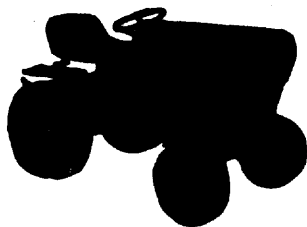


OWNER'S MANUAL

20T GARDEN TRACTOR
MODEL NUMBER T9329AR



LAWN AND GARDEN
POWER EQUIPMENT

ROPER

OUTDOOR POWER PRODUCTS

DIVISION OF ROPER CORPORATION

1905 WEST COURT STREET
KANKAKEE, ILLINOIS 60901

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WARNING

This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. See your Authorized Roper Dealer for spark arrester muffler part number LA269AR.

RULES FOR SAFE OPERATION

1. 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.
3. Do not carry passengers. Keep children and pets a safe distance away.
4. Always wear substantial footwear. Do not wear loose fitting clothing that could get caught in moving parts.
5. Keep your eyes and mind on your tractor, mower and the area being cut. Don't let other interests distract you.
6. Do not attempt to operate your tractor or mower when not in operator's seat.
7. Always get on or off your tractor from the operators left hand side.
8. Clear the work area of objects which might be picked up and thrown.
9. Disengage all attachment clutches and shift into neutral before attempting to start the engine.
10. Disengage power to attachments and stop the engine before leaving the operator's position.
11. Disengage power to mower, stop the engine and disconnect spark plug wire(s) from spark plug(s) before cleaning, making an adjustment or repairs.
12. Disengage power to attachments when transporting or not in use.
13. 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.
14. 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.
15. Reduce speed on slopes and make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.
16. Do not shift gears while going up or down slopes. Choose a gear low enough to negotiate the slope without stopping and shifting gears. To reduce speed, move throttle lever to slow.
17. Never mow in wet or slippery grass, when traction is unsure or at a speed which could cause a skid.
18. Stay alert for holes in the terrain and other hidden hazards.
19. Do not drive too close to creeks, ditches and public highways.
20. Exercise special care when mowing around fixed objects in order to prevent the blades from striking them. Never deliberately run tractor or mower into or over any foreign object.
21. Never shift gears until tractor comes to a stop.
22. Never place hands or feet under the mower, in the deflector (discharge chute) or near any moving parts while tractor or mower are running. Always keep clear of discharge chute.
23. 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.
24. Watch out for traffic when crossing or near roadways.
25. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the vehicle while in operation.
26. Handle gasoline with care - it is highly flammable.
 - a. Use approved gasoline containers.
 - 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.
27. Keep the vehicle and attachments in good operating condition, and keep safety devices in place.
28. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
29. 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.
30. To reduce fire hazard, keep the engine free of grass, leaves or excessive grease.
31. 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.
32. Do not change the engine governor settings or overspeed the engine.
33. When using the vehicle with mower, proceed as follows:
 - a. Mow only in daylight or in good artificial light.
 - b. Never make a cutting height adjustment while the engine is running if the operator must dismount to do so.
 - c. Shut the engine off when removing the grass catcher or unclogging chute.
 - d. Check the blade mounting bolts for proper tightness at frequent intervals.
34. Check the grass catcher bags frequently for wear or deterioration. Replace with new bags for safety protection.
35. Do not operate the mower without either the entire grass catcher, on mowers so equipped, or the deflector shield in place.



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

CUT AWAY VIEW

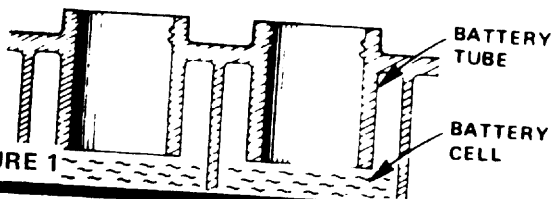


FIGURE 1

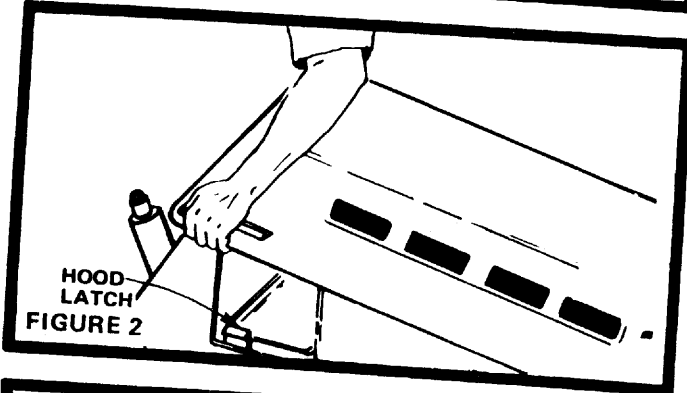


FIGURE 2

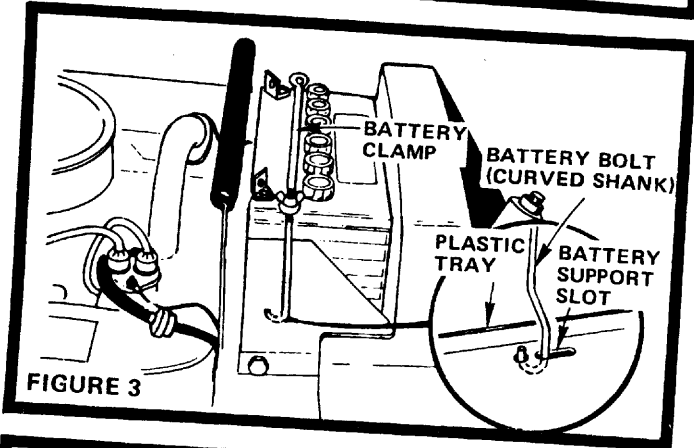


FIGURE 3

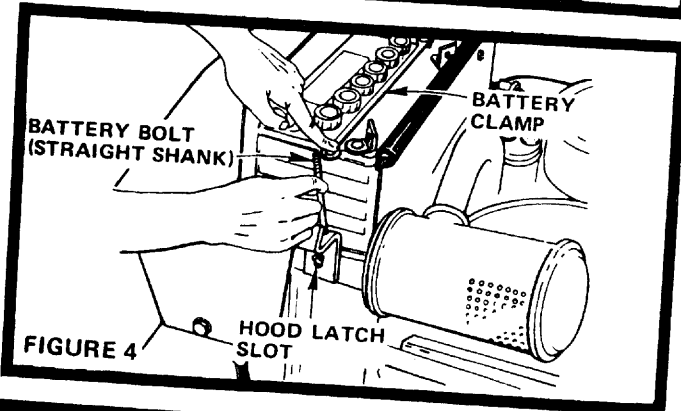


FIGURE 4

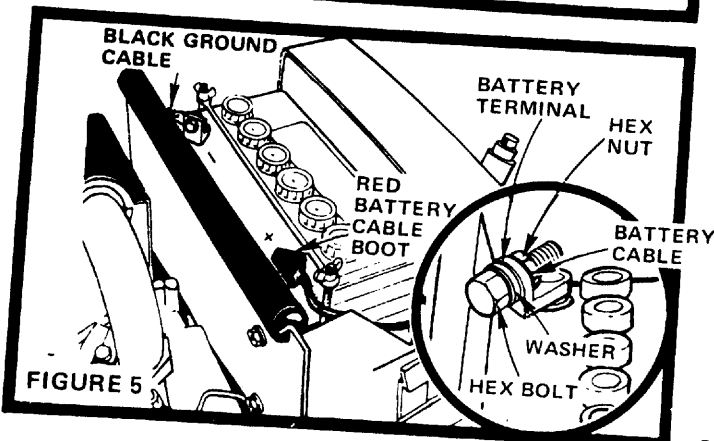


FIGURE 5

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

NOTE: Right Hand (R.H.) and Left Hand (L.H.) are determined from operator's position.

ASSEMBLY

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



WEAR EYE AND FACE SHIELD.

- a. 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.

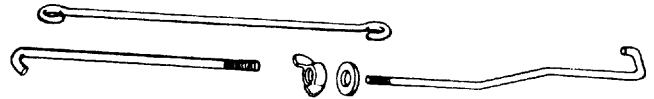
- b. Check level of electrolyte after 30 minutes. Add additional electrolyte if necessary. NOTE: Tighten Vent Caps securely.
- c. Charge Battery at a rate not exceeding three amperes for about two and one half hours.



DO NOT SMOKE. FUMES FROM CHARGED 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. Push down and slightly spread rear sides of Hood to release Hood Latches. Lift Hood from rear sides (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 front of Tractor) (Fig. 3).
- d. Hook the curved shank Battery Bolt into slot on the left side of Battery Support (Fig. 3). Fasten Battery Clamp to Battery Bolt with a Flat Washer and Wing Nut.
- e. Hook the straight shank Battery Bolt into slot in R.H. Hood Latch and fasten Battery Clamp 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) and Hex Nut (Fig. 5). Tighten Nut securely. Place Boot over Terminal.



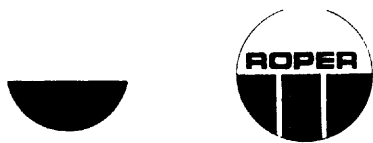
POSITIVE TERMINAL MUST BE CONNECTED FIRST TO PREVENT SPARKS FROM ACCIDENTAL GROUNDING.

- 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) 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).
- 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.
- Fasten with Flat Washer, Lockwasher and Hex Bolt (Fig. 6). Tighten securely.
- Press Steering Wheel Insert in place.

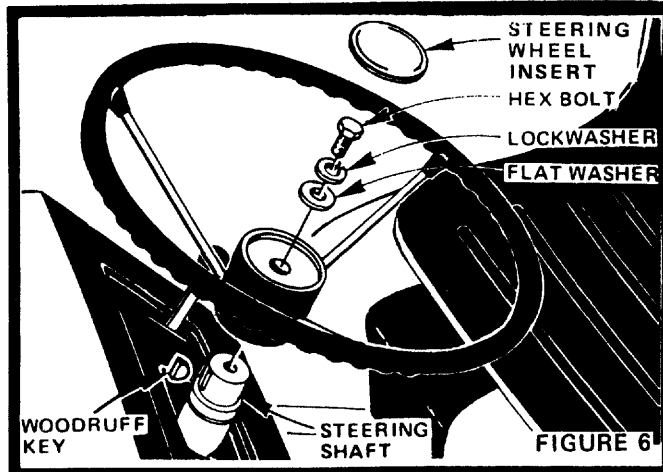


FIGURE 6



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. 10) AND THE CLUTCH BRAKE PEDAL IS IN DRIVE POSITION (FIG. 12).



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

NOTE: A SPARK ARRESTOR MUFFLER (PAGE 13) IS AVAILABLE AS AN ACCESSORY PART FOR YOUR TRACTOR. CHECK LEGAL REQUIREMENTS IN YOUR AREA.

INITIAL ADJUSTMENTS

- Reduce Tire pressure to 12 pounds in front and rear Tires. (Tires were overinflated for shipping purposes).
- 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 ALIGNMENT WITH SEAT SPRING.

INITIAL SERVICE

NOTE: BE CAREFUL NOT TO ALLOW DIRT TO ENTER THE ENGINE WHEN CHECKING OR ADDING OIL OR FUEL.

- Check Engine Oil Level with Tractor on level ground. Wipe dipstick (Fig. 8) 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.
- Fill Fuel Tank (Fig. 7) with fresh regular grade lead-free or leaded gasoline. Capacity is 3 - 1/4 gallons. NOTE: DO NOT SWITCH FROM LEADED TO LEAD-FREE GASOLINE.

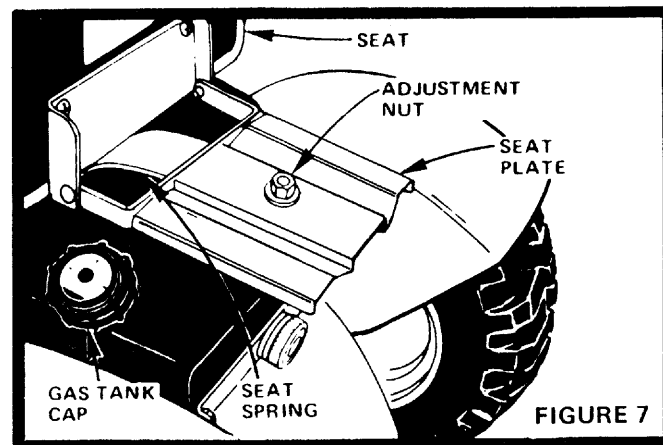


FIGURE 7

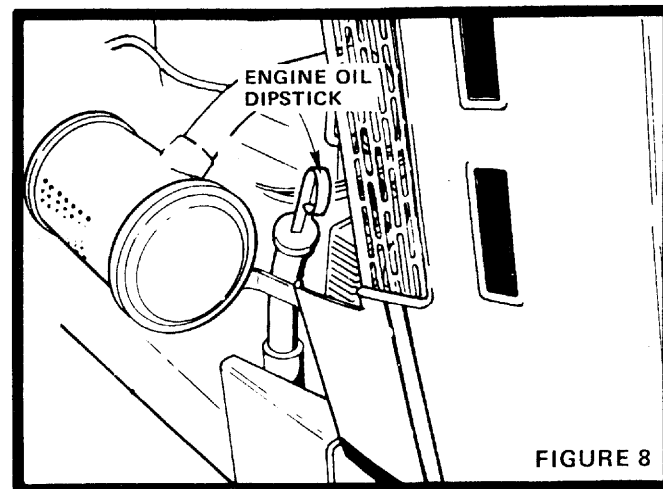
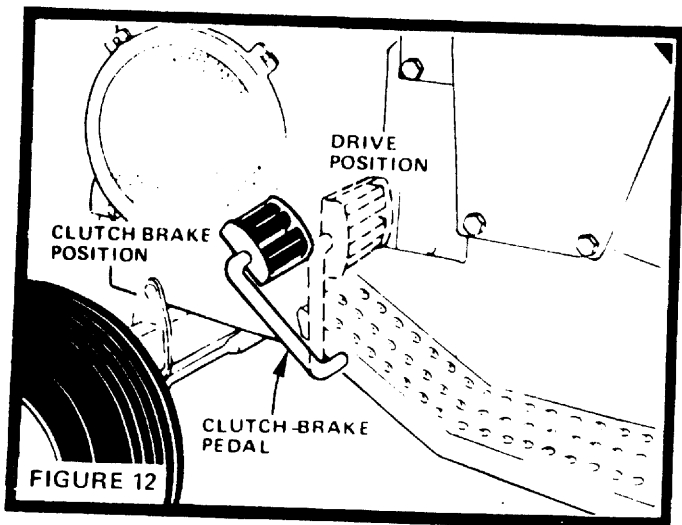
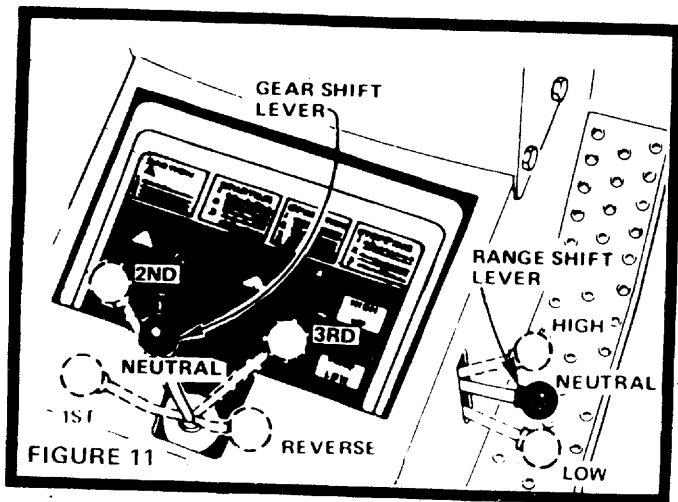
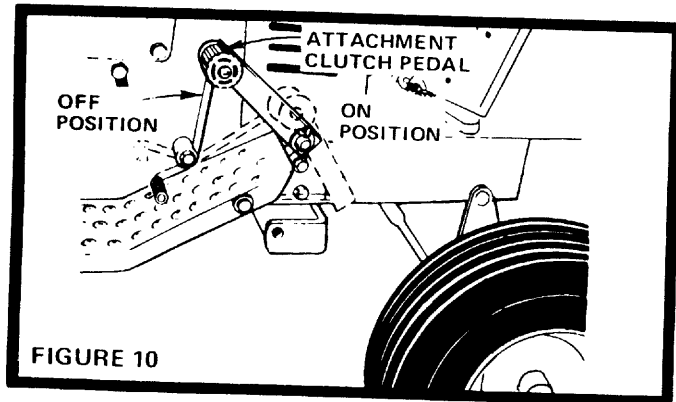
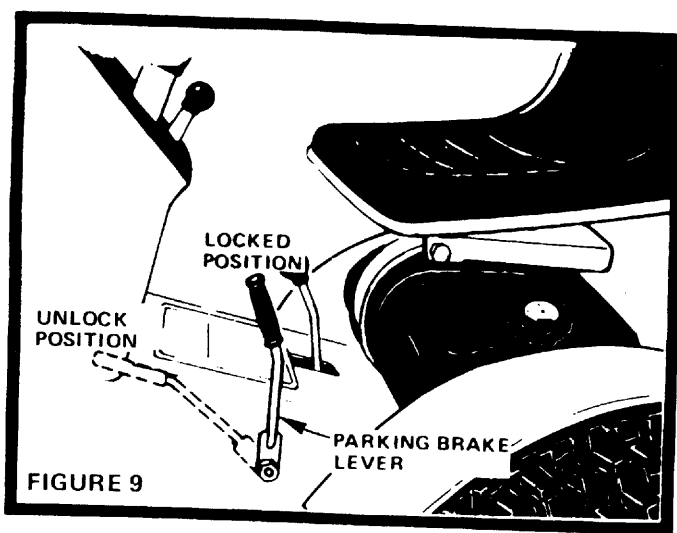


FIGURE 8



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



OPERATION



CAUTION

1. Keep all shields in place.
2. Before leaving operator's position:
 - a. Shift transmission to neutral
 - b. Set parking brake
 - c. 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 Parking Brake Lever in locked position (Fig. 9).
2. Place Attachment Clutch Pedal in "OFF" position (Fig.10).
3. Place Gear Shift Lever in neutral "N" position (Fig. 11).
4. Move Range Shift Lever to "N" neutral position (Fig. 11).
5. Push Clutch-Brake Pedal into brake position (Fig. 12).
6. Move Throttle Control Lever to middle position (Fig. 13).
7. Pull Choke out (Fig. 13).
8. Turn Ignition Key to "START" position until Engine starts (Fig. 13). 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 "FAST" position, wait a few minutes, and try again.

NOTE: The Electric Lift Switch (Fig. 13) raises or lowers an attachment when used with an Electric Three Point Hitch (optional equipment).

