FORM NO. 3313-797

TORO

MODEL NO. 56123 — 9000001 & UP
MODEL NO. 56127 — 9000001 & UP
MODEL NO. 56128 — 9000001 & UP

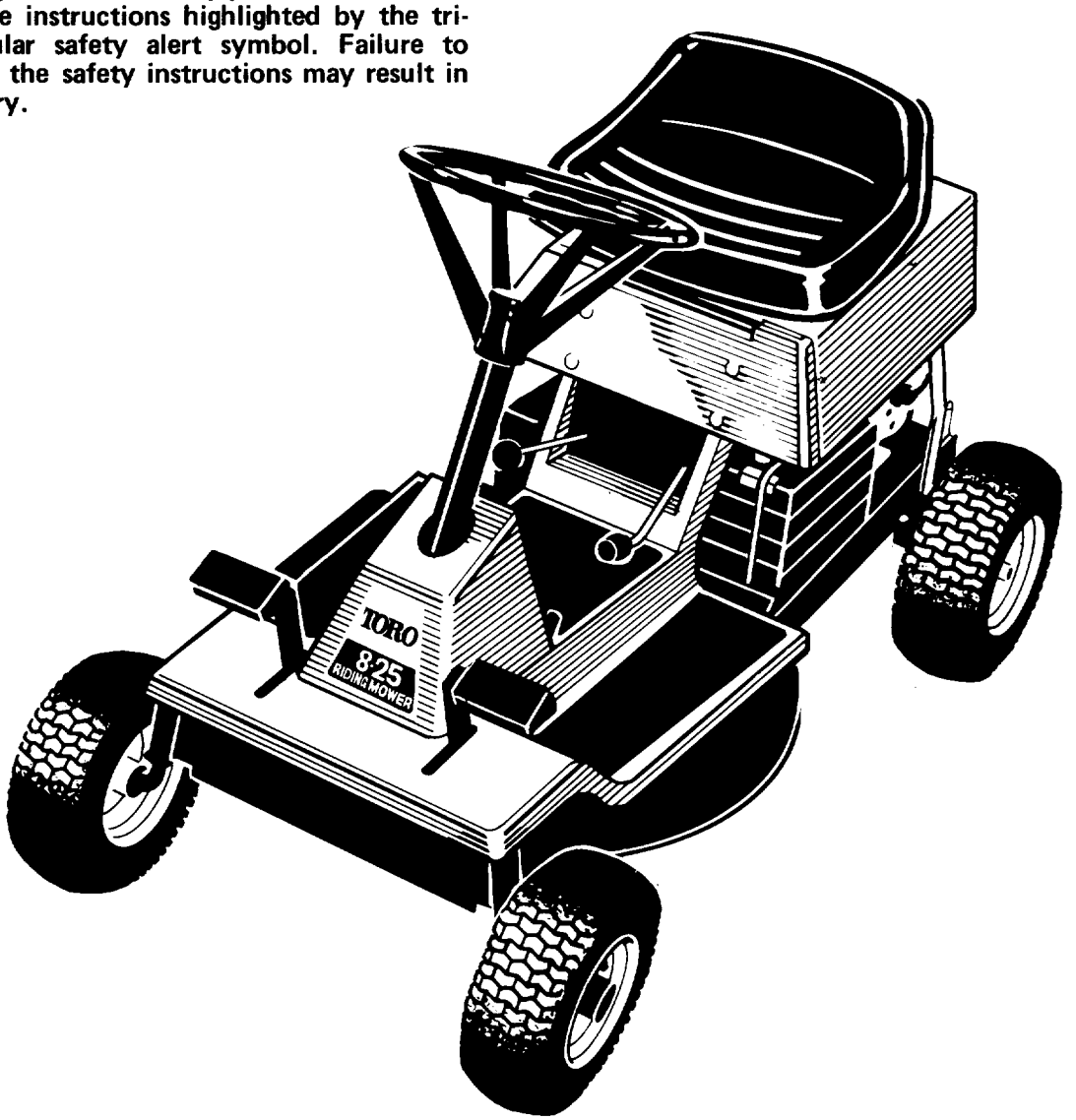
OPERATOR'S MANUAL

8 hp REAR ENGINE RIDER

MODEL CERTIFIED BY INDEPENDENT LABORATORY PROGRAM SPONSORED BY OUTDOOR POWER EQUIPMENT INSTITUTE
ANS B71.1-1986 SAFETY STANDARD

The Rear Engine Rider meets or exceeds the American National Standards Institute's safety standards for riding mowers; thus TORO proudly displays the OPEI safety seal.

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



FOREWORD

The Rear Engine Rider rotary mower has advanced concepts in engineering, design, and safety; and if maintained properly, the product will be reliable.

Since the rider is a high-quality product, Toro is concerned about the future use of the mower and the safety of the user. Therefore, read this manual to familiarize yourself with the safety instructions and the product before operating the rider or mower. The six major sections of the manual are:

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

Note that safety, mechanical, and some general information in the manual is emphasized. The words CAUTION, WARNING, DANGER, IMPORTANT, and NOTE are used to classify the information. CAUTION, WARNING and DANGER identify safety related information; IMPORTANT identifies special mechanical information; and NOTE identifies general information worthy of special attention.

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.

If help – concerning set-up, operation, maintenance, or safety – is ever needed, contact the local Authorized TORO Service Dealer or Distributor. Refer to the "Yellow Pages" for assistance. In addition to skilled service technicians, the dealer and distributor have other TORO Products, as well as factory approved accessories and replacement parts. Keep your Toro all TORO. Buy genuine TORO replacement parts and accessories.

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MINNEAPOLIS, MN 55420 – U.S.A.

SAFETY INSTRUCTIONS

The Rear Engine Rider was tested and verified by an independent laboratory for compliance with the B71.1 — 1986 specifications of the American National Standards Institute.

BEFORE OPERATING

1. Read and understand the contents of this manual or instructions furnished with attachments, before starting and operating the rider, mower or attachment. Become familiar with all controls and know how to stop the engine quickly. NEVER ALLOW CHILDREN TO OPERATE THE MACHINE.

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 tighten any loose nuts, bolts and screws.

4. Wear long pants and substantial shoes. Do not operate the rider while bare foot, 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. Do not fill fuel tank indoors, when the engine is running, or until engine cools for several minutes after running.

   C. Open doors if engine will be run in the garage because exhaust fumes are dangerous and could possibly be deadly. Do not run engine indoors.

   D. Wipe up any gasoline that spilled, and install gasoline container cap and rider fuel tank cap before starting the engine.

6. Before attempting to start the engine, shift into neutral, move blade control into DISENGAGE detent position and move height-of-cut control to highest cutting level. Engine will not start when transmission is in gear or blade control is in the ENGAGE position.

