



FORM NO. 3311-700

MODELS 57356 — 1000001 & UP

OPERATOR'S MANUAL

11 hp (8.2 KW) FRONT ENGINE RIDER (11-42)
ELECTRIC START

The FRONT ENGINE RIDER
meets or exceeds the Amer-
ican National Standards
Institute's safety
standards for
Lawn Trac-



tors; thus, Toro proudly displays the OPEI safety seal.

To assure maximum safety and optimum performance, and to gain knowledge of the tractor, it is essential that you or any other operator, read and understand the contents of this manual before the engine is started. Failure to comply with the safety instructions may result in personal injury.



FOREWORD

The TORO Front Engine Rider contains the latest engineering and technical workmanship and should provide long troublefree performance and service.

Since you have purchased this fine product, we are sure that dependability and performance are important to you. TORO is also concerned about future use of the machine and safety to the user. Therefore, you should read this manual thoroughly so that proper safety, operation and maintenance procedures are practiced at all times. The major sections of this manual are:

- | | | |
|----------------------------|---------------------------|---------------------|
| 1. Safety Instructions | 3. Before Operating | 5. Maintenance |
| 2. Setting Up Instructions | 4. Operating Instructions | 6. Trouble Shooting |

Safety, mechanical and some general information in this manual is emphasized. DANGER, WARNING and CAUTION identify safety messages. Whenever the triangular safety symbol appears it is followed by a safety message that must be read and understood. More complete details concerning safety are contained on page 3, 4 and 5. IMPORTANT identifies special mechanical information and NOTE identifies general information worthy of special attention.

OPTIONAL SPARK ARRESTER

In some areas there are local, state or federal regulations requiring that a spark arrester be used on the engine of this mower. If a spark arrester is required, order the following part from your local Toro Distributor:

1 Spark Arrester, part no. 36-7890

These parts are approved by the United States Department of Agriculture Forestry Service. The approval number for the exhaust system is 16362.

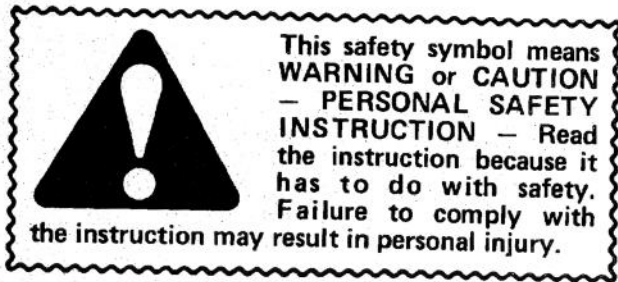
When mower is used or operated on any California forest, brush or grass covered land, a working order spark arrester must be attached to muffler. If not, the operator is violating state law, Section 4442 Public Resources Code.

Further assistance concerning safety, operation and maintenance can be acquired by contacting your local Authorized TORO Service Dealer. Your TORO Authorized Service Dealer can provide you with genuine TORO replacement parts and also optional equipment for your TORO Front Engine Rider. Keep your TORO all TORO. Buy genuine TORO parts and accessories.

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SAFETY INSTRUCTIONS



The FRONT ENGINE RIDER was tested and certified by an independent laboratory for compliance with the B71.1-1980 specifications of the American National Standards Institute. However, improper use or maintenance by the operator or owner of the mower can still result in injury. To reduce the potential for any injury, comply with the following safety instructions. Failure to comply with the instructions may result in personal injury.

BEFORE OPERATING

1. Read and understand the contents of this manual before starting and operating the rider and mower. Become familiar with all controls, and know how to stop the engine and machine quickly. NEVER ALLOW CHILDREN TO OPERATE THE RIDER.
2. Keep everyone, especially children and pets, away from the area of operation. Remove sticks, stones, wire, and any other debris or objects which might be picked up and thrown by the mower.
3. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operation is commenced. Also frequently check and tighten any loose nuts, bolts and screws.
4. Wear long pants and substantial shoes. Do not operate the rider while barefoot, wearing sandals, tennis shoes, sneakers, or shorts.
5. Fill fuel tank with gasoline before starting the engine. Avoid spilling any gasoline. Since Gasoline is highly flammable, handle it carefully — DO NOT SMOKE.
 - A. Use an approved gasoline container.
 - B. Fill fuel tank outdoors and only when engine is not running. Engine must be cool to prevent a potential fire hazard.
 - C. Wipe up any gasoline that spilled, and install gasoline container cap and machine fuel tank cap securely before starting the engine.

WHILE OPERATING

6. Do not run engine indoors without adequate ventilation. Exhaust fumes are dangerous and can be deadly.
7. Before attempting to start the engine, shift into neutral, move blade control into DISENGAGE position and lock parking brake. Engine will not start unless gear shift is in neutral, blade control is in DISENGAGE POSITION, and the operator is on the vehicle seat.
8. Never carry passengers on the rider.
9. Using a riding mower demands attention; therefore, mow only in daylight or when there is good artificial light. Stay alert for holes in the terrain and other hidden hazards. To prevent tipping or loss of control, do not drive close to a ditch or creek.
10. Cut steep grass slopes up and down, never across the face. When going uphill or downhill do not stop or start suddenly. To prevent tipping or loss of control, reduce speed on slopes and when making sharp turns. Extreme caution must be used when changing direction on slopes. If a steep hill must be ascended, back the rider up the hill and drive forward when descending.
11. Watch out for traffic when crossing or near roads. Always yield the right-of-way.
12. Keep face, hands, feet, or any other part of the body and clothing away from concealed, moving, or rotating parts such as the cutter blade, discharge area, wheels, belts, and engine. Always sit on the seat while operating the rider and mower.
13. When driving from one area to another, crossing a gravel driveway, road, or sidewalk, move blade control into DISENGAGE and raise mower housing to its highest level. This will prevent loose sand, rocks, and other debris from being thrown by the whirling blades.
14. Do not touch engine, muffler or muffler shields while it is running or soon after it is stopped, because the engine and muffler components may be hot enough to cause a burn.
15. Use only the drawbar hitch point at rear of chassis to pull the lightweight cart that is sold as an accessory. Limit loads to those that can be controlled safely. Be very careful when backing and turning: Never turn sharply.

SAFETY INSTRUCTIONS

16. Before leaving the operator's position — on the seat — or leaving rider unattended, shift transmission into neutral, set parking brake, move blade control into DISENGAGE, rotate ignition key to OFF, and remove key from switch.

17. If the blade strikes a solid object or mower vibrates abnormally, shift transmission into neutral, set parking brake, move blade control into DISENGAGE, rotate ignition key to OFF, and remove key from switch. Disconnect high tension wire from spark plug, and keep wire away from the plug to prevent possibility of accidental starting. Check rider and mower for possible damage, bent blade, defective belt or an obstruction, and a loose blade or other parts. Make all repairs before restarting the engine and operating the mower.

MAINTAINING MOWER

18. Before storing the rider, or performing any maintenance service and adjustment, shift transmission into neutral, set parking brake, move blade control into DISENGAGE, rotate ignition key to OFF and remove key from switch. Keep the key in a memorable place. Also disconnect high tension wire from spark plug to prevent possibility of accidental starting.

19. If major repairs are ever needed or assistance is desired, contact an Authorized TORO Service Dealer.

20. If rider and mower must be tipped to perform maintenance or an adjustment, drain gasoline from fuel tank and oil from crankcase and remove the battery.

21. Keep rider and mower housing in safe operating condition by having nuts, bolts, and screws tight. Check the blade mounting nut frequently to make sure the nut is tight (50-60 ft-lb [68-81 N·m]).

22. To reduce potential fire hazard, make sure engine, engine compartment, transmission and brake areas are free of excessive grease, grass, leaves and dirt.

23. Allow engine to cool before storing rider in any enclosure such as a garage or storage shed. Make sure the rider fuel tank is empty if machine is to be stored in excess of 30 days. Do not store rider near any open flame or where gasoline fumes may be ignited by a spark. Always store gasoline in a safety-approved, red metal container.

24. Do not overspeed the engine by changing governor settings. Recommended engine speed is 3400 rpm. To assure safety and accuracy, have an Authorized TORO Service Dealer check maximum engine speed (3400 rpm) with a tachometer.

25. At the time of manufacture, the rider conformed to safety standards in effect for riding mowers. Therefore, to assure optimum performance and safety, purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL-FIT" REPLACEMENT PARTS AND ACCESSORIES. The TORO logo assures genuine TORO replacement parts and accessories.

Genuine
TORO
PARTS & ACCESSORIES

CAUTION

1. KEEP ALL SHIELDS IN PLACE.
2. BEFORE LEAVING OPERATOR'S POSITION.
 - A. MOVE 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 BYSTANDERS FROM AREAS BEING MOWED.

SAFETY AND INSTRUCTION DECALS



The following safety and instruction decals are mounted on the TORO Front Engine Rider. Replace any that become damaged or illegible.

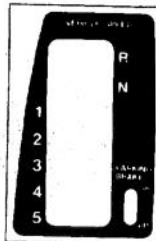
**LOWER LEFT
SIDE OF
DASH PANEL
(Part No. 36-2230)**



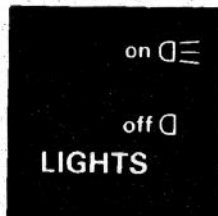
**LEFT SIDE
OF SEAT
(Part No. 36-2950)**



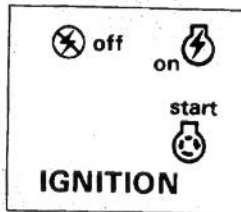
**RIGHT SIDE
OF SEAT
(Part No. 36-2940)**



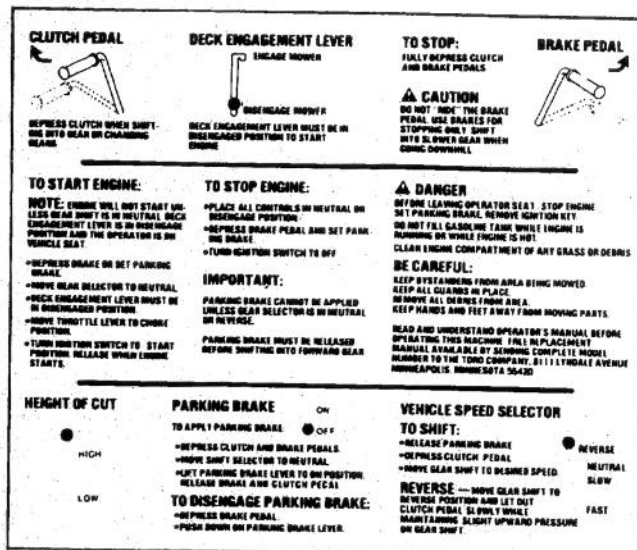
**AROUND
LIGHT SWITCH
(Part No. 28-2510)**



**AROUND KEY SWITCH
(Part No. 28-2690)**



**ON FLOOR PANEL
(Part No. 28-8140)**



**ON BATTERY
(Part No. 33-0340)**

TORO

**ADD ACID BEFORE USE
(GIVE CHARGE IF NECESSARY)**
DISTRIBUTED BY THE TORO CO., MINNEAPOLIS, MINN. 55420

**UNDERSIDE OF HOOD
(Part No. 36-5190)**

VEHICLE MAINTENANCE

INTERLOCK SYSTEM

THE ENGINE SHOULD NOT CRANK OR START UNLESS THE OPERATOR IS ON THE SEAT. THE TRANSMISSION IS IN NEUTRAL AND THE RECK IN DISENGAGED. THE ENGINE SHOULD STOP IF THE OPERATOR LEAVES THE SEAT WITH THE TRANSMISSION AND/OR THE RECK ENGAGED. IF INTERLOCK SYSTEM FAILS TO OPERATE AS DESCRIBED HAS AN AUTHORIZED TORO SERVICE DEALER. DO NOT OPERATE VEHICLE UNTIL FAULT IS CORRECTED.

BATTERY

1. MAINTAIN LEVEL OF ELECTROLYTE AT FILLER RING WITH CLEAN TAP WATER.
2. WHEN REMOVING BATTERY DISCONNECT BLACK NEGATIVE CABLE (GROUND) FIRST.

SEE OPERATORS MANUAL FOR COMPLETE INSTRUCTIONS

ENGINE

1. CHECK OIL LEVEL BEFORE STARTING ENGINE AND AFTER EVERY 5 HOURS OF OPERATION.
2. CHANGE OIL AFTER FIRST 5 HOURS OF OPERATION AND EVERY 25 HOURS THEREAFTER. CHANGE OIL MORE FREQUENTLY WHEN OPERATING IN EXTREMELY HOT OR COLD WEATHER. USE A HIGH QUALITY GRADE OF SAE 30 CLASSIFICATION OIL. DO NOT EXCEED OIL. FOR USE ABOVE 40°F OIL 10W-30. SAE 10W-30 OR USE SAE 30. FOR USE UNDER 40°F USE SAE 5W-20. SAE 5W-20 OR SAE 10W-30. CHARGE CARD CAPACITOR. 0.15F—30 SE. 11 SE. 11 SE.—40 SE.
3. CLEAN AIR CLEANER ELEMENT EVERY 25 HOURS. WHEN OPERATING IN DUSTY CONDITIONS, CLEAN MORE OFTEN. REMOVE FRESH ELEMENT AND WASH IN OIL (ELEMENT SHOULD BE DAMP WITH OIL). SATURATE ELEMENT WITH FRESH ENGINE OIL AND SQUEEZE TO REMOVE EXCESS OIL.
4. CHECK SPARK PLUGS EVERY 25 OPERATING HOURS. RESET GAP TO .000 OR REPLACE SPARK PLUG IF NECESSARY. REPLACE WITH (CHAMPION RCJ-8) OR (AUTOLITE 2871) SPARK PLUGS.

