FORM NO. 3312-385

TORO®

MODELS 57300 – 4000001 & UP
MODELS 57360 – 4000001 & UP

OPERATOR'S MANUAL

8 and 11 hp (6 and 8.2 KW) LAWN TRACTOR

ELECTRIC START

The FRONT ENGINE RIDER meets or exceeds the American National Standards Institute's safety standards for Lawn Tractors; 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 Lawn Tractor 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 of 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
2. Setting Up Instructions
3. Before Operating
4. Operating Instructions
5. Maintenance
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 parts from your local Toro Distributor:

1 Spark Arrester, part no. 36-7880 (8-32 only)
1 Spark Arrester, part no. 36-7890 (11-32 only)

These parts are approved by the United States Department of Agriculture Forestry Service. The approval numbers for the exhaust system are 16361 (8-32) and 16362 (11-32).

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 Lawn Tractor. Keep your TORO all TORO. Buy genuine TORO parts and accessories.

TABLE OF CONTENTS

	Page
Safety Instructions	3-4
Safety and Instruction Decals	5
Specifications	6-7
Loose Parts	7
Setting Up Instructions	8-9
Install Front Wheels	8
Install Steering Wheel Assembly	8
Install Seat	8
Adjusting Seat	9
Install Hitch Plate	9
Before Operating	9-11
Activating and Charging Battery	9
Check Crankcase Oil Level	10
Fill Fuel Tank with Gasoline	11
Check Tire Pressure	11
Controls	11-12
Starting and Stopping Instructions	12-13
To Start and Operate Machine	12
To Stop	12
Break In	12
Using Parking Brake	12
Adjusting Height-of-Cut	12
Operating Instructions	13
Grass Deflector	13
Operating Procedure	13
Grass Cutting Tips	13
Maintenance Interval Chart	14

	Page
Maintenance	14-26
Grease Front Axle Spindles and Wheels	14
Grease Rear Axles	15
Lubricate Steering Shaft and Pivot Points	15
Servicing Air Cleaner	15
Changing Crankcase Oil	16
Fuel Filter Replacement	16
Replacing Spark Plug	17
Adjusting Throttle-Choke Control	17
Adjusting Carburetor	18
Servicing Cutter Blade	19
Install Cutting Unit	20
Cleaning Underside of Mower Housing	21
Replacing Blade Drive Belt	21
Leveling Cutting Unit	22
Replacing Traction Belt	22
Brake Adjustment	23
Wheel Removal	23
Checking Safety Interlock System	24
Battery Charging System	25
Headlight Circuit (11-32 Only)	25
Preparing Mower for Storage	25
Wiring Diagram	26
Troubleshooting	27-28
Identification and Ordering	29
Maintenance Record	29-31
The Toro Promise	Back Cover

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SAFETY INSTRUCTIONS



This safety alert symbol means WARNING or CAUTION – PERSONAL SAFETY INSTRUCTION – Read the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

The TORO LAWN TRACTOR was tested and verified 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 injury, follow these safety instructions.

BEFORE OPERATING

1. Read and understand the contents of this manual before starting and operating the tractor and mower. Become familiar with all controls, and know how to stop the engine and machine quickly. NEVER ALLOW CHILDREN TO OPERATE THE TRACTOR.

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 tractor 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.

   A. Use an approved gasoline container.

   B. Fill tractor fuel tank outdoors. To prevent a potential hazard when filling tank, engine must be cool and not running.

   C. Wipe up any gasoline spills, and install gasoline container cap and tractor fuel tank cap before starting engine.

   D. Do not run engine indoors without adequate ventilation. Exhaust fumes are dangerous and can be deadly.

6. Before attempting to start engine, shift into neutral, move deck engagement switch into DISENGAGE position and lock parking brake. Engine will not start unless gear shift is in neutral, deck engagement switch is in DISENGAGE position, and the operator is on the vehicle seat.

7. Assure interlock system is functioning correctly before each use of the tractor. Have all safety related components checked and safety interlock switches replaced by an Authorized TORO Service Dealer every two years to assure safe operation of the tractor.

WHILE OPERATING

8. Never carry passengers on the tractor.

9. Keep people and pets a safe distance away from the tractor and the area of operation.

10. Start engine when parking brake is set, blade is disengaged, and transmission is in neutral.

11. 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.

12. 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 tractor up the hill and drive forward when descending.

13. Watch out for traffic when crossing or near roads. Always yield the right-of-way.

14. 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 tractor and mower.

15. During operation the grass deflector or complete rear grass catcher assembly must be installed on mower housing and tractor. Move deck engagement switch into DISENGAGE, shift into neutral, set parking brake, and shut engine off before removing the rear grass catcher hopper or unclogging discharge chute or tube. Use a stick to remove any obstruction.

16. When driving from one area to another, crossing a driveway, road, or sidewalk, move deck engagement switch into DISENGAGE and raise

SAFETY INSTRUCTIONS

mower housing to its highest level. This will prevent loose sand, rocks, and other debris from being thrown by the whirling blade.

17. 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.

18. 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.

19. Before leaving the operator's position – on the seat – or leaving tractor unattended, shift transmission into NEUTRAL, apply parking brake, move deck engagement switch into DISENGAGE, rotate ignition key to OFF, and remove key from switch.

20. If the blade strikes a solid object or mower vibrates abnormally, shift transmission into neutral, set parking brake, move deck engagement switch 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 tractor and mower for possible damage, bent blade or other parts. Make all repairs before restarting the engine and operating the mower.

MAINTAINING MOWER

21. Before starting the tractor, or performing any maintenance service and adjustment, shift transmission into neutral, set parking brake, move deck engagement switch 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.

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

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

24. Keep tractor 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).

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

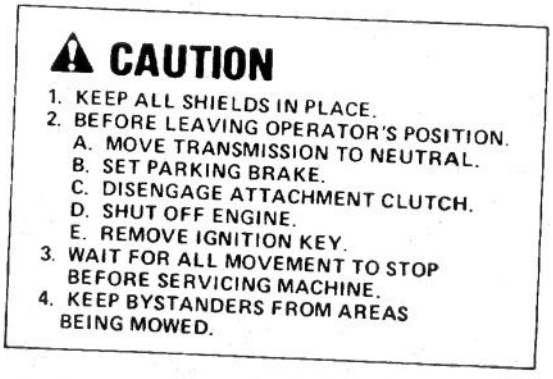
26. Check all components of optional grass catcher, including discharge chute and duct, for wear, damage or deterioration and replace if necessary with genuine TORO parts.

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

28. 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.

29. At the time of manufacture, the tractor conformed to safety standards in effect for lawn tractors. 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.





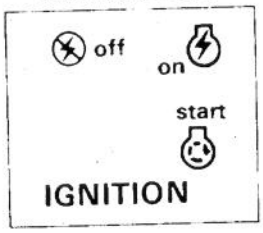
SAFETY AND INSTRUCTION DECALS

The following safety and instruction decals are mounted on the TORO Lawn Tractor. Replace any that become damaged or illegible.

LOWER LEFT SIDE OF DASH PANEL (Part No. 44-5710)



AROUND KEY SWITCH (Part No. 28-2690)



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 DECK IS DISENGAGED. THE ENGINE SHOULD STOP IF THE OPERATOR LEAVES THE SEAT WITH THE TRANSMISSION AND/OR THE DECK ENGAGED. IF INTERLOCK SYSTEM FAILS TO OPERATE AS DESCRIBED SEE 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 DUSTY CONDITIONS. USE A HIGH QUALITY GRADE OF A.P.I. CLASSIFICATION SC, SD, OR SE ENGINE OIL. FOR USE ABOVE 40° F SAE 10W-30, SAE 10W-40 OR USE SAE 30. FOR USE UNDER 40 F USE SAE 5W-20, SAE 5W-30 OR SAE 10W-30. CRANKCASE CAPACITIES: 8 H.P.—36 OZ. 11 H.P.—48 OZ.
3. CLEAN AIR CLEANER ELEMENT EVERY 25 HOURS. WHEN OPERATING IN DUSTY CONDITIONS, CLEAN MORE OFTEN. REMOVE FOAM ELEMENT AND WASH IN SOLUTION OF LIQUID DETERGENT AND WARM WATER AND SQUEEZE DRY. SATURATE ELEMENT WITH FRESH ENGINE OIL AND SQUEEZE TO REMOVE EXCESS OIL (ELEMENT SHOULD BE DAMP WITH OIL).
4. CHECK SPARK PLUG EVERY 25 OPERATING HOURS. RESET GAP TO .030 OR REPLACE SPARK PLUG IF NECESSARY. REPLACE WITH (CHAMPION RCJ-8) OR (AUTOLITE AR7N) SPARK PLUGS.

CHASSIS

1. ADJUST BRAKES AS NECESSARY. LOOSEN OUTER JAM NUT. TIGHTEN INNER JAM NUT ON TRANSMISSION BRAKE LEVER UNTIL BRAKE LEVER HAS 1/2 INCH FREE MOVEMENT BEFORE CALIPERS TIGHTEN ON BRAKE DISC. BRAKE PUCKS SHOULD NOT DRAG ON DISC WHEN BRAKE PEDAL IS RELEASED. TIGHTEN OUTER JAM NUT.
2. GREASE FRONT WHEEL BEARINGS AND FRONT AXLE SPINDLES EVERY 25 HOURS OF OPERATION. USE A NUMBER TWO LITHIUM BASED GREASE.
3. TIRE PRESSURE — 13 PSI.
4. LUBRICATE STEERING SHAFT AND PIVOT POINTS SHOWN WITH LIGHT OIL EVERY 25 OPERATING HOURS OR AS NECESSARY TO KEEP STEERING SYSTEM OPERATING EASILY.



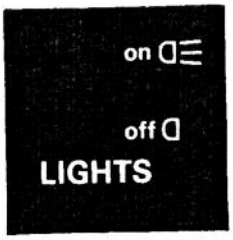


CAUTION REMOVE ANY BUILDUP OF GRASS OR DEBRIS THAT MAY BE IN THE ENGINE COMPARTMENT OR ABOVE THE TRANSAXLE.