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

WHILE OPERATING

8. Never carry passengers on the rider.

9. Keep people and pets a safe distance away from the rider and 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. Do not drive close to a ditch, creek, or dropoff to prevent tipping or loss of control.

12. Cut steep grass slopes up and down; never across the face. When going uphill or downhill do not stop or start suddenly. Reduce speed on slopes and when making sharp turns to prevent tipping or loss of control. 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.

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, chain, belts, and engine. Always sit on the seat while operating the rider and mower.

15. During operation the grass deflector or complete rear grass catcher assembly must be installed on mower housing and rider. Move blade control into DISENGAGE detent, 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 gravel driveway, road, or side walk, move blade control into DISENGAGE detent and raise mower housing to its highest level. This will prevent loose sand, rocks, and other debris from being thrown by the whirling blade.

17. Before backing up, move blade control into DISENGAGE detent. Do not mow in reverse unless absolutely necessary and then only after careful observation of the entire area behind the mower.

18. Do not touch engine while it is running or soon after it is stopped because the engine may be hot enough to cause a burn.

SAFETY INSTRUCTIONS

19. 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.

20. 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 detent, rotate ignition key to OFF, and remove key from switch.

21. If the blade strikes a solid object or mower vibrates abnormally, shift transmission into neutral, set parking brake, move blade control into DISENGAGE detent, rotate ignition key to OFF, and remove key from switch. Disconnect 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 chain, an obstruction, and a loose blade or other parts. Make all repairs before restarting the engine and operating the mower.

MAINTAINING MOWER

22. Before storing the rider, or performing any maintenance service and adjustment, shift transmission into neutral, set parking brake, move blade control into DISENGAGE detent, rotate ignition key to OFF and remove key from switch. Keep the key in a memorable place so it is not lost accidentally. Also disconnect high tension wire from spark plug to prevent possibility of accidental starting.

23. Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized TORO Service Dealer.

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

25. Keep rider and mower housing in safe operating condition by having nuts, bolts, and screws tight. Check the blade mounting nut frequently to assure the nut is tight (45 - 60 ft-lb).

26. To reduce potential fire hazard, make sure engine is free of excessive grease, grass, leaves and dirt.

27. Under normal usage the optional grass catcher is subject to deterioration and wear. Frequently check all components of grass catcher including bag material, discharge chute, and duct for wear, damage, or deterioration and replace if necessary with genuine TORO parts.

28. Allow engine to cool before storing rider in any enclosure such as a garage or storage shed, and make sure the rider fuel tank is empty if rider 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.

29. Do not overspeed the engine by changing governor settings. Recommended engine speed is 3450 rpm. To assure safety and accuracy, have an Authorized TORO Service Dealer check maximum engine speed (3450 rpm) with a tachometer.

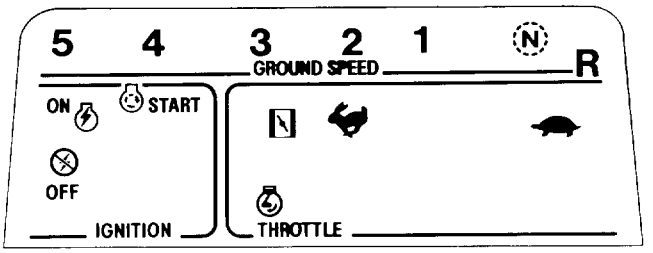
30. At the time of manufacture, the rider conformed to safety standards in effect for riding mowers. Therefore, to assure optimum performance and safety, purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL-FIT" REPLACEMENT PARTS AND ACCESSORIES. The TORO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

SAFETY DECALS

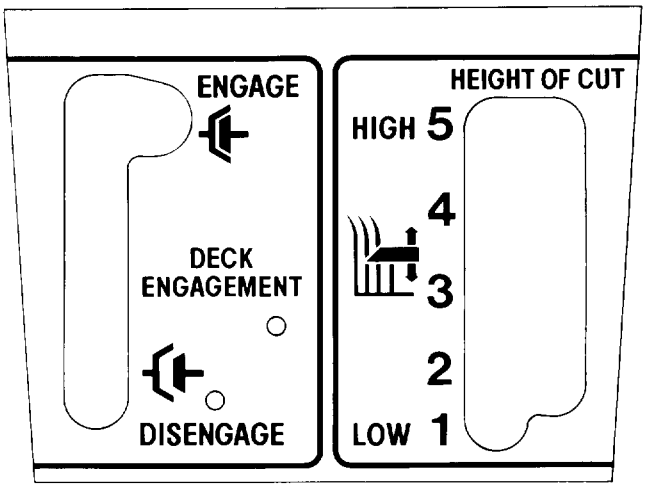
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged.

ON DEFLECTOR AND CUTTER DECK
(Part No. 54-9220)

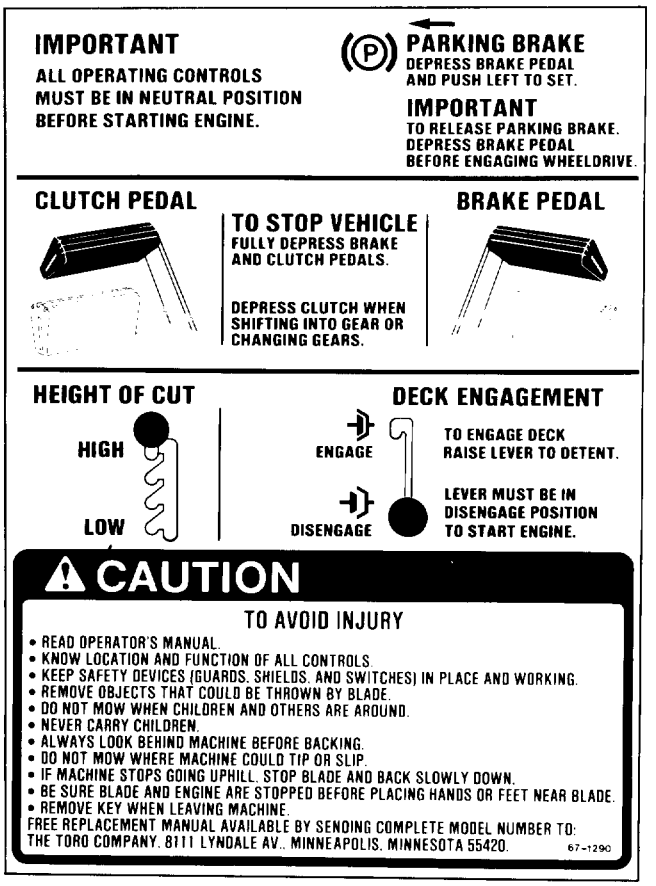
ON RIGHT SIDE OF SEAT BODY
(Part NO. 67-1270, MODEL 56127)
(Part NO. 66-6670, MODEL 56123)



ON FRONT OF SEAT BODY
(Part NO. 67-1280)



ON CENTER CHANNEL
(Part NO. 67-1290)



ON LEFT SIDE OF SEAT BODY
(Part NO. 67-1610)

SPECIFICATIONS

Tecumseh Engine: Four cycle engine has output of 8 hp @ 3600 rpm and 12.8 ft-lb of torque @ 2900 rpm. Displacement is 19.43 cubic inches. Crankcase capacity is approximately 32 oz. of oil, and capacity of fuel tank is 4 quarts. Correct spark plug is a Champion RJ-17LM and recommended air gap is 0.030 of an inch.