CHASSIS

1. ADJUST BRAKES AS NECESSARY. LOOSEN OUTER JAM NUT. TIGHTEN INNER JAM NUT ON TRANSMISSION BRAKE LEVER WITH BRAKE LEVER 1/2 INCH FREE MOVEMENT BEFORE TIGHTENING ON BRAKE SHOC. BRAKE PUCKS SHOULD NOT DRAG ON SHOC WHEN BRAKE PEDAL IS RELEASED. TIGHTEN OUTER JAM NUT.
2. BRASK FRONT WHEEL BEARINGS AND FRONT AXLE SPINDLES EVERY 25 HOURS OF OPERATION.
3. USE 5 HUNTER THE LITTON RABBIT BEARING.
4. LUBRICATE STEERING SHAFT AND PIVOT POINTS SHOWN WITH LIGHT OIL EVERY 25 OPERATING HOURS OR AS NECESSARY TO KEEP STEERING SYSTEM OPERATING EASILY.

CAUTION REMOVE ANY BUILDUP OF GRASS OR DEBRIS THAT MAY BE IN THE ENGINE COMPARTMENT OR ABOVE THE TRANSMISSION.

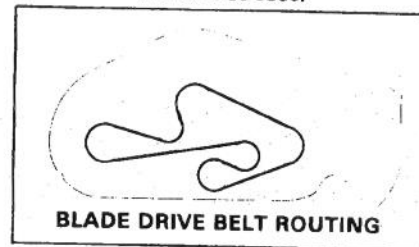
**RIGHT SIDE OF MOWER DECK
(Part No. 36-3410)**

CAUTION
KEEP HANDS AND FEET CLEAR ANYTIME ENGINE IS RUNNING.

**BOTH SIDES OF MOWER DECK
(Part No. 36-3400)**

DO NOT STEP

**FRONT OF MOWER DECK
(Part No. 36-5360)**



BLADE DRIVE BELT ROUTING

**LEFT SIDE OF MOWER DECK
(Part No. 38-1390)**

**TO ADJUST
DECK WHEELS**

PUT HEIGHT OF CUT LEVER IN HIGH POSITION. PULL WHEEL ADJUSTMENT LEVER AND ROTATE WHEEL SHAFT.



SPECIFICATIONS

11-42 FRONT ENGINE RIDER ELECTRIC, MODEL 57356

11-42 — Briggs & Stratton Engine: Electric start with alternator, four cycle engine, model 252707 type 0177-01 has output of 11 hp (8.2 Kw) @ 3600 rpm and 16.8 ft/lb (22.8 N·m) torque @ 2800 rpm. Displacement is 24.36 cubic inches (399 cc). Crankcase oil capacity is 3 pints (1.41 l) and fuel tank capacity is 7 quarts (6.624 l). Correct spark plug is a Champion RCJ-8 or Autolite AR7N resistor type and air gap is .030 of an inch (0.762 mm).

Mower Housing: Full floating, front to rear, side to side. 12 gauge (2.64 mm) stamped steel housing with right side discharge. Width of cut is 42 inches (1.067 m). Steel spindle housings with shafts are supported by two double seal ball bearings. Blade spindle pulleys are driven by spring tensioned "A" section V-belt from clutch on engine crankshaft.

Cutter Blades: Each blade is 14.8 inches (0.378 m) long, made of one piece hardened 7 gauge (2.72 mm) carbon steel.

Blade Tip Speed: 15,500 ft/min (78 740 m/s) @ 3400 engine rpm. Height of Cut Range: Height of cut is adjustable to one of seven approximate settings; 1 inch (25 mm); 1-1/2 inches (38 mm); 2 inches (51 mm); 2-5/8 inches (67 mm); 3-1/4 inches (83 mm); 3-7/8 inches (98 mm); and 4-1/2 inches (114 mm).

Transmission: Transmission fully enclosed, permanently lubricated with differential enclosed. In line shift pattern with five speeds forward and one reverse.

Reductions are:

1st — 61.87:1	4th — 15.77:1
2nd — 30.10:1	5th — 13.38:1
3rd — 20.07:1	Rev. — 40.13:1

Traction Drive: "A" section V-belt from 3.5 inch (88.9 mm) O.D. engine pulley to 7 inch (177.8 mm) O.D. automotive type clutch on transaxle input shaft. Total reduction, engine to wheels:

1st — 123.74:1	4th — 31.54:1
2nd — 60.20:1	5th — 26.76:1
3rd — 40.14:1	Rev. — 80.26:1

Ground Speed @3400 Engine rpm:

1st gear — 1.39 MPH (2.27 Km/hr)
2nd gear — 2.86 MPH (4.60 Km/hr)
3rd gear — 4.28 MPH (6.88 Km/hr)
4th gear — 5.45 MPH (8.77 Km/hr)
5th gear — 6.43 MPH (10.34 Km/hr)
Rev. — 2.14 MPH (3.44 Km/hr)

Wheels and Tires: The front 15 x 6.00-6 and the rear 18 x 8.50-8 tubeless, pneumatic turf tires are installed on demountable stamped steel wheels. Recommended tire pressure is 13 psi (89.6 kpa).

Steering: 13 inch (0.33 cm) diameter steering wheel mounted on a TORO design high helix screw shaft with a 6.3:1 reduction. One and one half wheel turns cramp to cramp.

Engine Controls: Control wire and casing with FAST, SLOW and CHOKE positions. Key switch with ON, OFF and START positions. Both controls mounted on dash panel.

Transmission Control: Hand operated lever on right side of operator with in line shifting with Z pattern.

Traction Clutch: Foot operated pedal on left side. Depressing pedal disengages clutch friction disc.

Brake Pedal: Foot operated pedal on right side. Depressing pedal engages caliper on 2-1/2 inch (64 mm) diameter disc.

Parking Brake Control: Hand operated lever on right side of operator. Depress brake pedal and lift lever to engage. Transmission must be in neutral to apply parking brake.

Cutter Blade Control: Hand operated lever on steering tower in front of operator. Lifting lever releases blade brake and engages spring-wrap clutch.

Height-of-Cut Control Levers: Hand operated lever at left of operator raises mower for high cutting and transporting. Lever on left side of mower deck adjusts deck wheels for five lower cutting heights.

General Dimensions (approx.):

Wheel Base	— 46 in. (1.168 m)
Tread Width	— 27 in. (0.686 m) front center to center
	— 27-1/2 in. (0.699 m) rear center to center
	— 33 in. (0.838 m) front outside to outside
	— 35 in. (0.889 m) rear outside to outside
Turning Radius	— 32 in. (0.813 m) inside wheel
Length	— 62 in. (1.575 m)
Width	— 54 in. (1.372 m) including cutter deck
Height	— 41 in. (1.041 m)
Weight	— 462 pounds (209.7 kg)

SPECIFICATIONS

Safety Features: Meets B71.1-1980 ANSI safety specifications.

Traction drive, blade drive and seat interlock.

Enclosed engine and muffler.

Enclosed traction drive.

Automotive type traction clutch.

Convenient, easy to operate controls.

Automatic blade brake.

Stable-Wide track and lower center of gravity.

Parking brake lockout prevents forward travel if parking brake is engaged.

Optional Accessories and Attachments:

Dump cart

Spreader/Seeder

Tire chains #11-0430

42" snow blade #59140

36" Snowthrower, #59136

Spark Arrester Muffler, #36-7890

LOOSE PARTS

DESCRIPTION	QTY.	USE
Tire and Wheel Assembly	2	Mount to front axles.
Cotter Pin 1/8 in. x 1-1/4 in.	2	Secure wheels to axles.
Washer	2	Mount to front axles.
Hub Cap	4	Mount to front axles.
Steering Wheel	1	On steering shaft.
Roll Pin	1	Secure steering wheel to shaft.
Seat	1	Install on machine.
Spacer	4	Install between seat and seat mount plate.
Hitch Plate	1	Rear frame behind transaxle.
Capscrew 5/16 - 18 x 3/4 in.	8	Secure hitch plate to frame and mount seat.
Clamp	1	Secure wire harness to seat mount plate.
Carriage Bolt 1/4-20 x 5/8 in.	1	Secure wire harness to seat mount plate.
Locknut 5/16 - 18	4	Secure hitch plate to frame.
Locknut 1/4 - 20	1	Secure wire harness to seat mount plate.
V-Belt	1	Mount cutting unit.
Clevis Pin	2	Mount cutting unit.
Washer	2	Mount cutting unit.
Cotter Pin 3/8 in. x 1-1/2 in.	2	Mount cutting unit.
Capscrew 1/4 - 20 x 5/8 in.	2	Install battery cables.
Wing Nut	2	Install battery cables.
Key	2	Install in start switch.
Operator's Manual	1	Read manual before operating.

SETTING UP INSTRUCTIONS

INSTALL FRONT WHEELS

Tools Required: Pliers.

1. Install wheel onto axle.
2. Mount flat washer onto axle, insert cotter pin and open pin ends with pliers (Fig. 1).

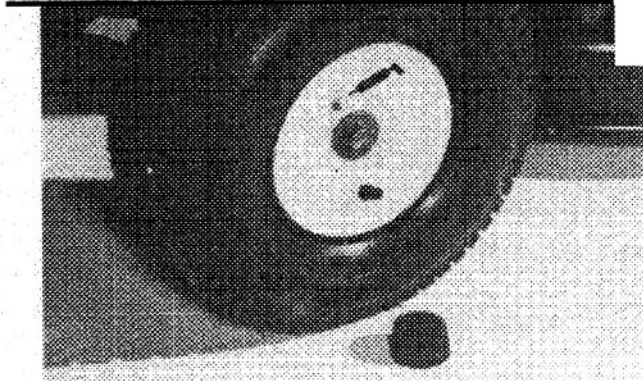


Figure 1

3. Install hub cap and grease wheel bearing.
4. Repeat steps 1-3 on opposite side.

INSTALL STEERING WHEEL ASSEMBLY

Tools Required: Small ball peen hammer and drift punch.

1. Slip steering wheel over shaft and line the steering wheel mount hole with the shaft mounting hole.
2. Insert a drift punch partially through the holes to maintain alignment and insert the roll pin in from the opposite side.
3. Drive the roll pin in until it is flush with the outside of the wheel (Fig. 2).

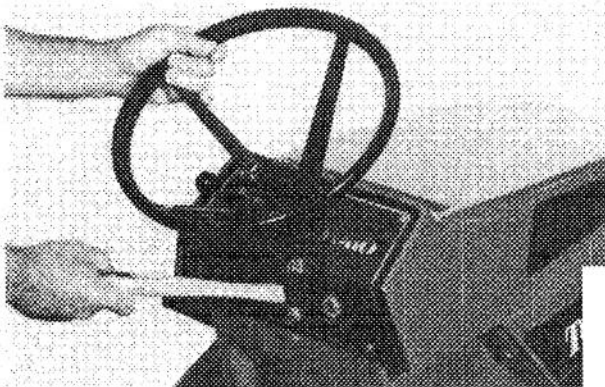


Figure 2

INSTALL SEAT

Tools Required: 7/16 in, 1/2 in wrench.

1. Remove battery from under seat mount plate and set aside.
2. Position seat onto mounting plate and insert wire end from seat switch through grommet in plate (Fig. 3).

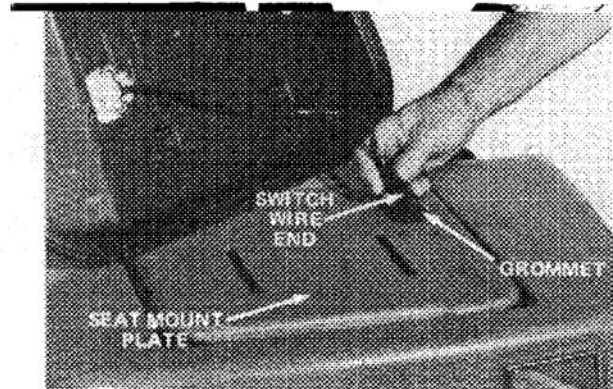


Figure 3

3. Insert carriage bolt into square hole next to grommet (Fig. 4), install spacers between seat and mount plate and set seat into position (Fig. 5).

Note: It is easier to install and secure the spacers with flange head capscrews individually: see step 4.



Figure 4

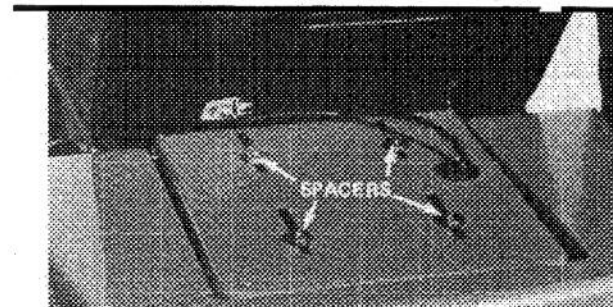


Figure 5

4. Lift seat mount plate, hold seat and spacers in position and install flange head capscrews (Fig. 6).
5. Insert seat switch connector into wire harness connector (Fig. 6).