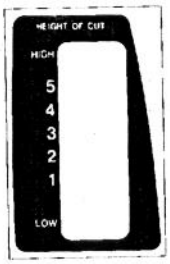
ON DEFLECTOR (Part No. 12-2890)

⚠CAUTION
KEEP HANDS AND FEET CLEAR ANYTIME ENGINE IS RUNNING
DO NOT OPERATE MOWER UNLESS ENTIRE GRASS CATCHER IS ATTACHED OR DEFLECTOR IS CLOSED AND SECURED

'AROUND' LIGHT SWITCH (11-32 ONLY) (Part No. 28-2510)



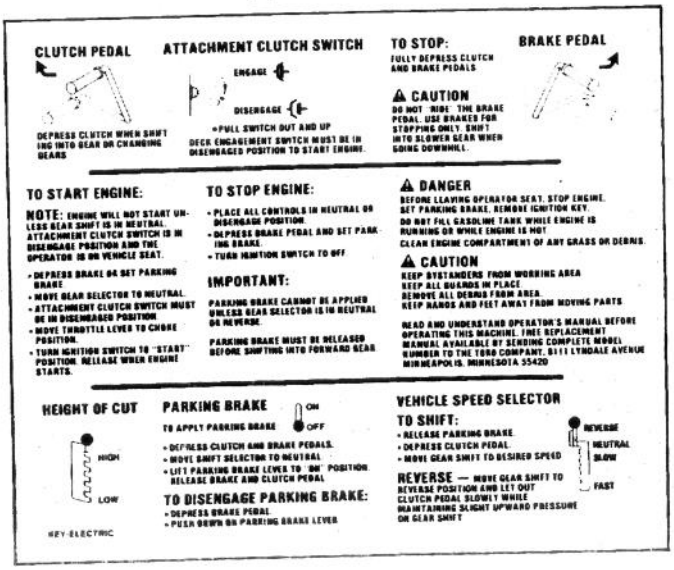
LEFT SIDE OF SEAT (Part No. 44-5840)



RIGHT SIDE OF SEAT (Part No. 36-1530)



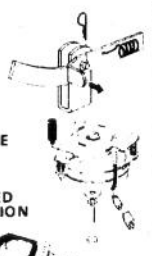
ON FLOOR PANEL (Part No. 44-5850)



UNDERSIDE OF HOOD (Part No. 44-5860)

BELT CHANGING

1. DECK BELT — REMOVE COTTER PINS FROM DECK TENSIONING BRACKETS AND PULL BRACKETS OFF CLEVIS PINS TO RELIEVE SPRING TENSION FROM DECK. REMOVE BELT. REVERSE PROCEDURE TO INSTALL NEW BELT.
2. TRANSMISSION BELT — REMOVE ENGINE-TO-DECK BELT AS DESCRIBED ABOVE. REMOVE CLUTCH WIRE TIE DOWN AND DISCONNECT WIRE. REMOVE DECK CLUTCH FROM ENGINE CRANKSHAFT. PULL IDLER PULLEY BACK AND REMOVE BELT FROM PULLEY. (CLUTCH LINKAGE MAY HAVE TO BE DISCONNECTED TO ALLOW BELT TO PASS BETWEEN TOP OF TRACTION CLUTCH AND ITS ACTUATING LEVER.)



REASSEMBLE IN REVERSE ORDER. MAKE SURE THAT SLOT IN DECK CLUTCH FITS OVER STEEL POST AND THAT WIRE IS HELD AWAY FROM ALL BELTS WITH WIRE TIE DOWN.



SPECIFICATIONS

8-32 LAWN TRACTOR ELECTRIC, MODEL 57300
11-32 LAWN TRACTOR ELECTRIC, MODEL 57360

8-32 — Briggs & Stratton Engine: Electric start with alternator, four cycle engine, has output of 8 hp (6 KW) @ 3600 rpm and 12.7 ft/lb (17.2 N·m) torque @ 2500 rpm. Displacement is 19.44 cubic inches (318.6 cc). Crankcase oil capacity is 2 1/4 pints (1.065 l) and fuel tank capacity is 7 quarts (6.62 l). Correct spark plug is a Champion RCJ-8 or an Autolite AR7N resistor type and recommended air gap is .030 of an inch (0.762 mm).

11-32 — Briggs & Stratton Engine: IC Series, electric start with alternator, four cycle engine, 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 (399.2 cc). Crankcase oil capacity is 3 pints (1.42 l) and fuel tank capacity is 7 quarts (6.62 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. Deck width is 32 inches (.0813 m). Steel spindle housing with shaft is supported by two double seal ball bearings. Blade spindle pulley is driven by a spring tensioned "A" section V-belt from clutch on engine crankshaft.

Cutter Blade: Single blade is 31 1/4 inches (0.794 m) long, made of one piece hardened 7 gauge (2.72 mm) carbon steel.

Blade Tip Speed: 17,000 ft./min (86 360 m/s) @ 3400 engine rpm. Height of Cut Range: Height of cut is adjustable to one of five approximate settings from 1 1/2 inches to 3 3/4 inches (38 to 91 mm).

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

Traction Drive: "A" section V-belt with 2:1 reduction from engine pulley to automotive type clutch on transaxle input shaft.

Ground Speed @ 3400 Engine rpm:

1st gear	— 1.2 MPH (1.9 km/hr)
2nd gear	— 2.49 MPH (4.0 km/hr)
3rd gear	— 3.73 MPH (6.0 km/hr)
4th gear	— 4.76 MPH (7.7 km/hr)
5th gear	— 5.43 MPH (8.7 km/hr)
Rev.	— 1.87 MPH (3.0 km/hr)

Wheels and Tires: The front 14 x 5.00-6 and the rear 16 x 6.50 8 tubeless, pneumatic turf tires are installed on demountable stamped steel wheels. Recommended tire pressure is 13 psi (89.6 kpa).

Steering: 13 inch (0.330 m) 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: Toggle switch (pull out and up to engage) on steering tower in front of operator. Switch releases blade brake and engages electromagnetic clutch.

Height-Of-Cut Control Lever: Hand Operated lever at left of operator. Height of cut selection is variable in five increments from 1 1/2 to 3 3/4 inches (38 to 91 mm).

General Dimensions (approx.):

Wheel Base	— 46 in. (1.168 m)
Tread Width	— 31 in. (0.787 m) front outside to outside
	— 32 in. (0.813 m) rear outside to outside

SPECIFICATIONS

Turning Radius	– 32 in. (0.813 m) inside wheel
Length	– 62 in. (1.575 m)
Width	– 38 1/2 in (0.978 m) including cutter deck
Height	– 40 in. (1.016 m)
Weight	– 8-32; 415 pounds (188.24 Kg) 11-32; 430 pounds (195.05 Kg)

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.
Full foot rests.
Convenient, easy to operate controls.
Automatic blade brake.
Stable-Wide track and low center of gravity.
Parking brake lockout prevents forward travel if parking brake is engaged.

Optional Accessories Attachments:
Easy Empty Grass Catcher, Model #59111.
Twin Bagger, Model #59122
Bumper Kit #59102.
Dump Cart.
Headlight Kit, Model #38-5760 (8-32 only).
42" Snow Blade Kit, Model #59140.
36" Snowthrower, Model #59160.
Tire Chain Kit, Model #47-7220
Spark Arrester Muffler, Part #36-7880 (8-32)
Part #36-7890 (11-32)
High Vacuum Bagging Kit,
Part #38-5730
Mulcher Kit, Model #59155

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 -/4 - 20	1	Secure wire harness to seat mount plate.
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 Tractor.
Reg. Card	1	Fill out and return to Toro.

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).

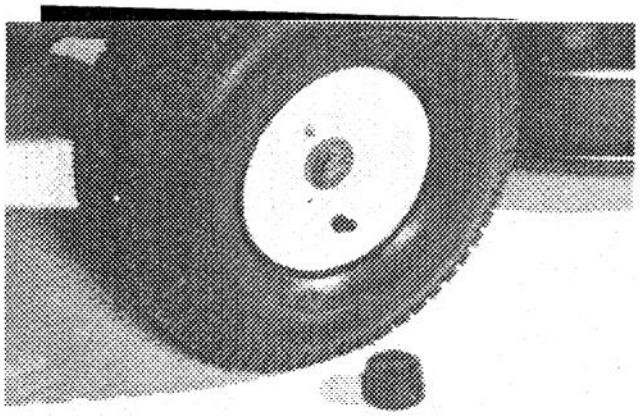


Figure 1

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).

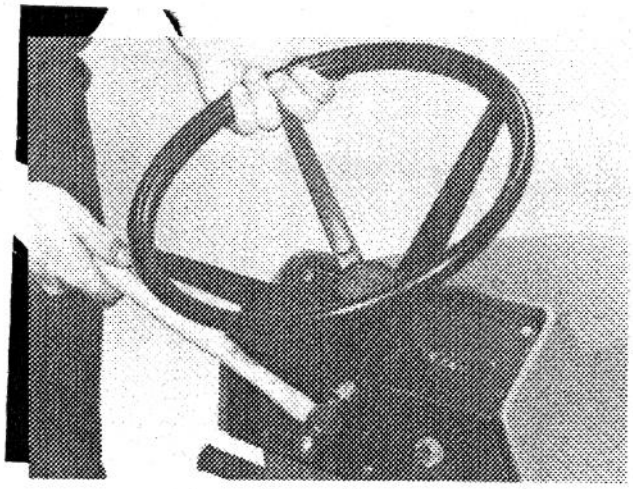


Figure 2

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 cable end from seat switch through grommet in plate (Fig. 3).

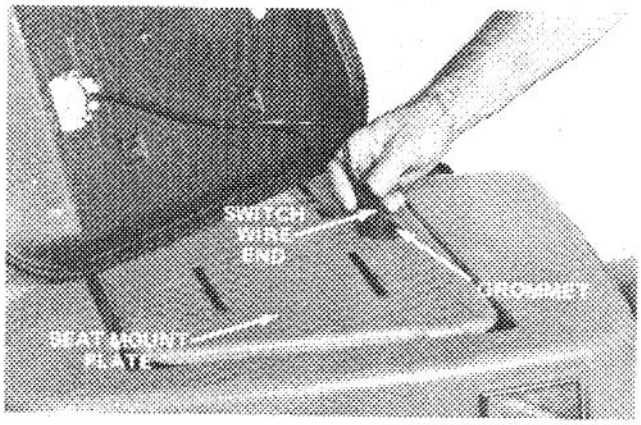


Figure 3

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.

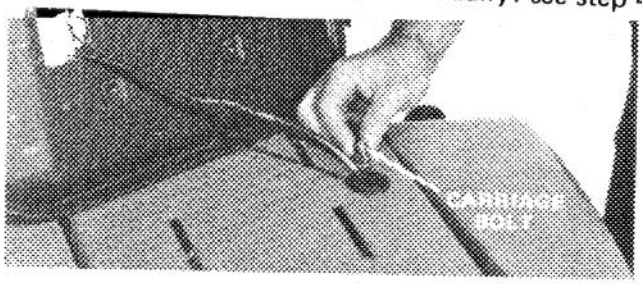


Figure 4

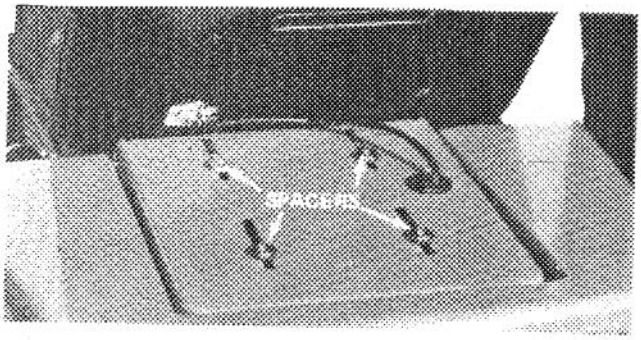


Figure 5

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

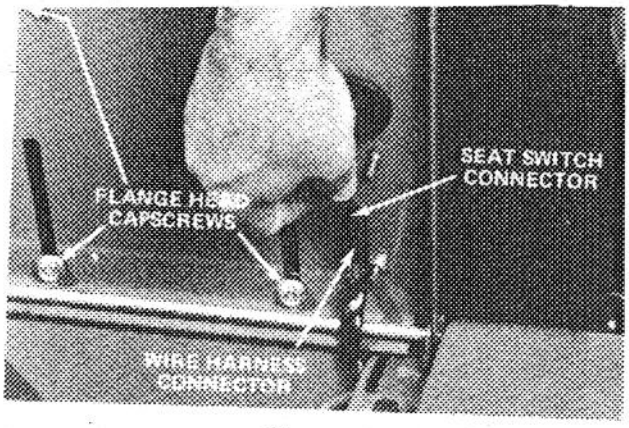


Figure 6

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.