Mower Housing: Full floating, stamped steel housing has spiral grass chamber and right side discharge. Deflector is spring loaded to mower housing. Width of cut is 25 inches. Cast iron spindle housing with shaft is supported by sealed ball bearings. Blade pulley is driven by a belt from the engine pulley.

Cutter Blade: Single blade is 25 inches long, made of 7 gauge carbon steel, and heat treated for hardness.

Blade Tip Speed: Tip speed of blade is 17,670 ft/min @3450 engine rpm.

Height-of-Cut Range: Height-of-cut is adjustable to one of five approximate settings: 1-1/2 inches to 3-1/2 inches.

Transmission: Transmission has five speeds forward and one in reverse. Heat treated, sintered metal gears are enclosed in a permanently lubribcated (E P Lithium grease), die cast aluminum housing.

Differential: Sintered powdered metal bevel gears are enclosed in a permanently lubricated (Shell Epro 71030), steel housing.

Traction Drive: Drive system has a "A" section v-belt from engine pulley to transmission input pulley. A no. 40 chain joins transmission output sprocket with differential sprocket.

Ground Speed @3450 Engine rpm:

1st gear — 1.4 mph
2nd gear — 2.1 mph
3rd gear — 3.2 mph
4th gear — 4.1 mph
5th gear — 4.7 mph
Rev. — 1.6 mph

Wheels and Tires: The front 11 x 4.00-5 and the rear 13 x 5.00-6 tubeless, pneumatic turf tires are installed on demountable stamped steel wheels. Recommended pressure for front and rear tires is 10-14 psi. All tires must be equally inflated to assure a level cut.

Steering: 13 inch diameter steering wheel.

Throttle Control: Control is located on right side of seat body. Hand-operated throttle control connects to and operates carburetor-mounted throttle and choke. Control has three positions: SLOW, FAST AND CHOKE.

Transmission Gear Shift: Single lever, in-line shifting with Z pattern.

Clutch Pedal: Foot-operated pedal is located at left front side of rider. Depressing clutch pedal moves idler pulley away from traction drive belt, which disengages the traction drive.

Brake Pedal: Foot-operated pedal is located at right front side of rider. Depressing brake pedal engages a caliper on side of transmission.

Parking Brake Control: Control is located at right front of center channel. Engage parking brake by moving control to the left while brake pedal is depressed; then release pedal. To disengage parking brake, push brake pedal down so parking brake lever moves back to its normal released position.

Blade Control: Control is mounted on front of seat body. Control has two position: ENGAGE and DISENGAGE. Interlock switch prevents engine from starting when control is in the ENGAGED position. When control is in DISENGAGE position, the blade brake is applied and blade belt idler pulley is disengaged. By contrast, idler pulley is engaged with blade belt when control is in the ENGAGE position: blade brake is released.

Ignition Switch: Switch is located on right side of seat body. Switch on electric start model has three positions ON, OFF and START. Switch on recoil model has two positions ON and OFF.

Height-of-Cut Control: Control is mounted on front of seat body.

General Dimensions (approx):

Wheel Base — 40 in.
Wheel Tread — 27 in. (front, outside to outside)
— 29 in. (rear, outside to outside)
Overall Length — 52 in.
Overall Width — 31 in. (w/mower housing)
Overall Height — 38 in.
Dry Weight — 305 lb. (w/mower housing)

Specifications and design subject to change without notice.

LOOSE PARTS

Note: Carefully remove rider and other parts from carton. Use chart below to assure all parts have been shipped.

DESCRIPTION	QTY.	USE
Seat Clamp Washer Capscrew	1 1 4 4	Install Seat, page 7.
Steering Wheel Roll Pin Spacer	1 1 1	Install Steering Wheel, page 7.
Key	2	Use in Ignition Switch.
Operator's Manual	1	Read manual before operating Rider.

SETTING UP INSTRUCTIONS

INSTALL SEAT

1. Position seat onto seat base, inserting seat switch cable thru slot and aligning mounting holes (Fig. 1).

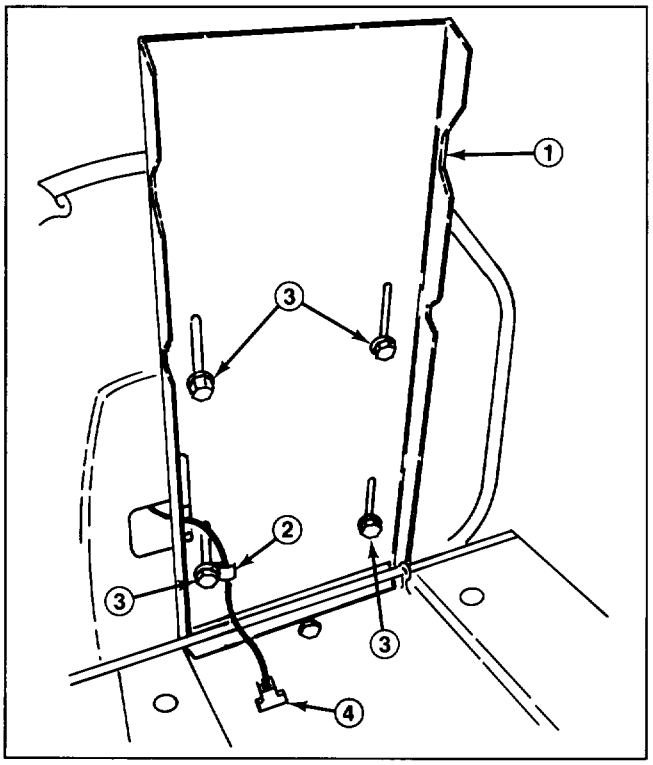


Figure 1

1. Seat base 3. Capscrews & washers
2. Clamp 4. Connectors

2. Slide wire clamp over seat switch wire (Fig. 1).

3. Using left rear mounting slot in seat base, loosely secure wire clamp and seat to seat base with a capscrew and lockwasher (Fig. 1).

4. Mount seat to seat base with (3) remaining capscrews and lockwashers.

Note: Seat may be adjusted for operator comfort by positioning seat as desired in seat base slots.