WARMING UP THE ENGINE

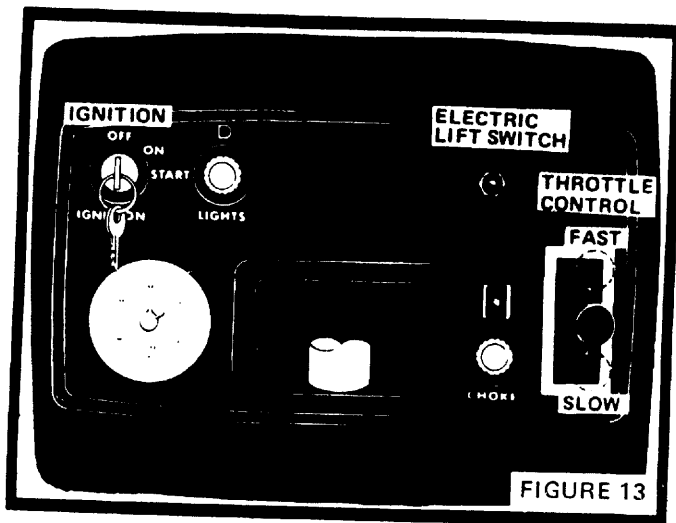
Move Throttle Control Lever to slow position. Push Choke in as engine warms. NOTE: ALLOW ENGINE TO WARM UP FOR A FEW MINUTES BEFORE OPERATING.

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

ALWAYS WEAR SUBSTANTIAL FOOTWEAR 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, place Throttle Lever in middle position.
2. Push Clutch-Brake Pedal down to brake position.
3. Move Gear Shift Lever to "2ND" and Range Shift Lever to "LOW".
4. Unlock Parking Brake.
5. Release Clutch-Brake Pedal SLOWLY to start forward movement.
6. If ground travel is too slow move Throttle Lever to fast position or press Clutch-Brake pedal and shift to a different gear. NOTE: ALWAYS SELECT A GROUND TRAVEL SPEED THAT WILL SUIT THE TERRAIN AND THE ATTACHMENT BEING USED.



BRING TRACTOR TO COMPLETE STOP BEFORE SHIFTING GEARS.



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.



DO NOT OPERATE THE MOWER WITHOUT EITHER THE ENTIRE GRASS CATCHER, ON MOWERS SO EQUIPPED, OR THE DEFLECTOR SHIELD IN PLACE.

NOTE: ALWAYS OPERATE ENGINE AT FULL ENGINE RPM WHEN MOWING TO ASSURE BETTER MOWING PERFORMANCE, LONG ENGINE LIFE AND PROPER DISCHARGE OF CUT MATERIAL.

STOPPING YOUR TRACTOR

1. Reduce Throttle Lever to "SLOW" position.
2. Push Clutch-Brake Pedal into Brake position.
3. Place Attachment Clutch Pedal in "OFF" position and lower attachment to the ground.
4. Move Gear Shift Lever to neutral "N".
5. Place Parking Brake in "LOCK" position.
6. Release Clutch-Brake Pedal.



MAKE SURE PARKING BRAKE WILL HOLD TRACTOR SECURE.

7. Turn Ignition Key to "OFF" position.



REMOVE KEY WHEN LEAVING TRACTOR TO PREVENT UNAUTHORIZED USE.

TRANSPORTING YOUR TRACTOR

For pushing or towing your tractor, place Gear Shift Lever and Range Shift Lever in "N" (Neutral) position (Fig. 11). NOTE: DO NOT TOW YOUR TRACTOR FASTER THAN SIX MILES PER HOUR.

TRACTOR OPERATION ON HILLS

1. Choose one of the lowest gears BEFORE starting up or down hills.



DO NOT DRIVE UP OR DOWN HILLS WITH SLOPES GREATER THAN 15°, AND DO NOT DRIVE ACROSS ANY SLOPE.

2. Avoid shifting or stopping on hills.
 - a. If slowing is necessary, move Throttle Control to middle position.
 - b. If stopping is necessary, push Clutch Brake Pedal quickly to brake position to prevent rolling.
 - c. Lock Parking Brake and shift to lowest speed range.
 - d. Partially release Clutch Brake Pedal (until forward movement begins).
 - e. Unlock Parking Brake.
 - f. Completely release Clutch-Brake Pedal.
3. 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 EQUIPPED WITH A 12 VOLT NEGATIVE GROUNDED SYSTEM. THE OTHER VEHICLE MUST ALSO BE A 12 VOLT NEGATIVE GROUNDED SYSTEM.



LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASSES. KEEP SPARKS, FLAME, AND SMOKING MATERIALS AWAY FROM BATTERIES. ALWAYS SHIELD EYES AROUND BATTERIES.

1. Connect each end of the RED cable to the POSITIVE (+) 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 BATTERY TO START OTHER VEHICLES.

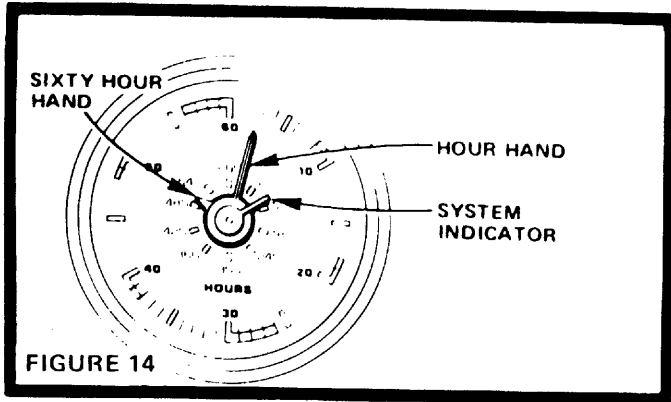


FIGURE 14

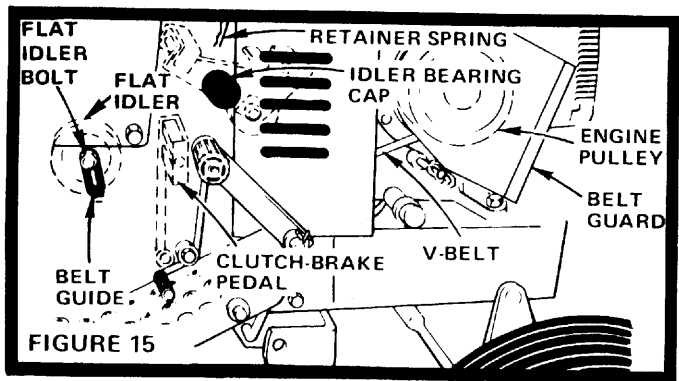


FIGURE 15

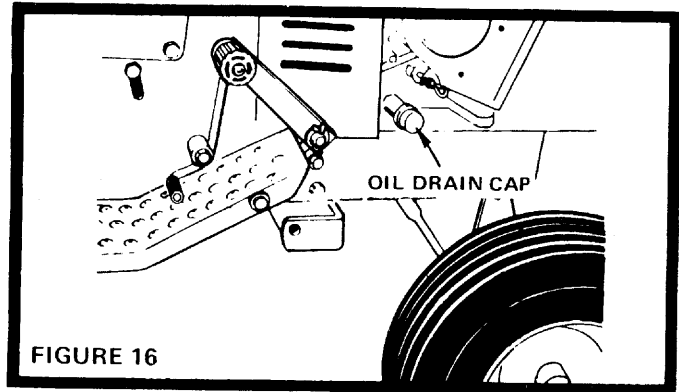


FIGURE 16

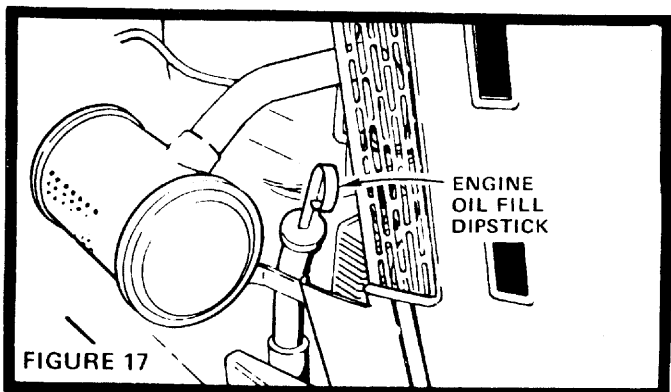


FIGURE 17

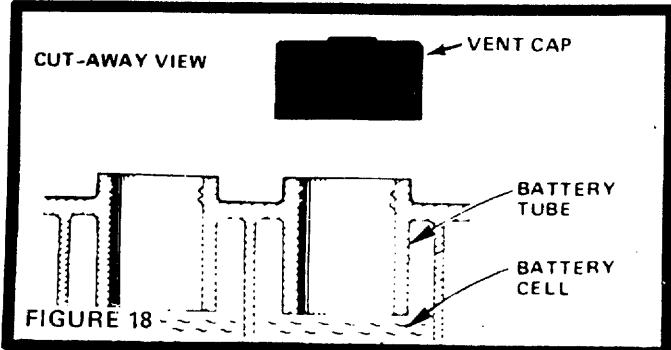


FIGURE 18

MAINTENANCE

To keep your tractor running better, longer; perform necessary service using the following Maintenance Schedule and the Service Hour Meter (Fig. 14) on the tractor dash.

The Service Hour Meter records the number of hours of tractor operation. Read the Hour Hand on the outer dial; each mark indicating one hour of operation. Read the Sixty Hour Hand on the inner dial; each mark indicating sixty hours of operation. The System Indicator moves visibly when the Ignition Key is in the "ON" position, indicating the system operational.



DISCONNECT SPARK PLUG WIRES TO PREVENT ACCIDENTAL STARTING BEFORE MAKING ANY INSPECTION, ADJUSTMENT (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. 15), 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.
 - Hold Nut on inside of Flat Idler and loosen Flat Idler Bolt.
 - Move Flat Idler in frame slot 1/4 inch down (to tighten), up (to loosen) V-Belt tension. Tighten Bolt.
 - Release Clutch-Brake Pedal. It should return to approximately vertical position.



CHECK TO MAKE SURE TRACTOR DOES NOT START WITHOUT FULLY DEPRESSING CLUTCH-BRAKE PEDAL.

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. 16) and catch Oil in a suitable container. Replace Cap.
- Refill Engine Oil (Fig. 17). 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 without Oil Cartridge change. If Oil Cartridge (page 8) is changed, capacity is changed, capacity is 4 pints. **NOTE: DO NOT OVER-FILL.**

FREQUENTLY

1. CHECK BATTERY

- Electrolyte solution level in each Battery Cell should be even with bottoms of tubes in cells (Fig. 18). Add distilled water if necessary. **NOTE: DO NOT OVERFILL.**
- Keep Battery and Terminals clean. Refer to page 10.
- Keep Battery bolts tight.
- Keep Vent Caps tight and small Vent holes in caps open.
- 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

Air Screen and Guard (Fig. 21) must be kept free of dirt and chaff to prevent Engine damage from overheating.

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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. 17) clean, push it down 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 OVER-FILL.

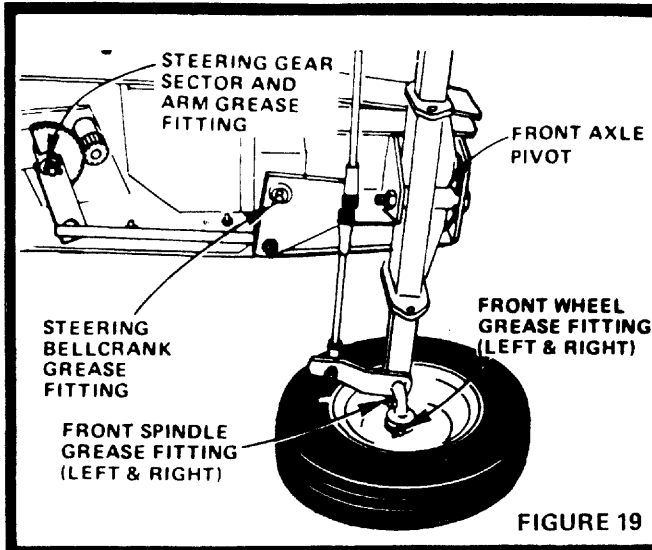
2. LUBRICATE STEERING AND FRONT WHEELS

There are six Grease Fittings on your Tractor (Fig. 19). Using a Grease Gun, give each Grease Fitting two shots of Extreme Pressure Lubricating Grease Amdex No. 1 (Available at your Roper Dealer).

3. OIL PIVOT POINTS

Place several drops of SAE 30 Oil at points where parts move against each other, especially:

- a. Idler Bearing (Fig. 15)
 - Remove Plastic 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. 19)



EVERY 25 HOURS

(EVERY 15 HOURS IF OPERATING IN VERY DUSTY CONDITIONS)

1. CLEAN AIR FILTER & FOAM PRE-CLEANER

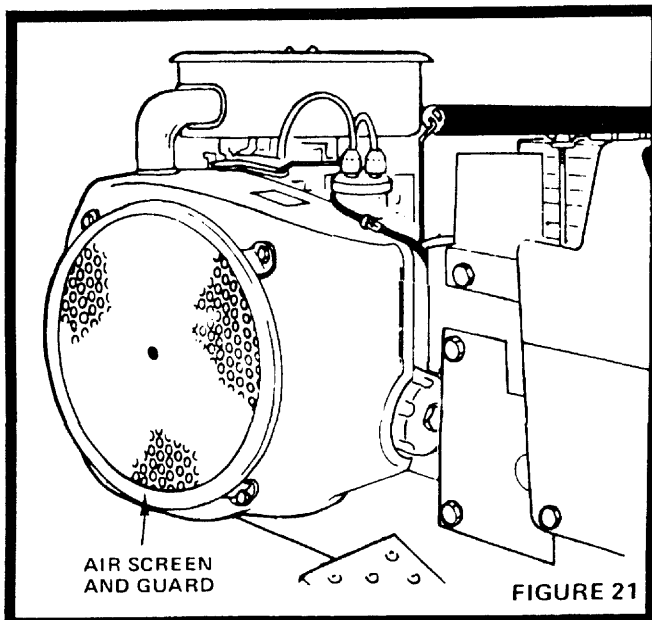
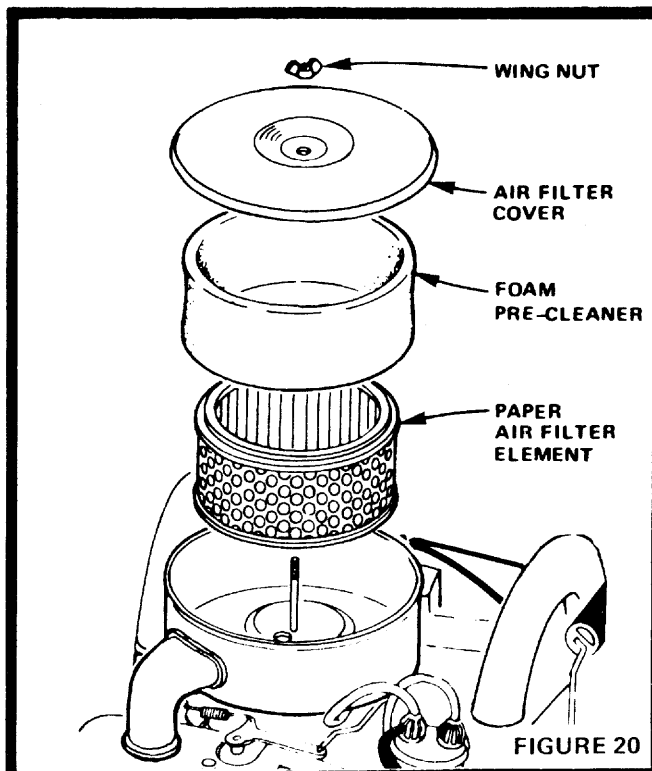
- a. Unscrew Wing Nut (Fig. 20) to remove Air Filter Cover, Paper Air Filter Element and Foam Pre-Cleaner.
- b. Clean dust from Paper Air Filter Element by gently tapping Element on a flat surface.
- c. Wash Foam Pre-Cleaner in detergent and water.
- d. Rinse, squeeze (rather than twist) and allow to 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 reposition on Tractor. NOTE: NEVER RUN ENGINE WITH AIR CLEANER REMOVED.

2. CLEAN AIR SCREEN

Air Screen and Guard (Fig. 21) must allow free-flow of air to prevent Engine damage from overheating. Remove Air Screen and Guard and clean with a wire brush to remove dirt, chaff, stubborn dried gum and fibers.

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 6.



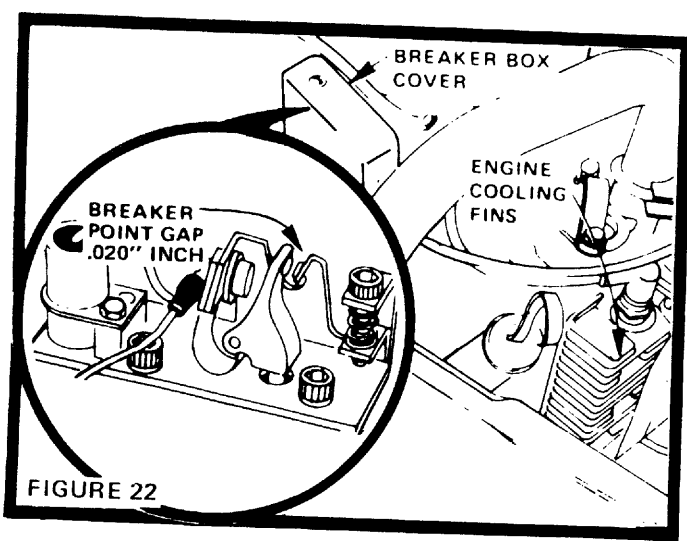


FIGURE 22

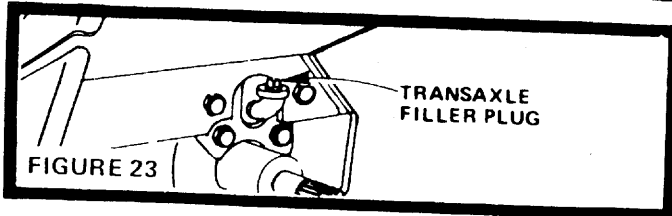


FIGURE 23

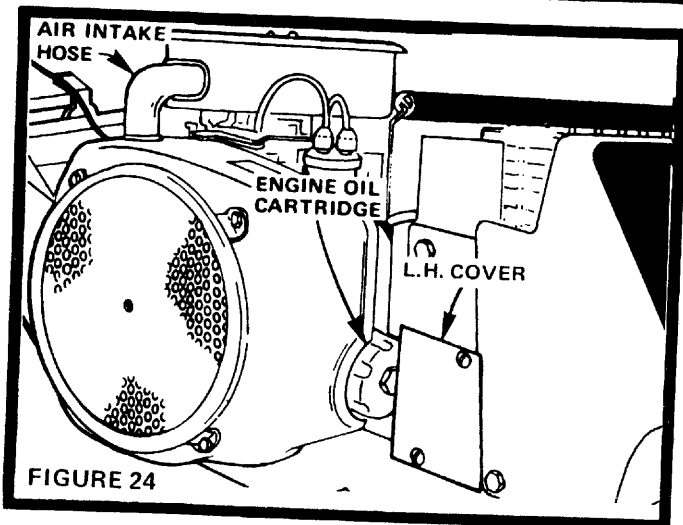


FIGURE 24

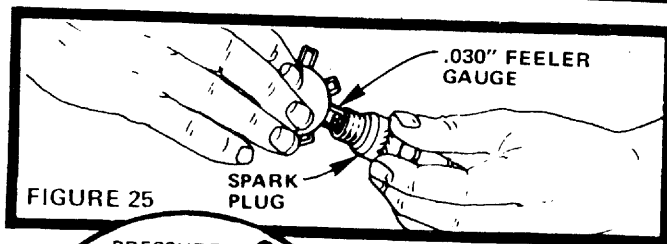


FIGURE 25

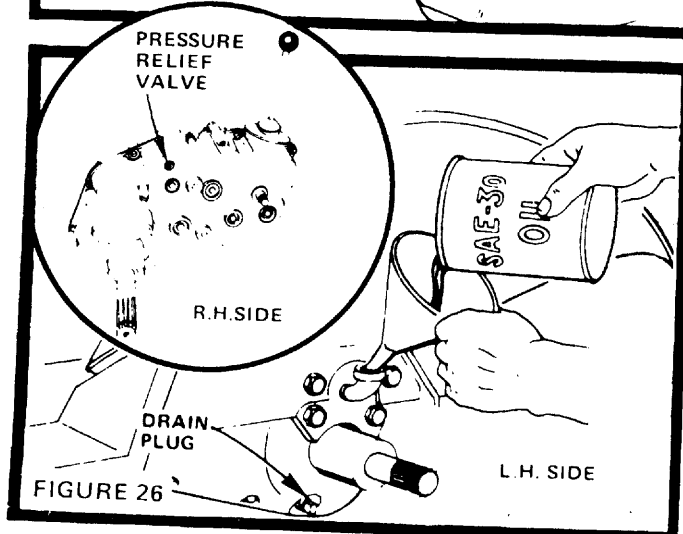


FIGURE 26

EVERY 50 HOURS

1. CLEAN ENGINE COOLING FINS

Remove any dust, dirt or oil from Engine Cooling Fins (Fig. 22) to prevent Engine damage from overheating.

