short period of time after the Ignition Key is turned to the "OFF" position.



DISCONNECT SPARK PLUG WIRES TO PREVENT ACCIDENTAL STARTING BE-FORE MAKING ANY INSPECTION, AD-JUSTMENT (EXCEPT CARBURETOR) OR REPAIR.

FIRST 2 HOURS

1. CHECK V-BELT TENSION

A new V-Belt may stretch after the first few hours of operation. If Clutch-Brake Pedal, in drive position (Fig. 14) is considerably to the front or rear of the vertical position, the V-Belt is out of adjustment and must be re-tensioned.

- Secure Clutch-Brake Pedal in brake position (relaxing V-Belt tension) by tying to front axle.
- b. Hold Nut on inside of Flat Idler and loosen Flat Idler Bolt (Fig. 17).
- c. Move Flat Idler in frame slot 1/4 inch down (to tighten), up (to loosen) V-Belt tension. Tighten Bolt.
- d. Release Clutch-Brake Pedal. It should return to approximately vertical position.

NOTE: FOR LONGER V-BELT LIFE, ALWAYS KEEP BELT TENSIONED PROPERLY, START TRACTOR MOVEMENT WITH THROTTLE CONTROL IN MIDDLE POSITION, AND ALWAYS REPLACE WITH ROPER V-BELTS.

2. CHANGE ENGINE OIL

Changing Oil after the first two hours will help eliminate break-in residue which might be damaging to your Engine.

Note: Be careful not to allow dirt to enter the Engine when changing oil.

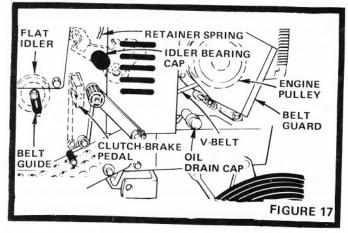
- Drain Oil with Engine warm. Unscrew Oil Drain Cap (Fig. 17) and catch Oil in a suitable container. Replace Cap.
- b. Refill Engine Oil (Fig. 18). In summer use S.A.E. 30 (SC, SD or SE) Oil. In winter (below 32°F.) use S.A.E. 10W30 (SC, SD or SE) or 10W40 (SC, SD or SE). In extreme cold (below 0°F.) use S.A.E. 5W20 (SC, SD or SE). Capacity is 3 1/2 pints. NOTE: DO NOT OVER-FILL.

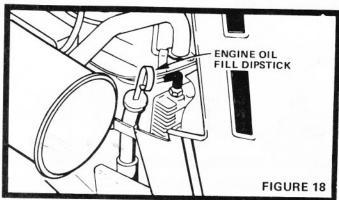
FIRST 10 HOURS

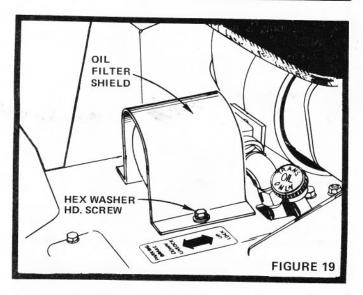
REPLACE HYDROSTATIC TRANSMISSION FLUID FIL-TER. Filter is available from Roper (Part No. 5276R).

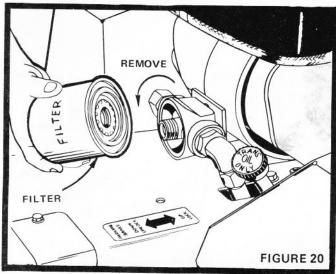
a. Remove Screw from each side of Oil Filter Shield (Fig. 19). Place rag under Filter to absorb oil leakage.

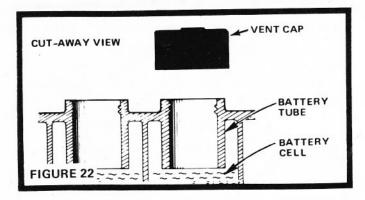
- b. Turn Filter (Fig. 20) counterclockwise to remove. Apply a light film of oil to seal surface and threads of new Filter. Hand tighten Filter securely. Turn Clockwise to tighten.
- Replace Oil Filter Shield and Screws. Check oil level and replace oil as required.
- d. After operating Tractor, check Filter for Fluid leaks. If leakage occurs, tighten Filter.

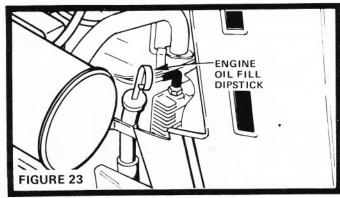


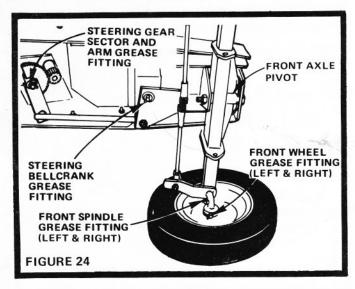


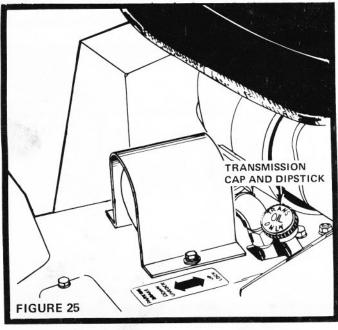












FREQUENTLY

1. CHECK BATTERY

a. Electrolyte solution level in each Battery Cell should be even with bottoms of tubes in cells (Fig. 22). Add distilled water if necessary. NOTE: DO NOT OVERFILL.

b. Keep Battery and Terminals clean. Refer to page 12.

c. Keep Battery bolts tight.
d. Keep Vent Caps tight and small Vent holes in caps open.
e. Recharge SLOWLY at 3 amperes if specific gravity of

electrolyte falls below 1.225.

2.CHECK TIRE PRESSURE Tire pressure in front and rear Tires should be 12 pounds.

3.CLEAN AIR SCREEN GUARDS

Blower Housing Guard and Flywheel Guard (Fig. 27) must allow free-flow of air to prevent Engine damage from overheating. Remove Oil Cooler Air Shield (Fig. 14) and Blower Housing Guard. Clean Blower Housing Guard and Flywheel Guard with a wire brush to remove dirt and chaff and stubborn dried gum and fibers.

4.CLEAN OIL COOLER

a. It will be necessary to remove the Oil Cooler Air Shield

(Fig. 14) to clean Oil Cooler.

b. Air is circulated from the back of the Oil Cooler therefore, it is especially necessary that this area be kept clean. Use a small brush, air pressure or water pressure.

NOTE: REPLACE GUARD AND SHIELD AFTER CLEAN-ING.

EVERY 5 HOURS

1. CHECK ENGINE OIL LEVEL



DO NOT CHECK ENGINE OIL LEVEL WITH ENGINE RUNNING.

Several minutes after stopping Engine, check Engine Oil Level with Tractor on level ground. Wipe dipstick (Fig. 23) Clean, push it down tight for a few seconds, remove and read Oil Level. If necessary, add Oil until "FULL" mark is Oil Level. If necessary, add Oil until "FULL" mark is reached. In summer use S.A.E. 30 (SC, SD or SE) Oil. In winter (below 32°F.) use S.A.E. 10W30 (SC, SD or SE) or 10W40 (SC, SD or SE). In extreme cold (below 0°F.) use S.A.E. 5W20 (SC, SD or SE). NOTE: DO NOT OVER-FILL.

2.LUBRICATE STEERING AND FRONT WHEELS

There are six Grease Fittings on your Tractor (Fig. 24). Using a Grease Gun, give each Grease Fitting two shots of Extreme Pressure Lubricating Grease Amdex No. 1 or until grease appears. This grease may be obtained by ordering Part No. 2557R through your Roper dealer.

3.OIL PIVOT POINTS

Place several drops of S.A.E. 30 Oil at points where parts move against each other, especially:

a. Idler Bearings (Fig. 17). Remove Idler Bearing Cap.

Remove Retainer Spring from Idler Shaft. Move Idler and Shaft outward and lubricate exposed Shaft.

Return Idler and Shaft to original position, replace Retainer Spring, and reposition Cap.

b. Front Axle Pivot (Fig. 24).

EVERY 10 HOURS

1. CHECK HYDROSTATIC TRANSMISSION FLUID LEVEL NOTE: Be careful not to allow dirt to enter the Hydraulic System when checking Fluid Level.

a. Engine must be running and Drive Control Lever in neutral position with Tractor on level ground.

- b. Unscrew Cap and Dipstick (Fig. 25) remove and wipe clean.
- Screw Cap and Dipstick in tight. Remove and read Fluid Level.
- d. If necessary, add Fluid to bring level to "SAFE" mark on Dipstick. Use Automatic Transmission fluid "TYPE F" only. Do not overfill. Capacity is 4 1/2 quarts Reonly. Do not overfill. Capacity is 4 - 1/2 quarts. Replace Cap and Dipstick.

When Oil Filters are replaced every 50 hours there will be

no need to drain Hydrostatic Transmission.

(EVERY 15 HOURS IF OPERATING IN VERY DUSTY CONDITIONS)

1.CLEAN AIR FILTER & FOAM PRE-CLEANER

- a. Unscrew Wing Nut (Fig. 26) to remove Air Filter Cover, Paper Air Filter Element and Foam Pre-Cleaner.
- b. Clean dust from Paper Air Filter Element by gently tapping Element on a flat surface.
- c. Wash Foam Pre-Cleaner in detergent and warm water.
- d. Rinse, squeeze (rather than twist) and allow to dry thoroughly.
- e. Coat with three tablespoons of S.A.E. 30 Engine Oil, knead to distribute evenly, and squeeze out excess.
- f. Check Paper Air Filter Element. Replace if excessively dirty.
- g. Re-Assemble Air Filter and re-position on Tractor. NOTE: NEVER RUN ENGINE WITH AIR CLEANER REMOVED.

2.CLEAN AIR SCREEN GUARDS

Blower Housing Guard and Flywheel Guard (Fig. 27) must allow free-flow of air to prevent Engine damage from overheating. Remove Oil Cooler Air Shield (Fig. 14) and remove Blower Housing Guard (Fig. 27). Clean Blower Housing Guard and Flywheel Guard with a wire brush to remove dirt and chaff and stubborn dried gum and fibers. NOTE: REPLACE GUARD AND SHIELD AFTER CLEAN-ING.

3.CHANGE ENGINE OIL

The best time to change Engine Oil is at the end of a days operation when all dirt and foreign material is suspended in the hot Oil. Refer to page 7.

EVERY TO HOURS

1. CLEAN COOLING SYSTEM

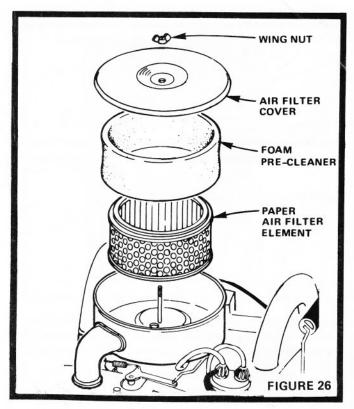
Remove any dust, dirt, chaff or oil from Engine Cooling Fins, Blower Housing Guard, Flywheel Guard (located under Blower Housing Guard) and Oil Cooler Cooling Fins to prevent Engine from overheating (Fig. 27). a. It will be necessary to remove the Oil Cooler Air Shield

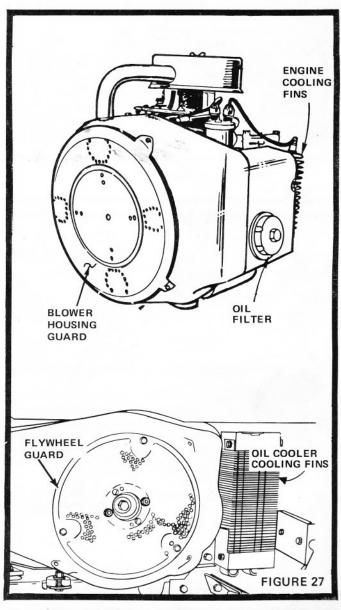
(Fig. 14) to clean Oil Cooler.

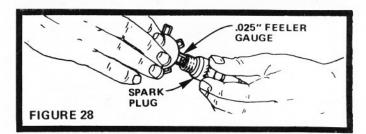
b. Air is circulated from the back of the Oil Cooler therefore, it is especially necessary that this area be kept clean. Use a small brush, air pressure or water pressure. NOTE: BE SURE TO REPLACE GUARD AND SHIELD AFTER CLEANING.