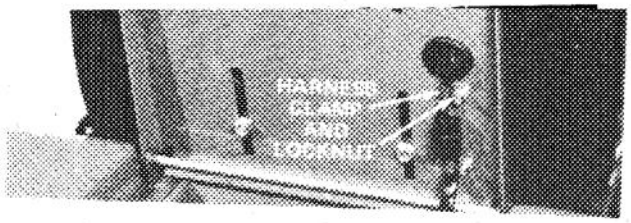


Figure 7

ADJUSTING SEAT

Tip the seat forward, loosen the seat mounting capscrews and relocate the seat for operator comfort. Retighten the capscrews 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 capscrews through the holes from the top.

2. Install the locknuts and tighten them to secure the plate to the frame (Fig. 8).

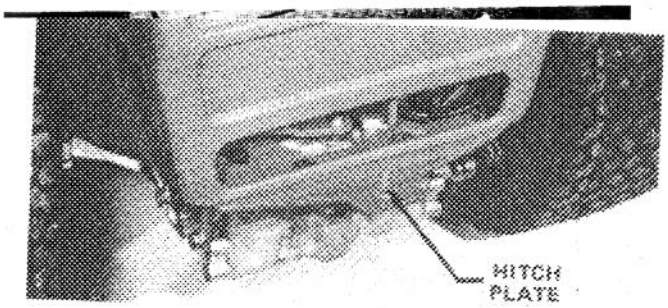


Figure 8

BEFORE OPERATING

ACTIVATING AND CHARGING BATTERY (12 Volt)

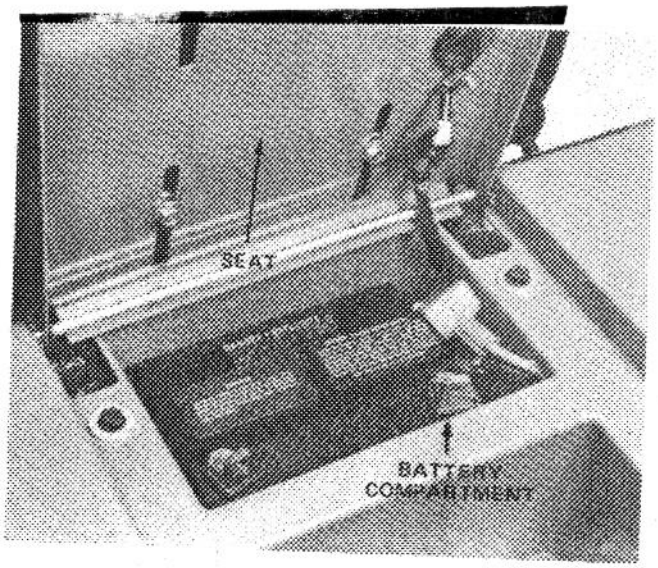
Tools Required: 3 to 4 Amp Battery Charger.

Since the battery for the tractor 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:

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.

1. Tip the seat forward and lift battery out of compartment (Fig. 9).



2. Remove filler caps from battery and slowly fill each cell until electrolyte is just above the plates. To obtain best results, let battery set for 20 minutes. Add electrolyte to the maximum capacity.



Figure 10

3. 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.

4. When battery is charged, disconnect charger from electrical outlet and battery posts.

5. 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.

6. Install the battery into the battery compartment with the terminal posts toward the rear of the machine.

7. 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. 11).

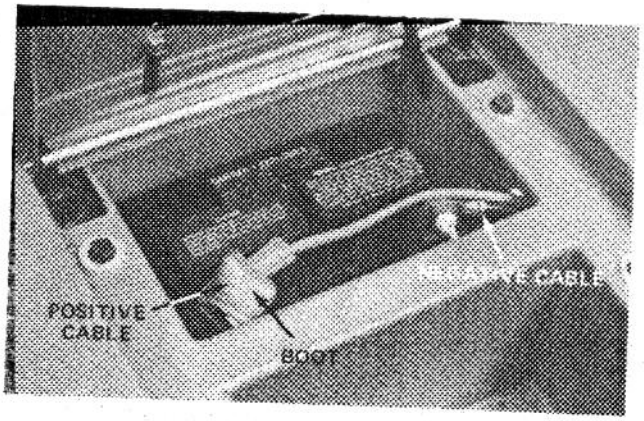


Figure 11

CHECK CRANKCASE OIL LEVEL

The tractor 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 tractor on a level surface to assure accurate oil level reading and open the hood. Ensure the oil drain plug is securely tightened, Page 16, (Fig. 22).

2. Unscrew and remove the dipstick from the oil fill tube (Fig. 12).

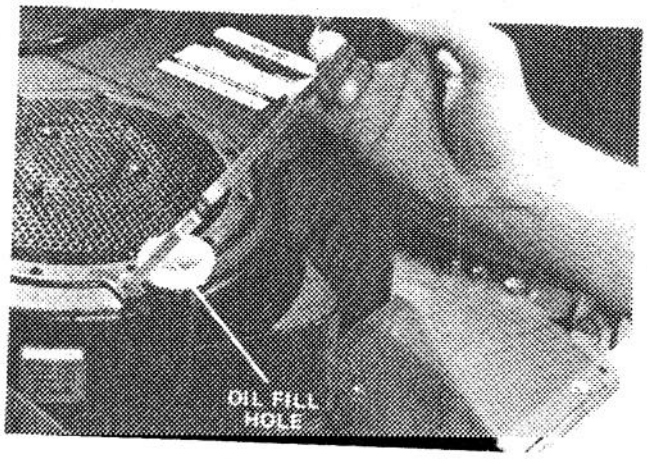


Figure 12

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.

A. Above +40° F (4° C) – Use SAE 30; 10W-30 and 10W-40 as substitutes.

B. Below +40° F (4° C) – Use SAE 5W-20 or 5W-30; SAE 10 or 10W-30 as substitutes.

C. 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 contaminents 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 of operation to remove the contaminents produced by normal

BEFORE OPERATING

engine break-in; thereafter, under normal conditions, change oil after every 25 hours of 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

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.

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).

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 gasoline (Fig. 13). Then install fuel tank cap.

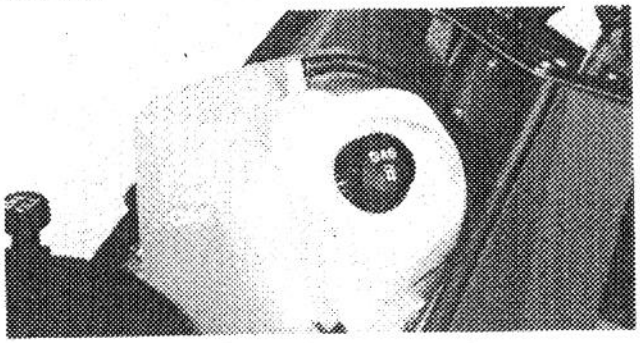


Figure 13

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.

CONTROLS

Clutch Pedal (Fig. 14) – 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. 14) – Throttle control connects to and operates carburetor mounted throttle and choke. Control has three positions: IDLE, FAST and CHOKE. The control must be pushed slightly to the right and forward to obtain CHOKE position.

Ignition Switch (Fig. 14) – 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 – Model 11-32 only (Fig. 14) – Two position switch for actuating headlights. Lights will not function unless engine is running as current is supplied by the engine alternator.

Deck Engagement Switch (Fig. 14) – Toggle switch (Pull out and up to engage) releases blade brake and engages electromagnetic clutch to drive cutter blade.

Brake Pedal (Fig. 14) 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. 15) – 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.

CONTROLS

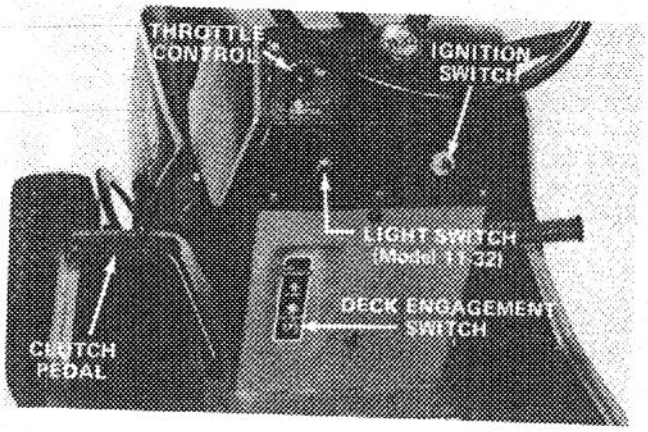


Figure 14

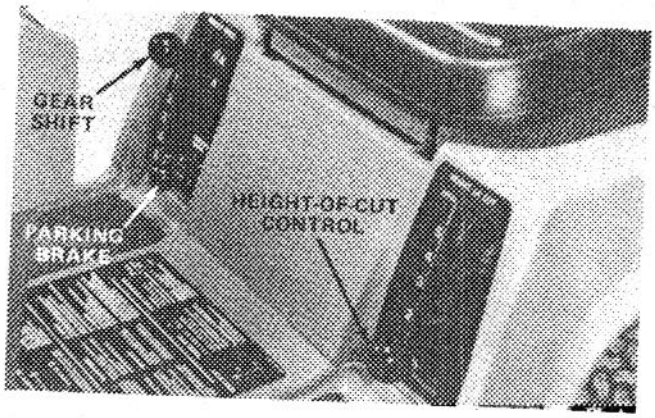


Figure 15

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

Gear Shift (Fig. 15) – Transmission has five forward speeds, neutral and reverse, and has an in-line shift pattern. An interlock switch, which prevents engine from being started when transmission is in gear, is mounted on the top of the transmission.

Height-of-Cut Control (Fig. 15) – Height-of-cut control varies the cutting height from 1 1/2 to 3 3/4 inches (38 to 91 mm) in five increments.

STARTING AND STOPPING INSTRUCTIONS

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

TO START AND OPERATE MACHINE

1. Shift into neutral, move deck engagement switch to DISENGAGE.

2. Move throttle control to CHOKE position and rotate ignition key to START. When engine starts, release key and move throttle control between FAST and SLOW.