2. CHECK TRANSAXLE OIL LEVEL

- Block up Rear Axle securely or use a Tractor Jack. Remove left rear wheel by removing E-Ring (Fig. 33).
- Remove Filler Plug (Fig. 23) from Transaxle. Oil Level should be even with Filler Plug threads. Add S.A.E. 30 Motor Oil if necessary.
- Check Pressure Relief Valve located on R.H. side near top (Fig. 26). It should spring completely closed when pulled out by hand and released.
- Reposition wheel. Secure with E-Ring.

3. REPLACE ENGINE OIL CARTRIDGE

- Drain Engine Oil. Refer to page 6.
- Remove L.H. Cover (Fig. 24).
- Remove the filter by turning counterclockwise with a filter wrench. Before installing a new filter, coat the gasket on the filter base with a light film of new oil. Install by turning clockwise until a light friction is noted, then turn an additional 1/2 turn.
- Refill engine oil. Refer to page 6. Capacity is 4 pints with Oil Cartridge change. NOTE: DO NOT OVER-FILL.

EVERY 100 HOURS

1. CLEAN SPARK PLUGS AND RESET GAP

Wire brush carbon deposits from Spark Plug Electrodes and reset gap at .030 inch (Fig. 25). 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. 24). This provides an access to view Timing Mark.
- Remove Spark Plugs and Belt Guard and turn Engine Pulley (Fig. 15) clockwise by hand until 25° BTC 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. 22) by loosening Screw and lift off to remove.
- Replace Points if necessary.
- Using an Allen Wrench, adjust Set Screw for .020 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

- Move Rubber Boots to expose Ball Joints on Tie Rods and Steering Link (Fig. 28).
- Coat Ball Joints with Silicone Spray Lubricant.
- Reposition Rubber Boots.

EVERY 200 HOURS

1. REPLACE PAPER AIR FILTER ELEMENT

Refer to page 7.

2. REPLACE BREAKER POINTS

Refer to step 2, above.

EVERY 480 HOURS

CHANGE TRANSAXLE OIL

- Block up Rear Axle securely or use a Tractor Jack. Remove Left Rear Wheel by removing E-Ring (Fig. 33).
- Drain Transaxle Oil by removing Drain Plug (Fig. 26) and catching Oil in suitable container. Replace Drain Plug.
- Refill Transaxle with S.A.E. 30 (SC, SD or SE) Motor Oil. Capacity is 5 quarts. Pressure Relief Valve (R.H. side of Transaxle, Fig. 26, Inset) may be held open to allow Transaxle to fill more quickly.
- Check Pressure Relief Valve. It should spring completely closed when pulled out by hand and released.

- 8 - e. Reposition wheel. Secure with E-Ring.

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. 27).
- Place new Fuel Filter in position in Fuel Line (arrow on side of Filter in direction of fuel flow).



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

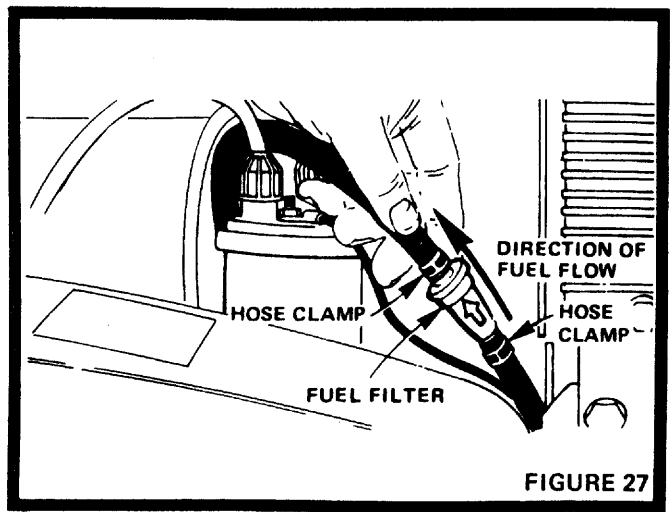


FIGURE 27

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. 28) at each end of Tie Rod Adjustment Sleeves.
- Adjust both Tie Rods so that Tie Rod Joints measure from 10 to 10 - 1/8 inches from center to center.
- 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.

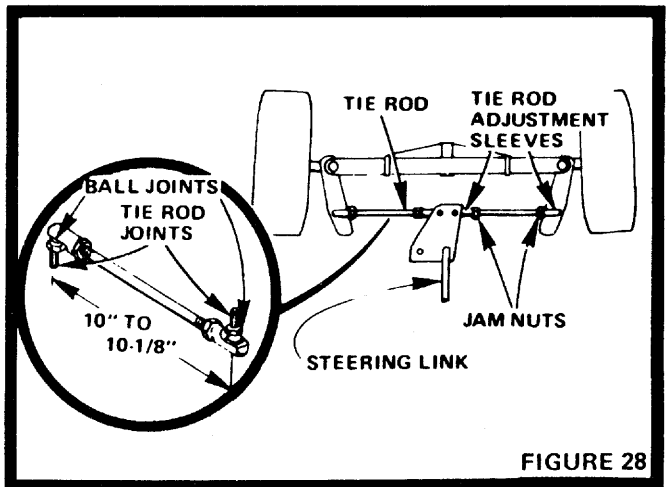


FIGURE 28

3. BRAKE ADJUSTMENT

If Clutch-Brake Pedal (Fig. 29) has more than approximately 4 inches of travel from vertical to full brake position then brake adjustment is necessary.

- Loosen Jam Nut (Fig. 29) in order to turn turnbuckle until Clutch-Brake Pedal regains 4 inches of travel.
- Tighten Jam Nut against Turnbuckle.

4. PARKING BRAKE ADJUSTMENT

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

- Loosen Parking Brake Hex Nuts (Fig. 29).
- Place Parking Brake Lever in locked position.
- Hold Clutch-Brake Pedal in brake position and tighten first Hex Nut finger tight against Bushing.
- Release Clutch-Brake Pedal and turn first Hex Nut two turns more against Bushing.
- Tighten second Hex Nut against first Hex Nut.

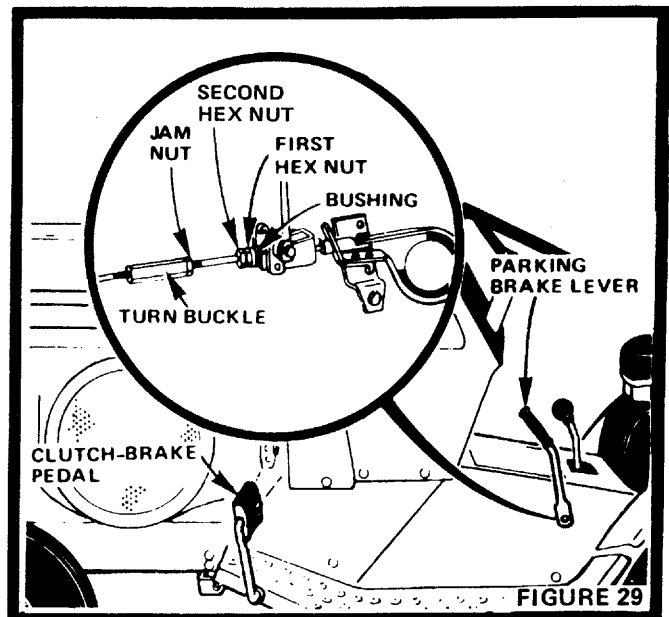


FIGURE 29

5. CARBURETOR ADJUSTMENT

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

- Main Fuel (High Speed) Screw (Fig. 30) should not require adjustment. If resetting is necessary, turn clockwise, closing finger tight ONLY, then turn counterclockwise 1 - 1/8 to 1 - 3/8 turns.
- Turn Idle Adjusting Needle (Fig. 30) clockwise, closing finger tight ONLY, and then turn counterclockwise 1 - 1/8 to 1 - 3/8 turns.



REFER TO "STARTING THE ENGINE" PAGE 4.

- Start Engine and allow to warm for five minutes.
- Make final adjustments with Engine running and Gear Shift Lever in Neutral position.
 - Turn Idle Adjusting Needle counterclockwise until Engine runs "rough" then clockwise until Engine begins to miss. Return Screw to a point midway between these extremes.
 - Throttle Stop Screw (Fig. 30) should not require adjustment. If resetting is necessary, set to obtain the slowest engine speed that will allow smooth acceleration.

6. RE-TENSION V-BELT

It may be occasionally necessary to re-tension V-Belt. (See page 6).



CHECK TO MAKE SURE TRACTOR DOES NOT START WITHOUT FULLY DEPRESSING CLUTCH-BRAKE PEDAL.

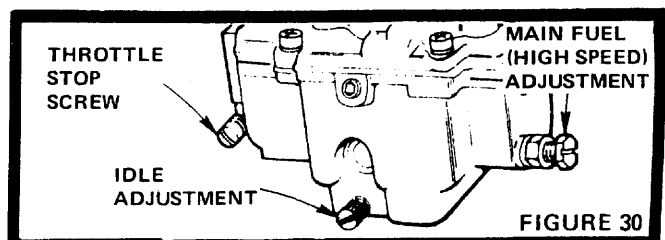


FIGURE 30

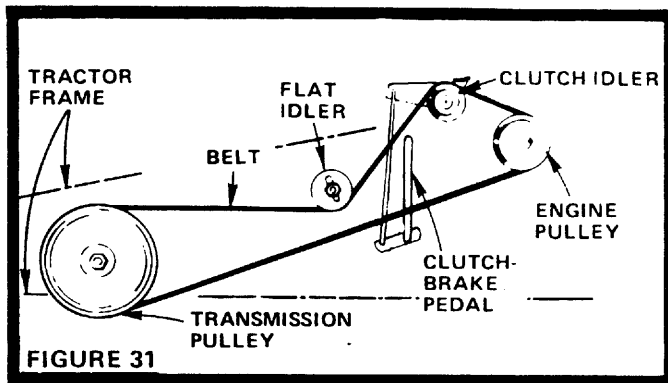


FIGURE 31

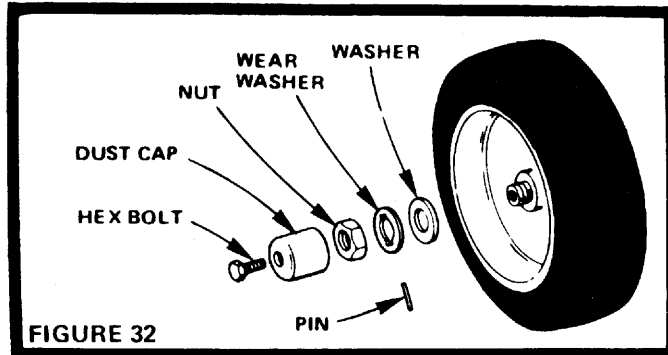


FIGURE 32

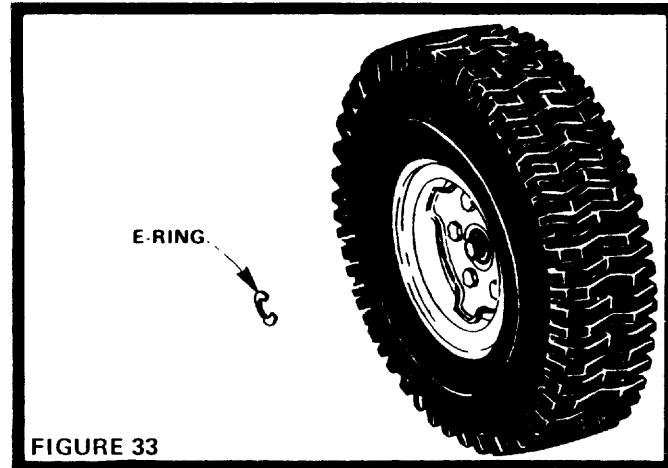


FIGURE 33

7. V-BELT REPLACEMENT

- a. Remove Belt from Clutch Idler by depressing Clutch-Brake Pedal (Fig. 31).
- b. Remove Belt Guide from Engine Pulley.
- c. Remove Rear Belt Guide Assembly from Transmission Pulley.
- d. Loosen Flat Idler Assembly on R.H. side of Tractor Frame.
- e. Remove Belt from Engine Pulley, between Belt Guide Finger (note position of Belt) and Flat Idler, and Transmission Pulley.
- f. Place new Belt around Transmission 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 Transmission Pulley Belt Guide. Tighten Flat Idler Assembly. NOTE: Make sure Belt Guide Finger on Flat Idler is parallel with slot in Tractor Frame.
- i. Check Belt tension, page 6.

8. 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 Vaseline.

9. 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. 32).
 - Block up front axle securely or use a Tractor Jack.
 - 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. 33).
 - Block up rear axle securely or use a Tractor Jack.
 - Remove E-Ring to allow wheel removal.
 - Repair tire and reassemble. Snap E-Ring securely in axle groove.

10. FINISH

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

TROUBLE SHOOTING

POSSIBLE CAUSE

POSSIBLE REMEDY

WILL NOT START

Clutch-Brake Pedal in drive position
Attachment Clutch Pedal in "ON" position
No gasoline in Fuel Tank, clogged Fuel Filter
or Fuel Line
Blown Fuse
Dead Battery

Press Pedal into brake position
Move Pedal to "OFF" position
Fill Tank with Gasoline, Check 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 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 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 gasoline

Shift to a lower gear or 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

Clean Air Screen
Add or change oil
Clean Cylinder Fins
Remove and clean Mufflers
Remove and clean
Use fresh fuel and adjust Carburetor

NO LIGHTS

No Headlights or Taillight with Light Switch Knob
Pulled out

Check Light Fuse under dash, Wire Connections and Switch.
Replace Taillight Bulb or Sealed Beam Headlights

WONT'T CHARGE

Blown Fuse
Defective Battery

Check for fault and replace
Replace

STORAGE

1. ENGINE OIL

Drain (with engine warm) and replace with clean engine oil. Refer to page 6.

2. FUEL SYSTEM

- 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.
- Dispose of gasoline if not to be used. NOTE: GASOLINE STORED FOR SEVERAL MONTHS LOSES ITS VOLATILITY (ABILITY TO BURN EFFECTIVELY).

3. CYLINDER

- Remove Spark Plugs.
- Pour one ounce of oil through spark plug holes into cylinders.
- Turn ignition key to "START" position for a few seconds to distribute oil.
- Replace Spark Plugs.

4. BATTERY

- 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.
- 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

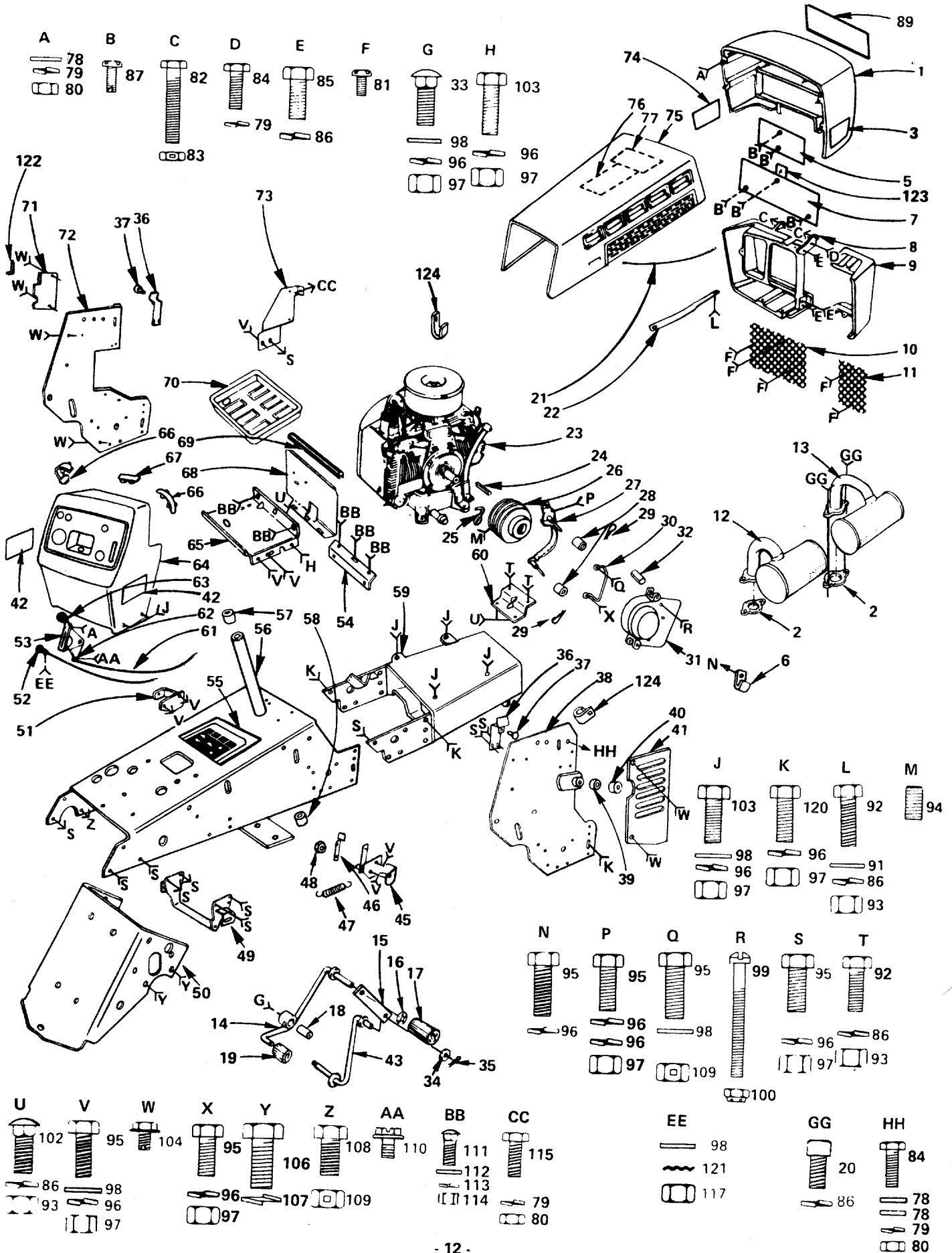
Clean engine, battery, seat, finish, etc. of all foreign matter.