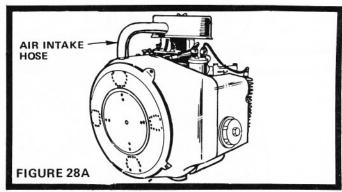
2.REPLACE HYDROSTATIC TRANSMISSION FLUID FIL-TER. Refer to page 7.

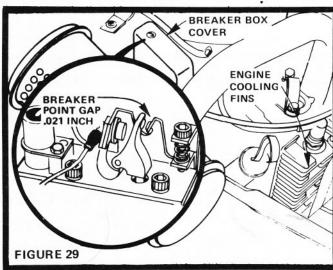
REPLACE OIL FILTER (FIG. 27).

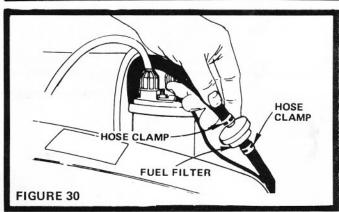


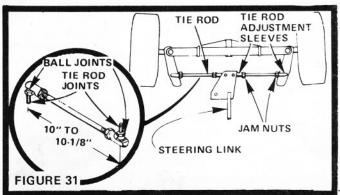












EVERY OH HOURS

1. CLEAN SPARK PLUGS AND RESET GAP

Wire brush carbon deposits from Spark Plug Electrodes and reset gap at .025 inch. (Fig. 28). Replace Spark Plugs if they show signs of fouling or electrode erosion.

2. CHECK BREAKER POINTS

Replace Points if they are pitted or burned.

- Remove Air Intake Hose that connects to Blower Housing (Fig. 28A). This provides an access to view Timing Mark.
- b. Remove Spark Plugs and Belt Guard and turn Engine Pulley (Fig. 17) clockwise by hand until 21^OBTC mark on gear cover aligns with mark on flywheel. Turn another 1/4 turn to ensure points are fully open.
- Remove Breaker Box Cover (Fig. 29) by loosening Screw and lift off to remove.

d. Replace Points, if necessary.

- e. Using an Allen Head Wrench, adjust Set Screw for .021 inch between Points. Measure Point Gap with a Flat Feeler Gauge. NOTE: MAKE SURE FEELER GAUGE IS CLEAN AND FREE OF GREASE, OIL, OR DIRT. No other adjustment or alignment is necessary. Setting point gap accurately adjusts Engine Timing.
- Replace Breaker Box Cover, Spark Plugs and Cables and Air Intake Hose.

3. LUBRICATE BALL JOINTS

- a. Move Rubber Boots to expose Ball Joints on Tie Rods and Steering Link (Fig. 31).
- b. Coat Ball Joints with Silicone Spray Lubricant.
- c. Reposition Rubber Boots.

EVERY200 HOURS

- REPLACE PAPER AIR FILTER ELEMENT Refer to page 9.
- 2. REPLACE BREAKER POINTS Refer to step 2, above.

AS NEEDED

1. REPLACE IN-LINE FUEL FILTER

If fuel filter is clogged, obstructing fuel flow to carburetor, replacement is required.

 With Engine cool, remove and plug Fuel Line Sections as removed from both ends of Fuel_Filter (Fig. 30).

b. Place new Fuel Filter in position in Fuel Line.



BE SURE THERE ARE NO FUEL LINE LEAKS AND THAT FUEL LINE IS IN PROPER POSITION IN HOSE CLAMPS.

2.TOE-IN ADJUSTMENT

If any parts in Front Axle or Steering Mechanism are being replaced, Tie Rod adjustment is required.

- Loosen Jam Nuts (Fig. 31) at each end of Tie Rod Adjustment Sleeves.
- b. Adjust both Tie Rods so that Tie Rod Joints measure from 10 to 10 1/8 inches from center to center.
- c. Tighten Jam Nuts, making sure Tie Rod Joints are parallel (180°) to each other. This adjustment secures proper Front Wheel Toe-in and steering operation.

3. RETENSION V-BELT

It may be occasionally necessary to re-tension V-belt page 7.

4. PARK BRAKE ADJUSTMENT

If the Parking Brake will not hold tractor, Parking Brake adjustment is necessary.

a. Remove Cotter Pin and Clevis Pin from Yoke (Fig. 32).

- Turn Yoke one full turn clockwise on Parking Brake Rod. Replace Yoke on Brake Arm and secure with Clevis Pin.
- c. Place by-pass valve handle (Fig. 34A) in the "OPEN" position.
- d. With parking brake handle in "LOCK" position (Fig. 34A)L.H.rear tire should slide when tractor is pushed. If tire does not slide, repeat steps a and b.

e. Replace Cotter Pin in Clevis Pin.

f. Rotate by-pass handle(Fig. 34A) to "CLOSE" position.

g. If tractor is to be operated, push down on parking brake handle to "UNLOCK" brake.

5. CARBURETOR ADJUSTMENT

If Engine lacks power or does not idle properly, the Carburetor may need adjustment.

a. Main Fuel (High Speed) Screw (Fig. 33) should not require adjustment. If resetting is necessary, turn clockwise, closing finger tight ONLY, then turn counterclockwise 1- 1/4 turn.

 Turn Idle Adjusting Needle (Fig. 33) clockwise, closing finger tight ONLY, and then turn counterclockwise one turn.

c. Start Engine and allow to warm for five minutes.

 Make final adjustments with Engine running and Drive Control Lever in Neutral position.

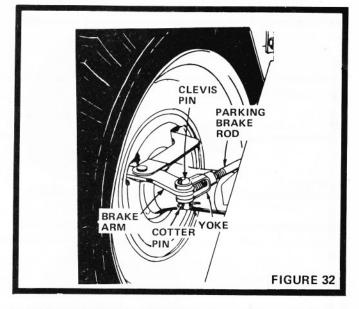
 Turn Idle Adjusting Needle counterclockwise until Engine runs "rough" then clockwise until Engine begins to miss. Return Needle to a point midway between these extremes.

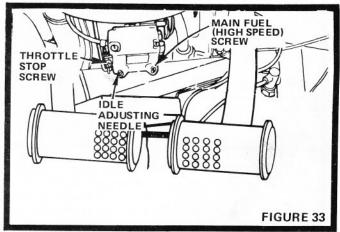
Throttle Stop Screw (Fig. 33) should not require adjustment. If resetting is necessary, set to obtain the slowest engine speed that will allow smooth accelleration.

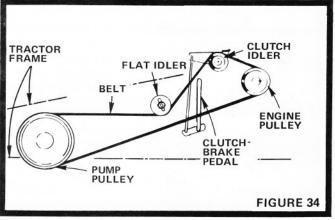
6. BELT REPLACEMENT

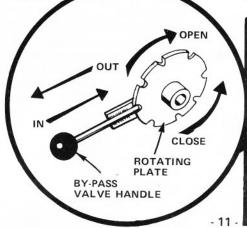
- a. Remove Belt from Clutch Idler by depressing Clutch-Brake Pedal (Fig. 34).
- b. Remove Belt Guide from Engine Pulley.
- c. Remove Belt Guide Weldment from Pump Pulley.
- d. Loosen Flat Idler Assembly on R.H. side of Tractor Frame.
- Remove Belt from Engine Pulley, between Belt Guide Finger (note position of Belt) and Flat Idler, and Pump Pulley.
- f. Place new Belt around Pump Pulley. Then place Belt between Belt Guide Finger and Flat Idler and then around Engine Pulley.
- g. Depress Clutch-Brake Pedal and slip Belt over the top of the Clutch Idler.
- h. Replace Engine Pulley Belt Guide and Pump Pulley Belt Guide Weldment. Tighten Flat Idler Assembly. NOTE: Make sure Belt Guide Finger on Flat Idler is parallel with slot in Tractor Frame.

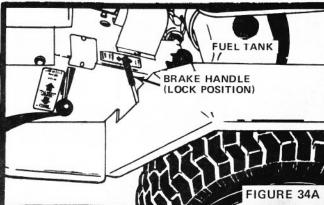


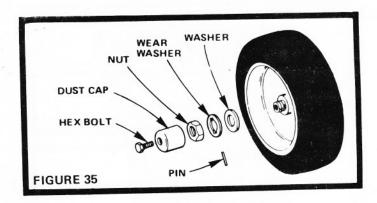


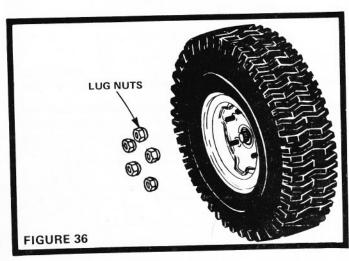












7. CLEAN BATTERY AND TERMINALS

Corrosion and dirt on the Battery and Terminals cause the Battery to "leak" power and hinders the operation of the charger.

- a. Remove the Battery from the Tractor and wash with four tablespoons of baking soda to one gallon of water. NOTE: BE CAREFUL NOT TO GET THE SODA SOLUTION INTO THE CELLS. Rinse the Battery with plain water, dry and reinstall on Tractor.
- b. Clean terminals and Battery Cables with a wire brush until bright. Replace Battery Cables. Coat terminal connections with Vasoline.

8.TIRE CARE

- a. Maintain tire pressure in front and rear tires of 12 pounds.
- b. Keep tires free of gasoline, oil, or insect control chemicals which can destroy rubber.
- c. Avoid stumps, stones, deep ruts and other hazards that may cause tire damage.
- d. Removing front wheel for tire repair (Fig. 35).
 - Block up front axle securely or use a Roper Tractor Jack. Rear wheels should also be blocked to prevent
 - Remove Hex Bolt and Dust Cap.
 - Remove Nut, Wear Washer, Pin and Washer to allow wheel removal.
 - Repair tire and reassemble.
- e. Removing rear wheel for tire repair (Fig. 36):
 - Block up rear axle securely or use a Roper Tractor Jack. Front wheels should also be blocked to prevent roll.
 - Remove the five Lug Nuts.
 - Repair tire and reassemble. Tighten Lug Nuts secure-

9. FINISH

Keep tractor finish free of gasoline, oil, insect chemicals or battery electrolyte. Protect painted surfaces with Automotive type wax.

STORAGE

1. ENGINE OIL

Drain (with engine warm) and replace with clean engine oil. Refer to page 7.

2. FUEL SYSTEM

- a. Drain fuel tank and carburetor by allowing the engine to run out of gasoline. NOTE: GASOLINE LEFT IN YOUR ENGINE WILL LEAVE GUM DEPOSITS CLOGGING FUEL SYSTEM.
- b. Dispose of gasoline if not to be used. NOTE: GASO-LINE STORED FOR SEVERAL MONTHS LOSES ITS VOLATILITY (ABILITY TO BURN EFFECT-IVELY).

3.CYLINDER

- a. Remove Spark Plugs.
- b. Pour one ounce of oil through spark plug holes into cylinders.

- c. Turn ignition key to "START" position for a few seconds to distribute oil.
- d. Replace Spark Plugs.

4.BATTERY

- a. Remove battery if tractor is not used regularly during winter months. Store in cool, dry place (above 50°F). NOTE: DO NOT STORE BATTERY DIRECTLY ON CEMENT SURFACE.
- b. Check electrolyte charge each month and recharge if below 1.225 specific gravity. NOTE: BATTERIES NOT IN USE FOR SEVERAL MONTHS AND NOT KEPT FULLY CHARGED, PRODUCE SULPHUR DEPOSITS ON PLATES WHICH CANNOT BE REMOVED BY RECHARGING.