5. Tighten all capscrews.

6. Insert seat switch connector into wire harness connector.

INSTALL STEERING WHEEL

1. Slip spacer onto steering shaft until groove in spacer fits over roll pin in shaft (Fig. 2).

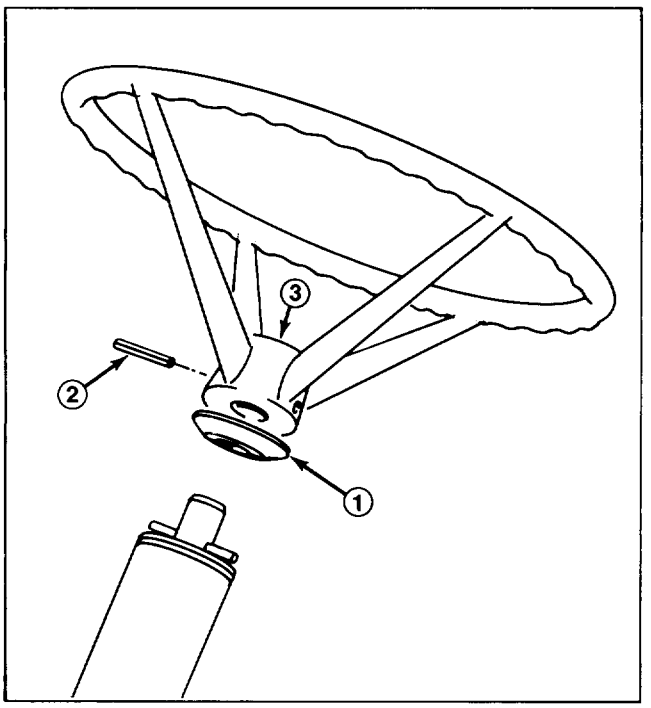


Figure 2

1. Spacer
2. Roll pin
3. Steering wheel insert

SETTING UP INSTRUCTIONS

2. Slip steering wheel onto steering shaft, aligning the steering wheel mount hole with shaft mounting hole.

Note: Steering wheel insert (Fig. 2) should be readable from operator's position on rider with wheels turned straight ahead.

3. Insert a drift punch partially through the holes to maintain alignment and insert the roll pin in the opposite side.

4. Drive the roll pin in until flush with the outside of the steering wheel.

ACTIVATING AND CHARGING BATTERY (Electric Start Model)

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:

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. Remove wing nut securing battery hold downs to rider chassis. (Fig. 3).

2. Remove battery from chassis and set it aside.

3. 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.

4. Leave filler caps off and connect a 3-4 amp battery charger to battery posts. Charge battery at a rate of 4 amperes or less for 4 hours (12 volt).

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

6. 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 and severe corrosion and deterioration will result.

7. Install the battery with the terminal posts toward the center of the machine and vent tube thru hole in frame (Fig. 3).

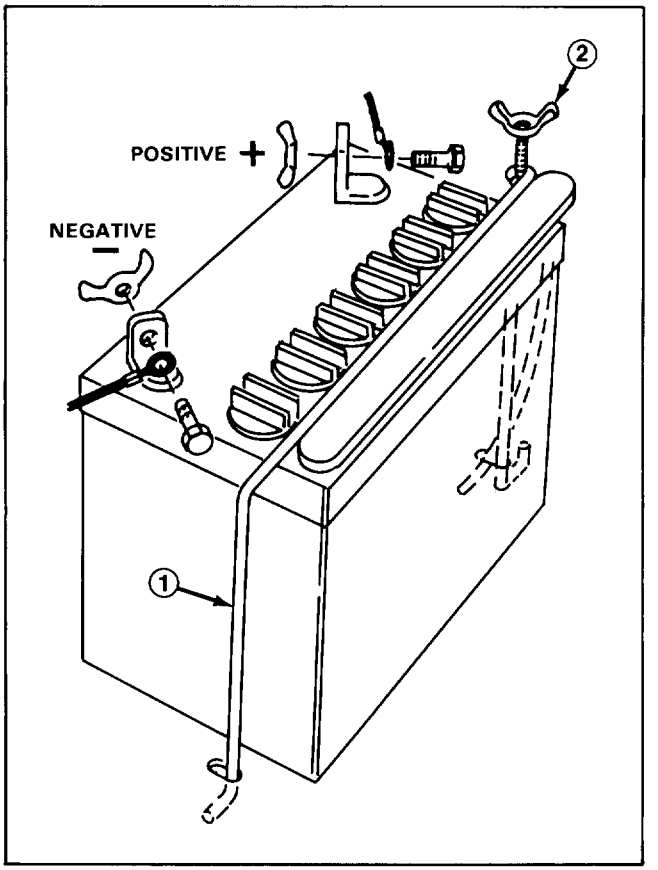


Figure 3

1. Battery hold down
2. Wing nut

8. Reinstall battery hold downs.

9. Install the positive cable to the positive (+) terminal and the negative cable (black) to the negative (–) terminal of the battery and secure with capscrews and wing nuts (Fig. 3).

BEFORE OPERATING

FILL CRANKCASE WITH OIL

The rider is shipped from the factory without oil in the crankcase. Therefore, before trying to start engine, oil must be added to the crankcase.

IMPORTANT: CHECK OIL LEVEL EVERY TIME YOU FILL GAS TANK. Initially, change oil after the first 2 hours of operation; thereafter, under normal conditions, change oil after every 25 hours of operation. However, change more frequently when engine is operated in dusty or dirty conditions.

1. Move rider to a level surface to assure accurate oil level reading.

2. Clean the area around oil dipstick so foreign matter cannot enter fill tube when plug is removed.

3. Remove dipstick from fill tube (Fig. 4).

4. Crankcase capacity is 32 oz. Amount of oil required to fill crankcase may be less than 32 oz. due to oil remaining in engine. **DO NOT OVERFILL.**

5. Slowly pour oil into crankcase (Fig. 4). The engine uses any high quality detergent oil having the American Petroleum Institute — API — "service classification" MS, SC, SD or SF. Oil viscosity — weight — must be selected according to anticipated ambient temperature.