Roper Corporation reserves the right to make any changes in design or improvements without imposing any obligation to in-

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

MAIN FRAME, DASH AND GRILL



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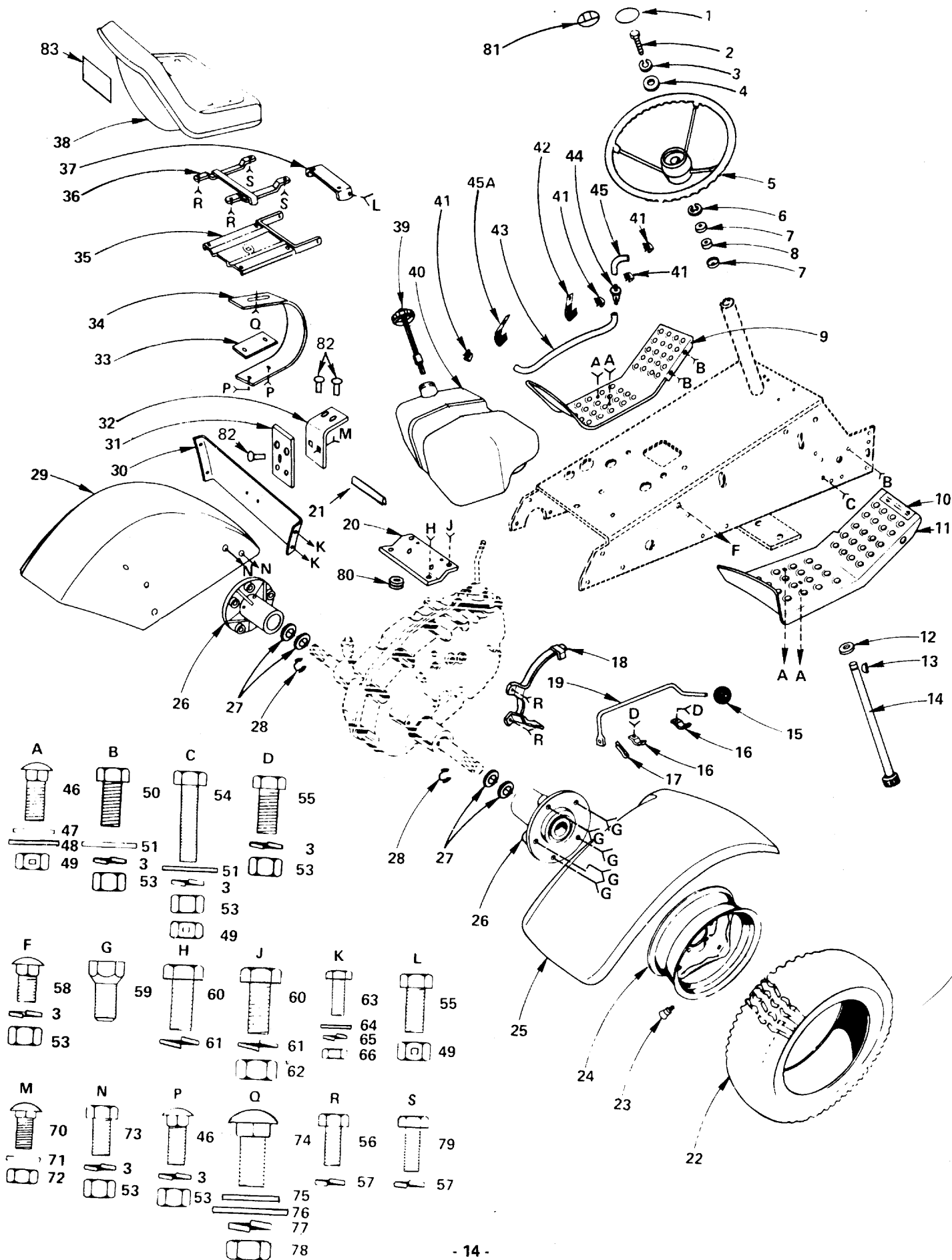
MAIN FRAME, DASH AND GRILL

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	911J	Grill - Upper	66	1998R	Clip - Dashboard
2	1166J	Gasket - Exhaust Manifold	67	8571R	Clip - Dashboard, Center
3	1591J	Decal	68	107J	Battery Heat Shield
5	290J	Grill Panel - Upper	69	7874R	Hood Seal
6	879J	Cable Clip	70	8855R	Battery Tray
7	291J	Grill Panel - Lower	71	86J	Cover - L.H.
8	868J	Grill - Lower	72	1182J	Bracket - Battery Support - L.H.
9	7938R	Grill Side	73	1181J	Bracket - Rectifier
10	2674R	Grill Screen - L.H.	74	1590J	Decal -
11	2673R	Grill Screen - R.H.	75	634A907	Hood Ass'y.
12	1157J	Muffler - Rear	76	8028R	Decal - Instruction
13	1156J	Muffler - Front	77	9880R	Decal - Wiring
14	634A901	Clutch Pedal	78	1506P	*Washer 9/32 x 5/8 x 16 Ga.
15	89J	Link	79	1002P	*Lockwasher 1/4
16	92J	Push-On Nut	80	503P	*Hex Nut 1/4 - 20 UNC
17	93J	Rubber Pedal	81	5501P	Phillips Pan Hd. Thd. Self Tap. 10 - 24 x 3/8 Type T
18	91J	Pivot Spacer	82	3267P	*Hex Bolt 1/4 - 20 x 1 - 1/2 Grade 5
19	267J	Foot Pedal	83	1605H	Locknut 1/4 - 20 UNC
20	3366P	Soc. Hd. Cap Screw 5/16 - 18 x 3/4	84	3003P	*Hex Bolt 1/4 - 20 x 3/4
21	8058R	Grill Cable	85	3010P	*Hex Bolt 5/16 - 18 x 3/4
22	875J	Grill Brace	86	1003P	*Lockwasher 5/16
23	N52M-GAO 19.9/3580B	Engine, Onan 20 H.P.	87	5554P	*Phillips Pan Hd. Thd. Self Tap 10 - 16 Hi-Lo Thd. x 1/2 Blunt Point
24	9396E	Sq. Key 1/4 x 2	89	245J	Decal - Roper
25	8245R	Belt Retainer Finger	91	1537P	*Washer 11/32 x 11/16 x 16 Ga.
26	634A925	Engine Pulley (Inc. Key No. 94)	92	3011P	*Hex Bolt 5/16 - 18 x 1
27	634A527	Belt Guide Weldment	93	504P	*Hex Nut 5/16 - 18 UNC
28	8704H1	Spacer	94	4546P	Hex Forged Socket Hdless. Set Screw CP 5/16 - 18 x 1/2 - Nylok
29	4939M	Retainer Spring	95	3023P	*Hex Bolt 3/8 - 16 x 1
30	9011H	Belt Retainer	96	1004P	*Lockwasher 3/8
31	634A659	Belt Guard Weldment	97	501P	*Hex Nut 3/8 - 16 UNC
32	8238H	Split Spacer	98	1557P	Washer 13/32 x 13/16 x 11 Ga.
33	50P	Carriage Bolt 3/8 - 16 x 2 - 1/4	99	3154P	St. Fil. Hd. Machine Screw 1/4 - 20 x 2 - 1/4
34	1545P	Washer 17/32 x 1 x 16 Ga.	100	347H	Huglock Nut 1/4 - 20 UNC
35	2506P	*Cotter Pin 1/8 x 1	102	67P	*Carriage Bolt 5/16 - 18 x 3/4
36	634A900	Hood Latch	103	3025P	*Hex Bolt 3/8 - 16 x 1 - 1/4
37	8457R	Support Bumper	104	5557P	Hex Washer Hd. Thd. Cutting Screw 1/4 - 20 x 1/2 Type 1
38	634A903	Battery Support Bracket (Inc. Key 39)	106	3035P	Hex Bolt 7/16 - 14 x 1 - 1/4
39	7756R	Bearing	107	1001P	*Lockwasher 7/16
40	8006R	Cap	108	3021P	*Hex Bolt 3/8 - 16 x 3/4
41	7729R	Cover - R.H.	109	5394H	Locknut 3/8 - 16 UNC
42	1420J	Decal - 20	110	6055P	Hex St. Hd. Machine Screw w/Sems Int. Tooth Lockwasher 10 - 32 x 1/4
43	634A902	Lever Weldment	111	53P	Sq. Neck Carriage Bolt 10 - 24 x 1/2
45	634A785	Hanger Weldment R.H. - Front	112	1535P	Washer 7/32 x 7/16 x 18 Ga.
46	7944R	Belt Tightener Arm	113	1006P	*Lockwasher No. 10
47	7948R	Return Spring	114	505P	*Hex Nut 10 - 24 UNC
48	7810H	Locknut 3/8 - 24 UNF	115	3114P	*Hex Bolt 1/4 - 20 x 1/2
49	634A814	Hanger Weldment - Rear	117	515P	*Hex Nut 3/8 - 24 UNF
50	634A787	Drawbar and Weldnuts	120	3137P	*Hex Bolt 3/8 - 16 x 1 - 1/4 Gr. 5
51	634A355	Hanger Weldment - L.H. - Front	121	1402P	Ext. Tooth Lockwasher - 3/8
52	7931R	Choke Control	122	902J	Rubber Edging
53	1518J	Throttle Control (Inc. Key 61, 62 & 63)	123	8768H	Mounting Clip
54	97J	Adaptor Bar	124	2751R	Mounting Clip
55	1596J	Decal (Shift Pattern)	*STANDARD HARDWARE--PURCHASE LOCALLY		
56	634A888	Chassis Ass'y. (Inc. Key 57 & 58)	OPTIONAL EQUIPMENT		
57	6468H	Bearing	Spark Arrestor Muffler LA269AR		
58	4766H	Bearing			
59	634A908	Engine Mount Ass'y.			
60	96J	Grill Spacer			
61	9903R	Throttle Wire & Casing			
62	8204R	Clamp			
63	1550J	Throttle Control Lever			
64	634A893	Dashboard (Inc. Key No's. 66 and 67)			
65	106J	Battery Support			

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

STEERING AND FINAL DRIVE



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REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

STEERING AND FINAL DRIVE

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	9719R	Steering Wheel Insert	46	61P	Sq. Nk. Sht. Shld. Carr. Bolt 3/8 - 16 x 1 Gr. 5
2	3023P	*Hex Bolt 3/8 - 16 x 1	47	1513P	*Washer 13/32 x 13/16 x 16 Ga.
3	1004P	*Lockwasher 3/8	48	1519P	Washer 15/32 x 1 x 12 Ga.
4	1559P	Washer 7/16 x 1 x 10 Ga.	49	5394H	Locknut 3/8 UNC
5	3644R	Steering Wheel	50	3025P	*Hex Bolt 3/8 - 16 x 1 - 1/4
6	5003P	E-Ring	51	1557P	Washer 13/32 x 13/16 x 11 Ga.
7	9007H	Cap			
8	5949H	Rubber Bushing			
9	7903R	Foot Rest - L.H.	53	501P	*Hex Nut 3/8 - 16 UNC
10	8900R	Decal (Attach. Clutch)	54	3027P	*Hex Bolt 3/8 - 16 x 1 - 1/2
11	7904R	Foot Rest - R.H.	55	3022P	Hex Bolt 3/8 - 16 x 7/8
12	1553P	Washer 57/64 x 1 - 1/4 x 16 Ga.	56	3010P	*Hex Bolt 5/16 - 18 x 3/4
13	9858M1	Woodruff Key 3/16 x 5/8	57	1003P	*Lockwasher 5/16
14	634A626	Steering Shaft and Pinion	58	19P	*Sq. Neck Carriage Bolt 3/8 - 16 x 3/4
15	6364H	Control Knob	59	1304H	Hub Bolt
16	6442H	Shift Rod Bracket	60	3034P	Hex Bolt 7/16 - 14 x 1
17	2511P	Cotter Pin 3/16 x 1	61	1001P	*Lockwasher 7/16
18	634A22A	Belt Guide	62	500P	*Hex Nut 7/16 - 14 UNC
19	6477H	Range Shift Rod	63	3003P	*Hex Bolt 1/4 - 20 x 3/4
20	9594R	Transmission Bracket	64	1506P	*Washer 9/32 x 5/8 x 16 Ga.
21	8674R	Seat Stop	65	1002P	*Lockwasher 1/4
22	4607R	Rear Tire 23 x 10.50 - 12	66	503P	*Hex Nut 1/4 - 20 UNC
23	795R	Tire Valve	70	16P	*Short Shoulder Sq. Neck Carriage Bolt 5/16 - 18 x 3/4
24	3635R	Rear Wheel			
25	9428R	Fender - R.H.	71	1537P	*Washer 11/32 x 11/16 x 16 Ga.
26	634A692	Wheel Hub - Rear	72	1685H	Lock Nut 5/16 - 18 UNC
27	7563R	Axle Thrust Washer	73	3021P	*Hex Bolt 3/8 - 16 x 3/4
28	5845R	Retaining Ring	74	52P	Carriage Bolt 1/2 - 13 x 1 - 1/4 Gr. 5
29	9427R	Fender - L.H.	75	1578P	Washer 3/4 x 1 - 1/8 x 11 Ga.
30	2656R	Bracket - Tail Light	76	1560P	Washer 17/32 x 1 - 1/2 x 11 Ga.
31	125J	Seat Stop Bracket	77	1000P	*Lockwasher 1/2
32	126J	Fuel Tank Retainer	78	502P	*Hex Nut 1/2 - 13 UNC
33	8141H	Seat Spring Reinforcement	79	3159P	*Hex Bolt 5/16 - 18 x 7/8
34	7898R	Seat Spring	80	9547R	Rubber Grommet
35	634A776	Seat Plate Weldment	81	235J	Steering Wheel Decal
36	634A532	Seat Bracket Weldment	82	124J	Rubber Bumper
37	7897R	Bracket, Seat Pivot	83	245J	Decal - Roper
38	9744R	Seat	...	1419J	Warranty Tag
39	2329J	Fuel Gauge	...	1418J	Owners Manual
40	7885R	Fuel Tank			
41	6999R	Fuel Line Clamp			
42	2751R	Clip - Fuel Line			
43	897J	Fuel Line			
44	7741R	In-Line Filter			
45	903J	Fuel Line Elbow			
45A	9297R	Clip - Fuel Line			