SETTING UP INSTRUCTIONS

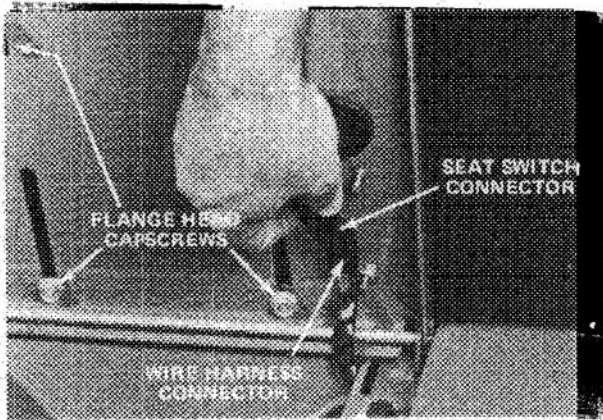


Figure 6

6. Install clamp around seat switch wire and over carriage bolt and secure with locknut (Fig. 7).

Note: Use a screwdriver or pry bar to hold the head of the carriage bolt in place while installing the locknut.

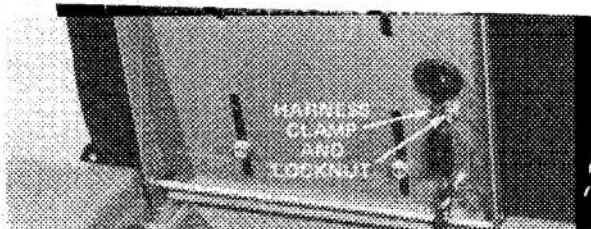


Figure 7

ADJUSTING SEAT

Tip the seat forward, loosen the seat mounting cap screws and relocate the seat for operator comfort. Retighten the cap screws and lower the seat.

INSTALL HITCH PLATE

Tools Required: 1/2 inch box end wrench and 1/2 inch socket wrench.

1. Place hitch plate under the rear edge of the frame, line the mount holes with one another and insert the flange head cap screws through the holes from the top.
2. Install the locknuts and tighten them to secure the plate to the frame (Fig. 8).

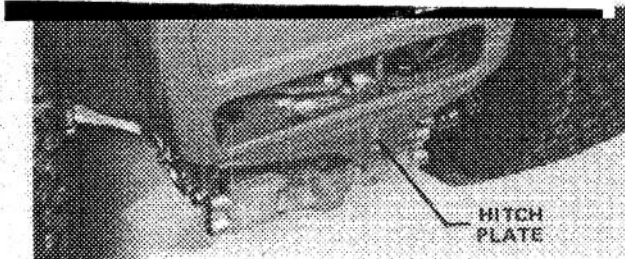


Figure 8

INSTALL CUTTING UNIT

Tools Required: Pliers.

1. Remove cutting deck from shipping carton.
2. Set cutting unit down on the wheels and rollers and slide cutting unit under tractor.
3. Slide deck under rider aligning bars of deck suspension with deck hanger brackets.
4. Insure height-of-cut lever is held down in lowest height-of-cut position.

Note: A narrow wooden block may be placed in height-of-cut slot to hold lever down.



CAUTION

Suspension bars are spring loaded use caution when installing deck.

Note: Use rear holes in hanger brackets for initial mounting of deck. When properly adjusted the front tip of the blade should be 3/8 inch (10 mm) lower than the rear tip when the blades are in the fore and aft position.

5. Lift front hanger brackets to suspension bars and slide deck rearward slightly.
6. Install engine to deck drive belt.
7. Push cutting unit rearward, align rear clevis pin holes and install long clevis pins (Fig. 9).
8. Remove cable tie securing tension pin to rider.
9. Pull tension pin forward, while pushing deck rearward, hook end on long clevis pin and secure with washer and cotter pin (Fig. 9).

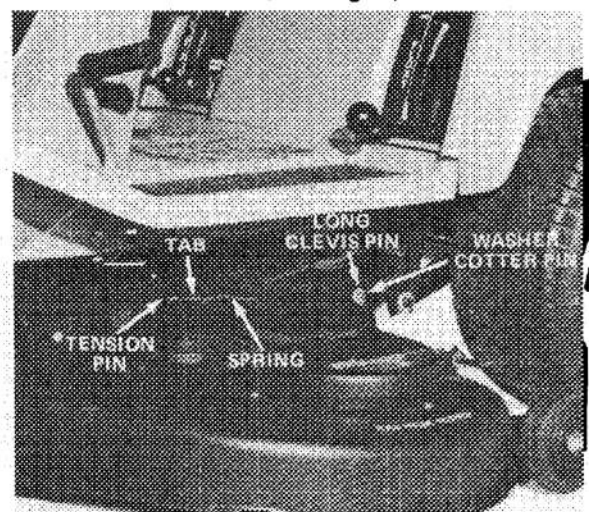


Figure 9

BEFORE OPERATING

ACTIVATING AND CHARGING BATTERY

Tools Required: 3 to 4 Amp Battery Charger.

Since the battery for the rider is not filled with electrolyte or activated, the battery, if you have not already done so, must be removed from the machine so it can be filled with electrolyte and charged. Bulk electrolyte with 1.260 specific gravity must be purchased from a local battery supply outlet. Remove the battery and activate it as follows:

1. Tip the seat forward and lift battery out of compartment.
2. Remove tape from battery.
3. Remove and discard orange seal cap from battery (Fig. 10). Install black tubed cap supplied with battery (Fig. 11).

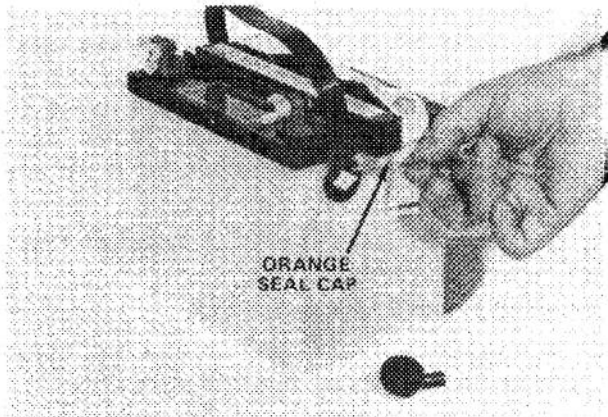


Figure 10

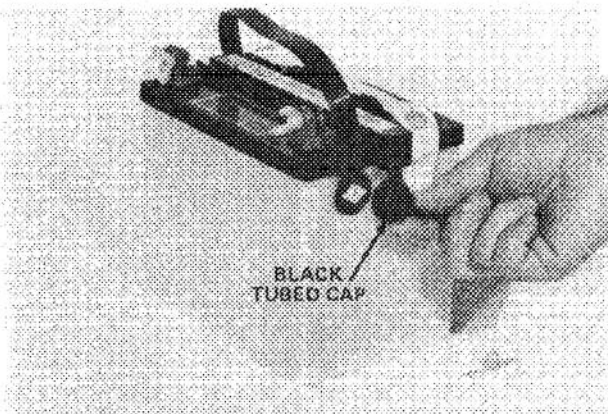


Figure 11

4. Remove filler caps from battery and slowly fill each cell until electrolyte is just above the plates.



CAUTION

Wear safety goggles and rubber gloves when working with electrolyte. Charge the battery in a well ventilated place so gases produced while charging can dissipate. Since the gases are explosive, keep open flame and electrical spark away from the battery; do not smoke. Nausea may result if the gases are inhaled. Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.

5. Leave filler caps off and connect a 3 to 4 amp battery charger to the battery posts. Charge the battery at a rate of 4 amperes or less for 4 hours.
6. When battery is charged, disconnect charger from electrical outlet and battery posts.
7. Slowly add electrolyte to each cell until level is up to fill ring. Install filler caps.

IMPORTANT: Do not overfill battery. Electrolyte will overflow onto other parts of the machine and severe corrosion and deterioration will result.

8. Install the battery into the battery compartment with the terminal posts toward the rear of the machine.
9. Install the positive cable (rubber boot over end) to the positive (+) terminal and the negative cable (black) to the negative (-) terminal of the battery and secure with capscrews and wing nuts. Slide the rubber boot over the positive terminal to prevent possible short-out from occurring (Fig. 12).

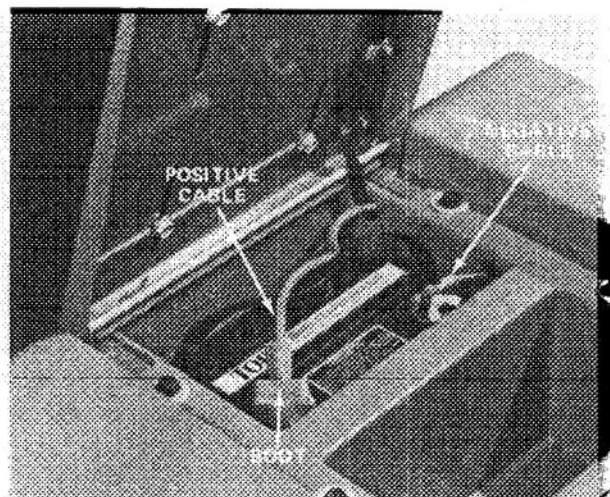


Figure 12

BEFORE OPERATING

CHECK CRANKCASE OIL LEVEL

The rider is shipped from the factory with oil in the crankcase. However, check the oil level in the crankcase prior to starting the engine.

1. Place rider on a level surface to assure accurate oil level reading and open the hood. Ensure the oil drain plug is securely tightened, Page 17, (Fig. 24).
2. Unscrew and remove the dipstick from the oil fill tube (Fig. 13).

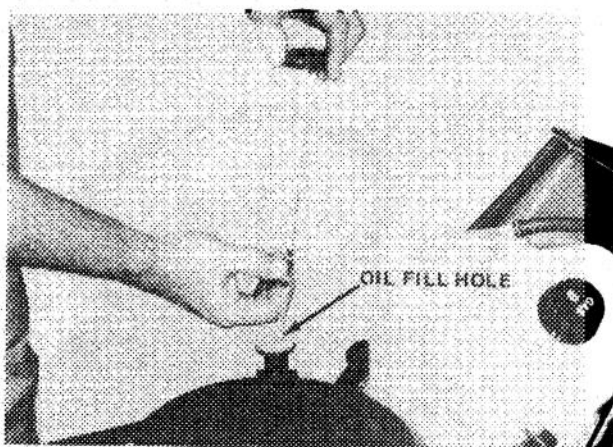


Figure 13

3. If oil level is low, insert a funnel into the tube and slowly add engine oil into the crankcase. Use a high quality detergent oil classified "For Service SC, SD, SE or MS". Oil viscosity (weight) must be selected according to anticipated ambient temperature.

- Above +40° F (+4° C) — Use SAE 30; 10W-30 and 10W-40 as substitutes.
- Below +40° F (+4° C) — Use SAE 5W-20 or 5W-30; SAE 10 or 10W-30 as substitutes.
- Below 0° F (-18° C) — Use SAE 10 or 10W-30 diluted 10% with kerosene.

Note: Avoid premature engine failure by insuring the funnel used is clean so contaminants are not introduced into the crankcase. Wipe any oil spilled so it will not cause dirt to collect on the engine.

4. Insure the oil level is to the full mark on the dipstick when it is fully installed. Do not overfill or engine damage may result.

5. Insert the dipstick and turn it clockwise to secure it in the fill tube.

Note: Check the oil level every 5 operating hours or each time rider is used. Initially, drain the oil and replace it after the first 5 hours operation to remove the contaminants produced by normal engine break-in; thereafter, under normal conditions, change oil after every 25 hours operation. Change the oil more frequently when the engine is operated in dusty or dirty conditions.

FILL FUEL TANK WITH GASOLINE

Tools Required: Clean Rag and Funnel

IMPORTANT: Leaded regular gasoline is recommended. If leaded regular gasoline is not available, low lead regular gasoline can be used. Do not mix any oil with the gasoline, and never use premium gasoline, gasohol, gasoline additives or white gas because engine damage could result. Capacity of fuel tank is 7 quarts (6.62 l).



DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. **DO NOT SMOKE** while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline, and fill tank to about 1/2 inch (12.7 mm) below the filler neck. Store gasoline in a clean safety-approved container and keep the cap in place on the container. Keep gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

1. Open the hood.
2. Clean area around fuel tank cap so foreign matter cannot enter tank when cap is removed.
3. Remove cap from fuel tank and fill tank with leaded regular or low lead regular gasoline (Fig. 14). Then install fuel tank cap.

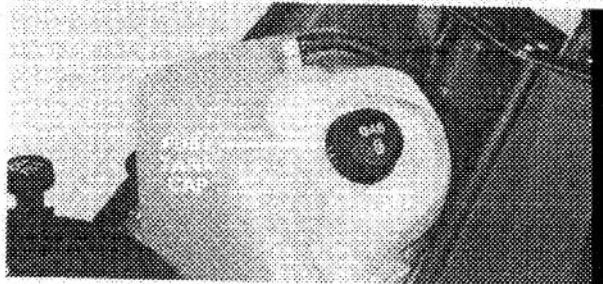


Figure 14

BEFORE OPERATING

Note: Lead-free gasoline reduces combustion deposits and extends valve life, and when available, this type of gasoline is recommended. Otherwise, use leaded-regular gasoline. Capacity of fuel tank is 7 quarts.

4. Wipe up any gasoline that may have spilled.
5. Close the hood and make sure it snaps in place.

CHECK TIRE PRESSURE

Tools Required: Tire Pump and Tire Gauge.

Check and insure the tires are inflated to 13 psi (89.6 kpa) before operating the machine.

ADJUSTING SEAT

Tip the seat forward, loosen the seat mounting capscrews and relocate the seat for operator comfort. Retighten the capscrews and lower the seat.

CONTROLS

Clutch Pedal (Fig. 15) — Foot operated clutch pedal is used in conjunction with the gear shift. Clutch must be fully depressed when shifting gears so that friction drive plates are separated on clutch assembly.

Throttle Control (Fig. 15) — Throttle control connects to and operates carburetor mounted throttle and choke. Control has three positions: IDLE, FAST and CHOKE. To obtain choke position control must be pushed slightly to the right and forward.