3. Select desired height-of-cut and pull out and up on deck engagement switch 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 deck engagement switch to DISENGAGE, and rotate ignition key to OFF.

2. Shift transmission to neutral and engage parking brake.

3. Remove key from ignition switch.

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.

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. 14), and push parking brake lever (Fig. 15) down to return it to its disengaged position. Release brake pedal slowly.

ADJUSTING HEIGHT-OF-CUT

The height-of-cut may be set in one of five positions from approximately 1 1/2 to 3 3/4 inches (38 to 91 mm).

1. Assure the deck engagement switch is in DISENGAGE position (Fig. 14).

2. Move height-of-cut control (Fig. 15) into desired setting.

3. To engage blade for cutting, pull up and out on deck engagement switch.

OPERATING INSTRUCTIONS

GRASS DEFLECTOR

WARNING

The grass deflector and toe bar is a safety device that routes discharged material down toward the turf; therefore, do not remove deflector from mower housing. If the deflector is ever damaged, replace it. Without the deflector or complete grass catcher assembly mounted in place, discharged material could cause personal injury.

OPERATING PROCEDURE

1. Move deck engagement switch into DISENGAGE.

2. Start the engine: refer to Starting/Stopping Instructions, page 12.

IMPORTANT: When tractor is used for the first time, operate the transmission in all gears to assure that drive system is functioning correctly, and become familiar with the controls and operating characteristics. Never shift while the machine is moving or without first depressing the clutch pedal or transmission damage could 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, release clutch pedal slowly. If shifting into reverse 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 tractor to assure area is clear before backing.

4. To engage blade for cutting, move height-of-cut control to the desired setting, then pull out and up on deck engagement switch.

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

IMPORTANT: Never leave the deck engagement switch in the engaged position when the engine is not running. Doing so with the ignition switch ON will discharge the tractor battery.

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

GRASS CUTTING TIPS

1. When the tractor 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 blade and remove the obstruction with a stick.

DANGER

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

4. When mowing, operate engine at full throttle. This maintains proper blade speed and air flow to facilitate discharge of clippings. Mowing with a lower rpm causes the blade to tear the grass, resulting in poor lawn appearance. Lower rpm also reduces alternator charging efficiency which may affect battery performance.

MAINTENANCE INTERVAL CHART

	5 Hours	25 Hours	Storage Service	Spring Service	2 Years	Notes
Change Oil (Initial)	X					
Change Oil (Periodic)		X	X			More often in dusty, dirty conditions.
Check Safety Interlock	X	X		X		
Check Cutter Blade	X	X	X			
Check Brake	X		X	X		
Grease Front Axle Spindles		X	X			
Lubricate Pivot Points		X	X			
Grease Rear Axle			X			
Service Air Cleaner		X	X			More often in dusty, dirty conditions.
Check Spark Plug		X	X	X		
Check Battery Electrolyte Level		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			More often in dusty, dirty conditions.
Clean Mower Housing			X			
Paint Chipped Surfaces			X			
Replace Interlock Switches					X	

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. 16). Make sure wire does not contact plug accidentally.

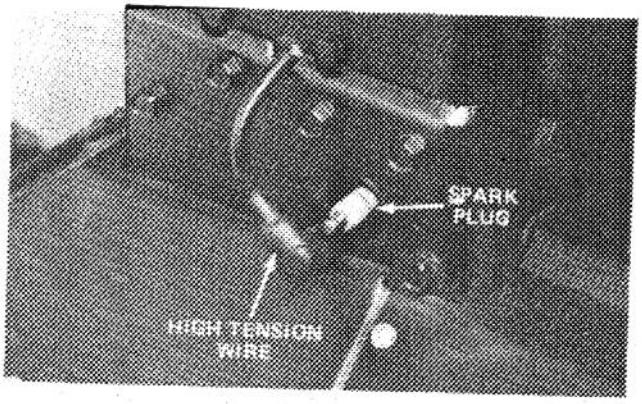


Figure 16

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. 17, 18) with a clean rag. If there is paint on front of fittings, scrape it off.

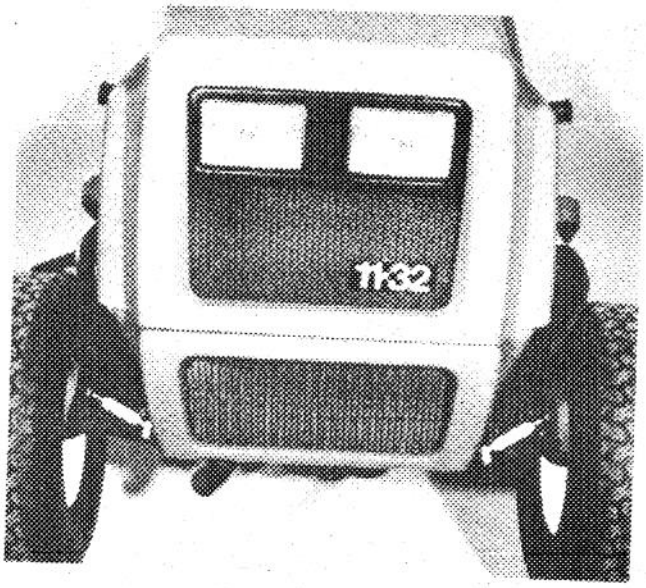


Figure 17

2. Lubricate both axle spindles w/No. 2 general purpose grease (Fig. 17). Continue to pump grease until it oozes out the spindle. Wipe up any excess grease.

MAINTENANCE

3. Lubricate both front wheels w/No. 2 general purpose grease (Fig. 18). Pump grease gun about [illegible]. Wipe up any excess grease.



Figure 18
Figure 18

GREASE REAR AXLES

The rear wheels should be removed and axles greased, once a year, to prevent the formation of rust and to simplify future wheel removal. Refer to Wheel Removal, page 23.

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. 19). Turn the front wheels fully to the left to position the lower follower assembly below the fuel tank to make it more easily accessible.

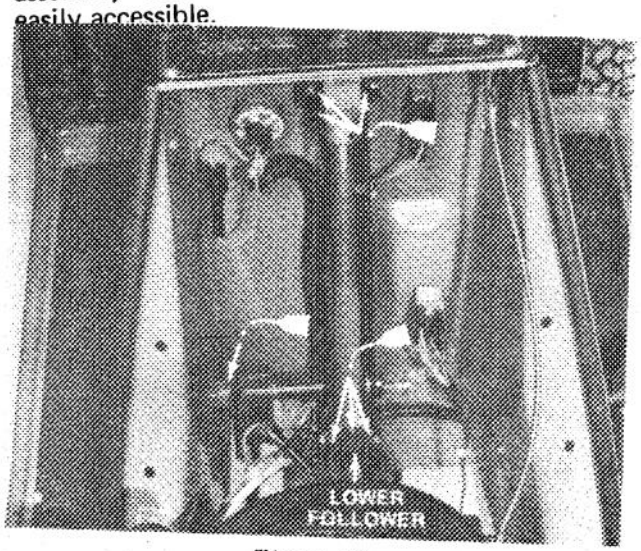


Figure 19
Figure 19

Note: The fuel tank has been removed in Figure 19 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: Medium blade.

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.

8-32 ONLY

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. 20).

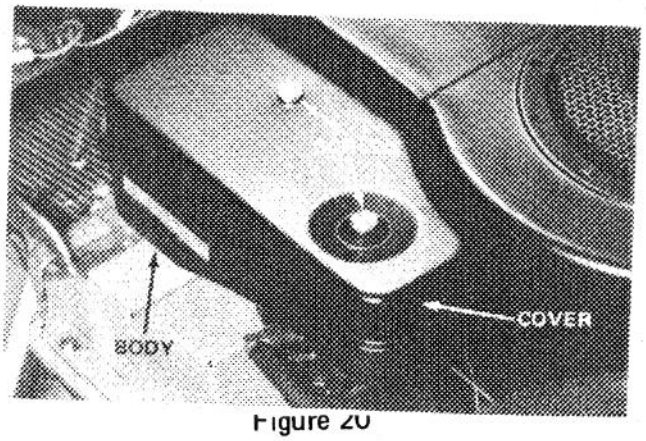


Figure 20

3. Remove cover and screen from foam element, remove spacers from element and element from body (Fig. 21). Examine element for dirt or discoloration and clean if necessary.

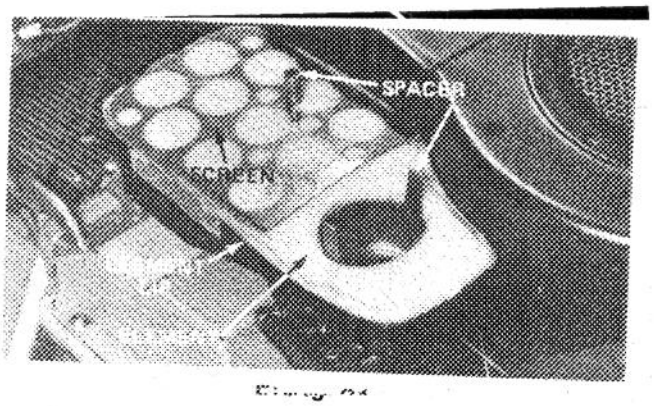


Figure 21

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 (25 ml) of oil to the element, work the oil in until the whole element is impregnated and squeeze the element thoroughly to remove all 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.

11-32 ONLY

1. Open the hood and remove the high tension wire from spark plug.

2. Remove air cleaner stud, screw and cover. Replace cover gasket if damaged (Fig. 22).

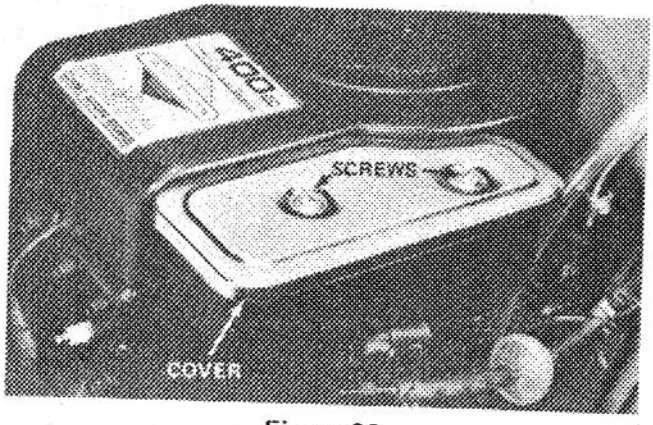


Figure 22

3. Remove plate screw, washer and plate (Fig. 23).

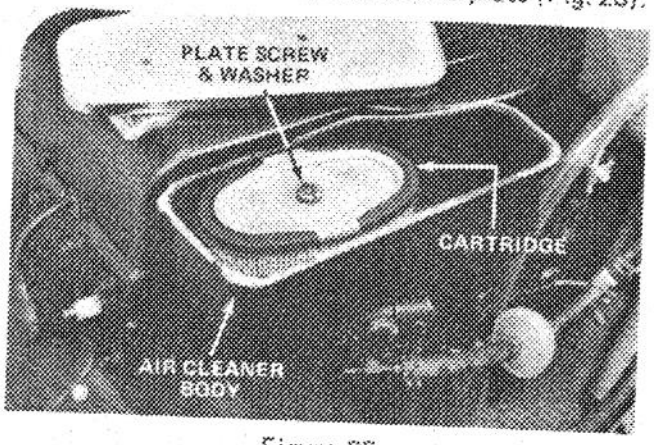


Figure 23

4. Remove cartridge and clean air cleaner body carefully to prevent dirt from entering carburetor. Brush dirt from body thru holes into duct.