*STANDARD HARDWARE--PURCHASE LOCALLY

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO: T9329AR

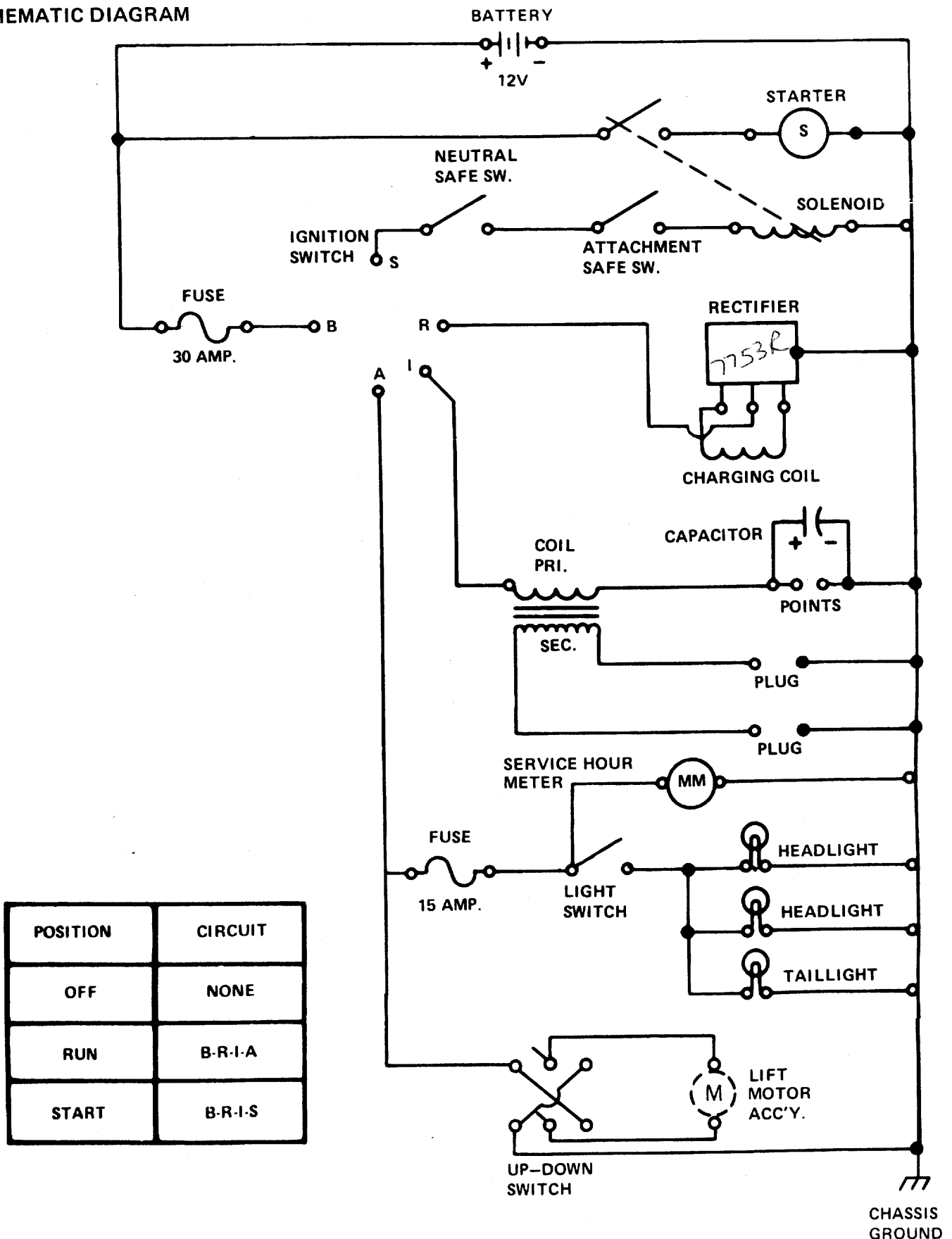
BRAKE AND CLUTCH

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	8899R	Insert Clutch-Brake	37	634A754	Idler Bracket Weldment
2	8882R	Foot Pedal	38	6636H	Idler
3	8765H	Foot Pedal Bracket	39	5002P	E-Ring
4	9008H	Spring	40	634A898	Steering Arm Assembly
5	111J	Foot Pedal Shaft	41	500P	*Hex Nut 7/16 - 14 UNC
6	5001P	E-Ring	42	1001P	*Lockwasher 7/16
7	1527P	Washer 21/32 x 7/8 x 16 Ga.	43	1544P	Washer 15/32 x 15/16 x 16 Ga.
8	2505P	Cotter Pin 1/8 x 3/4	44	6635H	Flat Idler
9	2202R	Brake Rod - Front	45	1520P	Washer .469 I.D. x 1 - 1/8 x 11 Ga.
10	6417H	Turnbuckle	46	6479H1	Belt Finger
11	501P	*Hex Nut 3/8 - 16 UNC	47	3262P	Hex Bolt 7/16 - 14 x 2 - 1/2
12	7823R	Safety Start Actuator	48	2692R	V-Belt
14	2201R	Bushing	49	6461H2	Pulley, Transmission
15	1557P	Washer 13/32 x 13/16 x 11 Ga.	50	3003P	*Hex Bolt 1/4 - 20 x 3/4
16	2263R	Spring Washer	51	1002P	*Lockwasher 1/4
17	9686R	Parking Brake Yoke	52	3341P	*Fin. Hex Bolt 3/8 - 24 x 1
18	175H	Roll Pin	53	1513P	*Washer 13/32 x 13/16 x 16 Ga.
19	634A887	Lock Bracket Assembly	54	546P	*Hex Jam Nut 3/8 - 24 UNF
20	2221R	Parking Brake Spacer	55	5142H	Roll Pin
21	5999H	Spring Washer	56	3022P	Hex Bolt 3/8 - 16 x 7/8
22	4379H	Handle Grip	57	1004P	*Lockwasher 3/8
23	626A341	Parking Lock Handle Assembly	58	3164P	Flat Hd. Machine Screw - Undercut 3/8 - 16 x 3/4
24	7810H	Gripco Centerlock Nut 3/8 - 24 UNF	59	11P	Sq. Neck Carriage Bolt 1/4 - 20 x 5/8
25	626A365	Brake Rod Assembly	60	503P	*Hex Nut 1/4 - 20 UNC
26	634A167	Brake Band Assembly	61	3159P	*Hex Bolt 5/16 - 18 x 7/8
27	634A168	Brake Bracket Assembly	62	1685H	Locknut 5/16 - 18 UNC
28	9204H	Lock Nut 1/2 - 20 UNF	63	3244P	Hex Bolt 1/4 - 28 x 5/8 Gr. 5
29	214J	Brake Drum	64	9071H	Huglock Nut 1/4 - 28 UNF
30	634A899	Brake Arm Assembly	65	3326P	Hex Hd. Mach. Screw 6 - 32 x 1
31	9858M1	Woodruff Key	66	1567P	Washer 5/32 x 3/8 x 20 Ga.
32	9288R	Clutch Rod	67	562P	Centerlock Nut 6 - 32 UNC
33	2514P	Cotter Pin 1/4 x 1	68	1602P	Washer 13/32 x 5/8 x 11 Ga.
34	6486H	Spring			*STANDARD HARDWARE--PURCHASE LOCALLY
35	1587P	*Washer 17/32 x 1 - 1/16 x 21 Ga.			
36	4939M	Retainer Spring			
36A	544J	Hose Shield			

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

SCHEMATIC DIAGRAM



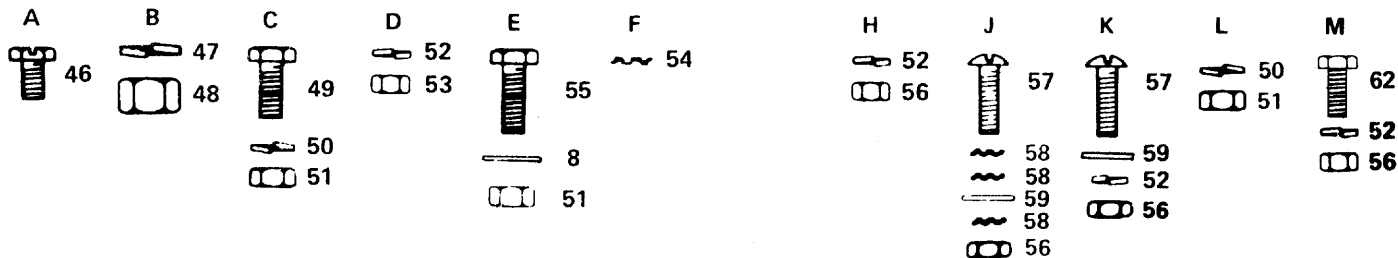
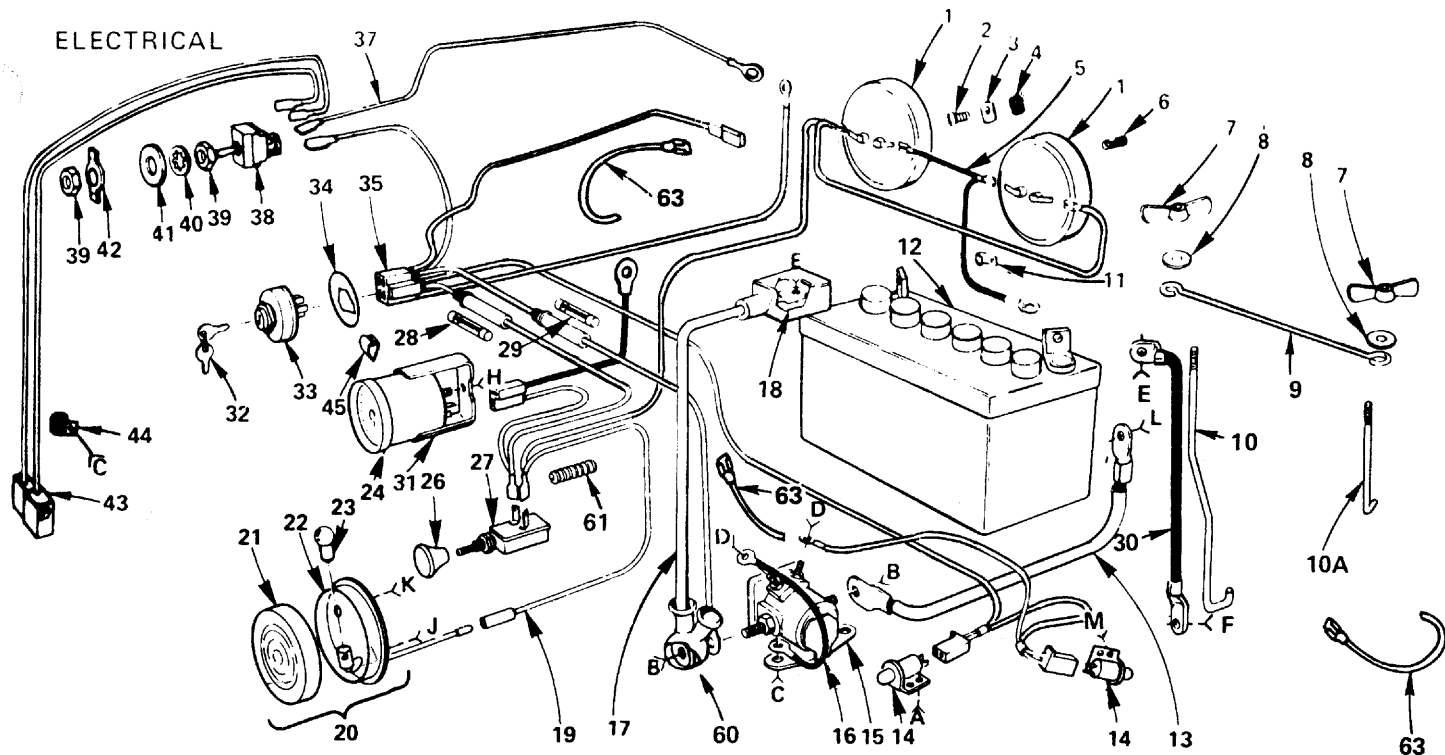
POSITION	CIRCUIT
OFF	NONE
RUN	B-R-I-A
START	B-R-I-S

WIRING CLIPS AND CABLE TIES

If Clips or Ties were removed for servicing of unit, they should be replaced to properly secure your wiring.

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

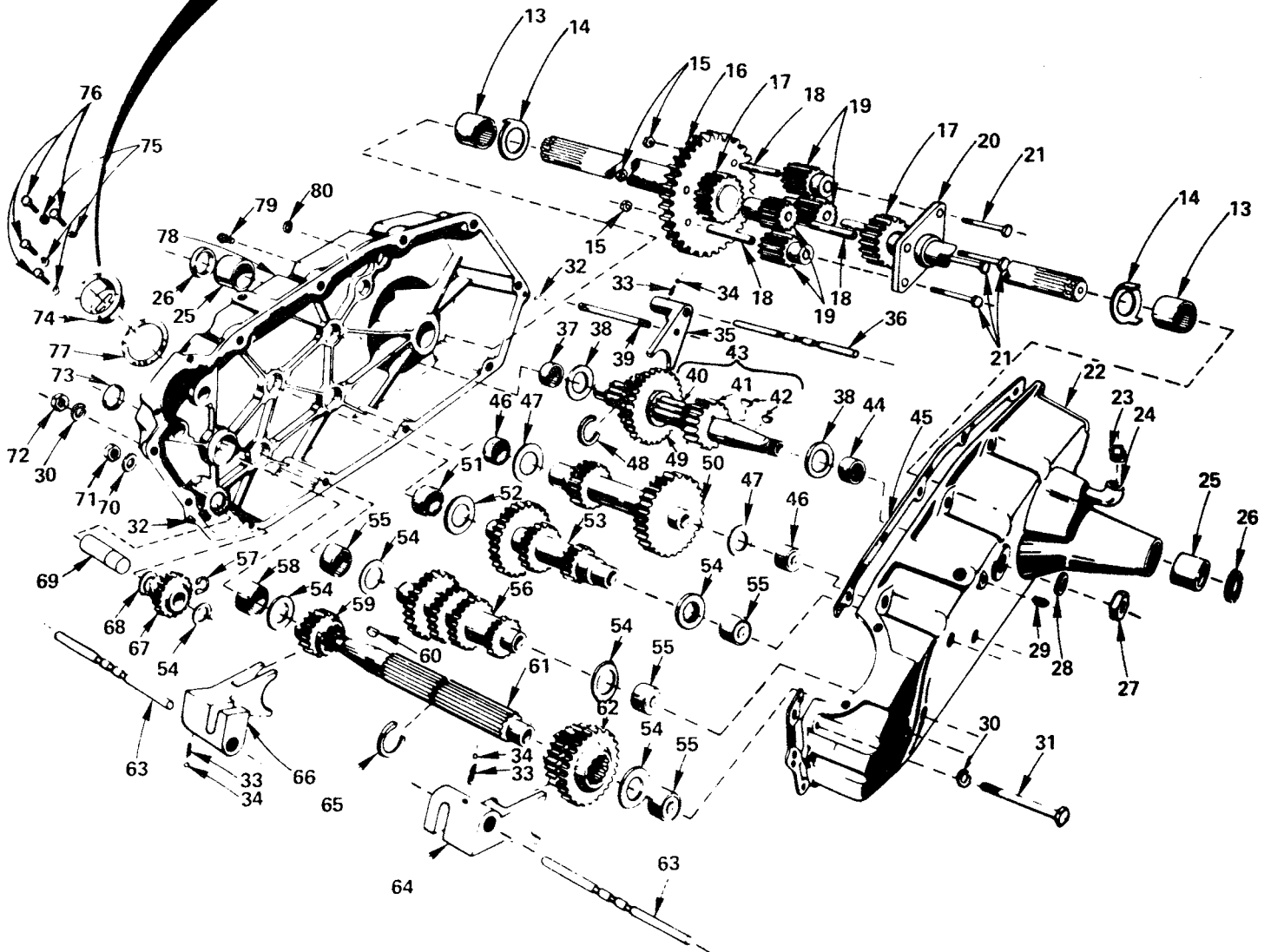
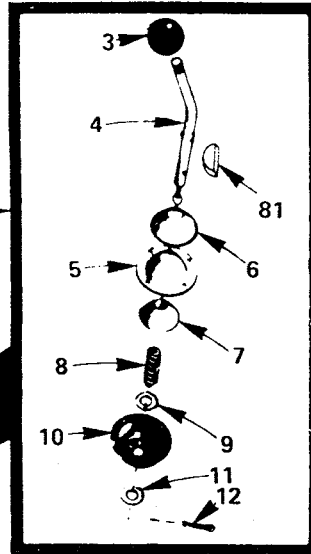
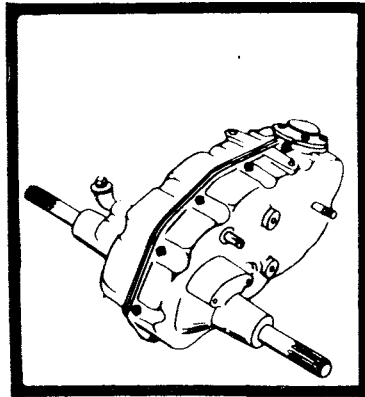


KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	6452R	Headlight	33	2683R	Ignition Switch
2	5554P	Phillips Pan Hd. Thd. Cutting Screw No. 10 - 16 x 1/2	34	8656R	Terminal Identifier
3	8768H	Mounting Clip	35	1492J	Wire Harness, Main
4	8784H1	Rubber Spacer	37	9698R	Wire, Ground Lift Switch
5	8031R	Headlight Ground Wire	38	8984R	Switch, Elec. Lift
6	9197H	Hose	39	566P	Hex Nut, Steel 7/16 - 32 NS - 2A
7	3748M	Wing Nut 1/4 - 20 UNC	40	7319R	Lockwasher, Internal Tooth
8	1506P	Washer 9/32 x 5/8 x 16 Ga.	41	1518P	Washer 15/32 x 11/16 x 16 Ga.
9	7955R	Battery Clamp	42	9349R	Switch Plate
10	2685R	Battery Bolt	43	8985R	Lift Motor Harness
10A	88J	Battery Bolt	44	5320R	Clip, Wire
11	4171R	Insulated Clip	45	8615R	Clip
12	226J	Battery	46	5534P	Slotted Hex Indented Hd. Self Tapping Screw No. 10 - 24 x 3/8 Type 1
13	2235R	Cable - Solenoid to Start	47	1003P	*Lockwasher 5/16
14	7755R	Safety Switch	48	538P	*Hex Jam Nut 5/16 - 24 UNF
15	7754R	Solenoid	49	3115P	*Hex Bolt 1/4 - 20 x 5/8
16	8027R	Wire - Ground to Solenoid	50	1002P	*Lockwasher 1/4
17	116J	Battery Cable	51	503P	*Hex Nut 1/4 - 20 UNC
18	225J	Terminal Cover	52	1006P	*Lockwasher No. 10
19	8030R	Light Harness	53	554P	*Hex Nut No. 10 - 32 UNF
20	8089H	Taillight (Inc. Key No's. 21, 22, & 23)	54	1402P	Ext. Tooth Lockwasher 3/8
21	8292H	Lens - Taillight	55	3003P	*Hex Bolt 1/4 - 20 x 3/4
22	8293H	Housing - Taillight	56	505P	*Hex Nut No. 10 - 24 UNC
23	8291H	Bulb No. 1895 2 Candle Power	57	3074P	*Std. Truss Hd. Mach. Screw 10 - 24 x 3/4
24	7763R	Maintenance Meter	58	1404P	Ext. Tooth Lockwasher No. 10
26	7794R	Light Switch Knob	59	1504P	*Washer 7/32 x 1/2 x 18 Ga.
27	7793R	Light Switch	60	51J	Solenoid Terminal Cover
28	2212R	Fuse - 15 Amp.	61	302J	Wire Guard
29	6347R	Fuse - 30 Amp.	62	3218P	Hex Hd. Mach. Screw No. 10 - 24 x 1/2
30	2753R	Battery Cable - Ground	63	6106R	Cable Tie
31	8066R	Maintenance Meter Bracket			
32	7552H	Key Set			