Ignition Switch (Fig. 15) — Switch is part of battery ignition system, and it has three positions: OFF, ON and START. Key automatically returns to ON position from START position when released after engine starts.

Light Switch (Fig. 15) — Two position switch for actuating headlights. Lights will not function unless engine is running as current is supplied by the engine alternator.

Blade Control (Fig. 15) — Blade control engages and disengages the cutter blade. A spring wrap clutch, which absorbs slippage and shock loading, actuates the blade drive pulley.

Brake Pedal (Fig. 15) — Foot operated pedal, which when depressed, actuates a disc brake assembly at the side of the transmission. Clutch pedal should also be depressed while braking to achieve maximum brake effectiveness.

Parking Brake (Fig. 16) — Parking brake is used in conjunction with standard brake assembly. When brake pedal is depressed and parking brake lever is pulled upward, a latch plate secures the brake assembly in the engaged position preventing the machine from moving.

Note: Transmission must be in neutral to engage parking brake.

Gear Shift (Fig. 16) — Transmission has five forward speeds, neutral and reverse, and has an in-line shift pattern. An interlock switch, which prevents

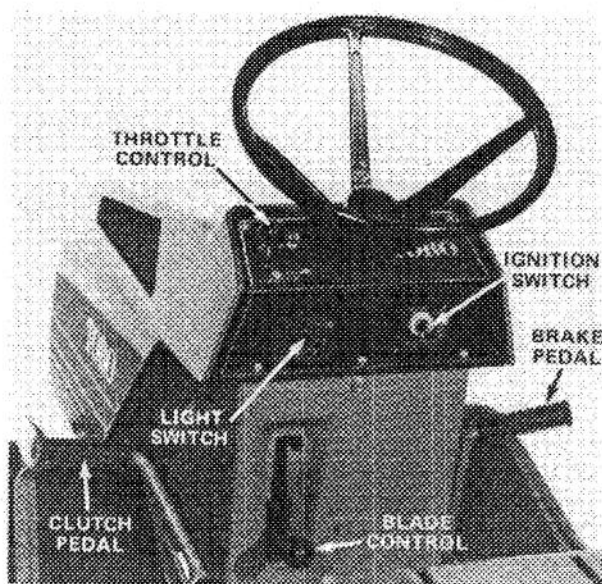


Figure 15

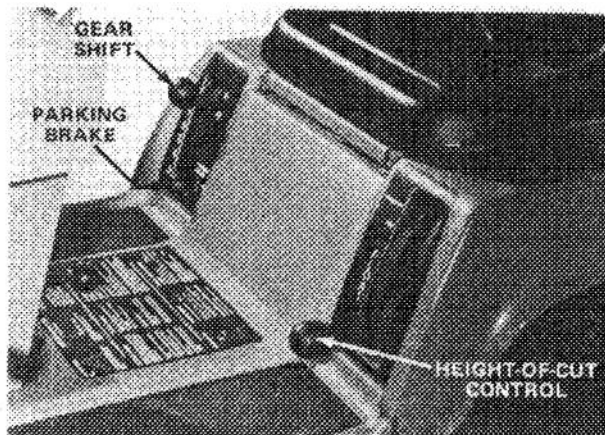


Figure 16

engine from being started when transmission is in gear, is mounted on the top of the transmission.

Height-of-Cut Control (Fig. 16) — Height-of-cut control varies the cutting height from 1 to 4-1/2 inches (25 mm to 114 mm) in seven positions.

STARTING AND STOPPING INSTRUCTIONS

Note: Engine will not start unless blade control is DISENGAGED, shift lever is in neutral and operator is sitting on the seat.

TO START AND OPERATE MACHINE

1. Shift into neutral, move blade control to DISENGAGE.
2. Move throttle control to CHOKE position and rotate ignition key to START. When engine starts, release key and reset throttle control between FAST and SLOW.
3. Select desired height-of-cut and move blade control to ENGAGE.
4. Release parking brake, depress clutch pedal and shift into gear.

TO STOP

1. Depress brake and clutch pedals, move throttle control lever to SLOW position, move blade control to DISENGAGE, and rotate ignition key to OFF.
2. Shift transmission to neutral and engage parking brake.
3. Remove key from ignition switch.

USING PARKING BRAKE



CAUTION

If the engine stalls or must be stopped while operating on a hill or slope, the engine must be shut off and parking brake engaged.

1. Depress brake pedal fully, shift transmission to neutral.
2. Move parking brake control upward and release brake pedal.
3. To release the parking brake, depress brake pedal (Fig. 15), and push parking brake lever down to return it to its disengaged position. Release brake pedal slowly.

BREAK-IN

The engine requires no special break-in other than changing oil after the first five hours of operation. Operate the transmission in all gears to assure that drive system is functioning correctly. After the first five hours of operation, check the condition of the belts.

OPERATING INSTRUCTIONS

ADJUSTING HEIGHT-OF-CUT

The height-of-cut may be set in one of seven positions: 1 inch (25 mm); 1-1/2 inches (38 mm); 2 inches (51 mm); 2-5/8 inches (67 mm); 3-1/4 inches (83 mm); 3-7/8 inches (98 mm); and 4-1/2 inches (114 mm).

Deck Lever Selection	Height-of-Cut Setting (Approx.)
1	1 in. (25 mm)
2	1-1/2 in. (38 mm)
3	2 in. (51 mm)
4	2-5/8 in. (67 mm)
5	3-1/4 in. (83 mm)
Height-of-Cut Lever Selection	
High	3-7/8 in. (98 mm)
Transport	4-1/2 in. (114 mm)

1. Assure the blade control lever is in disengage position (Fig. 16).
2. To adjust deck wheels, stop engine, put height-of-cut lever in high position, pull cut lever out on deck and rotate wheel shaft to desired height of cut.
3. Move height-of-cut control on Rider (Fig. 17) into desired setting for high or low cutting.
4. To engage blade for cutting, slowly move blade control upward and to the right into engage detent.

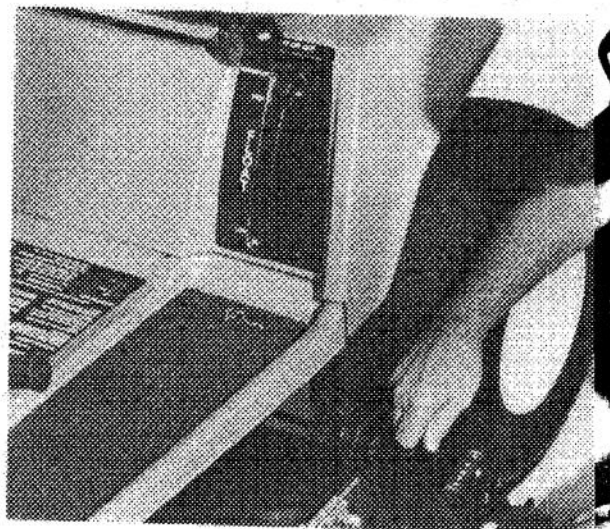


Figure 17

OPERATING PROCEDURE

1. Move blade control into DISENGAGE.
2. Start the engine: refer to Starting/Stopping Instructions, page 11.

IMPORTANT: When rider is used for the first time, operate the transmission in all gears to assure that drive system is functioning correctly, and be-

OPERATING INSTRUCTIONS

come familiar with the controls and operating characteristics. Never shift while the machine is moving or without first depressing the clutch pedal or transmission damage will result.

3. Depress clutch pedal and shift transmission into 1st gear. Then release pedal slowly until traction drive engages.

IMPORTANT: To avoid a jerky start and putting a heavy load on the transmission, move throttle to slow speed and release clutch pedal slowly. When traction drive engages, increase the engine speed. If shifting into gear is difficult, jog clutch pedal in and out to get gears to mesh. Do not force the gear shift because damage may result. Should you encounter a jerking or grabbing condition during operation, contact your local Authorized Toro Service Dealer for assistance.



WARNING

To avoid loss of control, always come to a complete stop before shifting gears, and slow down when turning, backing and changing direction. Look behind the rider to assure area is clear before backing.

4. To engage blade for cutting, move height-of-cut control to the desired setting. Start the blade whirling by moving blade control upward, to the right and into ENGAGE. Moving the blade control too fast could possibly overload and stall the engine.

5. To stop the engine, in sequence, depress clutch and brake pedals, move throttle control to SLOW, blade control into DISENGAGE, gear shift into neutral, rotate key to OFF position, and set parking brake.

Note: Remove the ignition key and store it in a memorable place between operating periods.

GRASS CUTTING TIPS

1. When the rider is used to cut a lawn for the

first time, cut grass slightly longer than normal to assure that cutting width of mower housing will not cause scalping, which could result from severe undulations of the ground. In general, however, the cutting height used in the past is probably the best one to use.

2. If the grass is ever allowed to grow slightly longer than normal, or if it contains a high degree of moisture, raise cutting height higher than usual and cut the grass at this setting. Next, cut the grass again using the lower, normal setting. This method of cutting long grass results in an even distribution of clippings and an acceptable quality-of-cut.

3. Very long or extremely wet grass can be cut, but specific operating techniques must be used. Start by setting height-of-cut in the highest position. Using 1st gear and maximum throttle speed, move into the grass and cut a swath that is only half as wide as the mower housing. Direct grass clippings toward area that was cut previously. Stop forward movement occasionally to allow discharge area to clear itself. Cutting too much grass may clog the mower housing and discharge area. If mower housing does clog, shut engine off, disengage blades and remove the obstruction with a stick.



DANGER

Before removing obstruction from mower housing, move blade control into DISENGAGE, depress clutch and brake pedals, shift into neutral and set parking brake. Turn ignition key to OFF position. Remove high tension wire from spark plug to prevent possibility of accidental starting.

4. Reduce engine speed when operating in dusty conditions to reduce the possibility of premature engine failure.

MAINTENANCE INTERVAL CHART

	5 Hours	25 Hours	Storage Service	Spring Service	2 Years	Notes
Change Oil (Initial)	X					
Change Oil (Periodic)		X	X			
Check Safety Interlock	X	X		X		
Check Cutter Blades	X	X	X			
Check Brake	X		X	X		
Grease Front Axle Spindles		X	X			
Lubricate Pivot Points		X	X			
Lubricate Deck Linkage		X				
Service Air Cleaner		X	X			
Check Spark Plug		X	X	X		
Check Blade Drive Belt			X			
Check Traction Drive Belt			X			
Check Tire Pressure		X	X			
Drain Gasoline			X			
Clean Outside of Engine		X	X			
Clean Mower Housing			X			
Paint Chipped Surface			X			
Replace Interlock Switches					X	

More often in dusty
dirty conditions

MAINTENANCE



CAUTION

To prevent accidental starting of the engine while performing maintenance, shut engine off and remove key from ignition switch. Also, open the hood and pull high tension wire off spark plug (Fig. 18). Make sure wire does not contact plug accidentally.

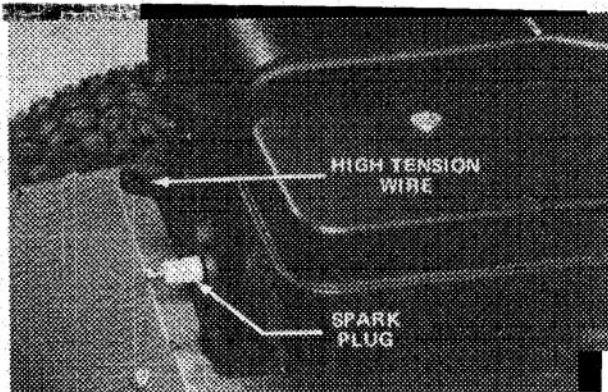


Figure 18

GREASE FRONT AXLE SPINDLES AND WHEELS

Tools Required: Clean Rag and Grease Gun w/No. 2 General Purpose Lithium Grease

The front axle spindles and wheels must be lubricated after every 25 hours of operation; however, lubricate more frequently when conditions are dusty or sandy.

1. Wipe grease fittings on spindles and wheels (Fig. 19, 20) with a clean rag. If there is paint on front of fittings, scrape it off.

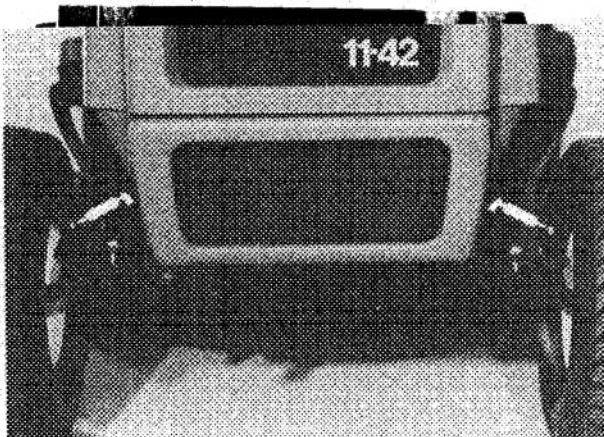


Figure 19

2. Lubricate both axle spindles w/No. 2 general purpose grease (Fig. 19). Continue to pump grease until it oozes out the spindle. Wipe up any excess grease.

3. Lubricate both front wheels w/No. 2 general purpose grease (Fig. 20). Pump grease gun about four times. Wipe up any excess grease.



Figure 20

LUBRICATE STEERING SHAFT AND PIVOT POINTS

Tools Required: Oil can filled with SAE 10 engine oil or a pressurized can of spray lubricant similar to WD-40.

Lubricate the steering shaft and pivot points every 25 hours with a few drops of SAE 10 oil or WD-40 spray lubricant (Fig. 21). Turn the front wheels fully to the left to position the lower follower assembly below the fuel tank to make it more easily accessible.