5. Clean cartridge by tapping gently on flat surface.

a. If very dirty, replace cartridge or wash in a low or non-sudsing detergent and warm water solution.

b. Rinse thoroughly from OUTSIDE IN until water is clear.

c. Cartridge must be allowed to stand and air dry thoroughly before using.

6. Reassemble air cleaner.

CAUTION

Petroleum solvents, such as kerosene, are not to be used to clean cartridge. They may cause deterioration of the cartridge. DO NOT OIL CARTRIDGE. DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY CARTRIDGE.

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, and shallow oil drain pan.

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 tractor on level surface.

B. Clean the area around oil dipstick so foreign matter cannot enter filler hole when dipstick is removed.

C. Unscrew dipstick and wipe oil off.

D. 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. Do not overfill or engine damage may result.

E. 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.

MAINTENANCE

To change oil:

A. Position tractor 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.

C. Open hood, unscrew dipstick and add oil to crankcase. Refer to CHECK CRANKCASE OIL LEVEL, page 10. Capacity of 8 hp (6 kw) tractor crankcase is 36 oz. (1.065 l) and 11 hp (8.2 kw) tractor is 48 oz. (1.42 l) DO NOT OVERFILL or engine damage may result.

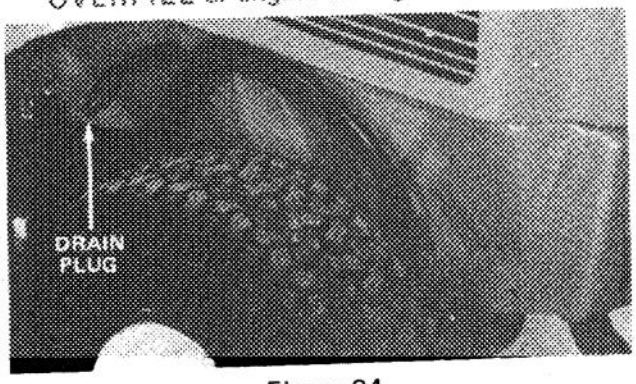


Figure 24

Use any high-quality A.P.I. classification SC, SD, SE, or MS engine oil. Recommended viscosity of oil to use is:

- 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.

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:

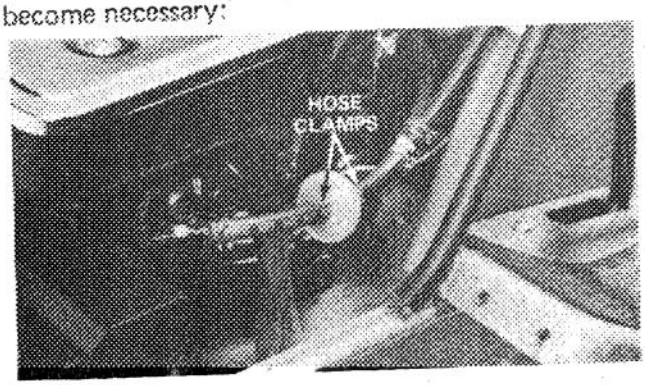


Figure 25

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, cigarettte, 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: 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 (0.762 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.

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 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. 26). Install correctly gapped spark plug w/gasket seal, and

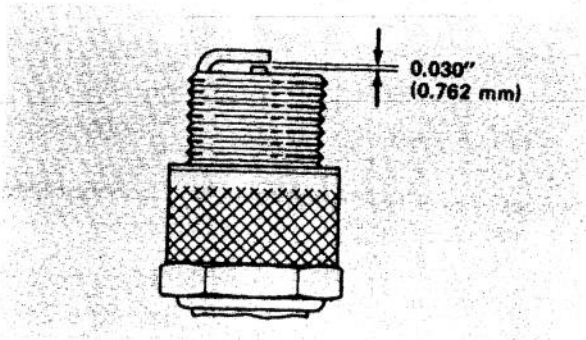


Figure 26

tighten plug to 15 ft-lb (20.4 N·m). If torque wrench is not used, tighten plug firmly.

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 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 air cleaner cover off air cleaner.

2. Move remote control lever to CHOKE position and check the position of the choke butterfly; it should be fully closed (Fig. 27).

3. Move remote control lever to FAST position. The butterfly should be in the fully open position (Fig. 27).

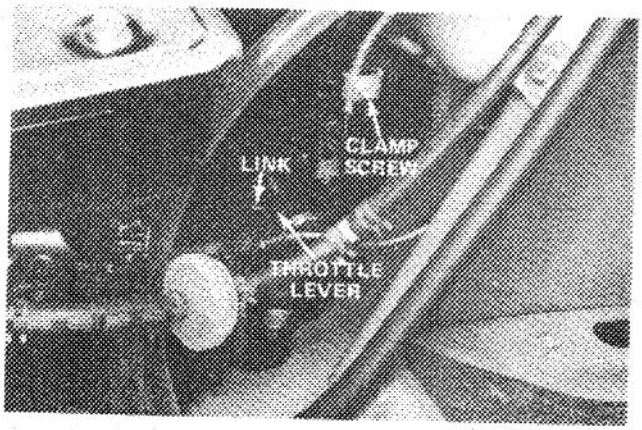


Figure 27

4. If the choke butterfly 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 CHOKE position.

2. Loosen the throttle cable clamp screw (Fig. 27) and move the control cable casing and wire until the throttle lever touches link.

3. Tighten the cable clamp and assemble the air cleaner cover to the air cleaner.

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 17.

1. Needle Valve (Fig. 28) – 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. 28).

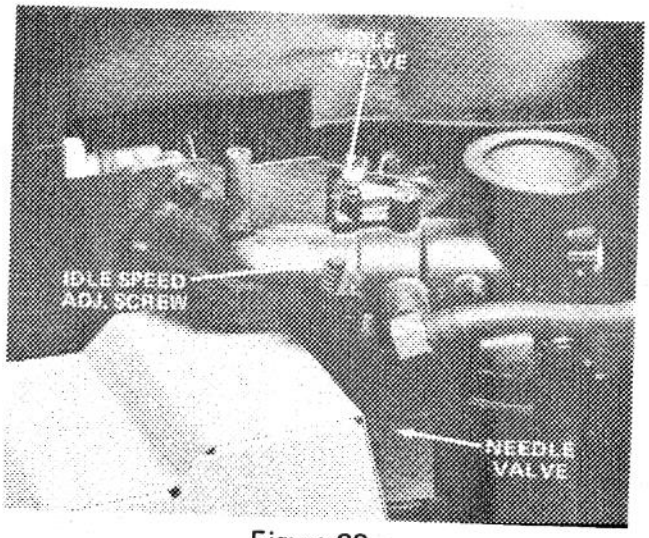


Figure 28

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.

MAINTENANCE

WARNING

Engine must be running so final adjustment of the carburetor can be performed. To guard against possible personal injury, move deck engagement switch 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.

4. Rotate needle valve (Fig. 28) 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. 28) 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. 28) 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 backward so engine idles. If engine stalls, rotate idle adjusting screw until engine speed increases (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.

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.

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 BLADE

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

To service blade:

1. Insure engine is shut off, lock parking brake, open the hood and remove the high tension wire from the spark plug.

CAUTION

Stop the machine and examine the cutter blade for damage and loss of torque of the nut securing the blade to the spindle shaft whenever the blade strikes an immoveable object. Open the hood and disconnect the spark plug lead, engage the parking brake and disengage the cutter blade prior to examining the blade. If blade is cracked, badly bent or twisted or severely eroded (Fig. 32), replace the blade. Always use genuine Toro replacement blades to assure safety and optimum performance. NEVER USE WILL FIT REPLACEMENT BLADES. See To Service Blade below.

2. Set cutting unit down in lowest height-of-cut position, remove the hair pin cotters and washers securing the deck spring straps on both sides (Fig. 29) and pull straps off clevis pins.

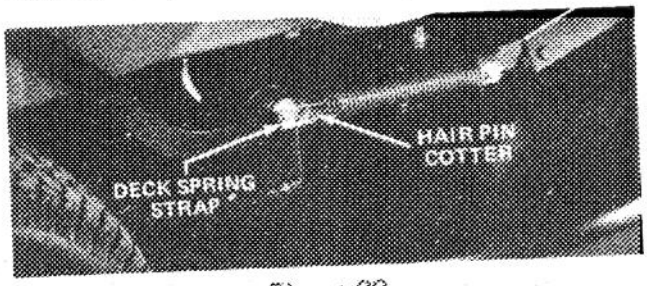


Figure 29

3. Slide deck forward and slip the belt off the cutting unit spindle pulley.

4. Turn tractor front wheels fully to the right, turn the cutting unit so the rear wheels face the right side of the tractor and pull the unit out from under the machine (Fig. 30).

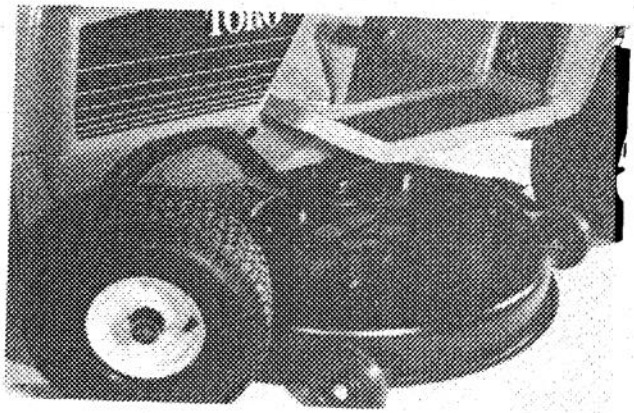


Figure 30

5. Turn cutting unit on its side, grasp the end of the blade with a rag or thickly padded glove; then remove the locknut, anti-scalp cup and blade (Fig. 31).



Figure 31

6. Examine cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet (Fig. 32A). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check the blade before using the mower. If wear is noticed (Fig. 32B), replace the blade.