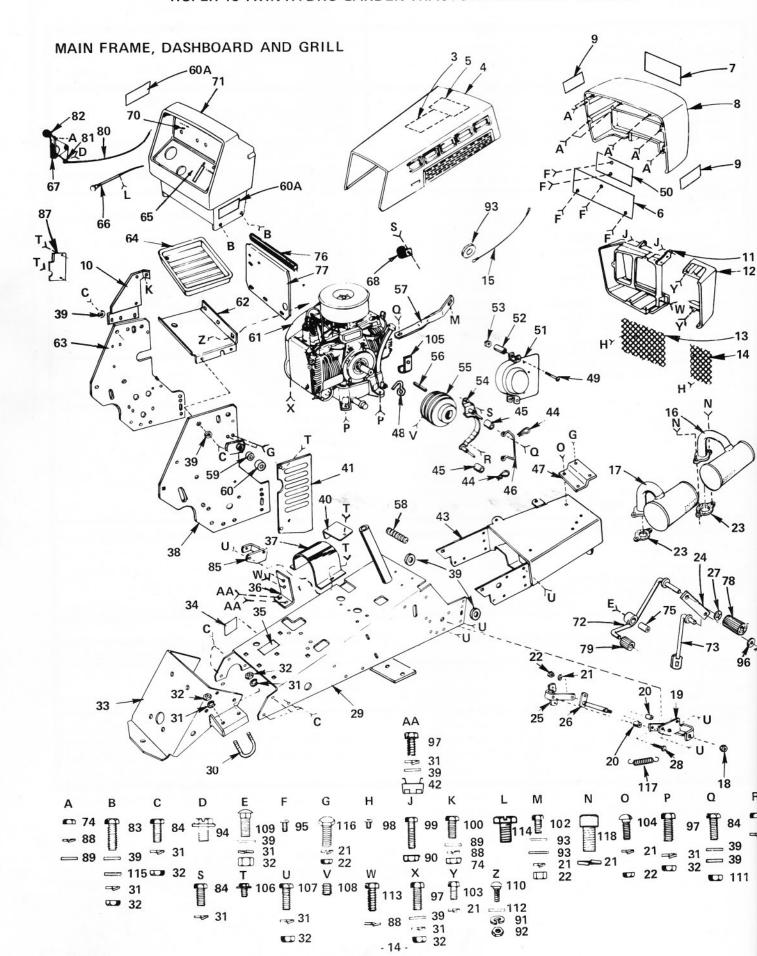
5.GENERAL CLEANING

Clean engine, battery, finish, etc. of all foreign matter.

POSSIBLE CAUSE	POSSIBLE REMEDY
WILL NOT START Drive Control Lever in "F" or "R" position Attachment Clutch Pedal in "ON" position No gasoline in Fuel Tank, clogged Fuel Line Filter or Fuel Line Blown Fuse Dead Battery	Move Lever to "N" position Move Pedal to "OFF" position. Fill Tank with Gasoline. Check Fuel Line, Fuel Line Filter and Carburetor (clean if necessary). Check for fault and replace Fuse Recharge or replace Battery
HARD TO START Choked improperly, flooded Engine Clogged Fuel Line Filter Clogged Fuel Tank Dirty Air Cleaner Spark Plugs dirty or improper gap Defective Battery Defective Ignition or loose wiring Water in gasoline or old fuel Improper Carburetor adjustment	Push Choke in, place Throttle Control in middle position and run starter several times to clear out gas Remove and replace Remove and clean Remove and clean Clean, adjust gap or replace Recharge or replace Check the wiring and Spark Plugs Drain Fuel Tank and Carburetor, use fresh fuel and clean Spark Plugs Make necessary adjustments
ENGINE MISSES OR LACKS POWER Engine overload Clogged Fuel Line Filter Clogged Fuel Tank Partially plugged Air Cleaner Improper Carburetor adjustment Dirty Air Screen Low oil level or dirty oil Spark Plugs dirty, improper gap or wrong type Faulty ignition Poor compression Oil in gasolirie	Reduce load Remove and replace Remove and clean Remove and clean Make necessary adjustments Clean Air Screen and Cylinder Fins Add or change oil Clean, reset gap or replace Check Spark Plugs and for loose wires Major Engine overhaul Drain and refill Gas Tank and Carburetor
ENGINE OVERHEATS Dirty Air Screen Low oil level or dirty oil Dirty Engine Partially plugged Mufflers Partially plugged Air Cleaner Stale fuel or improper Carburetor adjustment NO LIGHTS No Headlights or Taillight with Light Switch Knob	Clean Air Screen Add or change oil Clean Cylinder Fins Remove and clean Mufflers Remove and clean Use fresh fuel and adjust Carburetor Check Light Fuse behind dash and wire connections.
pulled out WON'T CHARGE Blown Fuse Defective Battery	Replace Taillight Bulb or Sealed Beam Headlights Check for fault and replace Replace
WILL NOT MOVE By-Pass Valve open Hydrostatic Transmission Fluid very low	Close valve. Refer to page 3. Add fluid, refer to bottom of page 8.

Roper Corporation reserves the right to make any changes in design or improvements without imposing any obligation to install the same upon its items heretofore manufactured.

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR

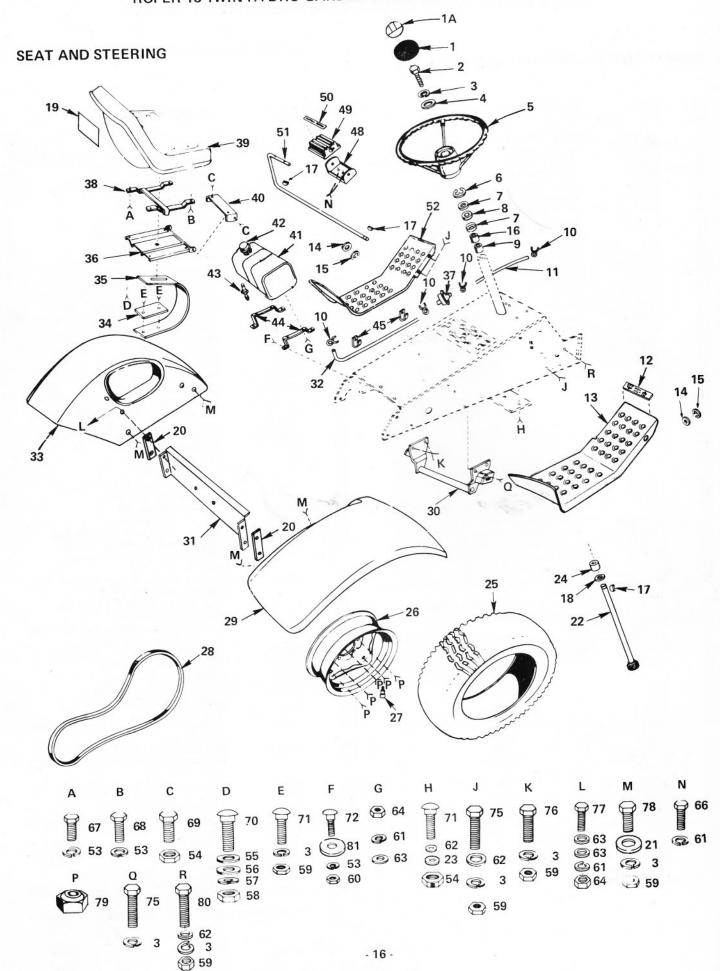


ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR

MAIN FRAME, DASHBOARD AND GRILL

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
3	8028 R	Decal - Maintenance			
4	634A907	Hood Assembly	61	B48M-GA01	
5	9880R	Decal - Wiring	00	3475A	Engine, Onan 18 H.P. Twin Cylinder
5 6 7	291J	Grill Panel - Lower	62	106J	Battery Support
	245J	Decal - Roper	63	906J	Battery Support Bracket - L.H.
8	911J	Upper Grill	64	8855R	Battery Tray
9	246J	Decal - Roper	65	9860 R	Decal - Lower Dash
10	1181J	Rectifier Bracket	66 67	2754R	Choke Control
11	7937 R	Lower Grill	68	1520J	Throttle Control Lever
12	7938 R	Grill Side	70	9776H 9859R	Choke Control Clip
13	2674R	Grill Screen - L.H.	71	5123R	Decal - Upper Dash Dashboard
14	2673R	Grill Screen - R.H.	72	634A901	Pedal Weldment P.T.O.
15	8058R	Grill Cable	73	634A930	Lever Weldment
16	104J	Muffler - Front	74	503P	*Hex Nut 1/4 - 20 UNC
17	105J	Muffler - Rear	75	91J	Pivot Spacer
18 19	7810H 634A494	Gripco Centerlock Nut 3/8 - 24 UNF	76	7874R	Hood Seal
20	1689E	Hanger Weldment - R.H., Front Bushing	77	9687 R	Battery Heat Shield
21	1003P	* Lockwasher 5/16	78	93J	Rubber Pedal
22	504P	*Hex Nut 5/16 - 18 UNC	79	267J	Foot Pedal
23	878J	Gasket - Exhaust Manifold	80	1515J	Throttle Wire and Casing
24	89J	Link	81	8204R	Throttle Clamp
25	634A492	Switch Bracket Assembly	82	1516J	Throttle Control
26	634A491	Belt Tightener Arm and Idler Shaft	83	3027P	*Hex Bolt 3/8 - 16 x 1 - 1/2
		Assembly	84	3023P	*Hex Bolt 3/8 - 16 x 1
27	92J	Speed - Nut/Push-on	85	634A355	Front Hanger Weldment - L.H.
28	3013P	*Hex Bolt 5/16 - 18 x 1 - 1/2	86	2506P	Cotter Pin 1/8 x 1
29	634A934	Chassis Assembly with Bearings (Inc.	87	86J	Cover - L.H.
		Key No's. 9 and 24, page 16)	88	1002P	*Lockwasher 1/4
30	5080R	U-Bolt - Axle Clamp	89	1506P	*Washer 9/32 x 5/8 x 16 Ga.
31	1004P	*Lockwasher 3/8	90	1605H	Locknut 1/4 - 20 UNC
32	501P	*Hex Nut 3/8 - 16 UNC	91	1006P	*Lockwasher No. 10
33	634A638	Drawbar Weldment	92 93	505P 1537P	*Nut No. 10 - 24 UNC *Washer 11/32 x 11/16 x 16 Ga.
34	6143R	Decal - By-Pass Valve	94	6055P	Hex Slotted Hd. Mach. Screw
35	5628 R	Decal - Parking Brake	34	00551	w/Sems Int. Tooth Lockwasher
36	5109R	Filter Mounting Bracket			No. 10 - 32 x 1/4
37	6204R	Oil Filter Shield	95	5564P	*Cutting Screw, Phillips Pan Hd. Thd.
38	634A903	Battery Support Bracket (Inc. Key	-		No. 10 - 24 x 1/2 Type T
39	1513P	No. 59) *Washer 13/32 x 13/16 x 16 Ga.	96	1545P	Flat Washer 17/32 x 1 x 16 Ga.
40	811J	Neutral Adjustment Cover	97	3025P	*Hex Bolt 3/8 - 16 x 1 - 1/4
41	7729R	Cover - R.H.	98	5501P	*Cutting Screw, Phillips Pan Hd. Thd.
42	8115R	Retainer Nut 3/8 - 16 UNC			No. 10 - 24 x 3/8 Type T
43	634A884	Engine Mount Assembly	99	3267P	*Hex Bolt 1/4 - 20 x 1 - 1/2 Gr. 5
44	4939M	Retainer Spring	100	3114P	*Hex Bolt 1/4 - 20 x 1/2
45	8704H1	Spacer	102	3011P	*Hex Bolt 5/16 - 18 x 1
46	5621R	Belt Retainer	103	3010P	*Hex Bolt 5/16 - 18 x 3/4
47	96J	Grill Spacer	104	5P	*Carriage Bolt 5/16 - 18 x 3/4
48	8245 R	Belt Retainer Finger	105	879J	Clip - Cable
49	3154P	Machine Screw, Slotted Fillister Hd.	106	5557P	Cutting Screw, Hex Washer Hd. Thrd.
		1/4 - 20 x 2 - 1/4	107	20050	1/4 - 20 x 1/2 Type 1 *Hex Bolt 3/8 - 16 x 1 - 1/4 Gr. 5
50	290J	Grill Panel - Upper	107 108	3025P 4540P	
51	634A663	Belt Guard Weldment	100	45401	Set Screw, Hex Forged Socket Hdless. 5/16 - 18 x 1/2
52	8238H	Split Spacer	109	50P	Carriage Bolt 3/8 - 16 x 2 - 1/4
53	347H	Huglock Nut 1/4 - 20 UNC	110	53P	Carriage Bolt No. 10 - 24 x 1/2
54 55	634A662 634A665	Belt Guide Weldment Engine Pulley (Inc. Key No. 108)	111	5394H	Locknut 3/8 - 16 UNC
56	9396E	Square Key 1/4 x 2	112	1535P	Washer 7/32 x 7/16 x 18 Ga.
57	875J	Grill Brace	113	3003P	*Hex Bolt 1/4 - 20 x 3/4
58	302J	Wire Guard	114	5592P	SI. Pan Hd. Tap Screw No. 8 x 3/4
59	7756R	Idler Bearing	115	1557P	Washer 13/32 x 13/16 x 11 Ga.
60	8006R	Idler Shaft Cap	116	3159P	*Hex Bolt 5/16 - 18 x 7/8
60A	1308J	Decal	117	7948R	Return Spring
			118	3366P	Socket Hd. Cap Screw 5/16 - 18 x 3/4