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

TRANSAXLE



REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

TRANSAXLE

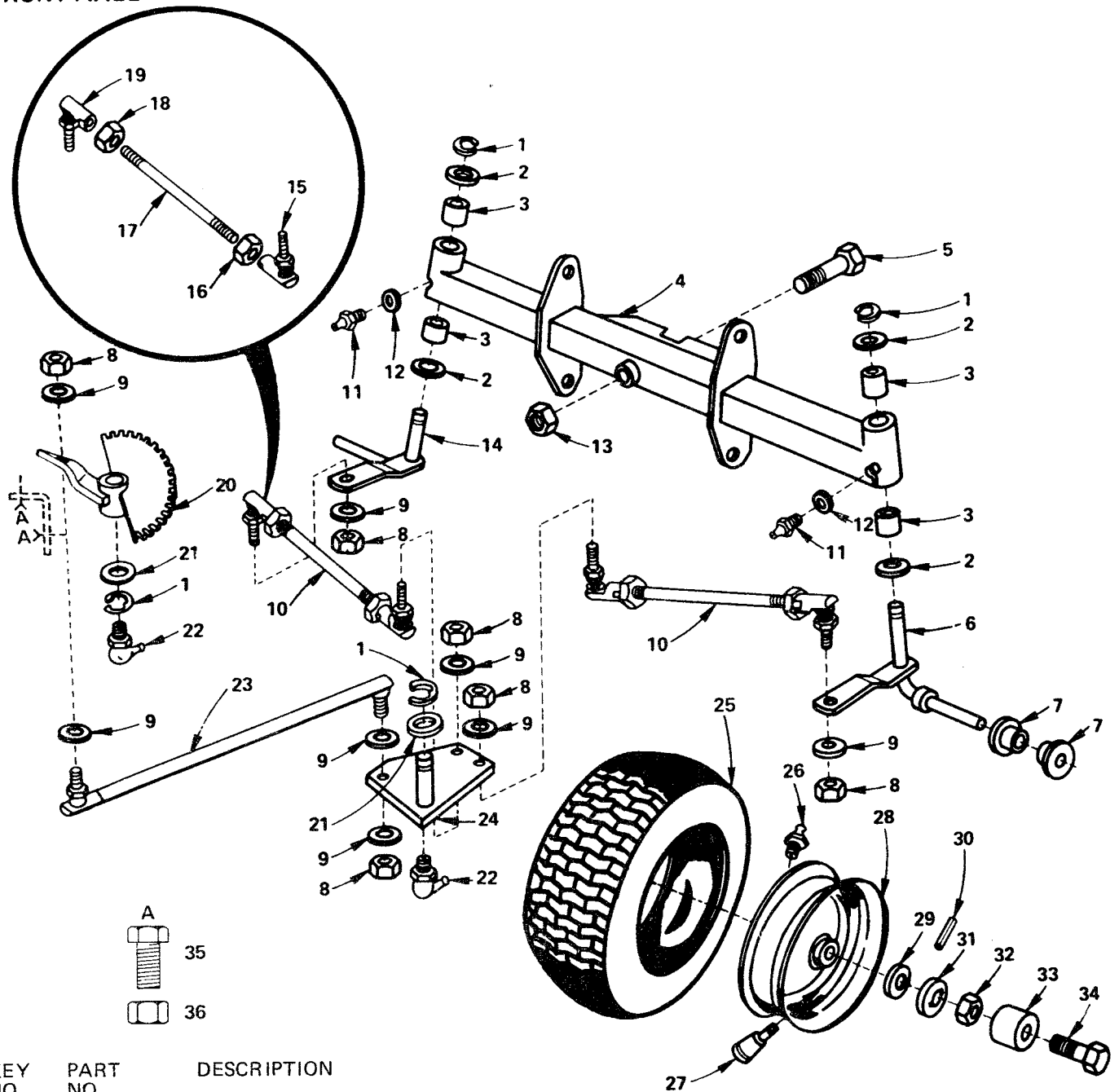
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	633A92	Transaxle Assembly Less Brake Drum & Shift Lever (Inc. Key No's. 13 thru 80)	44	8119M	Needle Bearing
2	633A82	Gear Shift Lever Assembly (Inc. Key No's. 3 thru 12 and 81)	45	6275H	Gasket - Gearcase
3	6364H	Control Knob	46	8117M	Needle Bearing
4	9635R	Gear Shift Lever	47	7396H	Thrust Bearing Race
5	633A85	Gear Shift Ball Cover and Pin	48	6276H	Snap Ring - Crescent Type
6	9013R	Gear Shift Cap	49	633A14	High - Low Range Gears and Hub
7	8739H1	Shift Lever Guide Ball	50	633A33	4th Reduction Shaft and Gears
8	4924H	Spring	51	7398H	Needle Bearing
9	1593P	*Washer 15/32 x 59/64 x 16 Ga.	52	7395H	Thrust Bearing Race
10	8105R	Shift Mechanism Seal	53	633A31	2nd Reduction Shaft and Gears
11	1525P	Washer 9/16 x 15/16 x 11 Ga.	54	1370H	Thrust Bearing Race
12	2505P	Cotter 1/8 x 3/4	55	4895H	Needle Bearing
13	3039R	Needle Bearing	56	633A30	Speed Change Gears and Shaft
14	6256H	Axle Thrust Washer	57	5001P	E-Ring
15	7810H	Centerlock Gripco Nut 3/8 - 24 UNF	58	4894H	Needle Bearing
16	8662H	Final Drive Gear	59	6231H	Low Speed Pinion
17	633A73	Axle Shaft and Gear	60	9858M1	Woodruff Key
18	6252H1	Bushing - Differential Pinion	61	6218H	Input Shaft
19	8657H	Differential Pinion	62	633A11	Intermediate and High Speed Pinions
20	6263H1	Differential Carrier	63	6216H	Shift Fork Shaft
21	3056P	Hex Bolt 3/8 - 24 x 3 - 1/4 1" Thread Length	64	4219R	Shift Fork - L.H.
22	633A89	Gear Case and Bearings - L.H.	65	4926H	Snap Ring - Crescent Type
23	4002P	Pipe Plug 1/2 - 14 N.P.T.	66	6262H	Shift Fork - R.H.
24	4003P	90 Street Elbow 1/2 - 14 N.P.T.	67	1153R	Reverse Idler Gear
25	992R1	Sintered Iron Bearing	68	7392H	Reverse Idler Thrust Washer
26	7393R	Oil Seal	69	7384H	Reverse Idler Shaft
27	9204H	Lock Nut	70	1167R	Sealing Washer
28	6271H	Oil Seal	71	541P	Hex Jam Nut 7/16 - 20 UNF
29	4001P	Pipe Plug 1/4 - 18 N.P.T.	72	504P	*Hex Nut 5/16 - 18 UNC
30	1007P	Lockwasher 5/16 Extra Heavy	73	6270H	Oil Seal
31	3087P	*Hex Bolt 5/16 - 18 x 1 - 1/2 Gr. 5	74	75J	Gear Shift Gate
32	6277H	Dowel Pin	75	1003P	*Lockwasher 5/16
33	6272H	Spring - Shift Fork Detent	76	3159P	*Hex Bolt 5/16 - 18 x 7/8
34	7392M	Steel Ball	77	6274H	Gasket - Shift Ball Cover
35	6260H	Shift Fork High - Low Range	78	633A90	Gear Case, Reverse Idler Shaft and Bearings R.H.
36	6217H	High - Low Range Shift Fork Shaft	79	5855H	Pressure Relief Valve
37	8118M	Needle Bearing	80	6269H	Oil Seal
38	6266H	Thrust Bearing Race	81	7835M	Woodruff Key
39	6215H	High - Low Range Shift Shaft			
40	6221H	3rd Reduction Gear Shaft			
41	8659H	4th Reduction Pinion			
42	2228M	Woodruff Key			
43	633A32	3rd Reduction Shaft and Gear (Inc. Key No's. 40, 41 & 42)			

*STANDARD HARDWARE--PURCHASE LOCALLY

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR

FRONT AXLE



KEY NO.	PART NO.	DESCRIPTION
1	5000P	E-Ring
2	1528P	Washer 13/16 x 1 - 1/4 x 14 Ga.
3	1309H	Bearing
4	634A521	Front Axle w/Bearings (Inc. Key No. 3)
5	3294P	Hex Bolt 5/8 - 11 x 5 Grade 5
6	634A277	Spindle Complete - R.H.
7	9040H	Flanged Bearing
8	7810H	Gripco Locknut 3/8 - 24 UNF
9	2515R	Hardened Washer
10	7838R	Tie Rod and Joints (Inc. Key No's. 15, 16, 17, 18 & 19)
11	6855M	Grease Fitting
12	1505P	Washer 9/32 x 1/2 x 14 Ga.
13	4764H	Huglock Nut 5/8 - 11 UNC
14	634A278	Spindle Complete L.H.
15	8515R	Tie Rod Joint (R.H. Thread)
16	558P	*Hex Jam Nut 1/2 - 20 (R.H. Thread)
17	634A819	Tie Rod and Nuts (Inc. Key No's. 16 & 18)
18	559P	Hex Jam Nut 1/2 - 20 (L.H. Thread)
19	8514R	Tie Rod Joint (L.H. Thread)
20	634A813	Steering Gear Sector and Arm
21	1552P	Washer 49/64 x 1 - 1/4 x 16 Ga.

KEY NO.	PART NO.	DESCRIPTION
22	6842M	Grease Fitting
23	7837R	Drag Link and Joints
24	634A98	Steering Bell Crank Weldment
25	3938R	Front Tire 16 x 6.50 - 8
26	6856M	Grease Fitting 1/4 - 28 Taper Thrd.
27	795R	Tire Valve
28	3636R	Front Wheel and Bearings
29	1562P	Washer 25/32 x 1 - 1/2 x 16 Ga.
30	8798H	Roll Pin 5/32 x 1
31	8785H	Wear Washer
32	4831H	Elastic Nut 3/4 - 16 UNF
33	8763H	Dust Cap-Outer
34	3008P	Hex Bolt 5/16 - 18 x 1/2
35	3341P	*Hex Bolt 3/8 - 24 x 1
36	546P	*Hex Jam Nut 3/8 - 24 UNF

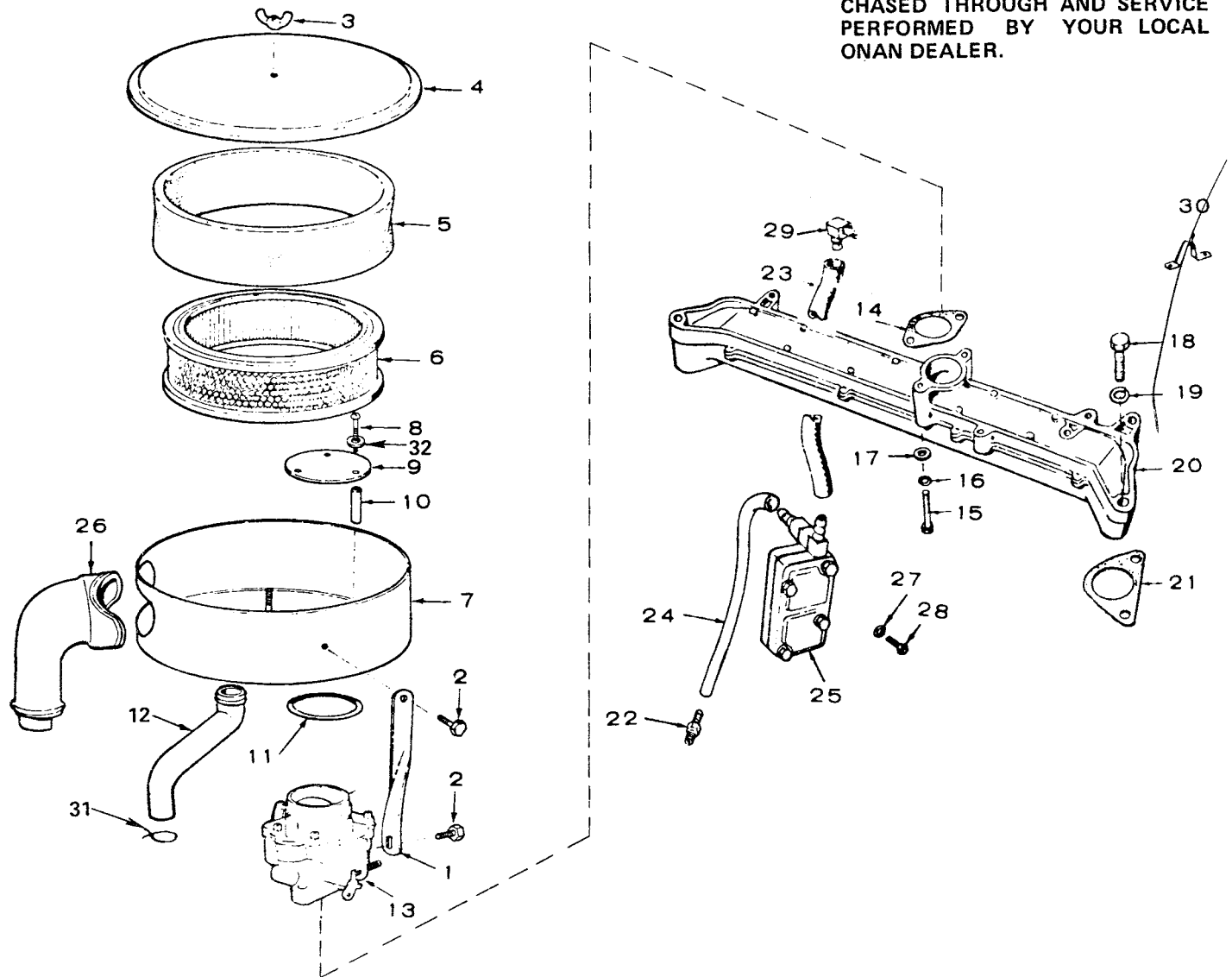
*STANDARD HARDWARE--PURCHASE LOCALLY

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

FUEL SYSTEM GROUP

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



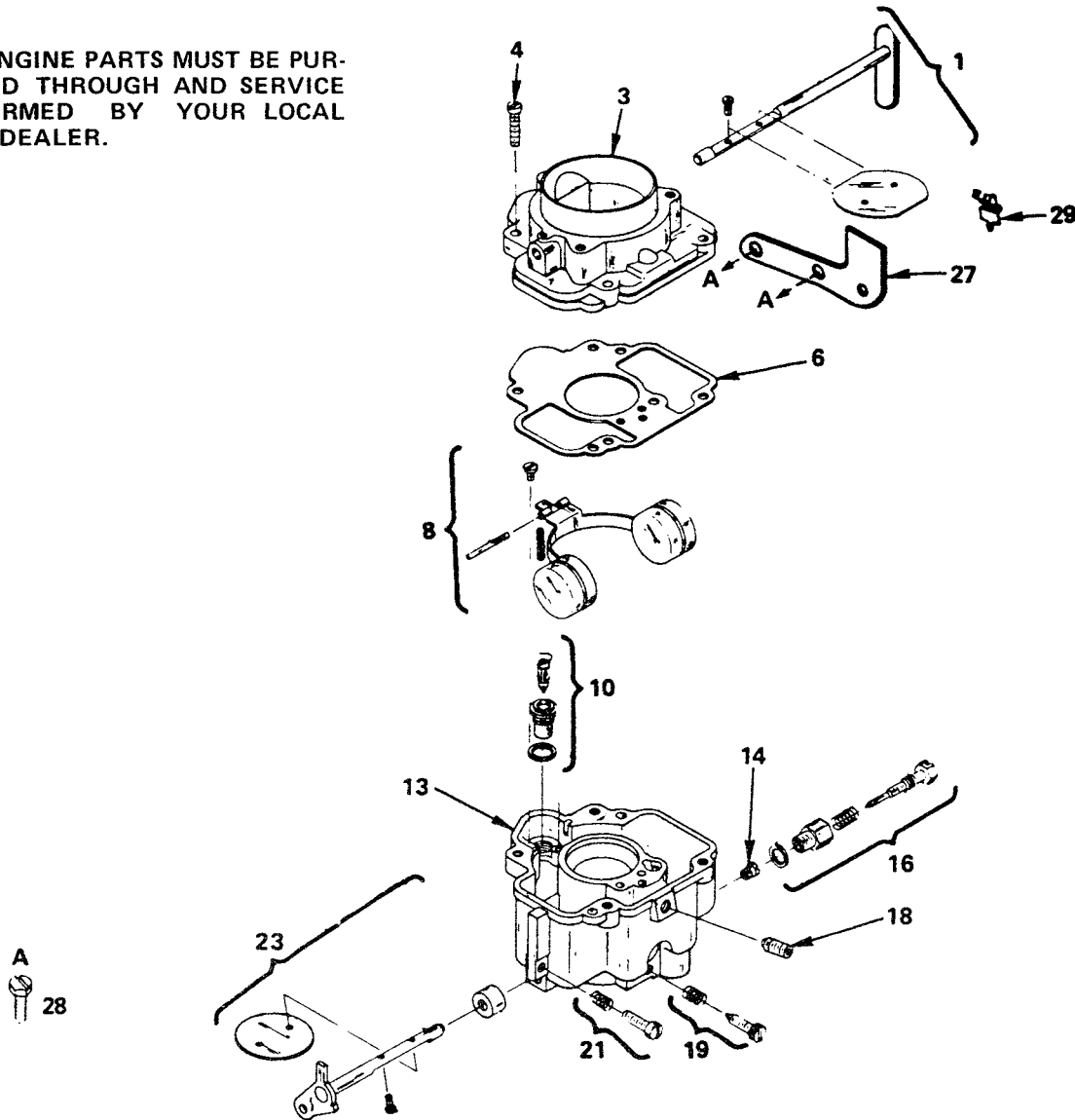
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	140-1499	Air Cleaner Support	17	526-0115	Flat Washer (11/32" I.D. x 11/16" O.D. x 1/16" Thick)
2	821-0009	Cap Screw, Hex Head Locking (1/4 - 20 x 3/8")	18	800-0058	Cap Screw, Hex Head (3/8 - 16 x 3")
3	865-0020	Wing Nut (1/4 - 20)	19	850-0050	Lockwasher, Spring (3/8")
4	140-1494	Air Cleaner Cover	20	154-2029	Intake Manifold
5	140-1496	Wrapper	21	154-1483	Gasket
6	140-1228	Element	22	502-0395	Connector
7	140-1498	Air Cleaner Housing	23	503-0874	Fuel Line
8	815-0470	Binder Head Machine Screw w/Nylon Patch (No. 10 - 32 x 1 - 1/2")	24	503-0910	Impulse Line
9	140-1500	Deflector Plate	25	149-1544	Fuel Pump
10	140-1501	Spacer	26	140-1495	Air Inlet Tube
11	509-0145	Seal, "O" Ring	27	850-0025	Lockwasher, Spring (No. 8)
12	123-1264	Breather Hose	28	812-0075	Round Head Machine Screw (No. 8 - 32 x 1/4")
13	146-0271	Carburetor Assembly (See Separate Group for Components)	29	502-0313	Elbow
14	154-0733	Gasket	30	403-1490	Lifting Bracket
15	800-0035	Cap Screw, Hex Head (5/16 - 18 x 2 - 1/2")	31	503-0171	Hose Clamp
16	850-0045	Lockwasher, Spring (5/16")	32	850-0030	Lockwasher (No. 10)
			...	149-1552	Fuel Pump Repair Kit

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

CARBURETOR PARTS 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
	146-0271	Carburetor Assembly, Complete	18	146-0211	Set Screw
1	146-0260	Choke Shaft Package	19	146-0209	+Needle Package
3		Air Intake (Not Sold Separately)	21	146-0261	Screw Package
4	146-0204	Screw	23	146-0270	Throttle Shaft Package
6	146-0203	Gasket	27	153-0515	Bracket- Choke Cable
8	146-0262	Float Assembly Package	28	821-0002	Mounting Screw
10	146-0227	+Valve and Seat Package	29	153-0514	Cable Clip
13		Body (Not Sold Separately)	----	146-0220	+Gasket Kit
14	146-0238	Power Jet	----	146-0228	Repair Kit (Includes Parts Marked+)
16	146-0214	+Power Needle Package			

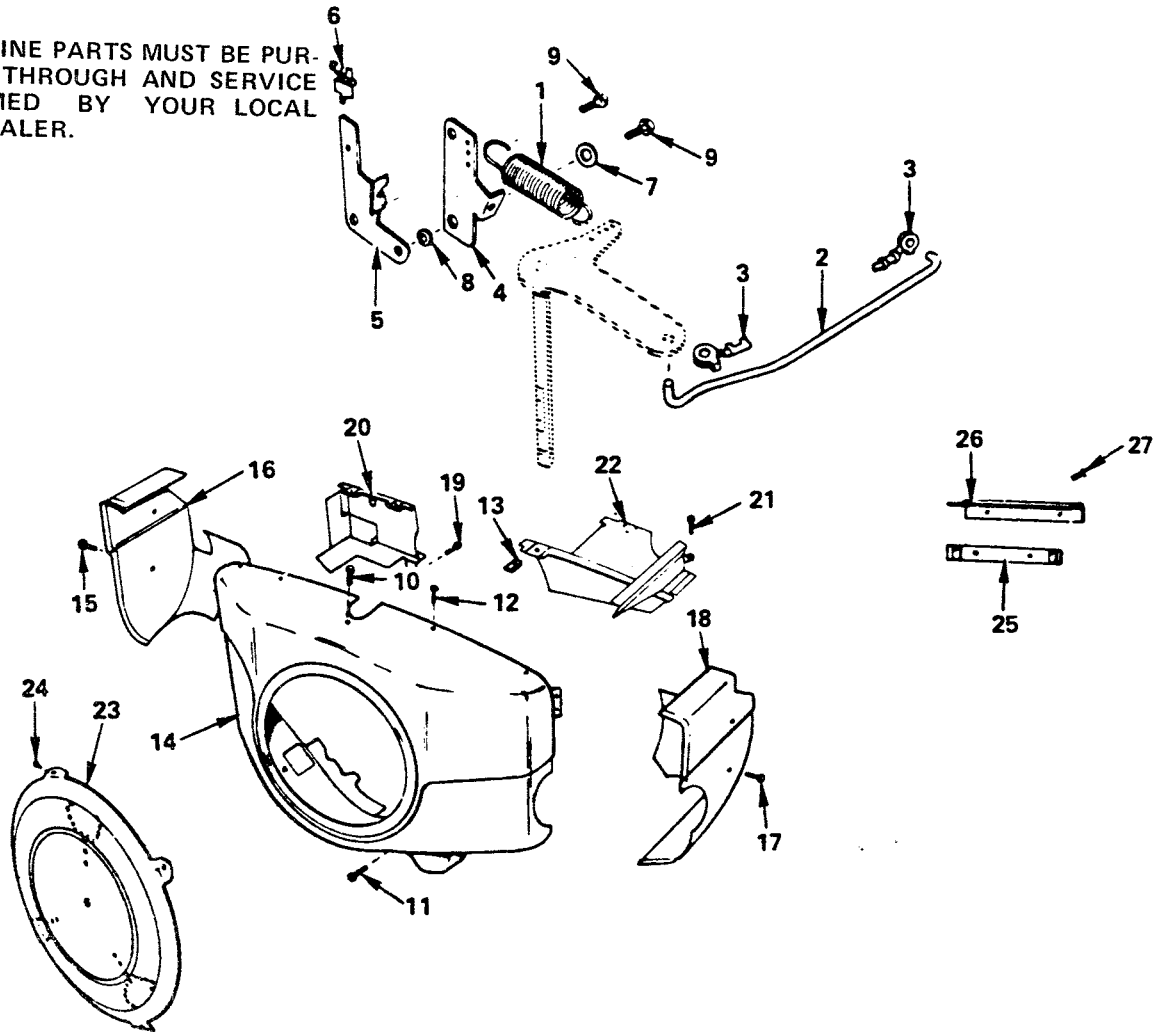
+PARTS CONTAINED IN 146-0228 REPAIR KIT.