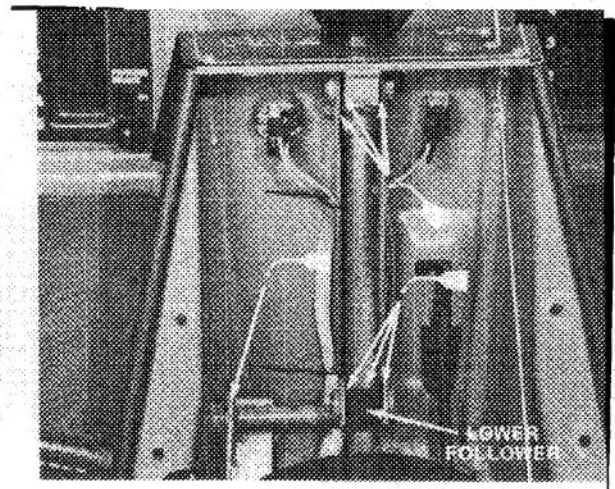


Figure 21

MAINTENANCE

Note: The fuel tank has been removed in Figure 21 in order to clarify the points needing lubrication. The tank does not have to be removed to lubricate the steering assembly.

SERVICING AIR CLEANER

Tools Required: Solution of liquid soap detergent and water, clean rag, engine oil, and medium blade screwdriver.

The air cleaner element must be cleaned after every 25 hours engine operation if engine is operated in clean air conditions. However, element must be cleaned every few hours if operating conditions are extremely dusty or sandy.

1. Open the hood and remove the high tension wire from the spark plug.
2. Remove two screws and lift complete air cleaner assembly off carburetor (Fig. 22).

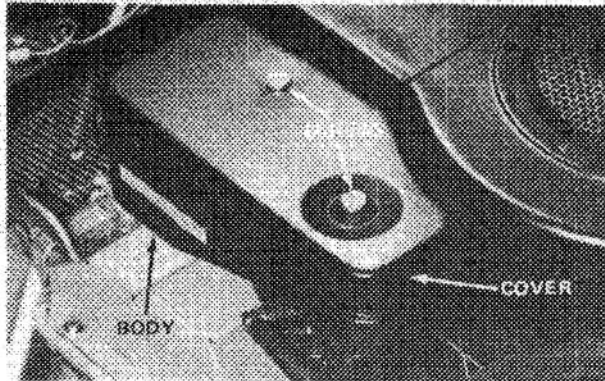


Figure 22

3. Remove cover and screen from foam element. Remove spacers from element and element from body. Examine element for dirt or discoloration (Fig. 23) and clean if necessary.

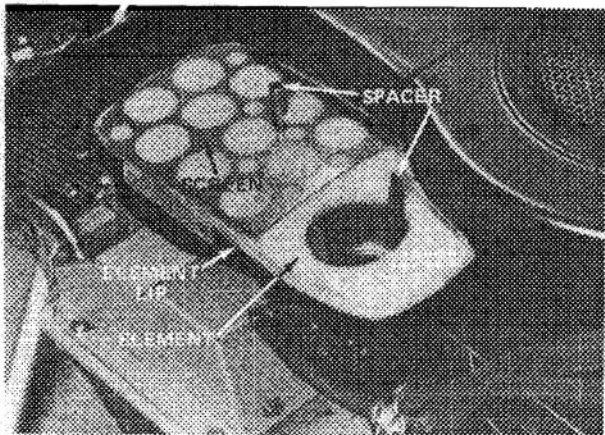


Figure 23

4. A. Wash foam element in solution of liquid detergent and water to remove dirt.
B. Wrap the element in cloth and squeeze it dry. Do not twist the element or it may tear.
C. Apply approximately 5 teaspoons of oil to the element, work the oil in until the whole element is impregnated and squeeze the element to remove the excess oil.
D. Assemble the air cleaner assembly, mount it on the carburetor and secure it in place with the screws.

Note: When assembling make certain the lip of the foam element extends over the edge of the air cleaner body so it will form a protective seal.

IMPORTANT: Always operate engine with air cleaner element in place or engine damage will result.

CHANGING CRANKCASE OIL

Tools Required: Clean rag, 7/16 inch open end wrench, shallow oil drain pan, and funnel.

1. Check level of oil before starting engine and after every 5 hours of operation. Maintain oil level at FULL mark on dipstick.

To check level of oil:

- A. Position rider on level surface.
B. Unscrew dipstick and wipe oil off.
C. Screw dipstick fully in to filler neck; then remove it and check oil level on dipstick. If level is low, add only enough oil to raise level to FULL mark. Adding too much oil could cause engine damage.
D. Screw dipstick back into filler neck.
2. Change oil after first 5 hours of operation; every 25 hours thereafter. Change oil more frequently when operating conditions are extremely dusty or dirty.

To change oil:

- A. Position rider on level surface. Start and run engine for a period to warm the oil.
B. Turn engine off and place drain pan below drain plug (Fig. 24). Remove drain plug and allow all oil to flow into drain pan. Install drain plug after oil stops flowing.

MAINTENANCE

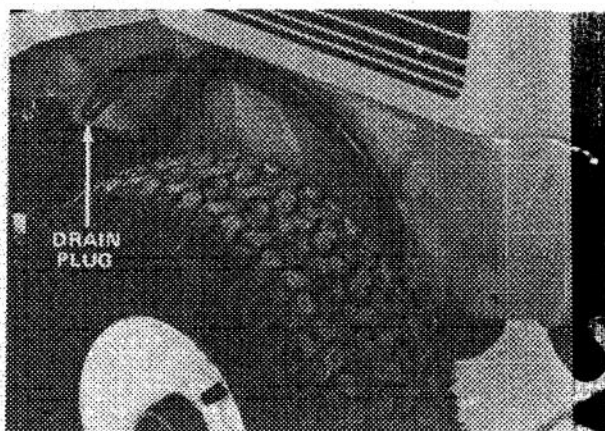


Figure 24

C. Open hood, unscrew and remove dipstick from oil fill tube.

D. Insert a funnel into the tube and slowly add 48 ounces (1.42 l) of engine oil into the crankcase. Use a high quality detergent oil classified "For Service SC, SD, SE or MS". Oil viscosity (weight) must be selected according to anticipated ambient temperature.

- Above +40° (+4° C) — Use SAE 30; 10W-30 and 10W-40 substitutes.
- Below +40° F (+4° C) — Use SAE 5W-20 or 5W-30; SAE 10 or 10W-30 as substitutes.
- Below 0° F (-18° C) — Use SAE 10 or 10W-30 diluted 10% with kerosene.

FUEL FILTER REPLACEMENT

Tools Required: Hose clamp pliers, drain pan.

An in-line filter is incorporated into the fuel line between the fuel tank and carburetor (Fig. 25). Use the following procedures should replacement become necessary:

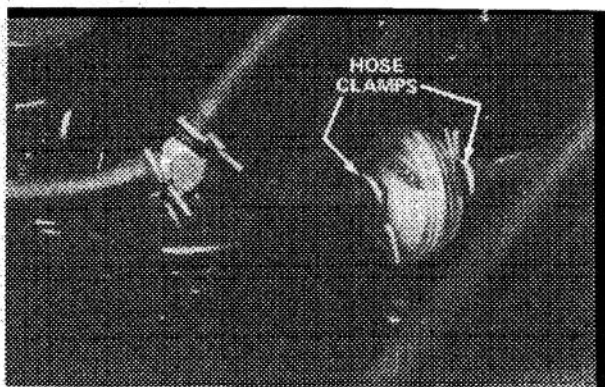


Figure 25

1. Open the hood.
2. Loosen the hose clamp on the carburetor side of filter and remove the fuel line from the filter.
3. Place a drain pan under filter, loosen the remaining hose clamp and remove filter.



CAUTION

Since gasoline is highly flammable, drain it outdoors and make sure engine is cool to prevent a potential fire hazard. Wipe up any gasoline that may have spilled. Do not drain gasoline near any open flame or where gasoline fumes may be ignited by a spark. Do not smoke a cigar, cigarette, or a pipe when handling gasoline.

4. Install the new filter with arrow on the filter body pointing towards the carburetor.

REPLACING SPARK PLUG

Tools Required: 3/4-Inch Spark Plug Socket, Spark Plug Gapping Tool, and Clean Rag.

Since air gap between center and side electrodes of the spark plug increases gradually during normal operation of the engine, check condition of electrodes after every 25 operating hours. Recommended air gap is 0.030 of an inch (0.76 mm). Correct spark plug to use is:

Champion RCJ-8 or Autolite AR7N.

Note: The spark plug usually lasts a long time; however, the plug should be removed and checked whenever the engine malfunctions.

1. Open the hood.
2. Clean area around spark plug so foreign matter cannot fall into cylinder when spark plug is removed.
3. Pull high tension wire off spark plug and remove plug from cylinder head (Fig. 26).
4. Check condition of side electrode, center electrode, and center electrode insulator to assure there is no damage.

IMPORTANT: A cracked, fouled, dirty or defective spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush

MAINTENANCE

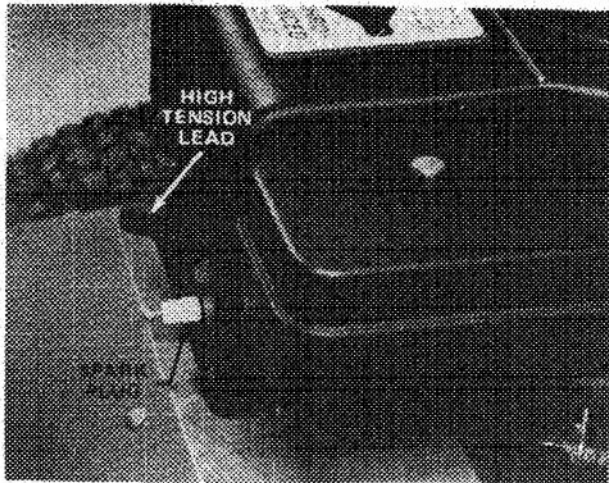


Figure 26

because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

5. Set air gap between center and side electrodes at 0.030 of an inch (0.762 mm) (Fig. 27). Install correctly gapped spark plug w/gasket seal, and tighten plug to 15 ft-lb (20.4 N·m). If torque wrench is not used, tighten plug firmly.

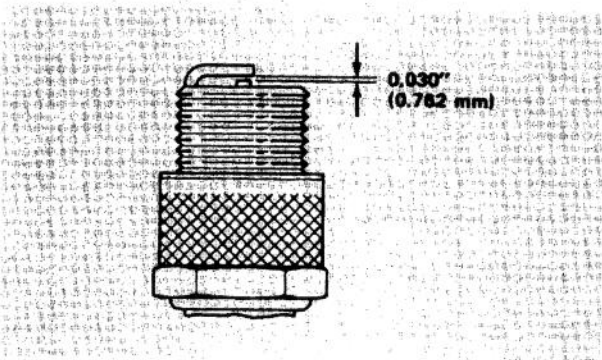


Figure 27

6. Push high tension wire onto spark plug but do not leave key in the ignition. This will prevent accidental starting when mower is being stored between use periods. Keep key in memorable place so it is not lost.

ADJUSTING THROTTLE-CHOKE CONTROL

Tools Required: Medium blade screwdriver.

Proper choke and stop switch operation is dependent upon proper adjustment of remote controls. Before adjusting the carburetor, assure the throttle-choke control is operating properly.

1. Open the hood, remove the screws holding air cleaner in place and lift complete air cleaner assembly off carburetor (Fig. 28).

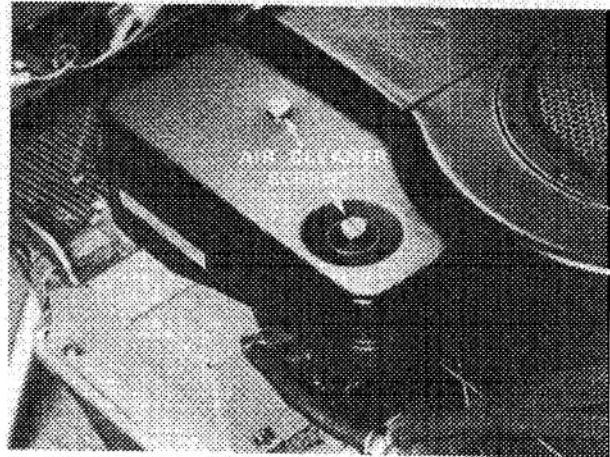


Figure 28

2. Move remote control lever to CHOKE position and check the position of the choke butterfly; it should be fully closed (Fig. 29).

3. Move remote control lever to FAST position. The butterfly should be in the fully open position (Fig. 29).

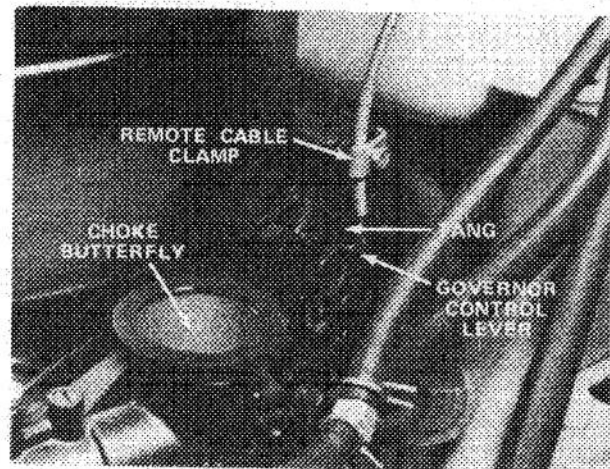


Figure 29

4. If the control lever is positioned as described in steps 2 and 3, replace the air cleaner assembly and continue operation.