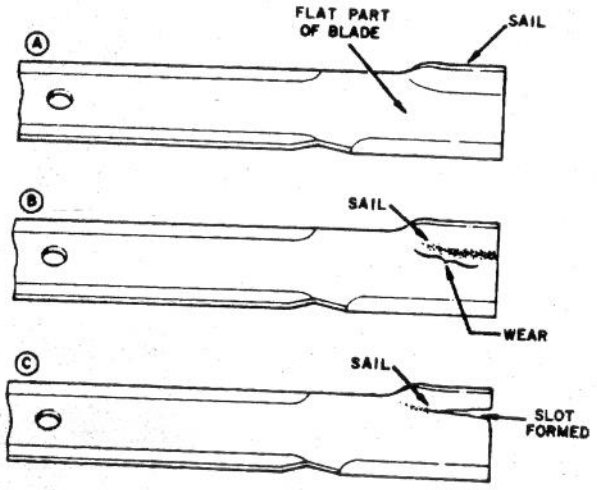


Figure 32

CAUTION

If blade is allowed to wear, a slot will form between the sail and flat part of the blade (Fig. 32C). 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 at the factory, it may be difficult to remove the nut. If nut cannot be removed, contact an Authorized TORO Service Dealer for assistance.

7. Using a file, sharpen cutting edge at both ends of the blade (Fig. 33). File only top side of blade, not the bottom side.

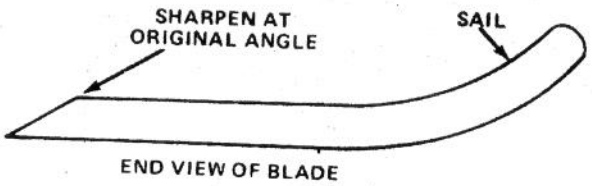


Figure 33

8. 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 more material off cutting edge of the blade. Continue to file and check the blade until it is balanced.

9. In sequence, install blade, anti-scalp cup and locknut (Fig. 31). Tighten locknut to 50-60 ft/lb (68-81 N·m).

IMPORTANT: Make sure blade sail is facing top of mower housing and cutting edge of blade is away from top of mower housing (Fig. 31). While lock nut is tightened, move blade slightly so it seats between sides of blade retainer.

10. Mount the cutting unit to the tractor. Refer to Install Cutting Unit, page 20, for proper procedures.

INSTALL CUTTING UNIT

Tools required: None.

1. Lock parking brake, turn the front wheels to a full turn position to allow more clearance for the cutting unit.

2. Set the cutting unit down on the wheels and rollers and slide the cutting unit (front end first) under the tractor (Fig. 34).

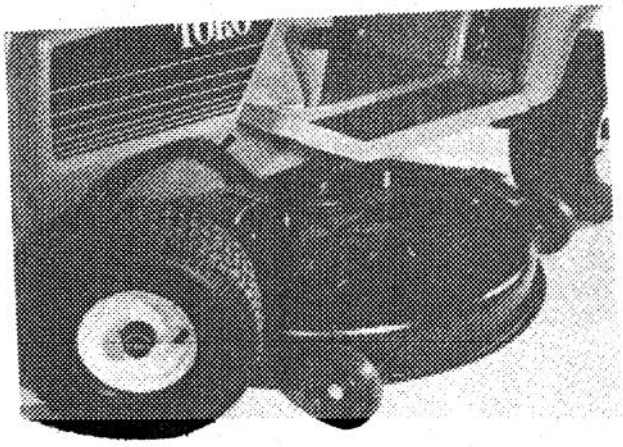


Figure 34

3. Insure the height-of-cut lever is in the lowest height setting. Position the cutting unit so the parallel links bisect the front brackets on each side and insert the clevis pins into the bracket holes from the inside toward the outside (Fig. 35).

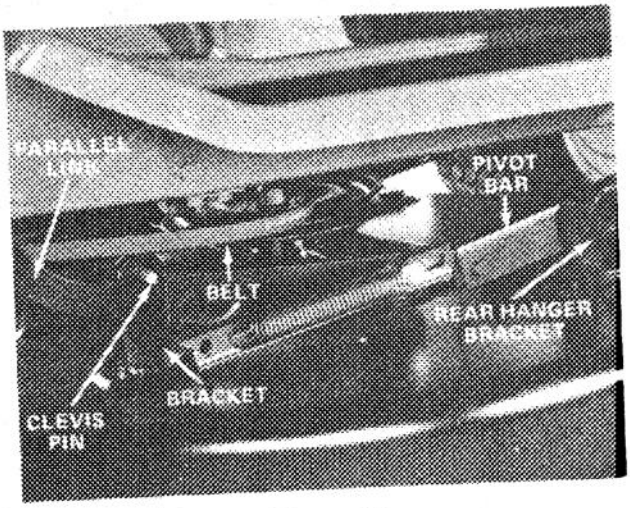


Figure 35

4. Slip the cutting unit drive belt around the spindle drive pulley, then lift the rear of the cutting unit and position the rear hanger brackets so they just rest over the top of the pins extending out from the pivot bar (Fig. 35). Insure belt is installed on front engine pulley.

5. Pull the deck spring straps forward while pushing deck rearward and position the clevis pins through the strap holes. Install a flat washer and a hair pin cotter to secure the assembly (Fig. 36).

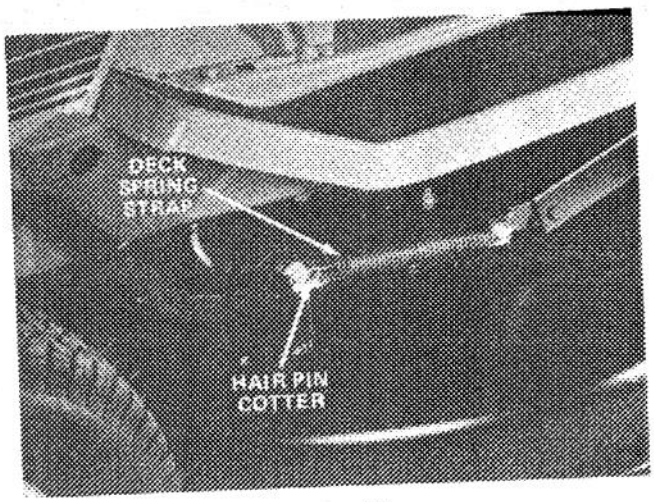


Figure 36

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: None

1. Lock parking brake, open hood and remove high tension lead from spark plug.

2. Lower cutting unit to the lowest height-of-cut setting.

3. Remove hair pin cotters and flat washers from the deck spring straps and remove straps from the pins (Fig. 37).

4. Slide the cutting unit forward and remove the belt from both front and rear pulleys.

5. Insure rear cutting unit brackets (Fig. 37) are resting on the pins and install the new belt.

6. Slide the deck rearward, remount the deck spring straps, flat washers and hair pin cotters.

MAINTENANCE

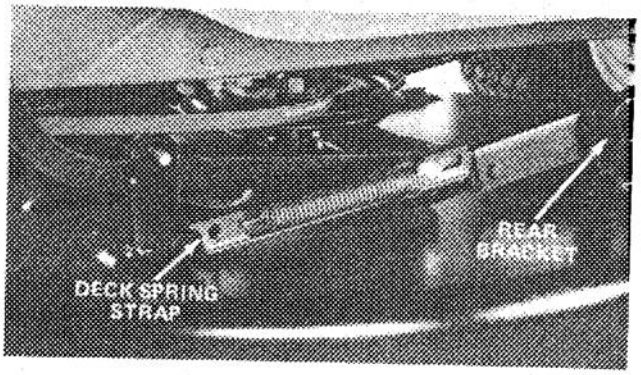


Figure 37

LEVELING CUTTING UNIT

Tools Required: 1/2 inch wrench, 6 inch (15 mm) scale ruler.

If mower doesn't cut level from side to side and cutting blade is not bent, level the cutting unit as follows:

1. Place tractor on level surface, lock parking brake, open hood and remove spark plug wire.

2. Place height-of-cut lever in number 3 position and position cutter blade at right angle to direction of rider travel.

3. Measure the blade tip height at one end of blade, rotate blade 180° and measure same blade tip at opposite side of tractor. Measurement should be within 1/8 inch (3 mm) of one another.

4. If blade tip height is not within 1/8 inch (3 mm), level cutting unit by loosening right hand pivot bar retainer hex nuts and raising or lowering the retainer (Fig. 38).

Note: The right rear wheel may have to be removed.

5. Assure blade tip height is within 1/8 inch (3 mm) and retighten hex nuts.

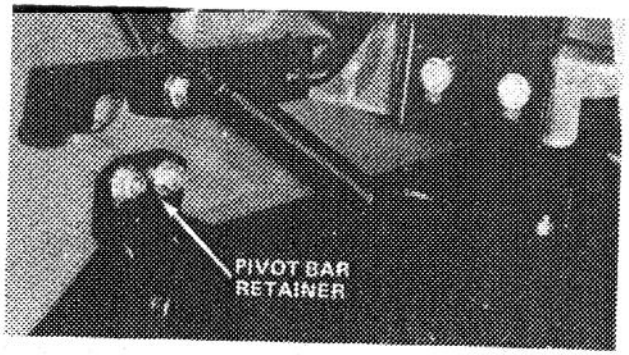


Figure 38

REPLACING TRACTION BELT

Tools Required: (2) Adjustable Wrenches, 5/8 inch Socket Wrench and Handle, Wheel Blocks.

1. Remove the cutting unit. Refer to Replacing Blade Drive Belt, steps 1 through 4, page 21.

2. Insure the parking brake is locked and place blocks in front of and behind one rear wheel.

3. Reach under the tractor frame just forward of the rear wheels, grasp the idler pulley assembly, (Fig. 39) pull on it to relieve tension on the belt and remove the belt from the belt guide and idler pulley (Fig. 39).

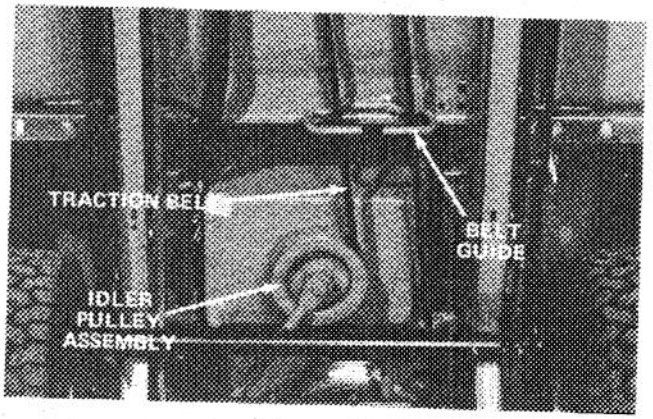


Figure 39

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. Disconnect the bolt retaining the wire tie down from the electromagnetic blade clutch. Disconnect the in-line wire connector (Fig. 40).

5. Remove the bolt securing the blade clutch assembly (Fig. 40) at the front of the machine and remove the assembly. Note how the clutch is prevented from rotating by a steel post welded to the underside of the tractor.

Note: If there is difficulty in removing blade clutch mount bolt with use of standard socket wrench, contact a Toro Service Dealer for assistance. An air impact wrench may be necessary.

6. 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.