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR



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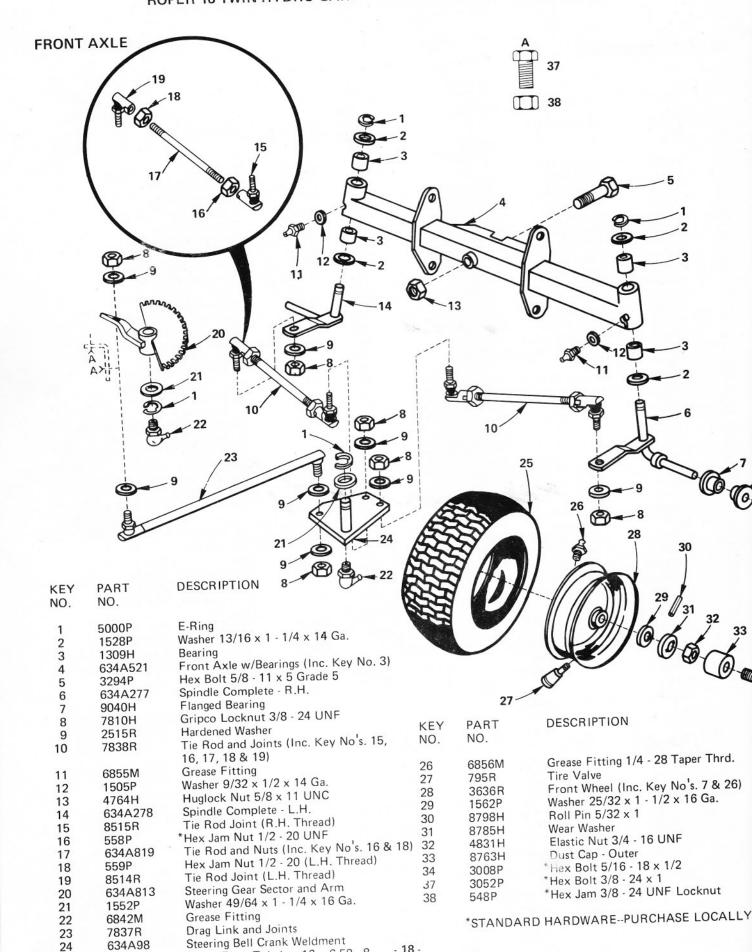
SEAT AND STEERING

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION	
1	9719R	Steering Wheel Insert	41	2693R	Fuel Tank	
1A	235J	Decal - Roper	42	7293R	Fuel Gauge	
2	3023P	*Hex Bolt 3/8 - 16 x 1	43	815R	Fuel Line Fitting	
3	1004P	*Lockwasher 3/8	44	2650R	Bracket - Fuel Tank	
4	1559P	Washer 7/16 x 1 x 10 Ga.	45	2751R	Clip - Fuel Line	
5	3644R	Steering Wheel	48	8765H	Foot Pedal Bracket	
6	5003P	E-Ring	49	8882R	Foot Pedal	
7	9007H	Cap	50	8899R	Insert-Clutch-Brake	
8	5949H	Rubber Bushing	51	940J	Foot Pedal Shaft	
9	6468H	Bearing	52	8178R	Foot Rest - L.H.	
10	6999R	Clamp - Fuel Line	53	1003P	*Lockwasher 5/16	
11	7833R	Fuel Line (Short)	54	5394H	*Locknut 3/8 - 16 UNC	
12	8900R	Decal (Attach, Clutch)	55	1578P	Washer 3/4 x 1 - 1/8 x 11 Ga.	
13	7904R	Foot Rest - R.H.	56	1560P	Washer 17/32 x 1 - 1/2 x 11 Ga.	
14	1527P	Washer 21/32 x 7/8 x 16 Ga.	57	1000P	*Lockwasher 1/2	
15	5001P	E-Ring	58	502P	*Hex Nut 1/2 - 13 UNC	
16	7895R	Steering Shaft Spacer	59	501P	*Hex Nut 3/8 - 16 UNC	
17	9858M1	Woodruff Key 3/16 x 5/8	60	504P	*Hex Nut 5/16 -•18 UNC	
18	1553P	Washer 57/64 x 1 - 1/4 x 16 Ga.	61	1002P	*Lockwasher 1/4	
19	245J	Decal - Roper	62	1513P	*Washer 13/32 x 13/16 x 16 Ga.	
20	1165J	Spacer - Taillight Bracket	63	1506P	*Washer 9/32 x 5/8 x 16 Ga.	
21	1557P	Washer 13/32 x 13/16 x 11 Ga.	64	503P	*Hex Nut 1/4 - 20 UNC	
22	634A775	Steering Shaft & Pinion	66	3003P	*Hex Bolt 1/4 - 20 x 3/4	
23	1519P	Washer 15/32 x 1 x 12 Ga.	67	3010P	*Hex Bolt 5/16 - 18 x 3/4	
24	4766H	Bearing	68	3159P	*Hex Bolt 5/16 - 18 x 7/8	
25	4607R	Rear Tire - Tubeless 23 x 10.00 - 12	69	3022P	Hex Bolt 3/8 - 16 x 7/8 Gr. 5	
26	3635R	Rear Wheel	70	52P	Carriage Bolt 1/2 - 13 x 1 - 1/4 Gr. 5	
27	795R	Tire Valve	71	61P	Sq. Nk. Carriage Bolt 3/8 - 16 x 1 Gr. 5	
×28	5125R	V-Belt (Ground Drive)	72	17P	*Carriage Bolt 5/16 - 18 x 1	
29	9428R	Fender - R.H.	75	3025P	* Hex Bolt 3/8 - 16 x 1 - 1/4	
30	634A814	Hanger Weldment - Rear	76	3023P	*Hex Bolt 3/8 - 16 x 1	
31	2656R	Bracket - Taillight	77	3004P	*Hex Bolt 1/4 - 20 x 1	
32	8545R	Fuel Line (Long)	78	3021P	*Hex Bolt 3/8 - 16 x 3/4	
33	8177R	Fender - L.H.	79	5137R	Lug Nut	
34	8141H	Seat Spring Reinforcement	80	3027P	*Hex Bolt 3/8 - 16 x 1-1/2	
35	5404R	Seat Spring	81	1537P	*Washer 11/32 x 11/16 x 16 Ga.	
36	634A533	Seat Plate Weldment		2557R	Grease Cartridge Amdex No. 1 E.P.	
37	266J	Fuel Line Filter			(Not furnished with your Tractor)	
38	634A532	Seat Bracket Weldment		1198J	Warranty Tag	
39	9744R	Seat		1197J	Owners Manual	
40	2663R	Bracket Seat Pivot				
				*CTANDA	DD HADDWADE BUDCHACE LOCALLY	

*STANDARD HARDWARE--PURCHASE LOCALLY

X DAYCO BELT # 1468

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR



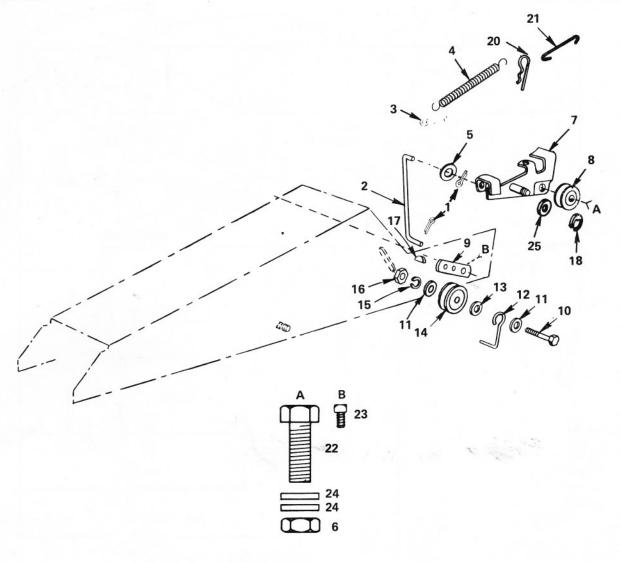
Front Tire - Tubeless 16 x 6.50 - 8

3938R

25

ROPER 18 TWIN HYDRO GARDEN TRACTOR-MODEL NO. T8338AR



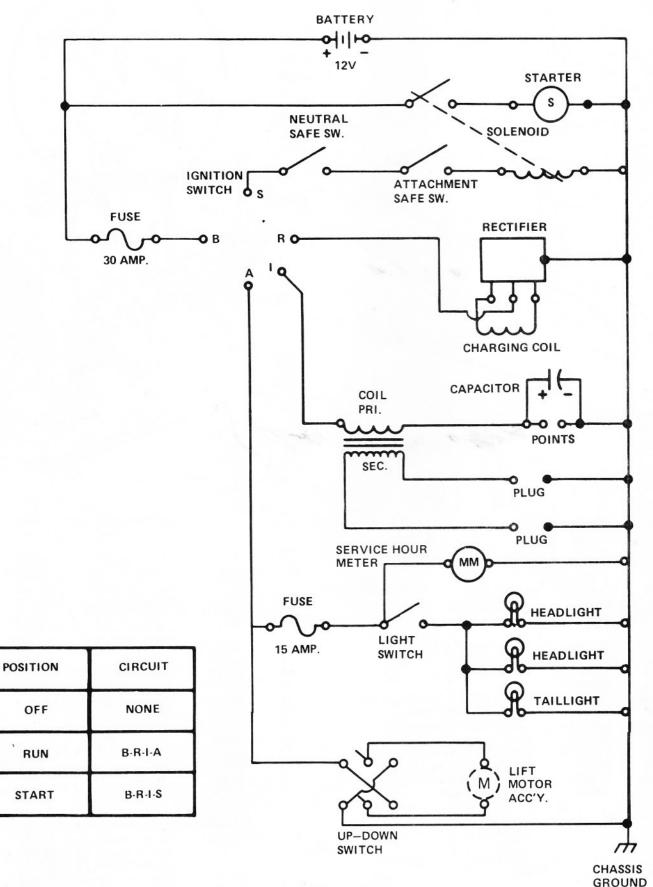


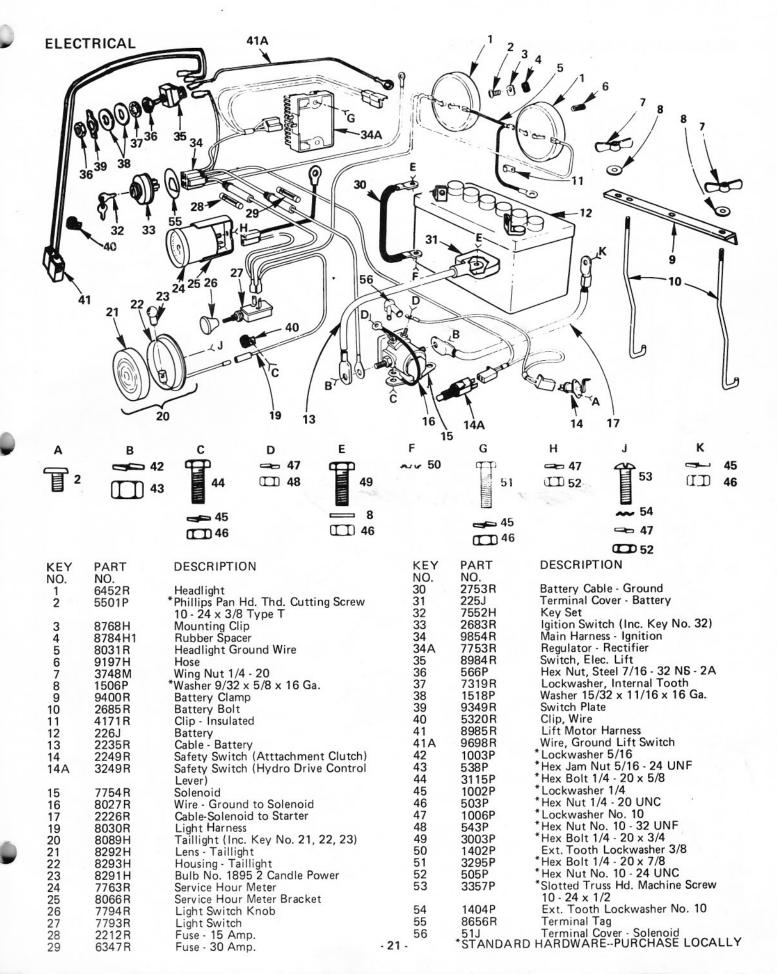
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	2505P	Cotter Pin 1/8 x 3/4	13	1520P	Washer .469 I.D. x 1 - 1/8 x 11 Ga.
2	9288R	Clutch Rod	14	5616R	Flat Idler
3	2514P	Cotter Pin 1/4 x 1	15	1001P	*Lockwasher 7/16
4	6486H	Spring	16	500P	*Hex Nut 7/16 - 14 UNC
5	1513P	*Washer 13/32 x 13/16 x 16 Ga.	17	9858M1	Woodruff Key 3/16 x 5/8
6	7810H	Locknut 3/8 - 24 UNF	18	5002P	E-Ring
7	634A754	Idler Bracket Weldment	20	4939M	Retainer Spring
8	6636H	Idler	21	8254R	Retainer Spring
9	626A31A	Steering Arm Assembly	22	3052P	*Hex Bolt 3/8 - 24 x 1
10	3262P	Hex Bolt 7/16 - 14 x 2 - 1/2	23	4501P	Sq. Hd. Set Screw C.P. 5/16 - 18 x 1/2
11	1518P	Washer 15/32 x 11/16 x 16 Ga.	24	1545P	Washer 17/32 x 1 x 16 Ga.
12	5892R	Belt Guide Finger	25	1587P	Washer 17/32 x 1 - 1/16 x 21 Ga.