If either the choke butterfly does not close or is not fully open in the FAST position, adjust the remote control lever as follows:

1. Place remote control lever in FAST position.

MAINTENANCE

2. Check the relationship between the governor control lever and the tang on the governor control plate. The top edge of the lever should line up with the bottom edge of the tang (Fig. 29).

3. Loosen the remote cable clamp screw (Fig. 29) and move the control cable casing and wire until the governor lever is properly aligned with the tang.

4. Tighten the cable clamp and assemble the air cleaner assembly to the carburetor.

ADJUSTING CARBURETOR

Tools Required: Medium Blade Screwdriver

The carburetor has been set at the factory, but an occasional adjustment may be required. However, do not make unnecessary carburetor adjustments because factory settings are usually correct. An adjustment may be required to compensate for differences in fuel, temperature and altitude.

IMPORTANT: Before the carburetor is adjusted, throttle control must be checked for proper operation: refer to Adjusting Throttle/Choke Control, page 18.

1. Needle Valve (Fig. 30) — Close valve by gently rotating it clockwise.

IMPORTANT: Do not close the needle valve too tight because the valve and seat in carburetor will likely be damaged.

2. Rotate — open — the needle valve 2 turns counterclockwise (Fig. 30).

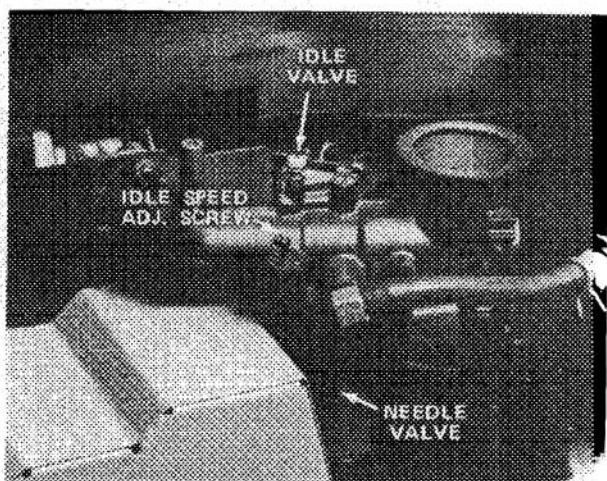


Figure 30

Note: The needle valve setting is an approximate; however, the setting will allow engine to be started so carburetor can be fine tuned — steps 3-9.



WARNING

Engine must be running so final adjustment of the carburetor can be performed. To guard against possible personal injury, move blade control into DISENGAGE detent, shift into neutral, and engage parking brake. Keep hands, feet, face, and other parts of the body away from the cutter blade, underside of mower housing, discharge area, and any rotating engine parts.

3. Start engine and let it warm up for approximately two minutes. Next, move throttle control into FAST detent.

IMPORTANT: Air cleaner must be installed on the engine whenever high speed is being adjusted. The air cleaner mounting screw must also be installed when engine is run. Fuel tank must be half full of gasoline to get best carburetor adjustment.

4. Rotate needle valve (Fig. 30) clockwise, 1/8 turn at a time, until engine starts to lose speed. Let engine react to each 1/8 turn setting.

5. Rotate needle valve (Fig. 30) counterclockwise — out — 1/8 turn at a time, until engine first runs rough. Let engine react to each 1/8 turn setting.

6. Rotate needle valve (Fig. 30) clockwise — in — very slowly until engine starts to run smoothly. This setting, under no load, may be slightly rich; however, the slightly rich setting will assure proper operation when engine is under load.

7. Move throttle control to SLOW. Next, rotate idle adjusting screw (Fig. 30) until engine speed is 1750 rpm.

Note: Rotate idle adjusting screw clockwise to increase idle rpm. By contrast, rotate idle adjusting screw counterclockwise to decrease idle rpm.

8. Turn idle valve in (lean) and out (rich) slowly until engine idles smoothly. Reset idle speed to 1750 rpm.

9. Check carburetor adjustment by quickly moving throttle control from SLOW to FAST. Engine speed should increase without hesitation. If engine tends to stall or die out, rotate needle valve 1/8 turn counterclockwise until engine accelerates smoothly.

MAINTENANCE

10. After carburetor is adjusted, shut engine off. If mower will not be used immediately, remove key from switch to prevent possibility of accidental starting. Keep key in a memorable place so it is not lost accidentally.

SERVICING CUTTER BLADES

Tools Required: Pliers, Pin Punch, Rag or thickly padded Glove, 15/16 inch Socket Wrench and Handle, File and Blade Balancer.



CAUTION

Stop the machine and examine the cutter blades for damage and loss of torque of the nut securing the blade to the spindle shaft whenever the blade strikes an immovable object. Open the hood and disconnect the spark plug lead, engage the parking brake and disengage the cutter blades prior to examining the blades. If blades are cracked, badly bent or twisted or severely eroded (Fig. 35), replace the blades. Always use genuine Toro replacement blades to assure safety and optimum performance. **NEVER USE WILL FIT REPLACEMENT BLADES.**

To service blade:

1. Insure engine is shut off. Open the hood and remove the high tension wire from spark plug.
2. With height-of-cut lever in transport position, set cutting unit deck wheels in center position (Fig. 31).

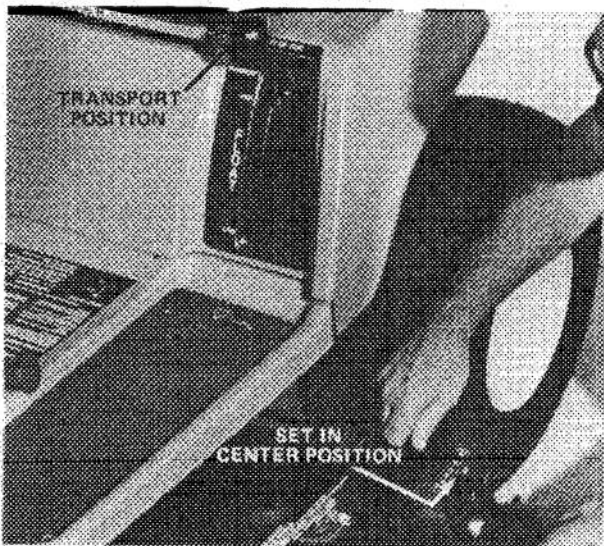


Figure 31

3. Lower cutting unit to level surface.



CAUTION

Suspension bars spring loaded use caution when removing deck.

4. Remove cotter pin, flat washer and tension rod from each rear clevis pin (Fig. 32).

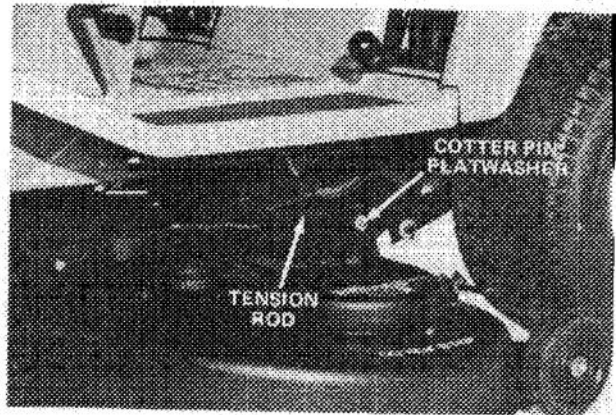


Figure 32

5. Remove right rear clevis pin.
6. Insure height-of-cut lever is held down in lowest height-of-cut position. Remove left rear clevis pin by pushing it out with a pin punch (Fig. 33).

Note: A narrow wooden block may be placed in height-of-cut slot to hold lever down.

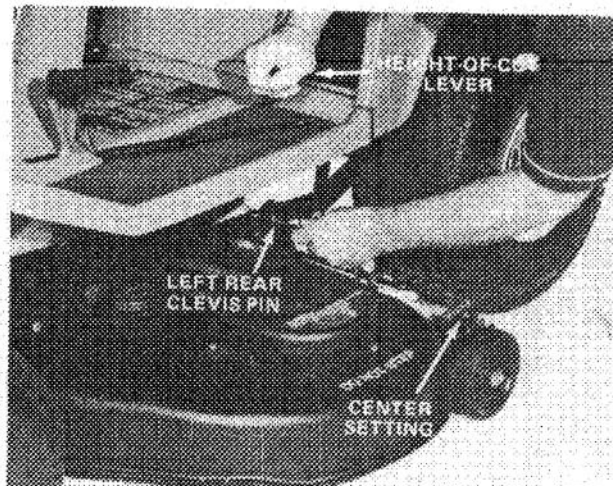


Figure 33

7. Push down on height-of-cut lever and slide deck forward until clevis pins, securing front deck hanger brackets to suspension bar clear suspension bars.

MAINTENANCE

8. Remove cutting unit drive belt.
9. Slide deck out from under tractor.
10. Turn cutting unit on its side, grasp the end of a blade with a rag or thickly padded glove; then remove the locknut and blade (Fig. 34).

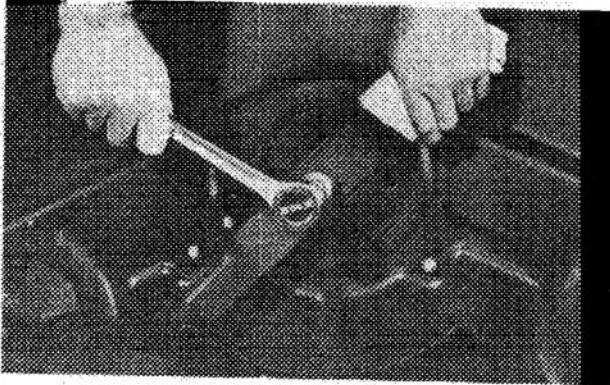


Figure 34

11. Examine cutting ends of the blades carefully, especially where the flat and curved parts of the blades meet (Fig. 35A). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blades, check the blades before using the mower. If wear is noticed (Fig. 35B), replace the blades.

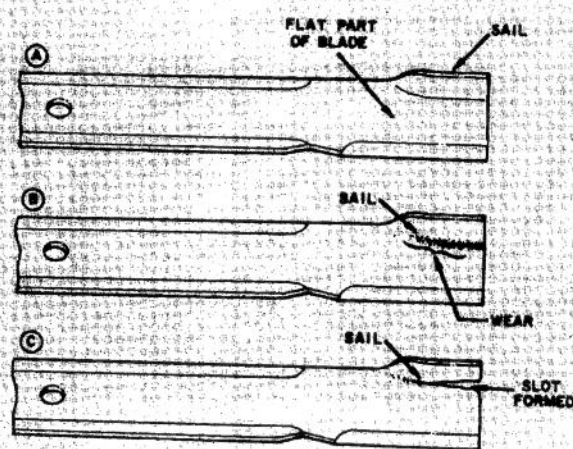


Figure 35



CAUTION

If blade is allowed to wear, a slot will form between the sail and flat part of the blade. (Fig. 35C). Eventually a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to yourself or bystander.

Note: Since lock nut is tightened to 50-60 ft/lb (68-81 N·m) at the factory, it may be difficult to remove the nut. If nut cannot be removed, contact an Authorized TORO Service Dealer for assistance.

12. Using a file, sharpen cutting edge at both ends of the blade (Fig. 36).

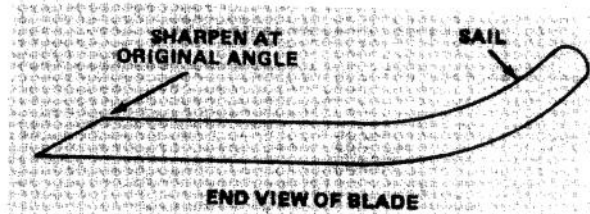


Figure 36

13. Check balance of blade by putting it on a blade balancer. (An inexpensive balancer can be purchased at a hardware store). A balanced blade will stay in a horizontal position on the balancer. By contrast, a blade that is not balanced will settle to the heavy side. If blade is not balanced, file some material off heavy cutting edge end of blade. Continue to check the blade until it is balanced.

14. In sequence, install blade, and lock nut (Fig. 35). Tighten lock nut to 50-60 ft-lb (68-81 N·m).

IMPORTANT: Make sure cutting edge of blade is away from top of mower housing (Fig. 35). While lock nut is tightened, move blade slightly so it seats between sides of blade retainer.

15. Mount the cutting unit to the rider. Refer to Install Cutting Unit, page 9 for proper procedures.

CLEANING UNDERSIDE OF MOWER HOUSING

Tools Required: Wooden scraper, garden hose and paste wax.

To assure a good quality-of-cut and efficient grass bagging, underside of mower housing and inside of discharge area must be kept clean. Whenever the mower is removed, clean out debris with a scraper and hose and apply a coat of paste wax on inside of mower housing and grass deflector. This will retard corrosion and prevent grass and dirt from sticking on inside of housing.

REPLACING BLADE DRIVE BELT

Tools Required: 1/2 inch wrench, pliers and medium blade screwdriver.

1. Remove the cutting unit. Refer to Servicing Cutter Blade, steps 1 through 9, page 20.

MAINTENANCE

2. Remove screws securing belt shields to deck and remove shields (Fig. 37).



CAUTION

Idler arm and pulley are spring loaded; use caution when loosening belt.