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

GOVERNOR AND AIR HOUSING GROUP

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



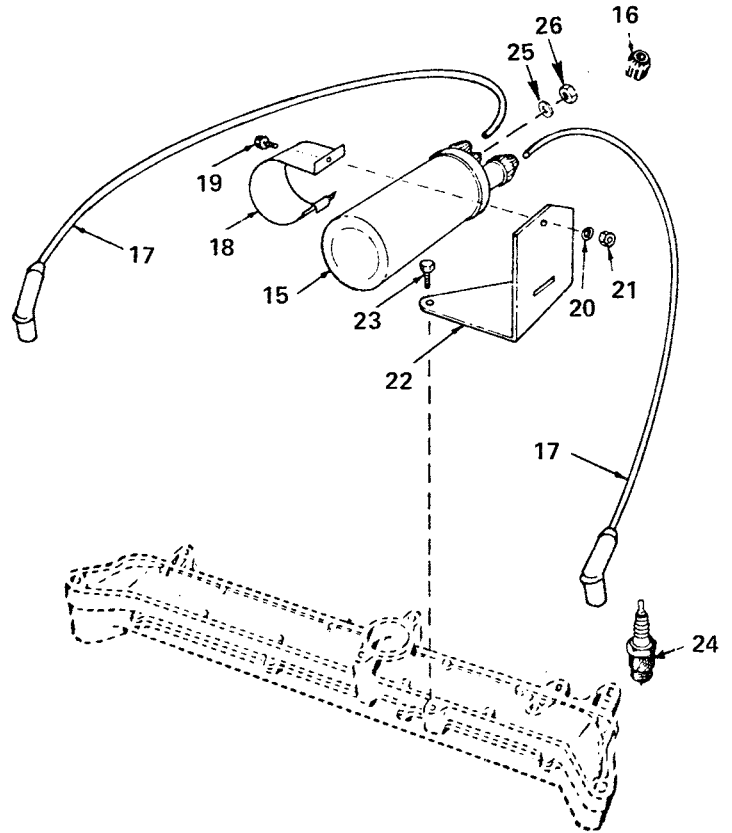
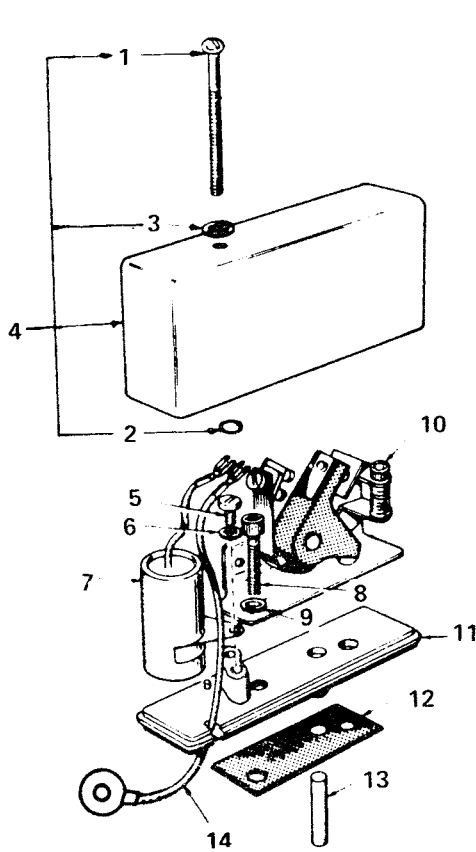
KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	150-1214	Governor Spring	15	815-0261	Cap Screw, Hex Head Locking (1/4 - 20 x 7/16")
2	150-1613	Throttle Link	16	134-3449	Air Housing, Left Side
3	518-0004	Clip	17	815-0261	Cap Screw, Hex Head Locking (1/4 - 20 x 7/16")
4	150-1576	Governor Control Arm	18	134-3448	Air Housing, Right Side
5	150-1725	Governor Control Mounting Bracket	19	815-0261	Cap Screw, Hex Head Locking (1/4 - 20 x 7/16")
6	153-0514	Cable Clip	20	134-2646	Housing Support, Left Side
7	526-0214	Flat Washer (17/64" I.D. x 1/2" O.D. x 1/16" Thick)	21	821-0018	Cap Screw, Hex Head Locking (1/4 - 20 x 5/8")
8	150-1269	Bushing	22	134-3591	Housing Support, Right Side
9	821-0010	Hex Head Cap Screw, Locking (1/4 - 20 x 1/2")	23	134-3589	Housing, Screen
10	815-0261	Cap Screw, Hex Head Locking (1/4 - 20 x 7/16")	24	815-0378	Cap Screw, Hex Head w/ET (No. 14 x 1/2")
11	821-0010	Cap Screw, Hex Head Locking (1/4 - 20 x 1/2")	25	134-3510	Support Mounting Bracket
12	815-0474	Cap Screw, Tapping Hex Head (1/4 x 1/2")	26	134-3511	Housing Support, Lower
13	870-0107	Nut, Speed (No. 14)	27	821-0009	Cap Screw, Hex Head Locking (1/4 - 20 x 3/8")
14	134-3747	Air Housing			

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

IGNITION AND BREAKER BOX GROUP

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



KEY NO.	PART NO.	DESCRIPTION
---	160-1210	Breaker Box (Inc. Parts Marked *)
1	812-0108	*Round Head Machine Screw (No. 10 - 24 x 1 - 1/2")
2	509-0065	*Retainer
3	526-0008	*Flat Washer (13/64" I.D. x 7/16" O.D. x 1/32" Thick)
4	160-1232	*Cover
5	815-0358	*Cap Screw, Slotted (No. 8 - 32 x 5/16")
6	850-0025	*Lockwasher - Spring (No. 8)
7	312-0196	*Condenser
8	802-0034	*Cap Screw, Socket Head (1/4 - 20 x 3/4")
9	850-0038	*Lockwasher, Spring (1/4")
10	160-1183	*Point Set
11	160-1219	*Base
12	160-1150	*Gasket
13	160-1151	Plunger
14	336-2378	Lead (Breaker Box to Coil)

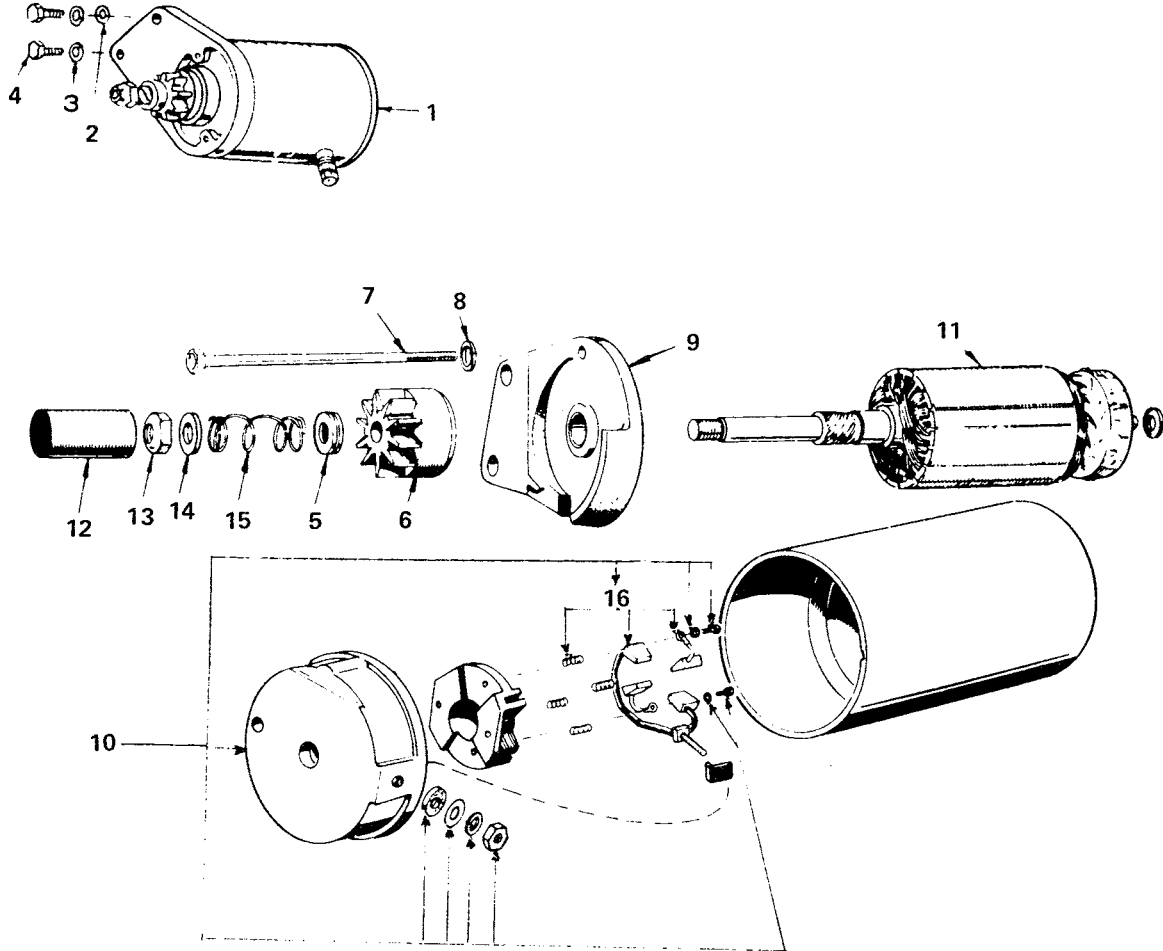
KEY NO.	PART NO.	DESCRIPTION
15	166-0535	Coil
16	166-0604	Cap (Part of Ignition Coil)
17	SPARK PLUG CABLE	
	167-1595	19"
	167-1596	16"
18	166-0588	Clamp
19	821-0010	Cap Screw, Hex Head Locking (1/4 - 20 x 1/2")
20	850-0040	Lockwasher, Spring (1/4")
21	862-0001	Hex Nut (1/4 - 20)
22	166-0690	Bracket
23	815-0261	Cap Screw (1/4 - 20 x 9/16)
24	167-0291	Spark Plug
25	850-2005	Washer - Primary Terminal
26	166-0554	Ignition Coil Nut (Primary Terminal)
	160-1213	Tune-up Kit (Inc. Points and Condenser)
	*PARTS INCLUDED IN 160-1210 BREAKER BOX	

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

STARTER PARTS GROUP

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



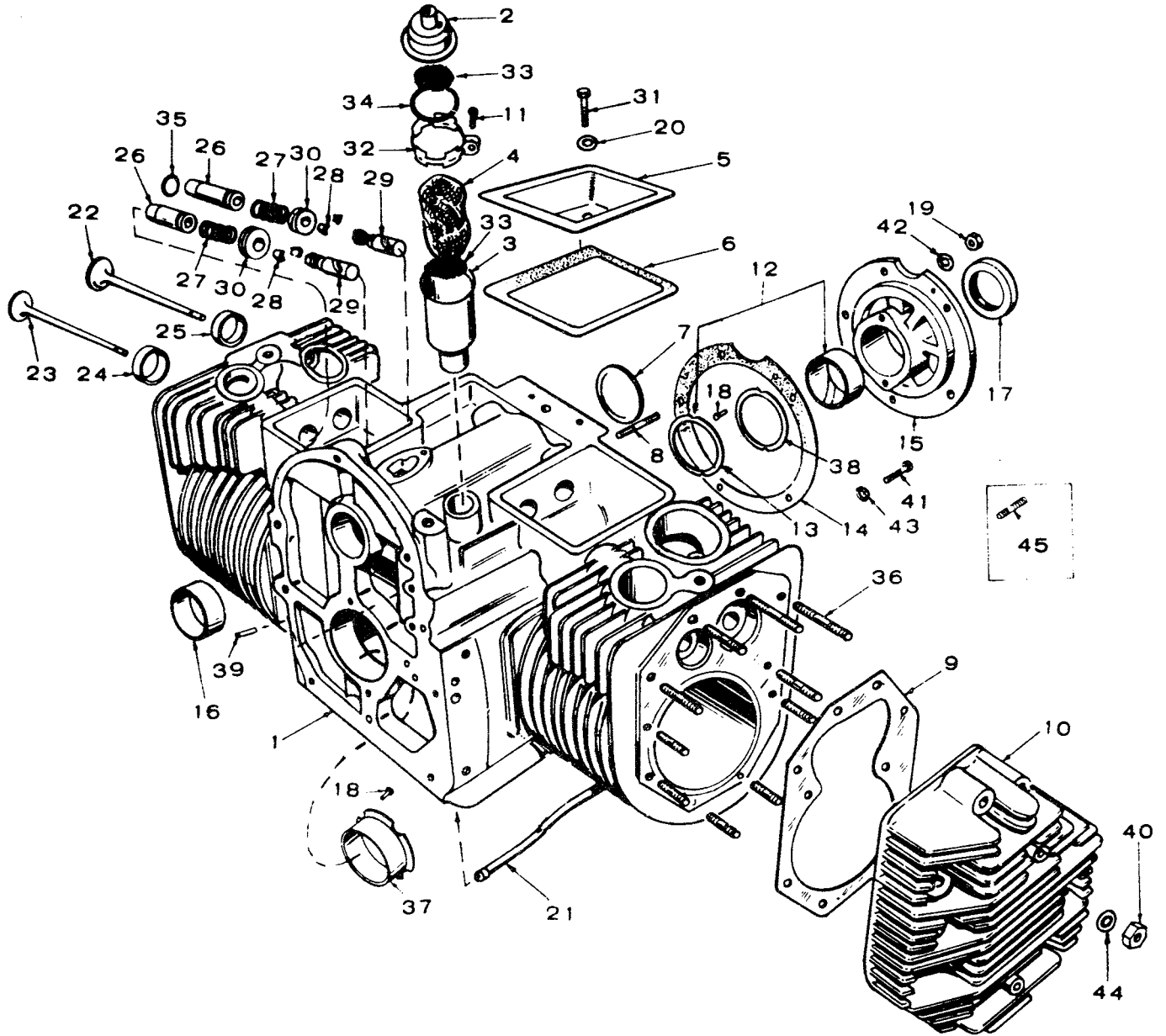
KEY NO.	PART NO.	DESCRIPTION
1	191-1205	Starter (Complete)
2	526-0113	Flat Washer (11/32" I.D. x 1" O.D. x 3/32" Thick)
3	850-0045	Lockwasher, Spring (5/16")
4	800-0028	Cap Screw, Hex Head
5	191-1047	Spacer
6	191-1156	Drive Assembly
7	191-1157	Cap Screw, Hex Head
8	850-0040	Lockwasher, Spring (1/4")
9	191-1223	Cap Assembly
10	191-1156	Cap Assembly
11	191-1154	Armature
12	191-1034	Dust Cover
13	191-1045	Stop Nut
14	191-1046	Flat Washer
15	191-1035	Spring
16	191-1222	Brush, Spring and Stud Kit

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

CYLINDER BLOCK GROUP

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



REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

CYLINDER BLOCK GROUP

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	110-2686	Cylinder Block Assembly (Inc. Parts Marked *)	29	VALVE TAPPET	
2	123-0954	Breather Cap and Valve		115-0006	Standard
3	123-0952	*Breather Tube		115-0006-05	.005" Oversize
4	123-0865	Baffle	30	110-0904	Valve Rotator
5	110-1624	Valve Compartment Cover	31	800-0011	Hex Head Cap Screw (1/4 - 20 x 2")
6	110-1720	Valve Cover Gasket	32	123-0951	Breather Cap Clamp
7	517-0048	*Expansion Plug	33	123-0958	Breather Screen
8	520-0736	*Stud	34	509-0017	Breather Tube Seal
9	110-1731	Head Gasket	35	110-0068	*Intake Valve Guide Gasket
10	110-2575	Cylinder Head	36	CYLINDER HEAD STUD	
11	809-0035	Round Head Self Tapping Screw (No. 8 x 3/4")		520-0717	*3/8 x 1 - 7/8"
12	CRANKSHAFT BEARING, REAR			520-0773	*3/8 x 2 - 5/16"
	101-0450	*Standard	37	CRANKSHAFT BEARING, FRONT	
	101-0450-02	.002" Undersize		101-0432	*Standard
	101-0450-10	.010" Undersize		101-0432-02	.002" Undersize
	101-0450-20	.020" Undersize		101-0432-10	.010" Undersize
	101-0450-30	.030" Undersize		101-0432-20	.020" Undersize
13	104-0575	*Thrust Washer		101-0432-30	.030" Undersize
14	101-0415	*Bearing Plate Gasket	38	104-0776	*Crankshaft Shim
15	101-0439	*Bearing Plate, Rear	39	516-0141	*Alignment Pin
16	101-0405	*Camshaft Bearing	40	104-0091	Hex Nut (3/8 - 24)
17	509-0041	*Crankshaft Oil Seal	41	800-0046	*Hex Head Cap Screw (3/8 - 16 x 1/2")
18	516-0072	*Bearing Stop Pin	42	526-0251	*Flat Washer (406" I.D. x .688" O.D. x .1345 Thick)
19	104-0091	*Hex Nut (3/8 - 24)	43	526-0066	*Flat Washer, Copper (25/64" I.D. x 9/16" O.D. x 1/16" Thick)
20	526-0063	Flat Washer, Copper (17/64" I.D. x 7/16" O.D. x 1/32" Thick)	44	526-0250	Flat Washer, Special (.407 I.D. x 1" O.D. x 1/8" Thick)
21	120-0680	*Oil Tube	45	520-0820	*Stud (Wet Hole)
22	110-1974	Intake Valve			
23	110-1719	Exhaust Valve			
24	VALVE SEAT INSERT, EXHAUST				
	110-1716	*Standard			
	110-1716-02	.002" Oversize			
	110-1716-05	.005" Oversize			
	110-1716-10	.010" Oversize			
	110-1716-25	.025" Oversize			
25	VALVE SEAT INSERT, INTAKE				
	110-1933	*Standard			
	110-1933-02	.002" Oversize			
	110-1933-05	.005" Oversize			
	110-1933-10	.010" Oversize			
	110-1933-25	.025" Oversize			
26	110-1939	*Valve Guide			
27	110-0539	Valve Spring			
28	110-0639	Valve Spring Lock			

*PARTS INCLUDED IN CYLINDER BLOCK ASSEMBLY.