*STANDARD HARDWARE--PURCHASE LOCALLY

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR

SCHEMATIC DIAGRAM





HYDROSTATIC AXLE, PUMP AND MOTOR 70 ₂₃

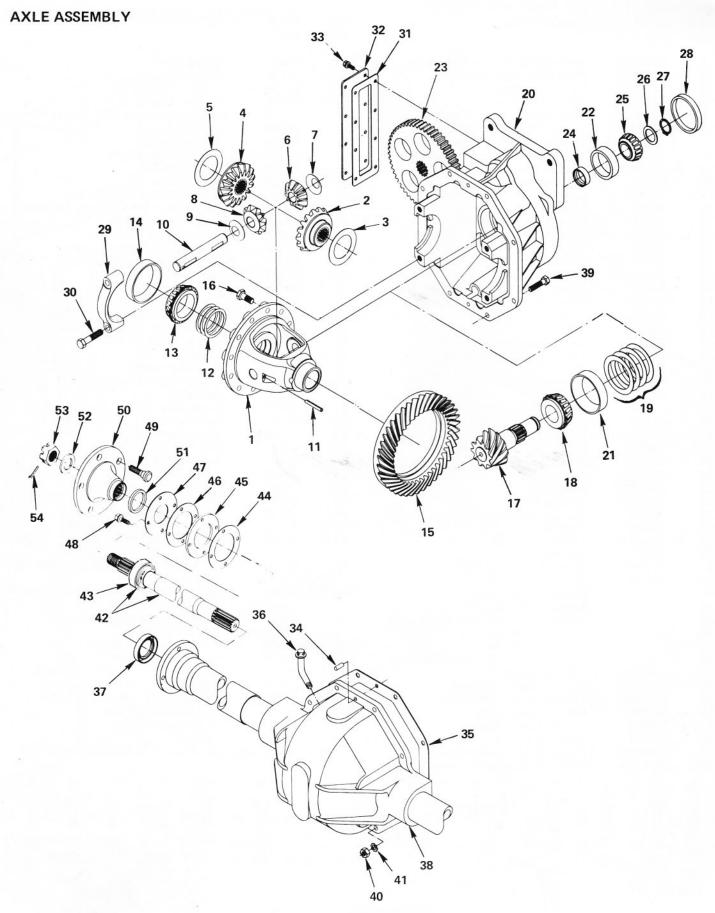
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ROPER 18 TWIN HYDRO GARDEN TRACTOR-MODEL NO. T8338AR

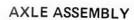
MAPA COLD HYP. FILT. 1551 HYDROSTATIC AXLE, PUMP AND MOTOR KEY PART DESCRIPTION KEY PART DESCRIPTION NO. NO. NO. NO. 1 634A640 Parking Brake Handle Weldment 55 5999H Spring Washer 2 634A652 Pump Pulley with Set Screw 56 5133R Suction Line 3 634A655 Hydrostatic Motor 57 5130R Pressure Line No. 1 4 634A656 Hydrostatic Pump 58 5131R Pressure Line No. 2 5 634A657 Filter Assembly (Inc. Key No. 69) Straight Connector "O" Ring to Flare 59 5128R 6 634A668 By-Pass Valve Handle Weldment 60 9420H Leveling Pin 7 634A669 Rotating Plate Weldment 61 4940M Retainer Spring 8 Axle Assembly (Inc. Key No. 78) 668A12 62 634A646 Belt Guide Weldment 9 634A678 Control Lever Weldment 63 8120H Coil Spring Pin 10 5868R Quadrant Bushing Street Elbow 90° 64 4012P 11 5864R Lever Plunger 65 1527P Washer 21/32 x 7/8 x 16 Ga. 12 5082R Brake Rod 66 634A677 Control Arm (Ret. to Neut.) Weldment 13 5863R Pivot Pin Cam Follower 67 634A671 Filter Top Weldment 14 5265R Plunger Button 68 Filter Bottom Weldment 634A672 15 5093R Parking Brake Pivot Pin ×69 5276R Cartridge for Filter Assembly 16 634A679 Quadrant Weldment 70 5886R Center Locknut 5/16 - 24 UNF 17 5120R Clevis Pin 71 503P *Hex Nut 1/4 - 20 UNC 18 5136R Transmission Cap and Dipstick Ass'y. Locknut 3/8 - 24 UNF 72 7810H 19 5135R Transmission Oil Filler Tube Ass v. 73 1506P *Washer 9/32 x 5/8 x 16 Ga. 20 5122R Yoke 74 1537P *Washer 11/32 x 11/16 x 16 Ga. 21 5266R Lever Plunger Guide 75 3003P *Hex Bolt 1/4 - 20 UNC x 3/4 22 5329R Decal - Quadrant 76 1545P Washer 17/32 x 1 x 16 Ga. 23 Connector Link and Joints 5879R 77 1002P *Lockwasher 1/4 24 4379H Handle Grip 78 7303R Brake Assembly 25 781J Handle Grip 79 7304R Brake Shoe and Lining 26 5273R Gasket 80 7305 R Spring Male 90°Elbow NPT to Flare 90°Elbow "O" Ring to Flare 27 5275R *Lockwasher 5/16 81 1003P 28 5274R 82 1004P *Lockwasher 3/8 "O"Ring to Hose Elbow 90⁰Elbow "O" Ring to Flare 29 5764R 83 1000P *Lockwasher 1/2 30 5127R 84 502P *Hex Nut 1/2 - 13 UNC 31 5760R Oil Cooler *Locknut 3/8 - 16 UNC 85 552P 32 5765R Hydro Hose 86 *Cotter Pin 1/8 x 1 2506P 33 5766R Hose Clamp 87 *Hex Nut 5/16 - 18 UNC 504P 34 5134R Suction Line 88 *Hex Bolt 3/8 - 16 UNC x 1 - 1/4 3025P 35 7987 R Control Knob 89 3023P *Hex Bolt 3/8 - 16 UNC x 1 36 5142H Roll Pin 90 3022P Hex Bolt 3/8 - 16 UNC x 7/8 37 1364H Roll Pin 91 4501P Set Screw, Sq. Hd. - C.P. 5/16 - 18 UNC 38 175H Roll Pin 39 6207R Groove Pin 92 4503P Set Screw, Square Head C.P. 5/16 - 18 40 2876H Spring UNC x 5/8 41 5280R Spring 93 5584P Cutting Screw, Hex Washer Hd. Thrd. 42 9204H Locknut 1/2 - 20 UNF 1/4 - 20 UNC x 3/4 Type T *Washer 13/32 x 13/16 x 16 Ga. 43 1513P 94 3253P Mach. Screw, Pan Hd. Phillips 44 2505P Cotter Pin 1/8 x 3/4 1/4 - 20 UNC x 1/2 45 8103R Mounting Tab (Axle) 95 3000P *Hex Bolt 1/2 - 13 UNC x 1 - 1/2 46 Conn, Rod (Ret. to Neut.) Weldment 634A674 3010P 96 *Hex Bolt 5/16 - 18 UNC x 3/4 47 634A675 Cam Weldment *Hex Bolt 1/4 - 20 UNC x 7/8 Gr. 5 97 3116P 48 634A676 Cam Follower Weldment *Hex Bolt 1/4 - 20 UNC x 5/8 98 3115P 49 634A673 Directional Arm Weldment 99 3012P *Hex Bolt 5/16 - 18 UNC x 1 - 1/4 Cam Follower Support 50 5878R 100 *Hex Nut 3/8 - 16 UNC 501P 51 8102R Bottom Pump Bracket 101 8115R Nut Retainer 52 5272R Lever Support J" Clip 102 3531R 53 634A972 Oil Cooler Air Shield Assembly *STANDARD HARDWARE--PURCHASE LOCALLY 54 634A647 Top Pump Bracket Weldment В C D K G н M N P Q S 91 92 98 96 95 97 90 98 @ 82 ® 82 @ 82 **21** 102 @ 83 @ 74 © 73 © 73 @ 82 **②** 73 © 77 © 77 @ 77 © 81

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ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR

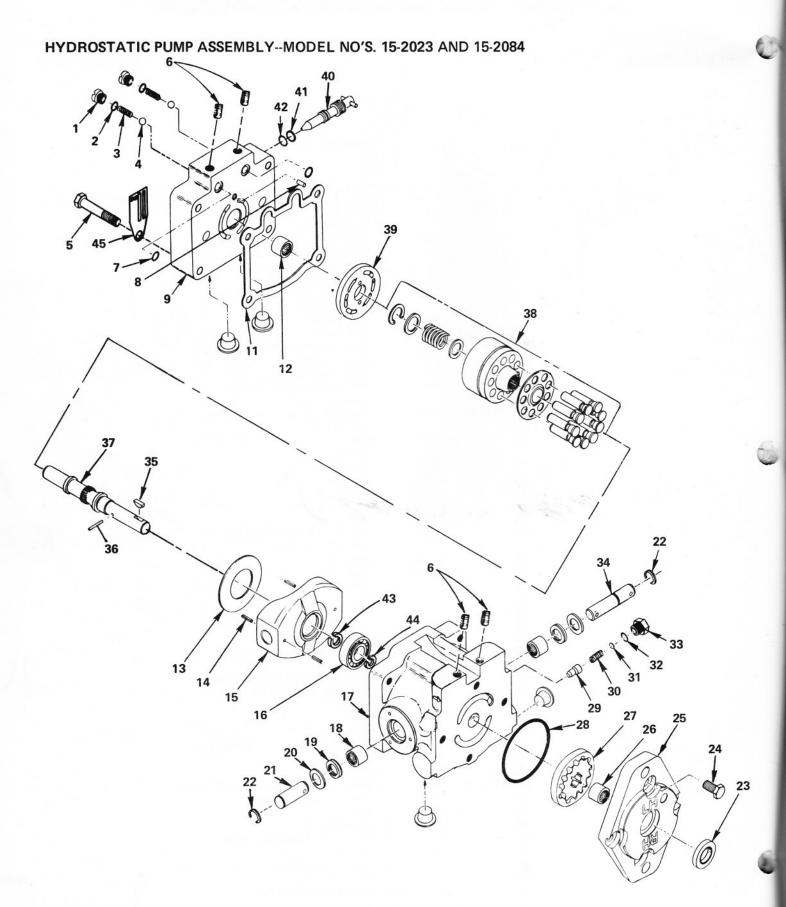


ROPER 18 TWIN HYDRO GARDEN TRACTOR-MODEL NO. T8338AR



KEY NO.	PART NO.	DESCRIPTION
1 2 & 4 3 & 5	7164R 7165R 7169R	Diff. Case Diff. Gear (Set of Two) Diff. Gear Thrust Washer
6 & 8 7 & 9 10 11 12	7166R 7170R 7167R 7168R 7202R	(Set of Two) Diff. Pinion Mate (Set of Two) Diff. Pinion Thrust Washer Diff. Shaft (Pin. Mate) Diff. Shaft Lock Pin Diff. Adj. Shim (Set of Four
13 14 15 & 17 16 18 19	7207R 7206R 7171R 7172R 7201R 7196R	.003 to .030) Brg. Cone Brg. Cup Gear and Pinion Assembly Drive Screw Roller Brg. Cone Pin. Brg. Shim (Set of Four .003 to .030)
20, 29 & 30 30	7173R 3299P	Upper Hsg. Sub. Assembly (Inc. Key No. 30) Hex Hd. Cap Screw 7/16 - 14
21 22 23 24 25 26	7200R 7194R 7208R 7195R 7193R 7179R	N.F.C. x 2 Grade 5 Roller Brg. Cup Brg. Cup Spur Gear Pin Brg. Spacer Brg. Cone Pin. Brg. Shim (Set of Four -
27 28 31 32 33 34 35 36 37 38 39	7178R 7177R 7174R 7175R 7176R 7217R 7210R 7214R 7219R 7215R 3303P	teen .031 to .057) Snap Ring Welch Plug Gear Cover Gasket Gear Cover Hex Tap Screw Dowel Pin Housing Gasket Vent Tube Assembly Oil Seal Lower Hsg. and Tube Assembly Hex Bolt 5/16 - 24 NF x 1 - 1/4 Grade 5
40 41 42 & 43	519P 1003P 7209R	Hex Nut 5/16 - 24 NF Lockwasher 5/16 Axle Shaft and Bearing (Inc. Key
43 44, 46 & 47 45 48 49 50 51 52 53	7211R 7180R 7181R 7213R 7216R 7212R 7218R 7220R 7221R 7222R	No. 43) Wheel Bearing Wheel Bearing Gasket (Set of Three) Wheel Bearing Retainer Bolt Wheel Bolt Axle Shaft Flange Assembly Felt Seal Wheel End Washer Wheel End Cotter Pin

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR



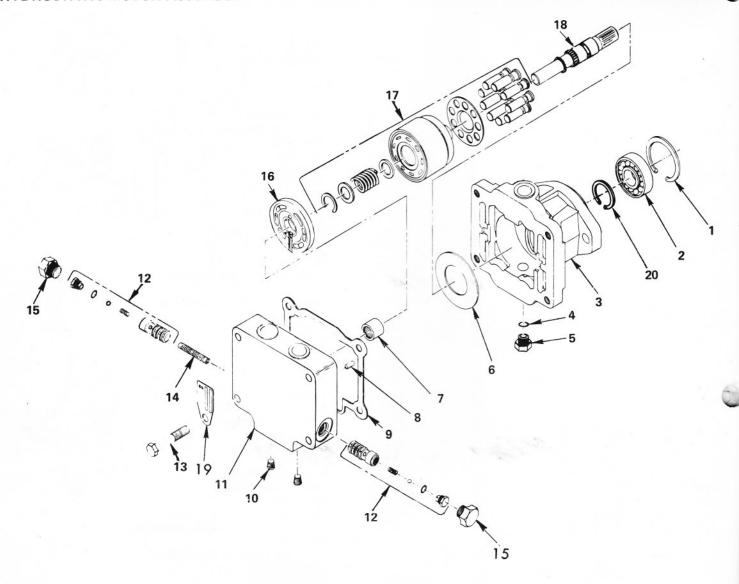
ROPER 18 TWIN HYDRO GARDEN TRACTOR-MODEL NO. T8338AR

HYDROSTATIC PUMP ASSEMBLY--MODEL NO'S. 15-2023 AND 15-2084

KEY NO.	PART NO.	DESCRIPTION
1,2,3 AND4	7223R	Check Valve Kit
5	7224R	Hex Head Cap Screw
6	7273R	Pipe Plug
7	7226R	"O" Ring
8	7227R	Headless Str. Pin
9	7228R	End Cap
11	7229R	Gasket
12	7230R	Needle Bearing
13	7231R	Thrust Plate
14	*7232R	Coiled Spring Pin
15	7233R	Swashplate
16	7234R	Ball Bearing
17	1601J	Housing (For Pump Model No.
		15 - 2084 ONLY)
17	7235R	Housing (For Pump Model No.
		15 - 2023 ONLY)
18	7236R	Needle Bearing
19	7237R	Lip Seal
20	7238 R	Washer
21	7239R	Trunnion Shaft
22	7240R	Retaining Ring
23	7241R	Lip Seal
24	7242R	Hex Head Cap Screw
25	7243R	Charge Pump Housing
26	7244R	Needle Bearing
27	7245R	Gerotor Assembly "O" Ring
28	7246R	"O" Ring
29	7247R	Relief Valve Cone
30	7248R	Relief Valve Spring
31	7249R	Shim Pack
32	7250R	"O" Ring
33	1603J	Hex Head Plug (For Pump Model No.
		15 - 2084 ONLY)
33	7251R	Hex Head Plug (For Pump Model
24	70500	No. 15 - 2023 ONLY)
34	7252R	Control Shaft
35 36	7253R	Woodruff Key
37	7254R	Head Str. Pin
3/	1602J	Shaft (For Pump Model No.
37	7255R	15 - 2084 ONLY)
37	7255N	Shaft (For Pump Model No.
38	7256R	15 - 2023 ONLY) Cyl. Block Kit
39	7257R	Valve Plate
40	7258R	By-Pass Valve
41	7259R	
42	7260R	Back-Up Ring "O" Ring
43	1604J	Retaining Ring (For Pump Model No.
		15 - 2084 ONLY)
44	1605J	Retaining Ring (For Pump Model No.
	(14)47(15)7(16 ⁻¹)7 ⁻¹	15 - 2084 ONLY)
45		Model Plate
	634A656	Complete Pump Assembly

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR

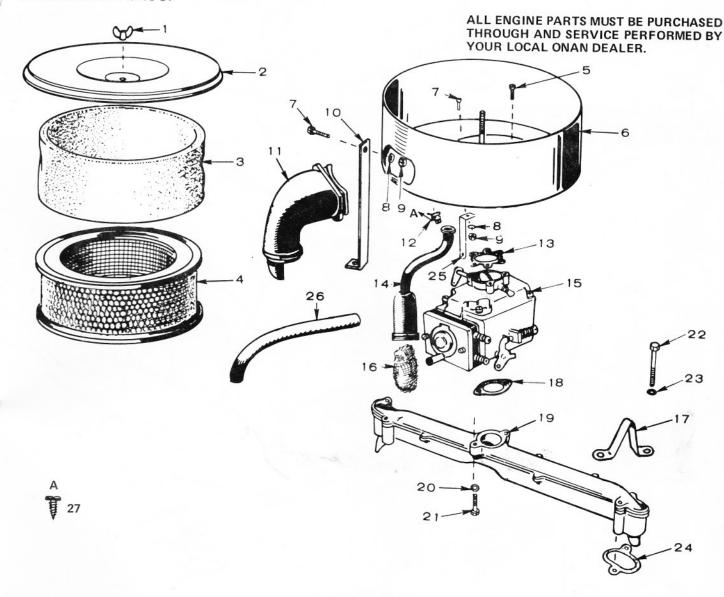
HYDROSTATIC MOTOR ASSEMBLY



KEY	PART	DESCRIPTION	KEY	PART	DESCRIPTION
NO.	NO.	DESCRIPTION	NO.	NO.	DESCRIPTION
	70000	0	4.4	70700	F-d Con
1	7262R	Retaining Ring	11	7272R	End Cap
2	7263R	Ball Bearing	12	7271R	Accelerator Valve Assembly
3	7264R	Motor Case	13	7279R	Hex Head Cap Screw
4 & 5	7265R	Hex Hd. Plug	14	7275R	Accelerator Spring
6	7231R	Thrust Plate	15	7270R	Hex Head Plug
7	7230R	Roller Bearing	16	7276R	Valve Plate
8	7227R	Hdless. Str. Pin	17	7256R	Cyl. Block Kit
9	7229R	Gasket	18	7278R	Motor Shaft
10	7273R	Pipe Plug	19		Model Plate
			20	224J	Retaining Ring
				634A655	Complete Motor Assembly

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A

FUEL SYSTEM GROUP



	KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
	1 2 3 4 5	865-0020 140-1168 140-1259 140-1216 815-0463	Wing Nut (1/4 - 20) Air Cleaner Cover Air Cleaner Wrapper Air Cleaner Element Machine Screw, Slotted Head (No. 10 - 32 x 5/8")	15 16 17 18 19	142-0568 123-0865 403-1021 145-0438 154-1468	Carburetor Filter Lifting Bracket Gasket Intake Manifold
	6 7 8	140-1213 800-0003 853-0013	Air Cleaner Housing Cap Screw (1/4 - 20 x 1/2") Lockwasher (1/4")	20 21 22	850-0040 800-0023 CAP SCREW 800-0033	Lockwasher (1/4") Cap Screw (1/4 - 20 x 1 - 3/8") 5/16 - 18 x 2"
)	9 10 11 12 13 14	862-0001 140-1198 140-1169 518-0328 140-1215 123-1277	Hex Nut (1/4 - 20) Support Air Intake Tube Cable Clip Gasket Breather Tube	23 24 25 26 27	800-0034 850-0045 154-1744 140-1313 503-0740 5592P	5/16 - 18 x 2 - 1/4" Lockwasher (5/16") Gasket Support Fuel Hose Tap Screw SI. Pan Hd. No. 8 x 3/4 Type AB

14

15

16

142-0572

142-0555

142-0544

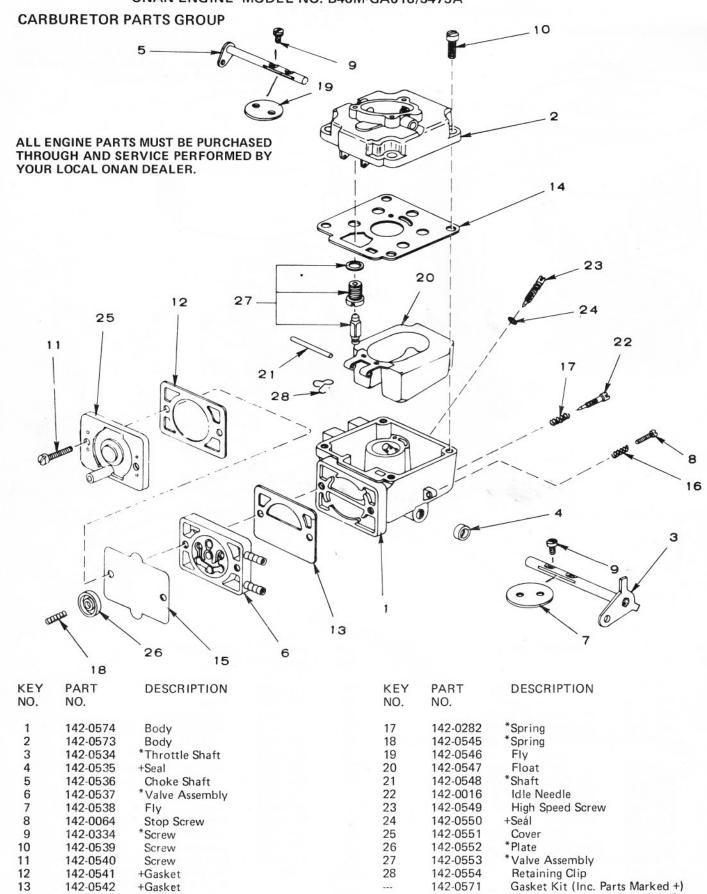
+Gasket

Spring

+Diaphragm

REPAIR PARTS

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A



⁺Parts included in 142-0571 Gasket Kit. *Parts included in 142-0570 Repair Kit.