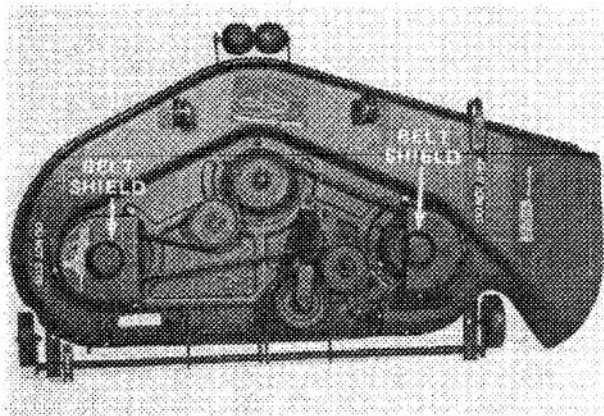


Figure 37

3. Roll belt off idler pulley to relieve tension on belt.
4. Remove old belt.
5. Install new belt around spindle pulleys and idler pulley.
6. Reinstall belt shields to cutting deck.
7. Reinstall cutting unit to tractor: refer to Install Cutting Unit, page 9.

REPLACING TRACTION BELT

Tools Required: 5/8 inch Socket Wrench and Handle, Wheel Blocks.

1. Remove the cutting unit. Refer to Servicing Cutter Blade, steps 1 through 9, page 20.
2. Insure the parking brake is locked and place blocks in front of and behind one rear wheel. Insure the blade control lever is in DISENGAGE position.
3. Reach under the rider frame just forward of the rear wheels, grasp the idler pulley assembly, (Fig. 38) pull on it to relieve tension on the belt and remove the belt from the pulley. Then, remove the belt from the belt guide (Fig. 38).

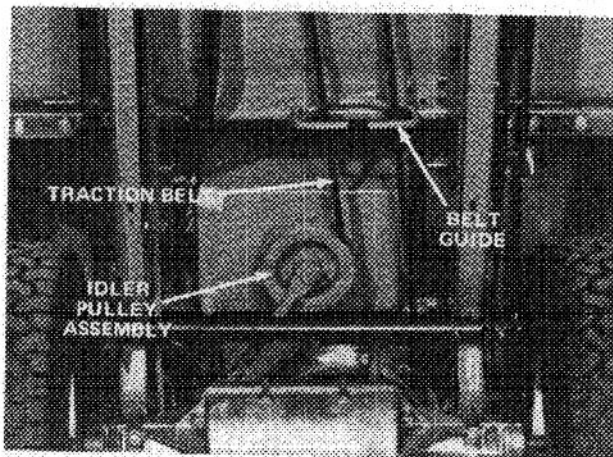


Figure 38



CAUTION

The idler pulley arm is under heavy spring tension. Hold the arm firmly while allowing the arm to return to its relieved position.

4. Remove the bolt securing the cutter blade clutch assembly (Fig. 39) at the front of the machine and remove the assembly.

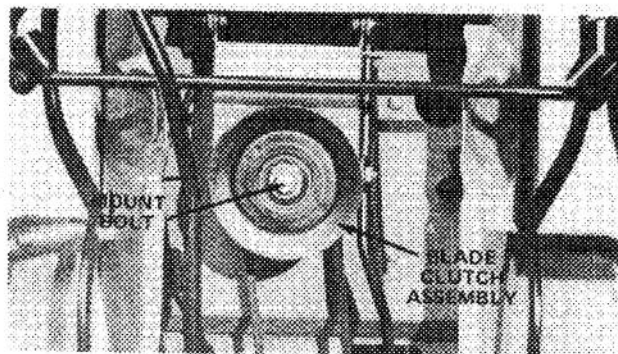
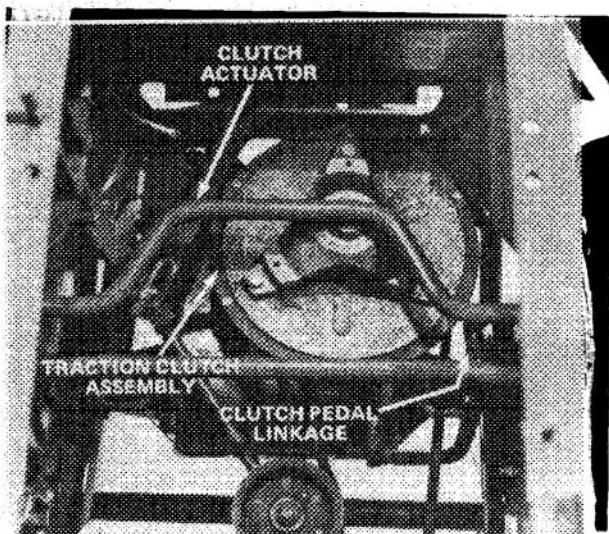


Figure 39

5. Slip the belt off the engine pulley, then remove it from the traction clutch pulley on top of the transmission at the rear of the machine.
6. Slide the belt between the top of the traction clutch assembly and the clutch actuator bar (Fig. 40).

Note: There may not be enough clearance between the actuator and clutch to remove the belt. Disconnect the clutch pedal linkage to gain more clearance, if necessary.

MAINTENANCE



7. Assemble the new belt to the machine by reversing the disassembly procedures. Apply grease or "NEVER SEEZE" to crankshaft before installing blade clutch. Torque the mount bolt for the blade clutch assembly to 60 ft-lb (81 N·m).

Note: After belt is installed on the upper pulley of the blade clutch assembly, engage the blade control lever to ease assembly of the clutch assembly to the shaft. Disengage the blade control lever after assembly is completed.

BRAKE ADJUSTMENT

Tools Required: Two 1/2 inch Open End Wrenches, Wheel Blocks.

The disc brake assembly is a coaster type brake, therefore, the traction clutch pedal must be actuated in conjunction with the brake pedal to achieve maximum brake effectiveness. Periodically adjust the brake assembly to maintain the brake pedal free travel of 1/2 inch (13 mm).

1. Place blocks on each side of one rear wheel and disengage parking brake.
2. Loosen the locknuts at right hand side of transmission (Fig. 41).



3. Rotate the inner locknut clockwise approximately 1/4 turn and check amount of free travel of brake pedal. Continue to adjust nut until brake pedal free travel is 1/2 inch (13 mm).

4. Rotate the outer locknut clockwise until it contacts the inner locknut, hold the inner locknut with a wrench to prevent it from turning and tighten the outer locknut against it to secure the adjustment.

WHEEL REMOVAL

Tools Required: Pry Bar, Pliers, 9/16 inch Socket Wrench, Floor Jack, Wheel Blocks.

Front Wheels:

1. Assure parking brake is locked and block one rear wheel.
2. Place jack under front axle and raise wheel off floor.
3. Use a pry bar to lever the hub cap off the axle (Fig. 42).

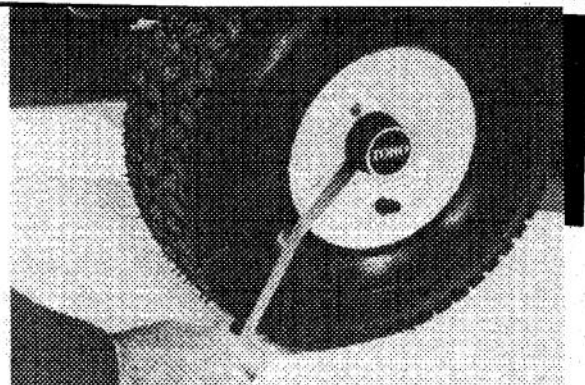


Figure 42

4. Remove the cotter pin and flat washer (Fig. 43) and remove the wheel from the axle.

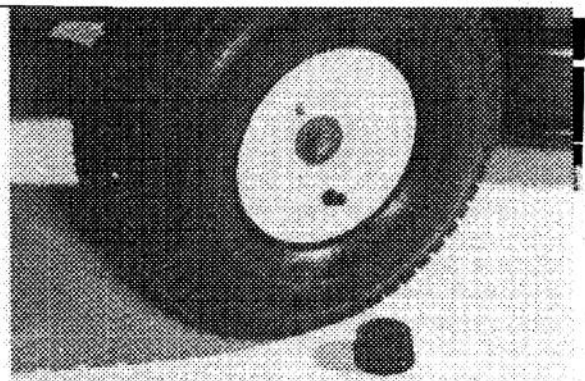


Figure 43

5. Assemble in reverse order.

MAINTENANCE

Rear Wheels:

1. Assure parking brake is locked and block the front wheels.
2. Place a block of wood between jack and rear axle and raise wheel off floor.

IMPORTANT: Place jack as close as possible to inside of wheel to prevent damage to transmission.

3. Use a prise bar to lever the hub cap off the axle.
4. Remove capscrew securing wheel to axle (Fig. 44).

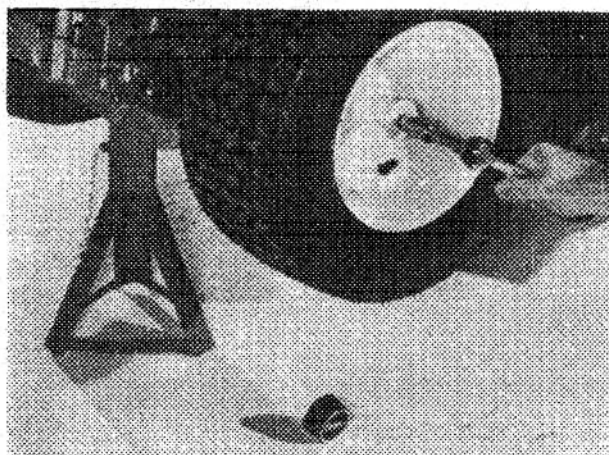


Figure 44

5. Assemble in reverse order of the disassembly procedures. Use grease or "NEVER SEEZE" on axle before mounting wheel. Insure woodruff key is installed. Tighten the mounting capscrew until the wheel hub bottoms out on the end of the axle. Torque mounting capscrew to 30 ft-lbs. (40.7 N·m)

Note: When installing right rear wheel make sure spacer is between end of axle and wheel hub.

CHECKING SAFETY INTERLOCK SYSTEM

The purpose of the safety interlock system is to prevent the engine from cranking or starting unless the operator is on the seat, the transmission shifted into neutral and the cutting unit blade control lever is in the Disengage position. In addition, the engine will stop, because of a seat switch, if the operator gets off the seat when the cutter blade drive control is engaged or transmission is in gear. To assure interlock system is functioning correctly, check it before each use of the rider. Have the safety interlock switches replaced by an Authorized TORO Service Dealer every two years to assure safe operation of the rider.

1. Sit on seat and move shift control into neutral position.

2. Move blade engagement lever (Fig. 45) to the ENGAGE position. Rotate the ignition key to START. Engine should not crank. If engine cranks, the interlock system is malfunctioning and it must be repaired by an Authorized TORO Service Dealer. If engine does not crank, proceed to step 3.

3. Move blade engagement lever to DISENGAGE position (Fig. 45) and place shift control into one of the gear selections (Fig. 46). Rotate the ignition key to START. Engine should not crank; but if it does, the interlock system is malfunctioning and it must be repaired by an Authorized TORO Service Dealer. If engine does not crank, proceed to step 4.

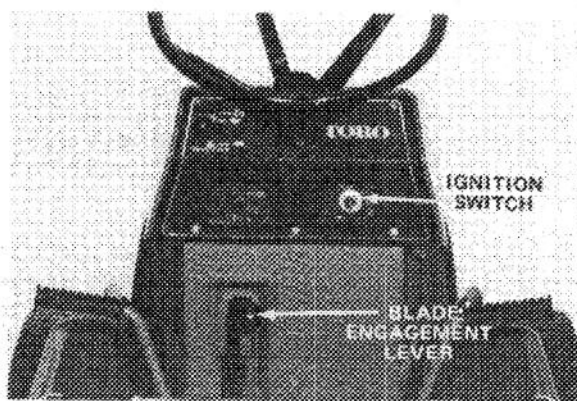


Figure 45

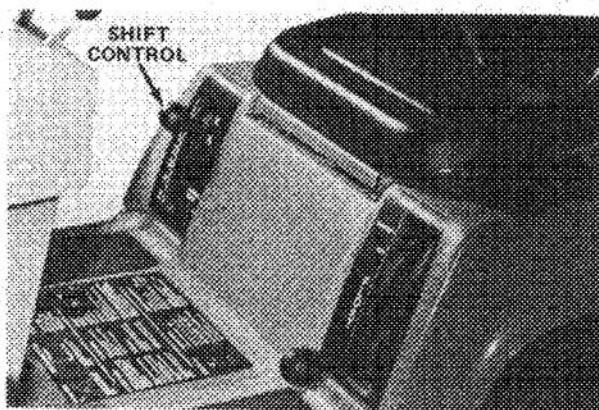


Figure 46

4. Move shift control (Fig. 46) into neutral and blade engagement lever (Fig. 45) to DISENGAGE position. Engage the parking brake to prevent movement of the rider. Rotate ignition key to START position and start engine. Place the blade engagement lever in ENGAGE position and carefully raise off the seat: the engine should stop running. If engine does not stop running, shut engine off and have interlock system repaired by an

MAINTENANCE

Authorized TORO Service Dealer. If engine shuts off when you raised off seat, the interlock system is functioning correctly.



WARNING

Do not operate the rider if the interlock system is malfunctioning because it is a safety device, designed for protection.

BATTERY CHARGING SYSTEM

An AGC 7-1/2 Amp Fuse (Fig. 47) is incorporated in the charging circuit as a protective device against alternator damage caused by possible "short-outs" in the wiring harness. If the battery lacks power to crank engine, raise the hood, separate the fuse block (Fig. 36) and check the fuse. If fuse is defective, replace it. If replacement fuse also fails, have the electrical system checked by an Authorized TORO Service Dealer. Also have electrical system checked if the fuse is not defective but the battery lacks power.