   A. Above +30° F — Use SAE 30.
   B. Below +30° F — Use SAE 5W-30.
      DO NOT USE SAE 10W40 OIL.

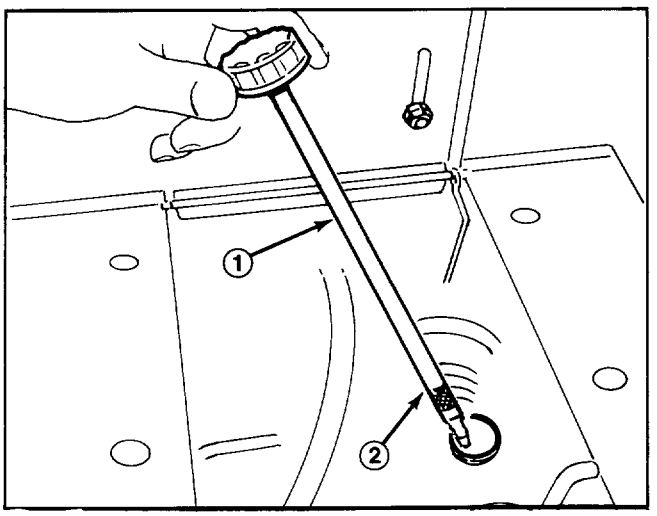


Figure 4

1. Dipstick plug 2. Full mark

6. Rock the rider gently to release any air that may be trapped in crankcase. Screw dipstick fully into fill tube; then remove it and make sure that oil level is up to FULL mark on dipstick (Fig. 4). If level is low, add only enough oil to bring level up to FULL mark.

7. Install dipstick into fill tube. Wipe up any oil that may have spilled.

FILL FUEL TANK WITH GASOLINE

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF CLEAN, FRESH UNLEADED REGULAR GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD-UP OF COMBUSTION CHAMBER DEPOSITS. LEADED GASOLINE CAN BE USED IF UNLEADED IS NOT AVAILABLE.

NOTE: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GASOLINE OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

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 (13 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. Clean area around fuel tank cap so foreign matter cannot enter tank when cap is removed.

2. Remove fuel tank cap and fill tank with unleaded regular gasoline. Then install fuel tank cap.

3. Wipe up any gasoline that may have spilled.

CONTROLS

Gear Shift (Fig. 5) — Transmission has five forward speeds, neutral and reverse. Single lever, straight, in-line shifting located on right side of operator. An interlock switch, which prevents engine from being started when transmission is in gear, is mounted on top of transmission.

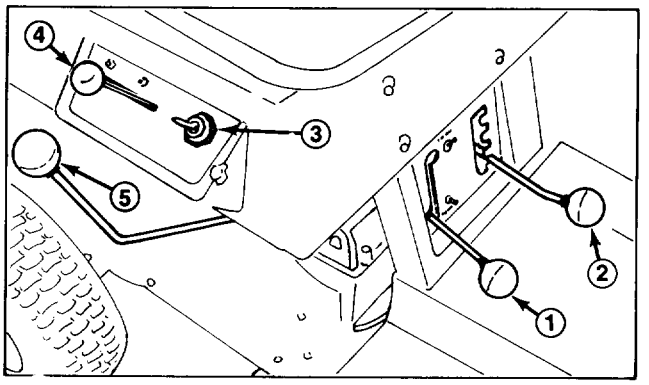


Figure 5

1. Blade control
2. Height of cut control
3. Ignition switch
4. Throttle Control
5. Gear shift

Clutch Pedal (Fig. 6) – Foot-operated clutch pedal is used in conjunction with gear shift. Depress clutch pedal fully when shifting gears, which moves idler pulley away from traction drive belt and disengages power to wheels. Depress clutch pedal whenever brake is used.

Brake Pedal (Fig. 6) – Foot-operated brake pedal must be depressed to slow down or stop the rider. When pedal is depressed, a caliper engages the brake disc at side of transmission. Remember to depress clutch pedal when using brake.

Parking Brake (Fig. 6) – Parking brake must be used in conjunction with brake pedal. When pedal is depressed and end of parking brake lever holds pedal in depressed position, a caliper engages the brake disc at side of transmission.

Blade Control (Fig. 5) — Blade control engages and disengages the cutter blade. An interlock switch prevents engine from starting when control is in the ENGAGE position. Engine will start when control is in DISENGAGE position only.

Throttle Control (Fig. 5) — Throttle control connects to and operates carburetor-mounted throttle and choke. Control has three positions: SLOW, FAST and CHOKE.

Height-of-Cut (Fig. 5) — Height-of-cut control varies the cutting height from 1 1/2 to 3 1/2 inches in five increments.

Ignition Switch (Fig. 6) — Switch on electric start model has three positions ON, OFF and START. Switch on recoil model has two positions ON and OFF.

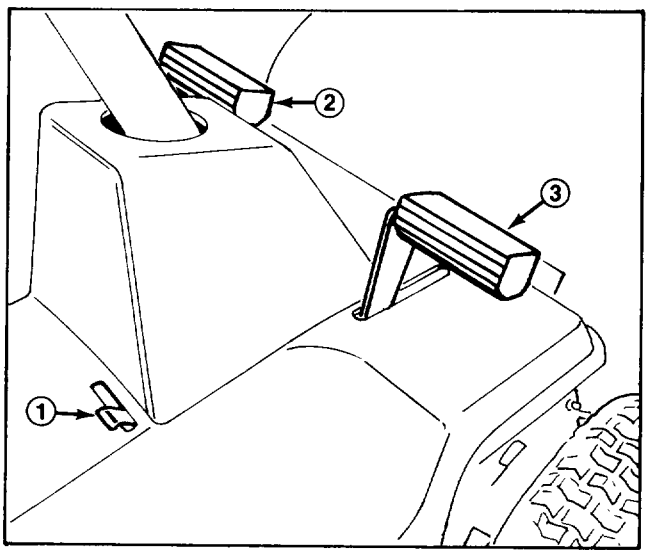


Figure 6

1. Parking brake
2. Clutch pedal
3. Brake pedal

Recoil Starter — Recoil starter, located on engine, must be used in conjunction with ignition switch. After turning ignition key to ON position, pull recoil starter handle to start engine.

STARTING AND STOPPING INSTRUCTIONS

Note: Make sure wire is installed on spark plug, battery is activated, and cables are installed on battery posts.

ELECTRIC START

1. Engage the parking brake (Fig. 6): refer to Using Parking Brake, page 11.

2. Move gear shift into neutral and blade control into DISENGAGE detent (Fig. 5)

Note: An interlock switch on the transmission and blade control prevents engine from starting unless gear shift is in neutral and blade control is in DISENGAGE detent.

3. Move throttle control to CHOKE position (Fig. 5) when starting a cold engine. However, a hot engine requires no choking; move throttle between FAST and SLOW for starting.

4. Rotate ignition key (Fig. 5) to START position. When engine starts, release the key and move throttle between FAST and SLOW if choke was used for starting.

STARTING AND STOPPING INSTRUCTIONS

RECOIL START

1. Engage the parking brake (Fig. 6): refer to Using Parking Brake, page 11.

2. Move gear shift into neutral and blade control into DISENGAGE detent (Fig. 5).

Note: An interlock switch on the transmission and blade control prevents engine from starting unless gear shift is in neutral and blade control is in DISENGAGE detent.

3. Move throttle control to CHOKE position (Fig. 5) when starting a cold engine. However, a hot engine requires no choking; move throttle between FAST and SLOW for starting.