SERVICE KITS AND MISCELLANEOUS

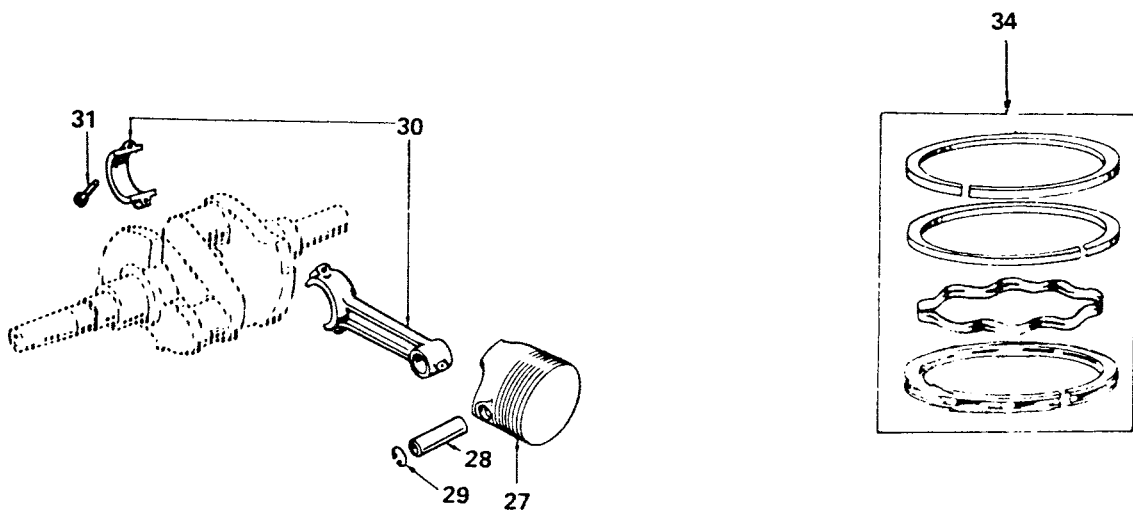
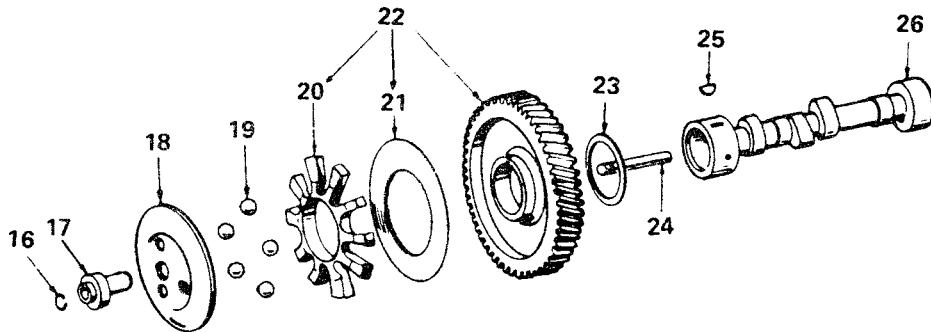
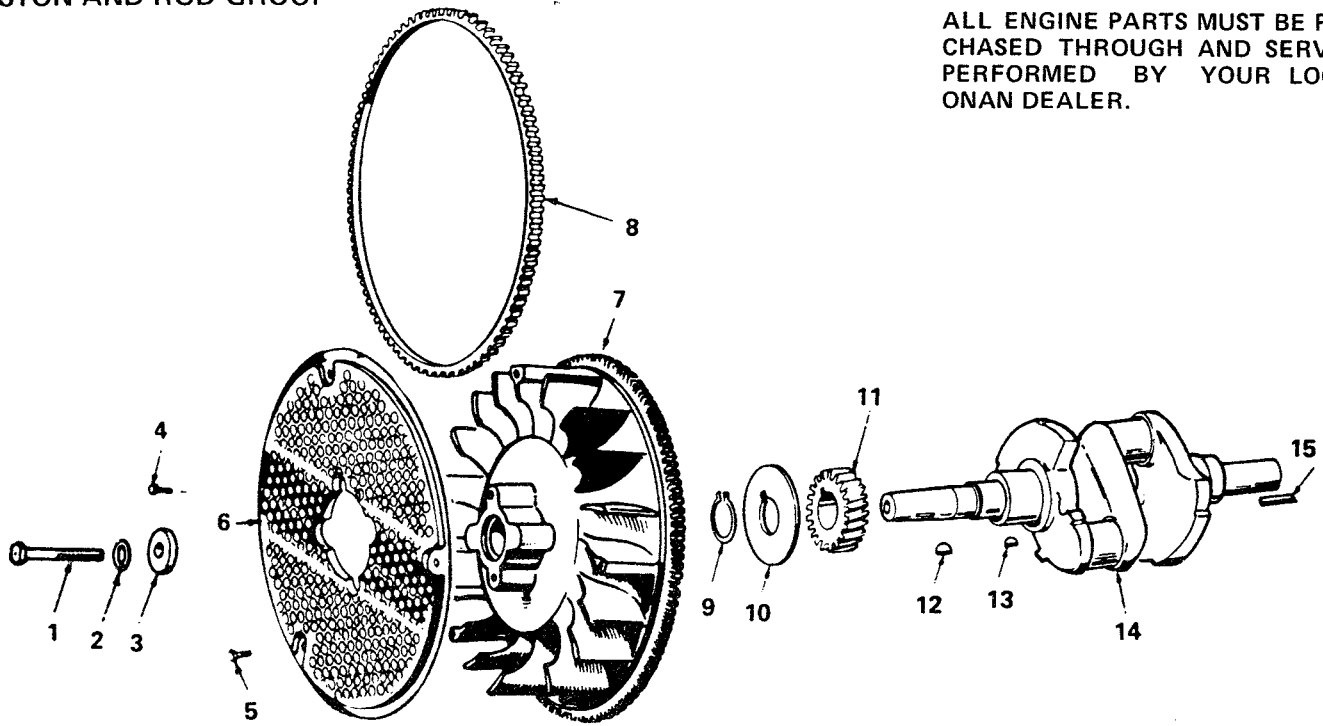
PART NO.	DESCRIPTION
98-2629	Decal Kit
168-0142	Engine Gasket Kit
168-0121	Carbon Removal Kit
160-1213	Ignition Tune-up Kit
522-0300	Engine Overhaul Kit

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

CRANKSHAFT, FLYWHEEL, CAMSHAFT,
PISTON AND ROD GROUP

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



REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

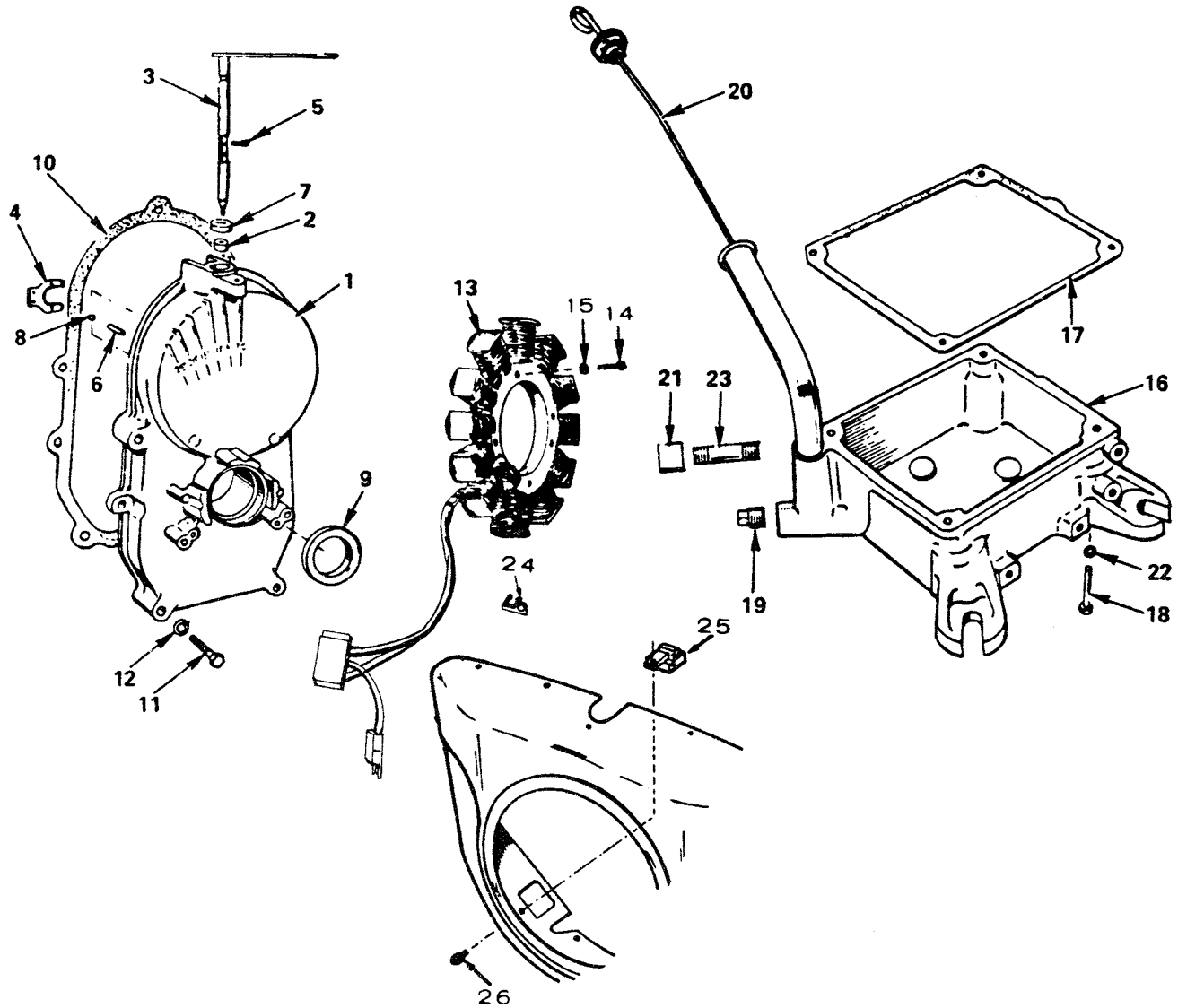
CRANKSHAFT, FLYWHEEL, CAMSHAFT,
PISTON AND ROD GROUP

KEY NO.	PART NO.	DESCRIPTION
1	104-0170	Cap Screw (Special)
2	850-0055	Lockwasher, Spring (7/16")
3	526-0262	Flat Washer (15/16" I.D. x 1 - 1/2" O.D. x .31" Thick)
4	821-0014	Cap Screw, Hex Head Locking (5/16 - 18 x 1/2")
5	815-0400	Screw, Truss Hd. Mach. w/Ext. Lw. (1/4 - 20 x 1/2")
6	134-3212	Flywheel, Guard
7	134-3740	Flywheel (Inc. Ring Gear and Magneto)
8	104-0779	Ring Gear
9	518-0014	Retaining Ring
10	104-0043	Retaining Washer
11	104-0032	Gear
12	515-0227	Flywheel Key
13	515-0001	Gear Key
14	104-1048	Crankshaft
15	515-0103	Key
16	150-0078	Retaining Ring
17	150-1519	Hub
18	150-1520	Cup
19	510-0015	Flyball
20	150-1257	Spacer
21	150-0077	Plate
22	105-0332	Gear Assembly (Inc. Plate and Spacer)
23	105-0004	Thrust Washer
24	150-0075	Center Pin
25	515-0001	Key
26	105-0382	Camshaft (Includes Center Pin)
27	PISTON AND PIN (Includes Retaining Rings)	
	112-0158	Standard
	112-0158-05	.005" Oversize
	112-0158-10	.010" Oversize
	112-0158-20	.020" Oversize
	112-0158-30	.030" Oversize
	112-0158-40	.040" Oversize
28	112-0069	Piston Pin
29	518-0294	Retaining Ring
30	CONNECTING ROD	
	114-0295	Standard
	114-0295-10	.010" Undersize
	114-0295-20	.020" Undersize
	144-0295-30	.030" Undersize
31	806-0036	Rod Cap Bolt
34	RING SET	
	113-0203	Standard
	113-0203-05	.005" Oversize
	113-0203-10	.010" Oversize
	113-0203-20	.020" Oversize
	113-0203-30	.030" Oversize
	113-0203-40	.040" Oversize

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

OIL BASE AND GEARCASE GROUP



KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	103-0498	Gearcase Assembly (Inc. Parts Marked *)	13	191-1216	Stator
2	510-0105	* Bearing	14	813-0108	Round Head Machine Screw (No. 10 - 32 x 1 - 1/2")
3	150-1470	* Shaft and Arm	15	850-0030	Lockwasher (No. 10)
4	150-1187	* Yoke	16	102-0769	Oil Base
5	815-0046	* Pan Head Machine Screw (No. 8 - 32 x 3/8")	17	102-0693	Oil Base Gasket
6	516-0130	* Dowel Pin	18	800-0056	Hex Head Cap Screw (3/8 - 16 x 1 - 1/4")
7	509-0008	* Oil Seal	19	505-0056	Drain Plug
8	510-0014	* Ball	20	123-1292	Cap and Indicator
9	509-0040	* Oil Seal	21	505-0158	Oil Drain Cap, Pipe (1/2")
10	103-0408	Gasket	22	850-0050	Lockwasher (3/8")
11	CAP SCREW, HEX HEAD		23	505-0176	Oil Drain Nipple, Pipe (1/2 x 3 - 1/2")
	800-0032	5/16 - 18 x 1 - 3/4"	24	167-0218	Support Alternator Leads
	800-0034	5/16 - 18 x 2 - 1/4"	25	191-1206	Regulator, Voltage (15 Amp)
12	526-0065	Flat Washer - Copper (21/64" I.D. x 9/16" O.D. x 1/16" Thick)	26	821-0010	Hex Head Cap Screw (1/4 - 20 x 1/2)

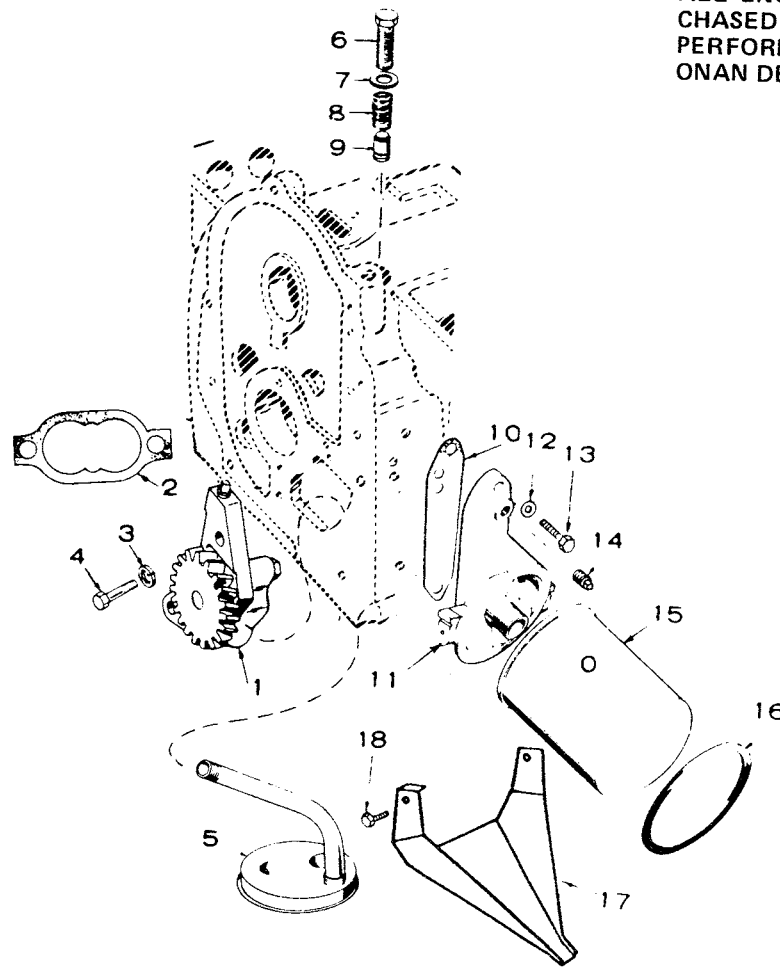
* - Parts included in 103-0498 Gearcase Assembly

REPAIR PARTS

20T GARDEN TRACTOR--MODEL NO. T9329AR
ONAN ENGINE--MODEL NO. N52M-GA019.9/3580B

OIL SYSTEM GROUP

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



KEY NO.	PART NO.	DESCRIPTION
1	120-0491	Oil Pump
2	120-0161	Pump Gasket Kit
3	850-0040	Lockwasher, Spring (1/4")
4	800-0007	Cap Screw, Hex Head (1/4 - 20 - 1")
5	120-0713	Oil Intake Cup
6	801-0050	Cap Screw, Hex Head (3/8 - 24 x 1")
7	526-0066	Flat Washer, Copper (15/64" I.D. x 9/16" O.D. x 1/16" Thick)
8	120-0140	Spring
9	120-0398	By-Pass Valve
10	122-0321	Gasket
11	122-0320	Oil Filter Adapter
12	526-0065	Flat Washer, Copper (21/64" I.D. x 9/16" O.D. x 1/16" Thick)
13	800-0028	Cap Screw, Hex Head (5/16 - 18 x 1")
14	505-0057	Plug (1/8")
15	122-0469	Oil Filter
16	122-0347	Oil Filter Air Seal
17	122-0352	Oil Drain
18	815-0194	Cap Screw Hex Head W/ET (No. 10 - 32 x 3/8")