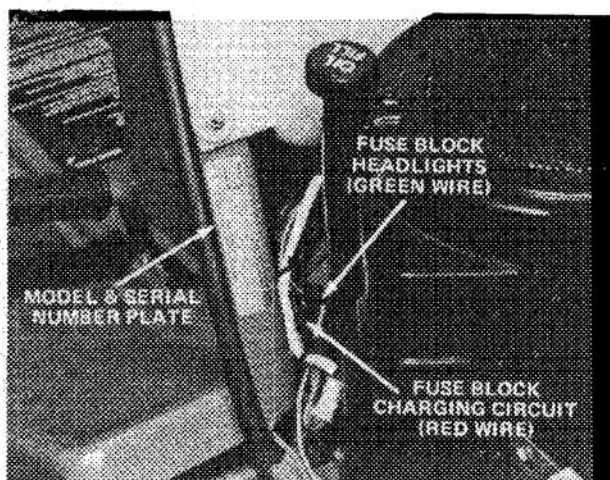


Figure 47

HEADLIGHT CIRCUIT

Power for the headlights on the 11-42 Rider is provided by AC current from the engine alternator; therefore, the headlights will not function unless the engine is operating. An AGC 7-1/2 Amp Fuse (Fig. 47) is incorporated in the headlight circuit as a protective device against alternator damage caused by possible "short-outs" in the wiring harness. If the headlights are inoperative, raise hood, separate fuse block and check fuse. If fuse is defective, check wiring for "short-outs". If none can be ascertained, contact your Authorized TORO Service Dealer for assistance.

PREPARING MOWER FOR STORAGE

1. Drain gasoline from fuel tank and fuel line; refer to Fuel Filter Replacement, page 17. Next, start engine and let it run at idle speed until it stops because all gasoline is used. Replace the fuel filter.

Note: All gasoline must be expended to prevent gum-like varnish deposits from forming in the carburetor, fuel line, and fuel tank. Such deposits, if allowed to form, will cause starting problems and poor engine operation.

2. Pull high tension wire off spark plug and clean area around the plug so foreign matter cannot fall into cylinder when plug is removed. Next, remove plug from cylinder head and pour two tablespoons of engine oil into spark plug hole. Rotate engine by hand slowly to distribute oil on inside of cylinder. Then reinstall spark plug and tighten it to 15 ft-lb. If torque wrench is not used, tighten plug firmly. **DO NOT INSTALL HIGH TENSION WIRE ON SPARK PLUG.**

3. Drain oil from crankcase; refer to Changing Crankcase Oil, page 16.

4. Clean dirt and chaff from outside of cylinder, cylinder head fins, and blower housing. Also, remove grass clippings, dirt, and grime from external parts of rider, engine, shrouding, and top of mower housing.

5. Clean underside of mower housing; refer to Cleaning Underside of Mower Housing, page 21.

6. Check condition of blades; refer to Servicing Cutter Blade, page 20.

7. Check and tighten all capscrews, bolts, screws, nuts, and mating parts. If any part is damaged, repair or replace it.

8. Lubricate wheels and spindles with grease; refer to Grease Front Axle Spindles and Wheels, page 15.

9. Wash air cleaner element in a liquid soap detergent and water; refer to Servicing Air Cleaner, page 16.

10. "Touch up" all rusted or chipped paint surfaces. Make sure to sand affected area before painting.

Note: TORO Re-Kote "touch-up" paint is available from any Authorized TORO Service Dealer. The spray paint dries in minutes to a glossy, factory-finish.

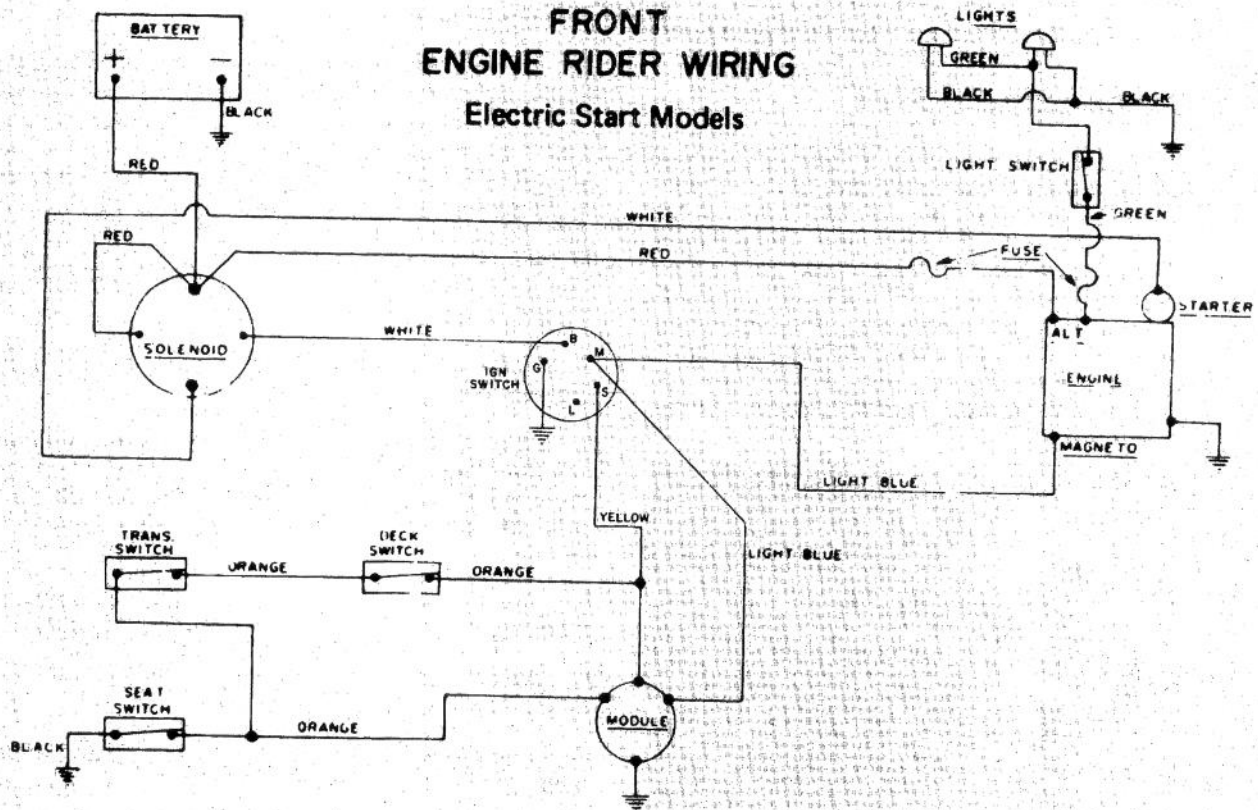
11. Remove the battery from the machine, recharge it and store it in a cool, dry place. Recharge it every 30 days to prevent it from discharging. Refer to Activating and Charging Battery, page 10.

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12. Place blocks under the front and rear axles to raise the wheels off floor and prevent tire deterioration.

13. Store the rider in a clean, dry place. Remove key from ignition switch and keep it in a memorable place. Cover the rider to protect it and keep it clean.

WIRING DIAGRAM



TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine does not start, starts hard, loses power, or fails to keep running.	<ol style="list-style-type: none"> 1. Gas tank is empty. 2. Transmission is in gear. 3. Blade control is in ENGAGE detent. 4. Spark plug is loose. 5. High tension wire is loose or disconnected from spark plug. 6. Spark plug gap is incorrect. 7. Spark plug is pitted, fouled, or defective in some other way. 8. Wrong spark plug is used. 9. Electrical connections are loose. 10. Carburetor is adjusted incorrectly. 11. Air cleaner is dirty. 12. Vent hole in fuel tank is plugged. 13. Plugged fuel filter. 14. Dirt, water, or stale fuel in fuel system. 15. Dead battery. 16. Defective points, condenser, ignition coil, or ignition switch. 17. Module or switch is defective. 	<ol style="list-style-type: none"> 1. Fill fuel tank with gasoline. 2. Shift transmission into neutral. 3. Move blade control into DISENGAGE detent. 4. Tighten plug to 15 ft-lb (20.4 N-m). 5. Install high tension wire on spark plug. 6. Set gap between electrodes at 0.030 of an inch (0.762 mm). 7. Install new correctly gapped spark plug. 8. Install correct spark plug. 9. Check electrical system to assure good contact. 10. Adjust the carburetor. 11. Clean the air cleaner element. 12. Inspect and open vent. 13. Refer to Fuel Filter Replacement, page 16. 14. Have rider serviced by Authorized TORO Service Dealer. 15. Have rider serviced by Authorized TORO Service Dealer.
Engine does not idle or idles poorly.	<ol style="list-style-type: none"> 1. Air cleaner is dirty. 2. Oil level in crankcase is low. 3. Cooling fins and air passages under engine blower housing are plugged. 4. Idle speed is too low or high speed mixture is incorrect. 5. Plugged fuel filter. 6. Dirt, water, or stale fuel is in fuel system. 7. Vent hole in fuel tank is plugged. 8. Spark plug is pitted, fouled or defective in some other way. 	<ol style="list-style-type: none"> 1. Clean air cleaner element. 2. Add oil to crankcase. 3. Remove obstruction from cooling fins and air passages. 4. Adjust the carburetor. 5. Refer to Fuel Filter Replacement, page 16. 6. Have rider serviced by Authorized TORO Service Dealer. 7. Clean fuel tank vent. 8. Install new correctly gapped spark plug.

TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine loses power	<ol style="list-style-type: none"> 1. Oil level in crankcase is low. 2. Cooling fins and air passages under engine blower housing are plugged. 3. Engine load is excessive. 4. Air cleaner is dirty. 5. Plugged fuel filter. 6. Dirt or water is in fuel system. 7. Carburetor is adjusted incorrectly. 8. Spark plug is pitted, fouled or defective in some other way. 	<ol style="list-style-type: none"> 1. Add oil to crankcase. 2. Remove obstruction from cooling fins and air passages. 3. Shift into lower gear to reduce load. 4. Clean air cleaner element. 5. Refer to Fuel Filter Replacement, page 16. 6. Have rider serviced by Authorized TORO Service Dealer. 7. Adjust the carburetor. 8. Install new correctly gapped spark plug.
Engine over heats	<ol style="list-style-type: none"> 1. Cooling fins and air passages under engine blower housing are plugged. 2. Carburetor is adjusted incorrectly. 3. Oil level in crankcase is low. 4. Engine load is excessive. 	<ol style="list-style-type: none"> 1. Remove obstruction from cooling fins and air passages. 2. Adjust the carburetor. 3. Add oil to crankcase. 4. Shift into lower gear to reduce load.
Rider vibrates abnormally.	<ol style="list-style-type: none"> 1. Engine mounting bolts are loose. 2. Loose blade clutch pulley, idler pulley or blade pulley. 3. Cutter blade is unbalanced. 4. Lock nut holding blade is loose. 5. Drive pulley is damaged. 	<ol style="list-style-type: none"> 1. Tighten engine mounting bolts. 2. Tighten the appropriate pulley. 3. Install new cutter blade. 4. Tighten nut to 50-60 ft-lb (68-81 N·m). 5. Replace drive pulley.
Blades do not rotate	<ol style="list-style-type: none"> 1. Blade drive belt is worn, loose or broken. 2. Blade drive belt is off pulley. 3. Faulty blade clutch assembly. 	<ol style="list-style-type: none"> 1. Install new blade drive belt. 2. Install blade drive belt. 3. Have rider serviced by Authorized TORO Service Dealer.
Rider does not drive	<ol style="list-style-type: none"> 1. Traction drive belt is worn, loose or broken. 2. Traction drive belt is off pulley. 3. Transmission does not shift gear. 4. Damaged clutch. 	<ol style="list-style-type: none"> 1. Install new traction drive belt. 2. Install traction drive belt. 3, 4. Have rider serviced by Authorized TORO Service Dealer.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The TORO Front Engine Rider has two identification numbers: a model number and a serial number. The two numbers are stamped on a decal that is located under the hood to the right of steering shaft. See page 25, Fig. 47.

In any correspondence concerning the rider, supply model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an Authorized TORO Service Dealer, supply the following information:

1. Model and serial numbers of the rider.
2. Part number, description and quantity of part(s) desired.

Note: Do not order by reference number if a parts catalog is being used; use the PART NUMBER.

MAINTENANCE RECORD

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MAINTENANCE RECORD

[illegible]

MAINTENANCE RECORD

[illegible]

The Toro Promise

A ONE YEAR LIMITED WARRANTY

The Toro Company promises to repair your TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:

Residential Product 1 Year
Residential Products Used Commercially . . . 45 Days

The costs of parts and labor are included, but the customer pays the transportation costs. Just return any residential product to an Authorized TORO Service Dealer or TORO Distributor.

Should you feel your TORO Product is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact any Authorized TORO Service Dealer, TORO Master Service Dealer, or TORO Distributor (the Yellow Pages of your telephone directory is a good reference source).
2. He will either instruct you to return the product to him or recommend another Authorized TORO Service outlet which might be more convenient.
3. Bring the product along with your original sales slip, or other evidence of purchase date, to the service dealer.
4. The servicing dealer will inspect the unit, advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without extra charge to you.

If for any reason you are dissatisfied with the dealer's analysis of the defect or the service performed, you may contact us.

Write:

TORO Consumer Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Service Dealer is the purchaser's sole remedy for any defect.

THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper operating condition is the responsibility of the owner.

All warranty repairs reimbursable under The Toro Promise must be performed by an Authorized TORO Service Dealer using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Service Account are not reimbursable under The Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

THE TORO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT INCLUDING ANY COST OR EXPENSE OF PROVIDING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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

COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact

the TORO importer. If all other remedies fail, you may contact us at The Toro Company.

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