4. Rotate ignition key (Fig. 5) to ON position. Stand to left side of rider, pull recoil starter handle out until positive engagement results; then pull handle vigorously to start engine. When the engine starts, immediately move throttle control between FAST and SLOW positions if choke was used for starting. Get onto the rider from the left side and sit on the seat.

IMPORTANT: Do not pull recoil rope to its limit or let go of the starter handle when rope is pulled out because rope may break or recoil assembly may be damaged.

TO STOP

1. To stop the engine, depress clutch pedal, shift into neutral and engage parking brake. Move blade control into DISENGAGE detent, rotate ignition key to OFF and wait for all parts to stop moving before getting off the seat.

OPERATING INSTRUCTIONS

BREAK-IN

The engine requires no special break-in other than checking oil level each time you fill gas tank and changing oil after the first two hours of operation. Some oil consumption will be noticed during break in, but will improve as used. Operate the transmission in all gears to assure that drive system is functioning correctly. After the first five hours of operation, check the condition and adjustment of the drive chain and belts.

USING PARKING BRAKE

CAUTION

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

1. Depress brake pedal fully.

2. Move parking brake control to the left and release brake pedal until it contacts end of parking brake lever (Fig. 6).

3. To release the parking brake, depress brake pedal (Fig. 6), which will allow parking brake lever to return to its disengaged position. Then release brake pedal.

IMPORTANT: Disengage parking brake before shifting into gear to commence operation. If the rider is driven when parking brake is engaged, accelerated brake wear will result.

ADJUSTING HEIGHT-OF-CUT

The height-of-cut may be set in one of five positions: 1-1/2 inches to 3-1/2 inches.

1. Move blade control into DISENGAGE detent (Fig. 5).

2. Move height-of-cut control (Fig. 5) into desired setting.

3. To engage blade for cutting, slowly move blade control into ENGAGE detent.

GRASS DEFLECTOR

WARNING

The grass deflector is a safety device that routes discharged material down toward the turf; thererfore, 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 or blade contact could occur.

OPERATING INSTRUCTIONS

OPERATING PROCEDURE

1. Move blade control into DISENGAGE detent.

2. Start the engine: refer to Starting/Stopping Instructions, steps 1-4, page 11.

IMPORTANT: When rider is used for the first time, operate only the transmission in all gears to assure that drive system is functioning correctly, and become familiar with the controls and operating characteristics. Also check condition of the drive chain and belts, and make any adjustment that may be required.

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.

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 slowly moving blade control into ENGAGE detent.

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

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 height 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.

4. If the cutting width of the rider is wider than the mower previously used, raise height-of-cut setting one notch to assure undulations in turf are not cut to short.

DANGER

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

OPTIONAL BAGGING OPERATION

To assure efficient operation of the optional grass catchers, its operating characteristics must be understood. In addition to cutting turf uniformly, the blade also generates high-velocity air currents. These air currents propel grass clippings from under the cutter deck, through the duct, and into the rear catcher. However, certain conditions may cause the rear grass catching system to malfunction.

One condition that may cause a conveying malfunction is when the cutter deck is set too low. Since air is required to propel grass clippings, there must be a source for this air. And if the source is obstructed, conveying will be inefficient. Thus the height-of-cut must not be set too low, because grass surrounding the cutter deck will prevent air from getting under the cutter deck and entering the conveying system.

A second condition that may cause a malfunction is when excessively long, wet and heavy grass clippings

cannot be propelled into the catcher. Even though the supply of air may be acceptable for efficient conveying, some grass clippings may fall from the main air stream and into the duct. This starts a progressive buildup of grass clippings in the duct, discharge chute, and against the inside of the cutter deck. The chute and duct may even plug. Therefore, to assure efficient grass collecting, experiment with different heights-of-cut until satisfaction is obtained.

Another condition affecting conveying is moisture. If the turf is wet from watering, morning dew, or its own internal moisture content, the system may malfunction. Therefore, to assure efficiency, cut the grass when it is dry. Since dry grass has some moisture content, clippings may stick to the duct, discharge chute, and on the inside of the cutter deck. This slight buildup is normal, but the rear hopper, duct, discharge chute, and cutter deck must be cleaned to prevent undesirable buildup of clippings.

A final condition to consider is ground speed. As the engine overloads – slows down – air velocity decreases. Therefore, ground speed of the rider must be slow enough to allow all grass clippings to move continuously from under the cutter deck, through the duct, and into the catcher.

BAGGING TIPS

1. To assure maximum air currents in the system, move throttle to FAST and gear shift to 1st gear, which is the slowest ground speed.

2. Do not bag grass when it is wet or too long. But grass can be cut with grass deflector installed. Several hours later, pick up the dry grass clippings with complete rear grass catcher installed.

3. Cut the grass often, especially when the turf growth is rapid. High heights-of-cut produce good grooming results. If shorter turf is desired, cut the grass again.

4. Overlap swaths to produce an even cutting pattern and to minimize the load on the engine. Make sure grass clippings move continuously through the duct.

5. While operating, glance frequently at the duct. If grass clippings are not moving through the duct, there may be an obstruction in the duct or discharge chute. The obstruction can usually be cleared, however, by moving gear shift to neutral, raising cutter deck to highest position, and slapping the side of the installed duct — near the obstruction. If the obstruction does not pass into the catcher when duct is slapped, move blade control to DISENGAGE and rotate ignition key to OFF. Then remove duct and clear any obstruction from the duct or discharge chute with stick or similar object. After obstruction is removed, install duct, restart engine and continue grass collecting.

6. After using the grass catcher, remove mulch from inside of catcher, duct, discharge chute, and from underside of cutter deck. If grass clippings remain on the inside of these parts, a malfunction will likely result. To retain translucency, remove grass and dirt stains from inside the duct by washing it with soap and water. Keep the blade sharp to assure good grooming and conveying results.

DANGER

Do not remove duct, discharge chute, or rear catcher when engine is running or when blade is rotating, because personal injury could result.

MAINTENANCE INTERVAL CHART

	2 Hours	10 Hours	25 Hours (Monthly)	Storage Service	Spring Service	2 Years	Notes
Change Oil (Initial)	X						
Change Oil (Periodic)			X	X			
Check Safety Interlock	X		X		X	X	
Check Cutter Blade	X		X	X			
Check Brake	X			X	X		
Grease Front Axle Spindles			X	X			More often in dusty, dirty, conditions.
Lubricate Pivot Points			X	X			
Service Air Cleaner		X		X			
Check Spark Plug			X	X	X		
Check Blade Drive Belt				X			
Check Traction Drive Belt				X			
Check Drive Chain		X		X			
Drain Gasoline				X			
Clean Outside of Engine			X	X			More often in dusty, dirty, conditions.
Clean Blower Screen on Engine			X	X	X		
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, remove key from ignition switch and pull wire off spark plug (Fig. 7). Make sure wire does not contact plug accidentally.