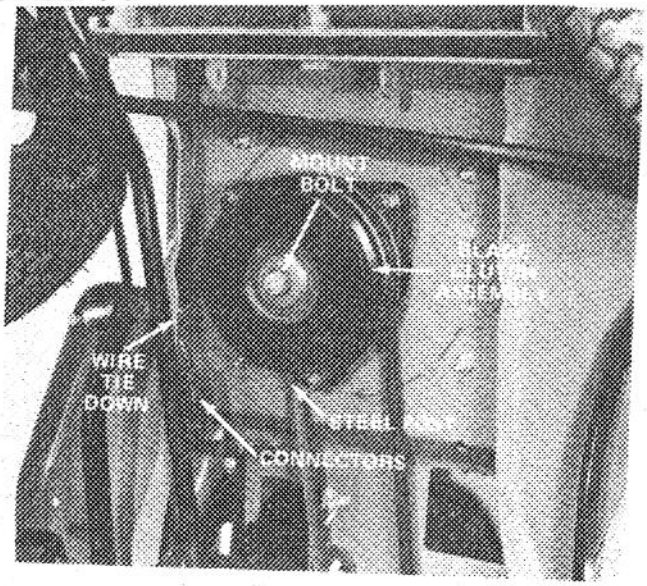


Figure 40

Figure 40

7. Slide the belt between the top of the traction clutch assembly and the clutch actuator bar (Fig. 41).

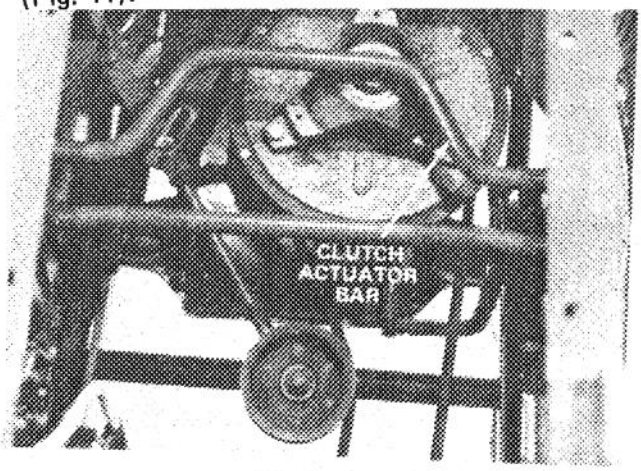


Figure 41

Figure 41

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.

8. Assemble the new belt to the machine by reversing the disassembly procedures. Apply grease or "NEVER SEEZE" to crankshaft before installing blade clutch. Reassemble the clutch insuring that the slot in the clutch fits over the steel post. Torque the mount bolt for the blade clutch assembly to 60 ft-lb (81 N·m).

9. Reconnect the wire connectors and remount the wire tie down to the tractor body. Make sure that all wires are positioned away from moving parts.

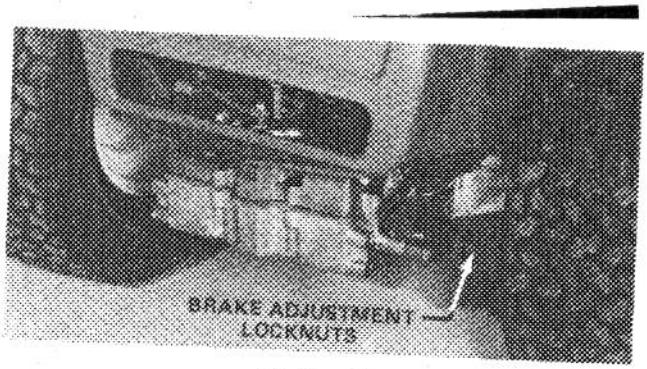
BRAKE ADJUSTMENT

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.

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. 42).



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. 43).

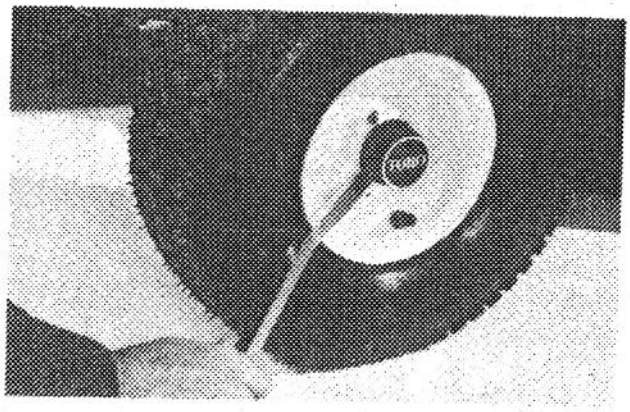


Figure 43

4. Remove the cotter pin and flat washer (Fig. 44) and remove the wheel from the axle.

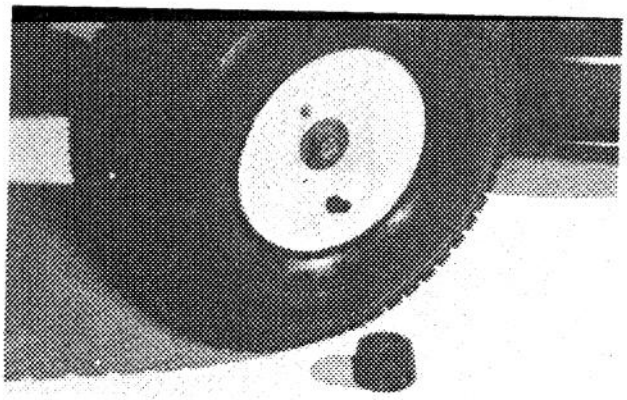


Figure 44

5. Assemble in reverse order.

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 pry bar to lever the hub cap off the axle.

4. Remove the capscrew from the axle (Fig. 45).

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 to 30 ft-lb (40.7 N·m).

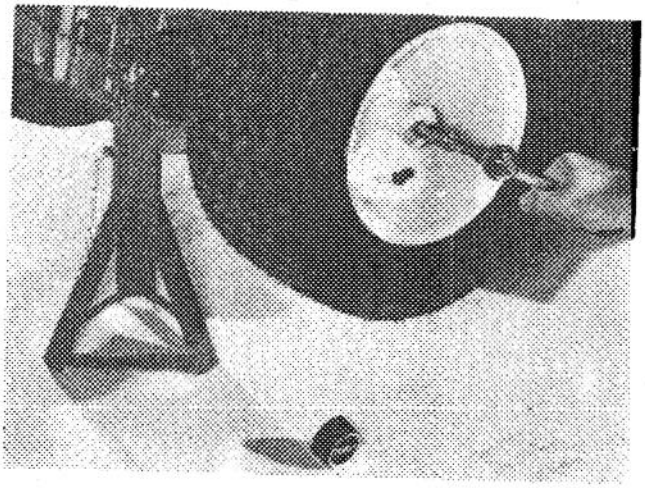


Figure 45

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 deck engagement switch is in the Disengage position. In addition, the engine will stop 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 tractor. Have the safety interlock switches replaced by an Authorized TORO Service Dealer every two years to assure safe operation of the tractor.

1. Sit on seat and move shift control into neutral position. Engage the parking brake to prevent movement of the tractor.

2. Move deck engagement switch (Fig. 46) 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.

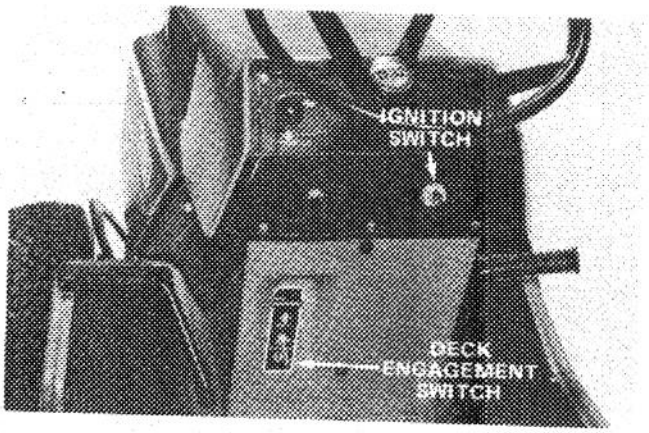


Figure 46

3. Move deck engagement switch to DISENGAGE position (Fig. 46), push clutch in and place shift control into one of the gear selections (Fig. 47). 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.

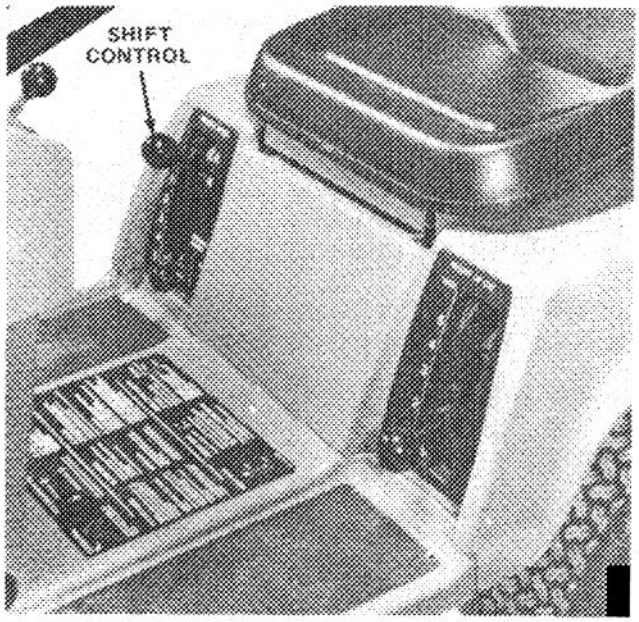


Figure 47

4. Move shift control (Fig. 47) into neutral and deck engagement switch (Fig. 46) to DISENGAGE position. Engage the parking brake to prevent movement of the tractor. Rotate ignition key to START position and start engine. Place the deck engagement switch 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 Authorized TORO Service Dealer. If engine shuts off when you raised off seat, the interlock system is functioning correctly.

WARNING

Do not operate the tractor 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. 48) 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 is fully charged, but fails to crank the engine, have the electrical system checked by an Authorized TORO Service Dealer.

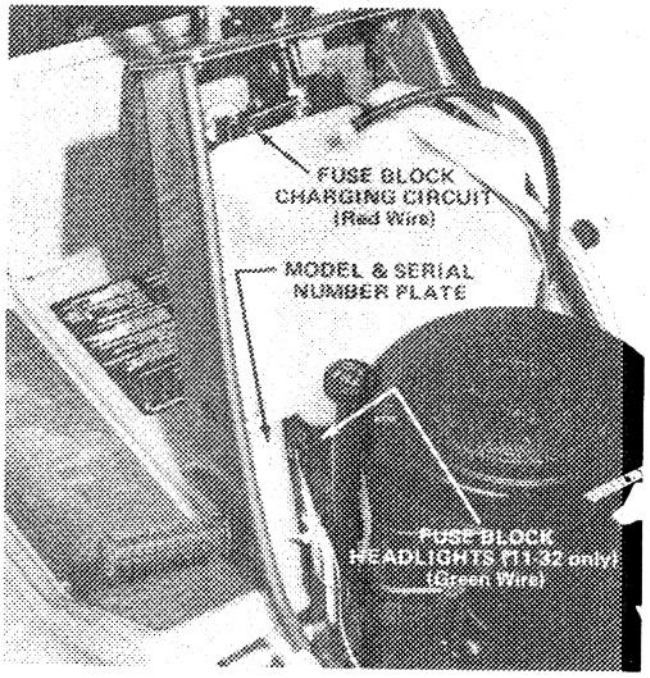


Figure 48

HEADLIGHT CIRCUIT (11-32 ONLY)

Power for the headlights on the 11-32 Tractor is provided by electric current from the engine alternator; therefore, the headlights will not function unless the engine is operating. An AGC 7-1/2 Amp Fuse (Fig. 48) 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 16. Next, start engine and let it run at idle speed until it stops and 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.