142-0570

- 30 -

Repair Kit (Inc. Parts Marked *)

18

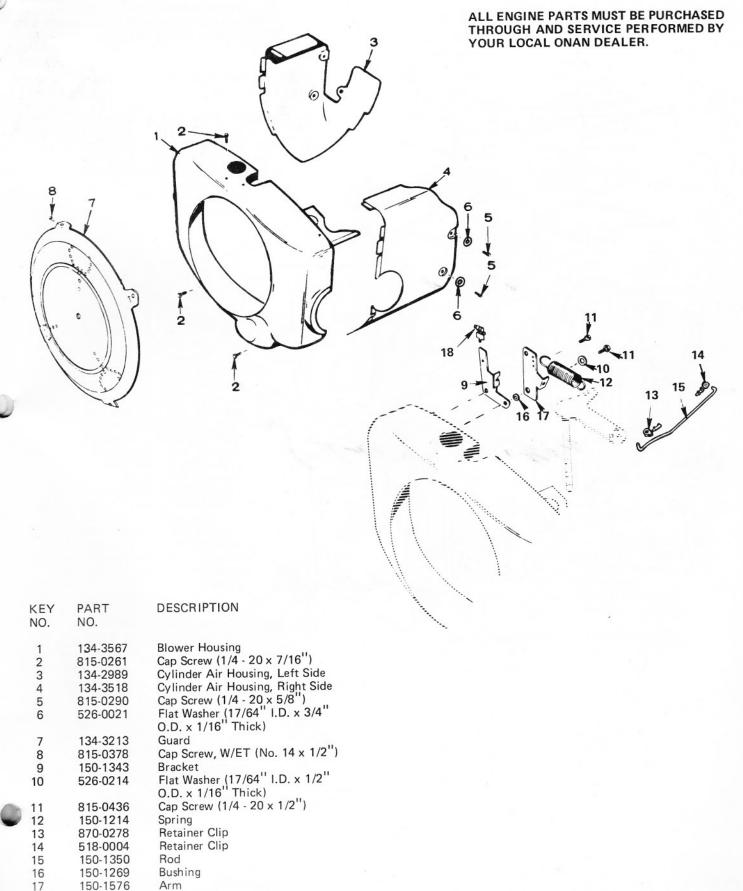
518-0176

Clip

REPAIR PARTS

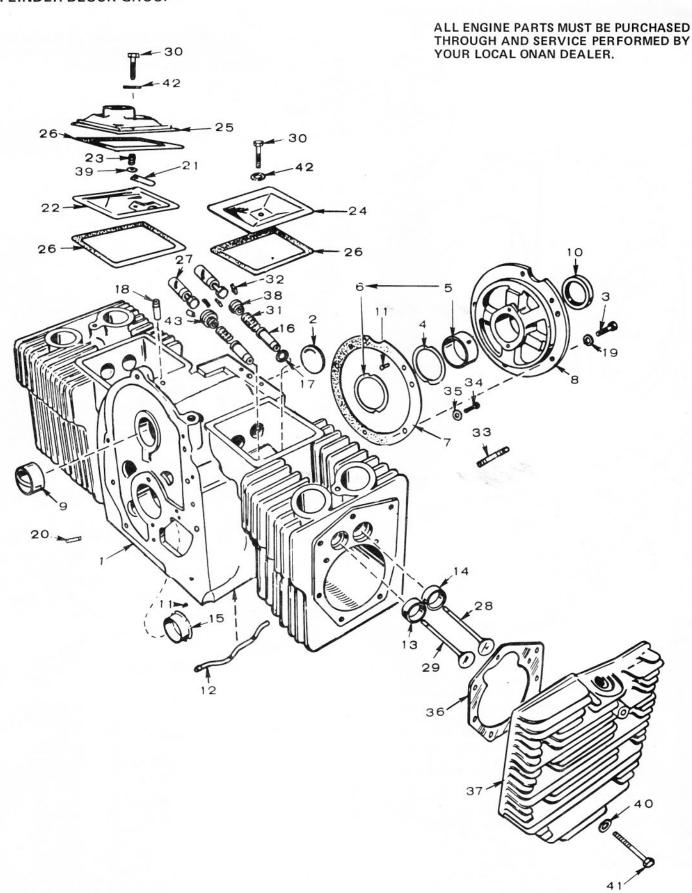
ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A

BLOWER HOUSING AND GOVERNOR GROUP



ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A

CYLINDER BLOCK GROUP



ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A

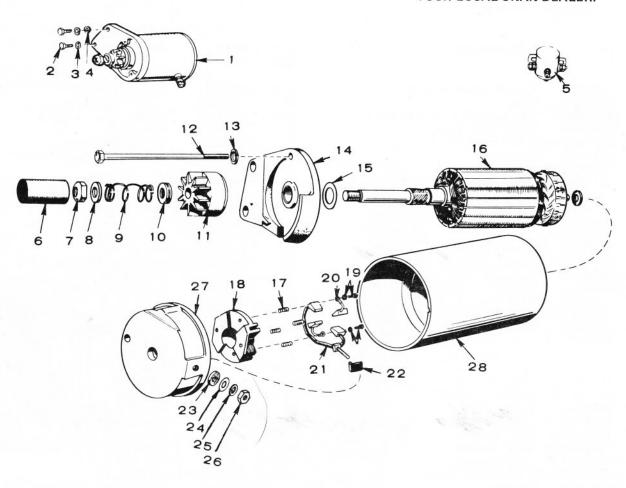
CYLINDER BLOCK GROUP

KEY NO.	PART NO.	DESCRIPTION		KEY NO.	PART NO.	DESCRIPTION
1	110-2590	Cylinder Block Assembl	У	21	123-1175	Reed
2	517-0048	*Plug	•	22	123-1173	Baffle
3	800-0051	*Cap Screw (3/8 - 16 x 1	- 1/4")	23	123-1174	Spring
4	104-0776	*Shim (.005" Thick)		24	110-1879	Valve Cover
5	CRANKSHA	AFT BEARING, REAR		25	110-2274	Valve Cover
	101-0450	*Standard		26	110-1921	Gasket
	101-0450-02	2 .002" Undersize		27	VALVE TAP	
	101-0450-10	.010" Undersize				*Standard
	101-0450-20	.020" Undersize			115-0006-01	.001" Oversize .002" Oversize
	101-0450-30		•		115-0006-02	.002" Oversize
6	104-0575	*Thrust Washer			115-0006-05	.005" Oversize
7	101-0415	*Gasket		28	110-1808	Intake Valve
8	101-0439	*Bearing Plate, Rear		29	110-1809	Exhaust Valve
9	101-0405	*Camshaft Bearing		30	800-0010	Cap Screw (1/4 - 20 x 3/4")
10	509-0041	*Seal		31	110-0539	Valve Spring
11	516-0072	*Drive Pin		32	110-0639	Valve Spring Lock
12	120-0735	*Tube		33	520-0820	Stud
13		AT INSERT, EXHAUST		34	800-0046	Cap Screw (3/8 - 16 x 1/2")
	110-1824 110-1824-02	*Standard ! .002" Oversize		35	526-0066	Flat Washer, Copper (25/64" I.D. x 9/16" O.D. x 1/16" Thick)
	110-1824-05			36	110-2287	Head Gasket
	110-1824-10			37	CYLINDER F	
	110-1824-25			37	110-2564	Right Side
14		AT INSERT, INTAKE			110-2563	Left Side
	110-0197	*Standard		38	110-0904	Roto-Cap - Exhaust Valves
	110-0197-02	002" Oversize		39	526-0018	Flat Washer (17/64" I.D. x 5/8"
	110-0197-05	005" Oversize		00	320 00 10	O.D. x 1/16" Thick)
	110-0197-10	.010" Oversize		40	526-0122	Flat Washer 11/32" I.D. x 23/32"
	110-0197-25			10	020 0122	O.D. x 10 Ga.)
15		FT BEARING, FRONT		41	CAP SCREW	
	101-0432	*Standard			800-0540	5/16 - 18 x 1 - 5/8"
	101-0432-02	002" Undersize			800-0541	5/16 - 18 x 1 - 5/8" 5/16 - 18 x 2"
	101-0432-10	.010" Undersize		42	526-0063	Flat Washer, Copper 17/64" I.D. x
	101-0432-20	0.010" Undersize		0000		7/16" O.D. x 1/32" Thick)
	101-0432-30			43	110-0893	Retainers - Intake Valves
16	110-1807	*Valve Guide			160-1213	Ignition Tune-up Kit
17	110-0068	*Gasket	•		168-0140	Carbon Removal Gasket Kit
18 19	149-1299 850-0050	*Vacuum Tube *Lockwasher (3/8")			168-0141	Engine Gasket Kit
20	516-0141	*Alignment Pin			*Parts Included	in Cylinder Block Assembly

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A

STARTER GROUP

ALL ENGINE PARTS MUST BE PURCHASED THROUGH AND SERVICE PERFORMED BY YOUR LOCAL ONAN DEALER.



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	191-0933	Starting Motor, Complete	15	191-1038	Washer
2	800-0028	Cap Screw (5/16 - 18 x 1")	16	191-1039	Armature
3	850-0045	Lockwasher (5/16")	17	&	*+Spring
4	526-0113	Flat Washer (11/32" I.D. x 1" O.D.	18	&	+Brush
		x 3/32" Thick)	19	&	+Screw and Lockwasher
5	307-1031	Starting Solenoid	20	&	*+Brush
6	191-1034	Dust Cover	21	&	*+Stud and Brush Assembly
7	191-1045	Stop Nut	22	&	+Bushing
8	191-1046	Washer	23	&	+Insulation Washer
9	191-1035	Spring	24	&	+Flat Washer
10	191-1047	Spacer	25	&	+Lockwasher
11	191-1036	Drive Assembly	26	&	+Nut
12	191-1048	Cap Screw	27	191-1040	Cap Assembly (Inc. Parts Marked +)
13	850-0040	Lockwasher (1/4")	28	&	Housing
14	191-1037	Cap Assembly		191-1041	Repair Package (Inc. Parts Marked *)

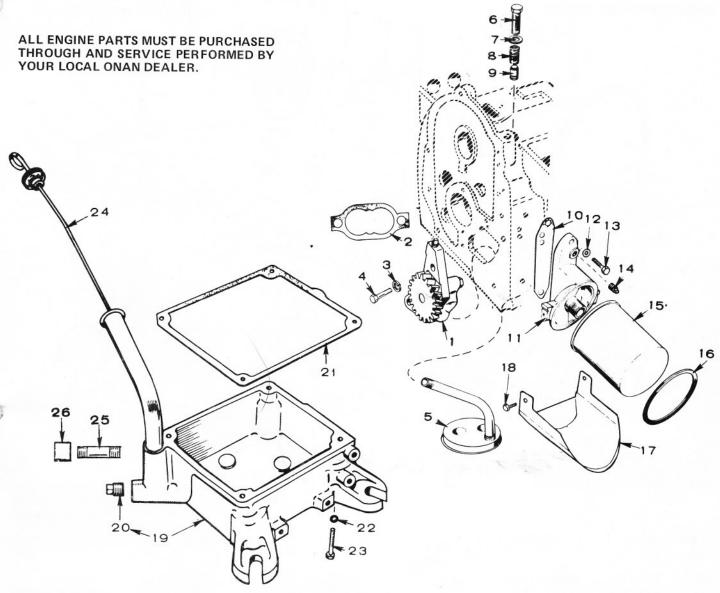
⁺Parts included in 191-1040 Cap Assembly

&Not Sold Separately

^{*}Parts included in 191-1041 Repair Package

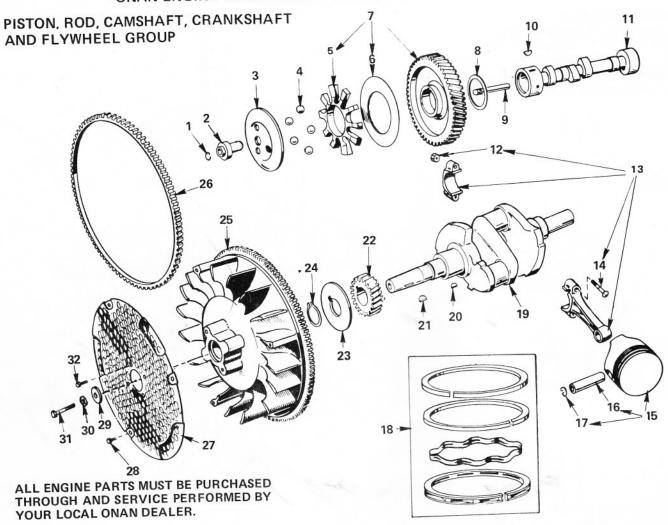
ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A





PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
120-0491	Oil Pump (Components Not Sold	13	800-0028	Cap Screw (5/16 - 18 x 1)
	Separetely)	14	505-0057	Pipe Plug
120-0161	Oil Pump Gasket Kit	15	122-0338	Oil Filter
850-0040	Lockwasher (1/4")	16	122-0347	Air Seal, Filter to Housing
800-0007	Cap Screw (1/4 - 20 x 1")		122-0360	Oil Drain
120-0713	Intake Cup			Cap Screw W/ET (No. 10 - 32 x 3/8")
801-0050	Cap Screw (3/8 - 24 x 1")			Oil Base
526-0066	Flat Washer, Copper	20	505-0056	Plug
	(25/64" I.D. x 9/16" O.D. x 1/16" Thick)	21	102-0693	Gasket
120-0140	Spring			Lockwasher (3/8")
120-0398	Plunger	1771		Cap Screw (3/8 - 16 x 2 - 1/2")
122-0321		1000 100		Cap and Indicator
122-0320		337323		Pipe Nipple (1/2 x 3 - 1/2")
526-0065	Flat Washer, Copper	26	505-0158	Pipe Cap (1/2")
	NO. 120-0491 120-0161 850-0040 800-0007 120-0713 801-0050 526-0066 120-0140 120-0398 122-0321 122-0320	NO. 120-0491 Oil Pump (Components Not Sold Separetely) 120-0161 Oil Pump Gasket Kit 850-0040 Lockwasher (1/4") 800-0007 Cap Screw (1/4 - 20 x 1") 120-0713 Intake Cup 801-0050 Cap Screw (3/8 - 24 x 1") 526-0066 Flat Washer, Copper (25/64" I.D. x 9/16" O.D. x 1/16" Thick) 120-0140 Spring 120-0398 Plunger 122-0321 Gasket 122-0320 Adapter 526-0065 Flat Washer, Copper	NO. 120-0491 Oil Pump (Components Not Sold 13 Separetely) 14 120-0161 Oil Pump Gasket Kit 15 850-0040 Lockwasher (1/4") 16 800-0007 Cap Screw (1/4 - 20 x 1") 17 120-0713 Intake Cup 18 801-0050 Cap Screw (3/8 - 24 x 1") 19 526-0066 Flat Washer, Copper 20 (25/64" I.D. x 9/16" O.D. x 1/16" Thick) 21 120-0140 Spring 22 120-0398 Plunger 23 122-0321 Gasket 24 122-0320 Adapter 25	NO.

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1 2 3 4 5 6 7 8 9 10 11 12 13	114-0257 114-0257-10 114-0257-20 114-0257-30	.020" Undersize .030" Undersize Bolt (Special) D PIN (Inc. Key No's 16 and 17) Standard .005" Oversize) .010" Oversize) .020" Oversize) .030" Oversize	19 20 21 22 23 24 25 26 27 28 29	112-0122 518-0311 RING SET, PI 113-0189 113-0189-05 113-0189-10 113-0189-20 113-0189-30 113-0189-40 104-0996 515-0001 515-0227 104-0032 104-0043 518-0014 134-3506 104-0779 134-3508 815-0400 526-0017 850-0055 104-0170	Piston Pin Retaining Ring ISTON Standard .005" Oversize .010" Oversize .020" Oversize .030" Oversize .040" Oversize Crankshaft Key, Crankshaft Gear Key, Flywheel Gear Gear Retaining Washer Retaining Ring Flywheel (Inc. Ring Gear and Stator) Ring Gear Guard Machine Screen, Truss Head Flat Washer (15/32" I.D. x 1 - 1/4" O.D. x 1/4" Thick) Lockwasher (7/16") Cap Screw (7/16 - 14 x 4")

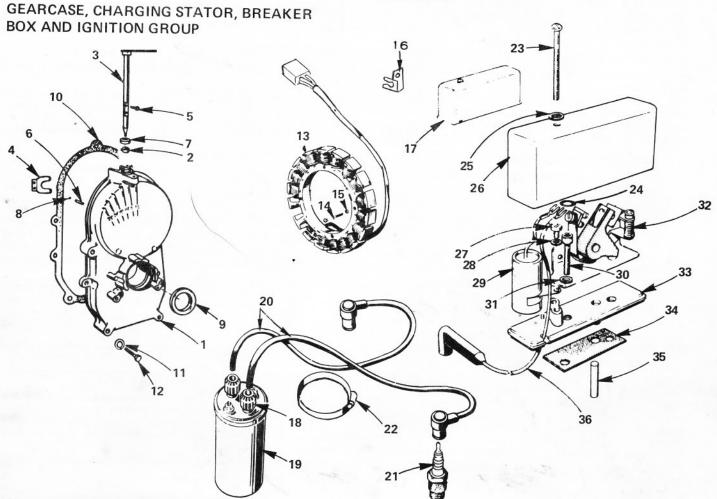
21

167-0237

Spark Plug

REPAIR PARTS

ROPER 18 TWIN HYDRO GARDEN TRACTOR--MODEL NO. T8338AR ONAN ENGINE--MODEL NO. B48M-GA018/3475A



ALL ENGINE PARTS MUST BE PURCHASED THROUGH AND SERVICE PERFORMED BY YOUR LOCAL ONAN DEALER.

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	103-0498	Gearcase Assembly (Inc. Parts Marked X)	22	503-0311	Coil Clamp
2	510-0105	xBearing	23	812-0108	+*Machine Screw, Round Head (No. 10 - 24
	150-1470	xShaft and Arm			x 1 - 1/2")
4	150-1187	xYoke	24	509-0065	+*Retainer, "O" Ring
5	815-0046	xPan Head Screw (8 - 32 x 3/8")	25	526-0008	+*Flat Washer (13/64" I.D. x 7/16" O.D. x
4 5 6 7	516-0130	xDowel Pin			1/32" Thick)
	509-0008	xSeal	26	160-1232	*Cover (Inc. Parts Marked +)
8	510-0014	xBall	27	815-0358	*Cap Screw (No. 8 - 32 x 5/16") - Slotted
9	509-0040	xSeal	28	850-0025	*Lockwasher (No. 8)
10	103-0408	Gasket	29	312-0196	*Condenser
11	CAP SCREW		30	802-0034	*Cap Screw (1/4 - 20 x 3/4") - Socket Head
	800-0032	5/16 - 18 x 1 - 3/4"	31	850-0038	*Lockwasher (1/4")
10	800-0545	5/16 - 18 x 2 - 3/4" - Special	32	160-1183	*Point Set
12	526-0065	Flat Washer, Copper (21/64" I.D. x 9/16"	33	160-1219	*Base
13	101 1100	O.D. x 1/16" Thick)	34	160-1150	*Gasket
14	191-1102	Stator	35	160-1151	Plunger
15	813-0108	Round Head Screw (No. 10 - 32 x 1 - 1/2")	36	336-2132	Lead
16	850-0030 167-0188	Lockwasher (No. 10)		160-1213	Tune up Kit (Include points
17	160-1210	Bracket Alternator Lead			and condenser)
18	166-0604	Breaker Box (Inc. Parts Marked *)			
19	166-0535	Terminal Cap (Part of Coil)		*Parts included in 160-1210 Breaker Box	
20	166-0535 Ignition Coil SPARK PLUG CABLE			+Parts included in 160-1232 Cover	
	167-1595	17"		xIncluded in	103-0498 Gearcase Assembly
	167-1596	15"			
	. 57 1000	10			

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ONAN MANUFACTURER'S LIMITED WARRANTY

Onan extends to the original purchaser of goods for use, the following warranty covering goods manufactured or supplied by Onan, subject to the qualifications indicated.

THERE IS NO OTHER EXPRESS WARRANTY.

IMPLIED WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMIT-ED TO PERIODS OF WARRANTY SET FORTH BELOW AND TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IM-PLIED WARRANTIES ARE EXCLUDED.

IN NO EVENT IS ONAN LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

NOTE: Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply in every instance.

1. Onan warrants to original purchaser for the periods set forth below that goods manufactured or supplied by it will be free from defects in workmanship and material, provided such goods are installed, operated, and maintained in accordance with Onan's written instructions, and further provided, that installation inspection and initial start-up on commercial-industrial generator set or power system installations are conducted by an Onan Authorized Distributor or its designated service representatives.

PRODUCT APPLICATION	PERIOD OF WARRANTY
Goods used in personal, family and household applications.	One (1) year from date of purchase.
Goods used in commercial-industrial applications.	One (1) year from date of purchase.
Commercial-industrial stationary generator sets.	One (1) year from date of initial start-up.
Commercial-industrial, standby power systems with nominal operating speeds of 1800 rpms or less which are installed in the U.S. or Canada (must include Onan supplied generator sets, automatic transfer switch, exerciser and running time meter).	*Five (5) years or 1500 hours, whichever occurs first from the date of initial start-up. Labor allowance for the first two (2) years or 1500 hours, whichever occurs first from the date of initial start-up.
Commercial-industrial, standby power systems with nominal operating speeds of 1800 rpms or less which are installed outside the U.S. or Canada (must include Onan supplied generator set, automatic transfer switch, exerciser and running time meter).	*Two (2) years or 1500 hours, whichever occurs first from the date of initial start-up.
Repair or replacement parts.	Ninety (90) days from date of purchase, ex- cludes labor.
*MUST BE REGISTERED ON FORM NO. 23C065, TO BE PR	OVIDED AND COMPLETED BY SELLER.

2. Onan's sole liability and Purchaser's sole remedy for a failure of goods under this warranty and for any and all other claims arising out of the purchase and use of the goods, including negligence on the part of the manufacturer, shall be limited to the repair of the product by the repair or replacement, at Onan's option, of parts that do not conform to this warranty, provided that the product or parts are returned to Onan's factory at 1400 73rd Avenue N.E. Minneapolic, Minnesota 55432, or to an Onan Authorized Distributor or its designated service representative, transportation prepaid:

Except as indicated below, this warranty does not include travel time, mileage, or labor for removal of Onan product from its application and reinstallation.

Removal and Reinstallation.

Onan will pay the following stated labor at straight time only for warranty work requiring removal and reinstallation of Onan Products in the following applications, provided, such warranty labor is performed by an Onan Authorized Distributor or its designated service representatives.

 i. Garden Tractor Applications – Up to a maximum of two (2) hours for Onan Industrial Engine installations.
 ii. On-Highway Recreational and Commercial Vehicle Applications – Up to a maximum of one (1) hour for Onan engineered Power Drawer or slide-out type generator set installations.

Up to a maximum of two (2) hours for all other permanent type generator set installations.

Marine Product Installations - Up to a maximum of four (4) hours for all single and two cylinder engine powered Marine Generator Sets installed below-deck.

- Up to a maximum of eight (8) hours for all four and six cylinder engine powered Marine Generator Sets installed belowdeck.

b. Travel Time and Mileage

Marine Generator Set Installations - Onan will, for six (6) months after date of purchase, pay travel time up to four (4) hours and mileage costs up to one hundred fifty (150) miles related to warranty repairs, provided, such travel and repairs are performed by an Onan Authorized Distributor or its designated service representative.

Commercial-industrial Standby Generator Set and System Installations — Provided the generator set or system is permanently wired in a stationary installation, Onan will, for six (6) months after initial start-up, pay travel time up to four (4) hours and mileage costs up to one hundred fifty (150) miles for warranty repairs performed by an Onan Authorized Distributor or its designated service representative.

- 3. All claims must be brought to the attention of Onan or an Authorized Distributor or its designated service representative within thirty (30) days after discovery that goods or parts fail to meet this warranty.
- 4. THIS WARRANTY SHALL NOT APPLY TO:
 - a: Cost of maintenance, adjustments, installation and start-up.
 - b. Failures due to normal wear, accident, misuse, abuse, negligence or improper installation.
 - Products which are altered or modified in manner not authorized by manufacturer in writing.
 - d. Failure of goods caused by defects in the system or application in which the goods are installed.
 - Telephone, telegraph, teletype or other communication expenses.
 - Living and travel expenses of persons performing service, except as specifically included in Section 2.
 - Rental equipment used while warranty repairs are being performed.
 - Overtime labor requested by purchaser.
 - Starting batteries.

No person is authorized to give any other warranties or to assume any other liabilities on Onan's behalf, unless made or assumed in writing by an officer of Onan, and no person is authorized to give any warranties or assume any other liability on behalf of Seller unless made or assumed in writing by Seller.

5. This warranty gives the user specific legal rights, and the user may also have other rights which vary from state to state.