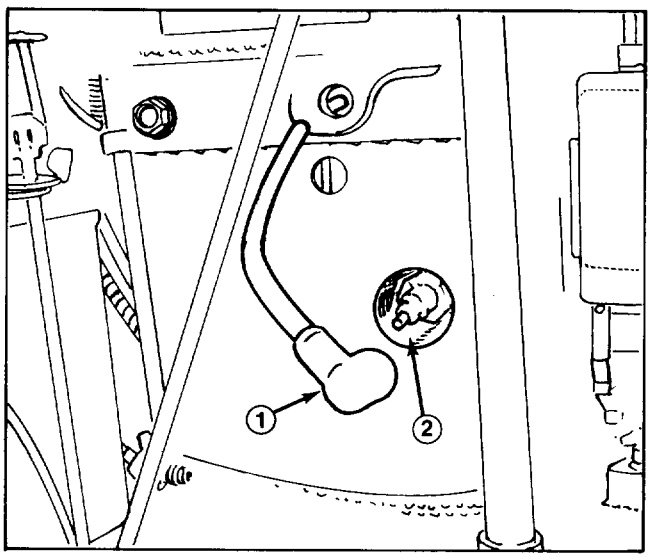


Figure 7

1. Spark plug wire
2. Spark plug

GREASE FRONT AXLE SPINDLES AND WHEELS

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

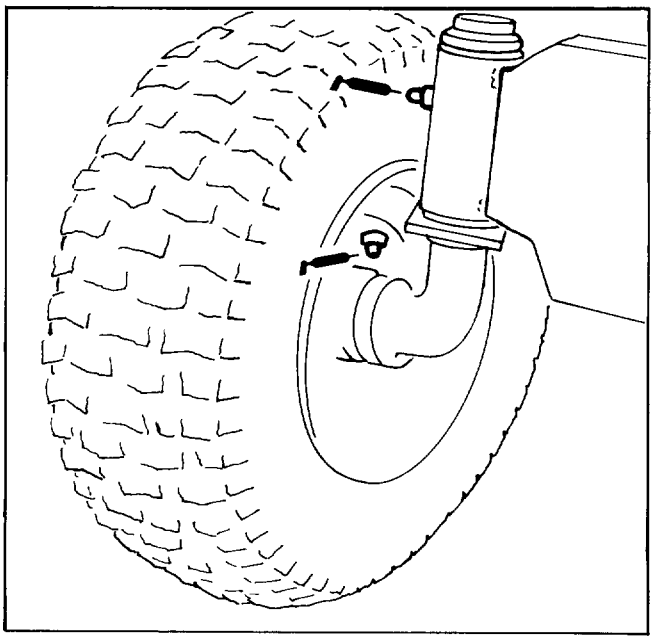


Figure 8

2. Lubricate both axle spindles w/No. 2 general purpose grease (Fig. 8). 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. 8). Pump grease gun about four times. Wipe up any excess grease.

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.

LUBRICATE PIVOT POINTS

The mechanical pivot points on the rider must be lubricated after every 25 hours of operation; however, lubricate more frequently when conditions are dusty or sandy.

IMPORTANT: To lubricate all the mechanical pivot points, the rider must be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider.

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 16.

2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6 page 16.

3. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

4. Shift transmission into 1st gear and engage parking brake.

5. Tip rider up and onto its rear end.

6. Remove mower housing from rider chassis: refer to Removing/Installing Mower Housing, steps 1-10, page 20.

7. Lubricate all mechanical pivot points on rider and mower housing with light oil.

8. Install mower housing onto rider chassis: refer to Removing/Installing Mower Housing, steps 11-14, page 20.

9. Tip rider back to its normal operating position.

10. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

11. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

12. Install the battery: refer to Activating and Charging Battery, page 8.

SERVICING AIR CLEANER

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

1. Pull wire off spark plug.

2. Remove (2) wing nuts securing air cleaner cover to air cleaner body (Fig. 9).

3. Lift off air cleaner cover and clean thoroughly (Fig. 9).

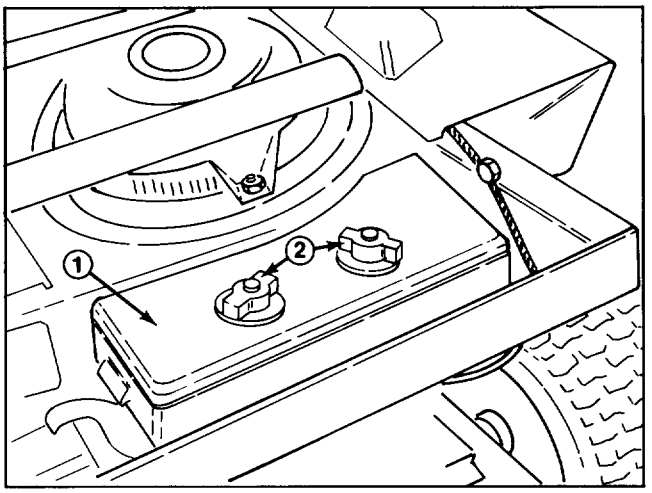


Figure 9

1. Air cleaner cover 2. Wing nuts

4. If foam element is dirty, remove it from paper element (Fig. 10). **Clean thoroughly.**

A. WASH foam element in a solution of liquid soap and warm water. Squeeze to remove dirt, but do not twist because foam may tear.
B. DRY by wrapping in a clean rag. Squeeze rag and foam element to dry.

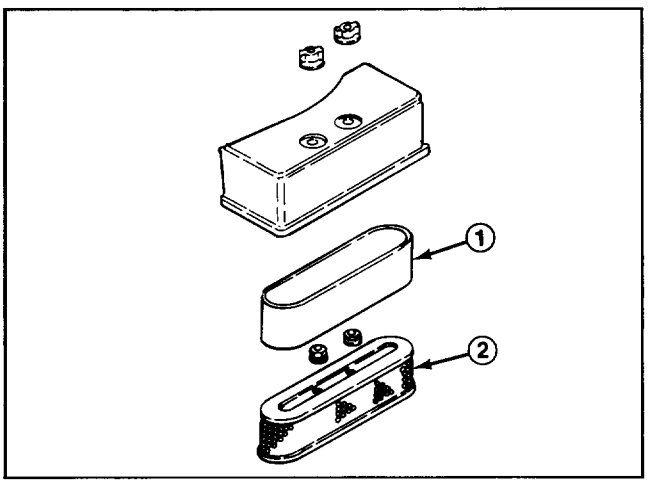


Figure 10

1. Foam element 2. Paper element

C. SATURATE element with a generous quantity of SAE 30 engine oil. Squeeze element to remove excess oil and to distribute oil thoroughly. A damp element is desirable.