MAINTENANCE

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 (20.4 N·m). If torque wrench is not used, tighten plug firmly. DO NOT INSTALL HIGH TENSION WIRE ON SPARK PLUG.

3. Drain oil from crankcase and refill with proper viscosity oil: 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 blade: refer to Servicing Cutter Blade, page 19.

7. Check and tighten all cap screws, 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 14.

9. Check air cleaner element: refer to Servicing Air Cleaner, page 15.

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.

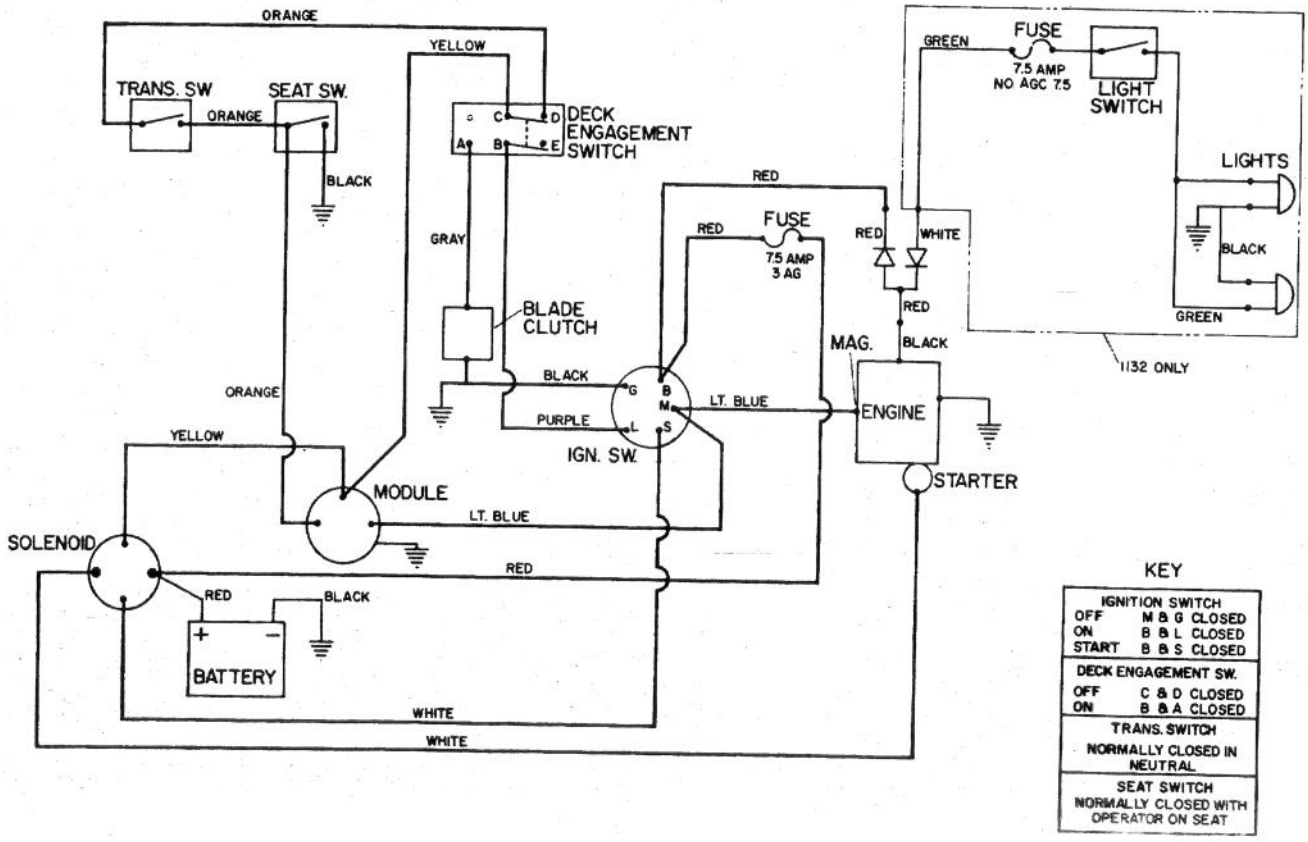
11. Remove the battery from the machine, recharge it and store it in a cool, dry place. Recharge it every 30 days to prevent it from discharging. Refer to Activating and Charging Battery, page 9.

IMPORTANT: Improper storage or failure to recharge may cause battery failure.

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

13. Store the tractor 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.	1. Gas tank is empty.	1. Fill fuel tank with gasoline.
	2. Transmission is in gear.	2. Shift transmission into neutral.
	3. Deck engagement switch is in ENGAGE detent.	3. Move deck engagement switch into DISENGAGE detent.
	4. Spark plug is loose.	4. Tighten plug to 15 ft-lb (20.4 N·m).
	5. High tension wire is loose or disconnected from spark plug.	5. Install high tension wire on spark plug.
	6. Spark plug gap is incorrect.	6. Set gap between electrodes at 0.030 of an inch (0.762 mm).
	7. Spark plug is pitted, fouled, or defective in some other way.	7. Install new correctly gapped spark plug.
	8. Wrong spark plug is used.	8. Install correct spark plug.
	9. Electrical connections are loose.	9. Check electrical system to assure good contact.
	10. Carburetor is adjusted incorrectly.	10. Adjust the carburetor.
	11. Air cleaner is dirty.	11. Clean the air cleaner element.
	12. Plugged fuel filter.	12. Refer to Fuel Filter Replacement, page 16.
	13. Dirt, water or stale fuel in fuel system.	13. Have tractor serviced by Authorized TORO Service Dealer.
	14. Dead battery.	14. Have tractor serviced by Authorized TORO Service Dealer.
	15. Defective points, condenser, ignition coil, or ignition switch.	
	16. Module or switch is defective.	
Engine does not idle or idles poorly.	1. Air cleaner is dirty.	1. Clean air cleaner element.
	2. Oil level in crankcase is low.	2. Add oil to crankcase.
	3. Cooling fins and air passages under engine blower housing are plugged.	3. Remove obstruction from cooling fins and air passages.
	4. Idle speed is too low or high speed mixture is incorrect.	4. Adjust the carburetor.
	5. Plugged fuel filter.	5. Refer to Fuel Filter Replacement, page 16.
	6. Dirt, water or stale fuel is in fuel system	6. Have tractor serviced by Authorized TORO Service Dealer.
	7. Spark plug is pitted, fouled or defective in some other way.	7. Install new correctly gapped spark plug.

TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine loses power	1. Oil level in crankcase is low.	1. Add oil to crankcase.
	2. Cooling fins and air passages under engine blower housing are plugged.	2. Remove obstruction from cooling fins and air passages.
	3. Engine load is excessive.	3. Shift into lower gear to reduce load.
	4. Air cleaner is dirty.	4. Clean air cleaner element.
	5. Plugged fuel filter.	5. Refer to Fuel Filter Replacement, page 16.
	6. Dirt or water is in fuel system.	6. Have tractor serviced by Authorized TORO Service Dealer.
	7. Carburetor is adjusted incorrectly.	7. Adjust the carburetor.
	8. Spark plug is pitted, fouled or defective in some other way.	8. Install new correctly gapped spark plug.
Engine over heats	1. Cooling fins and air passages under engine blower housing are plugged.	1. Remove obstruction from cooling fins and air passages.
	2. Carburetor is adjusted incorrectly.	2. Adjust the carburetor.
	3. Oil level in crankcase is low.	3. Add oil to crankcase.
	4. Engine load is excessive.	4. Shift into lower gear to reduce load.
Tractor vibrates abnormally.	1. Engine mounting bolts are loose.	1. Tighten engine mounting bolts.
	2. Loose blade clutch pulley, idler pulley or blade pulley.	2. Tighten the appropriate pulley.
	3. Cutter blade is unbalanced.	3. Install new cutter blade.
	4. Lock nut holding blade is loose.	4. Tighten nut to 50-60 ft-lb (68-81 N·m).
	5. Drive pulley is damaged.	5. Replace drive pulley.
Blade does not rotate	1. Blade drive belt is worn, loose or broken.	1. Install new blade drive belt.
	2. Blade drive belt is off pulley.	2. Install blade drive belt.
	3. Faulty blade clutch assembly or damaged pulley.	3. Have tractor serviced by Authorized TORO Service Dealer.
Tractor does not drive.	1. Traction drive belt is worn, loose or broken.	1. Install new traction drive belt.
	2. Traction drive belt is off pulley.	2. Install traction drive belt.
	3. Transmission does not shift gear.	3, 4. Have tractor serviced by Authorized TORO Service Dealer.
	4. Damaged clutch or pulley.	

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The TORO Lawn Tractor 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. 48.

In any correspondence concerning the tractor, 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 tractor.

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

Date	Hours Used	Oil Change	Air Cleaner Service	Lubrication	Sharpen Blade	Winter Storage	Spring Service	Spark Plug Gap

MAINTENANCE RECORD

Date	Hours Used	Oil Change	Air Cleaner Service	Lubrication	Sharpen Blade	Winter Storage	Spring Service	Spark Plug Gap

MAINTENANCE RECORD

Date	Hours Used	Oil Change	Air Cleaner Service	Lubrication	Sharpen Blade	Winter Storage	Spring Service	Spark Plug Gap

THE TORO PROMISE

It is Toro's policy to design and produce TORO products to provide our customers with a high level of performance and durability in normal operation. Our products, however, are produced in high volume, and it is inevitable that occasionally a unit will reach a customer with a defect in materials or workmanship which causes the unit to fall below the normal high level of TORO performance. Invariably, such a defect will be noticed in a residential product within one year after purchase. Recognizing this possibility, Toro has established a simple guarantee policy and procedure that is intended to assure customer satisfaction. This guarantee statement is as follows:

The Toro Promise

A Two Year Limited Warranty
On All
Riding Mowers, Premium Rotary Mowers, Tillers, and Gas Edgers.

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

Residential Product	2 Years
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 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 Customer 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 limitation on how long 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 of incidental or consequential damages, so the above 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.

COMPLIANCE WITH RADIO INTERFERENCE REGULATIONS CERTIFIED
CERTIFIÉ CONFORME AU REGLEMENT SUR LES BROUILLAGE RADIOÉLECTRIQUE

Litho in U.S.A.