5. PAPER FILTER — Replace annually, more frequently when mower is operated in dusty or dirty conditions. DO NOT ATTEMPT TO CLEAN OR OIL PAPER FILTER.

6. Reinstall paper element, foam element and air cleaner cover. Tighten mounting srews.

IMPORTANT: Do not operate engine without air cleaner element because extreme engine wear and damage will likely result.

CLEANING COOLING SYSTEM

Clean cooling system frequently. Remove build-up of grass, dirt or other debris from the cylinder and cylinder head cooling fins, air intake screen on flywheel end, and carburetor-governor levers and linkage. This will help insure adequate cooling and correct engine speed and reduce the possibility of overheating and mechanical damage.

CHANGING CRANKCASE OIL

Check oil level every time you fill gas tank. Change oil after the first 2 hours of operation; thereafter, under normal conditions, change oil after every 25 hours of engine operation. However, change oil more frequently when engine is operated in dusty or sandy conditions. If possible, run engine just before changing oil because warm oil flows better and carries more contaminants than cold oil.

1. Position rider on level surface so oil drains completely and a true reading results when crankcase is refilled.

2. Stop engine and pull wire off spark plug.

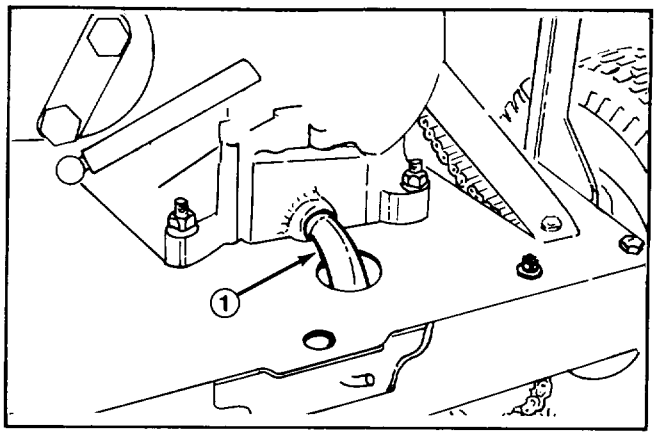


Figure 11

1. Elbow

3. Move blade control into DISENGAGE detent and set height-of-cut in lowest position.

4. Clean area around drain plug in elbow. Next, put a shallow drain pan under rider to catch the oil.

5. Remove drain plug from elbow (Fig. 12).

6. When oil is drained completely, reinstall drain plug and wipe up any oil that may have spilled.

7. With rider parked on a level surface, fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

DRAINING GASOLINE FROM FUEL TANK

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.

IMPORTANT: When the rider is tipped, all gasoline must be drained from the fuel tank.

1. Clean area around fuel tank cap so foreign matter cannot enter filler hole when cap is removed. Next, remove cap from fuel tank (Fig. 12).

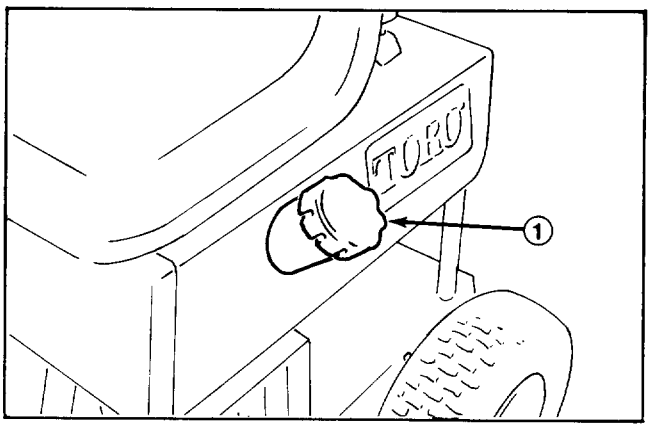


Figure 12

1. Fuel tank cap

2. Using a pump-type syphon, drain gasoline into a clean gas can.

Note: There is no other recommended way to drain gasoline from the fuel tank, other than by using a pump-type syphon. An inexpensive syphon can be purchased at a hardware store.

MAINTENANCE

REPLACING SPARK PLUG

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. Correct spark plug is a Champion RJ-17LM and recommended air gap is 0.030 of an inch.

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

1. Clean area around spark plug so foreign matter cannot fall into cylinder when spark plug is removed.

2. Pull wire off spark plug and remove plug from cylinder head (Fig. 13).

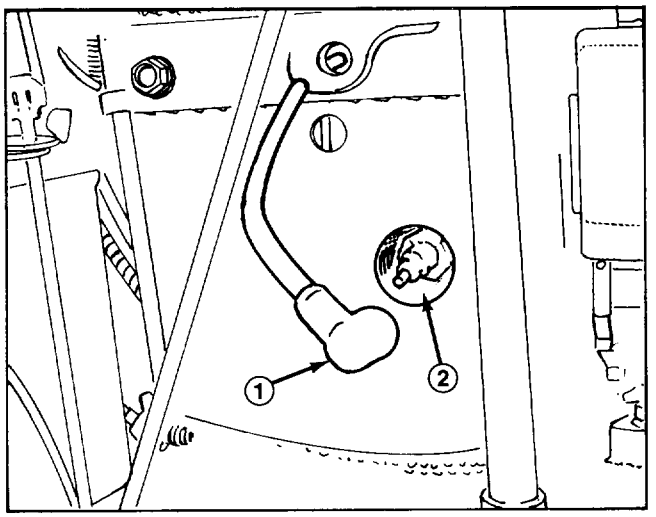


Figure 13

1. Spark plug wire
2. Spark plug

3. Check conditions 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.

4. Set air gap between center and side electrodes at 0.030 of an inch (Fig. 14). Install correctly gapped spark plug w/gasket seal, and tighten plug to 20 ft-lb. If torque wrench is not used, tighten plug firmly.

5. Push 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.

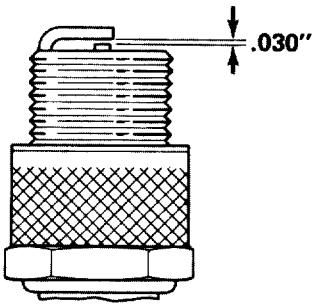


Figure 14

ADJUSTING THROTTLE CONTROL

To assure that choke and carburetor-mounted throttle are operating properly, the throttle control must be adjusted correctly. Hard starting may be an indication of an incorrect adjustment. If throttle control is ever replaced, an adjustment is also necessary. Before the carburetor is adjusted, assure that throttle control is operating properly.

1. Move throttle control into FAST detent position. Hole in carburetor control arm and notch in bracket must line up (Fig. 15). If holes line up throttle is adjusted correctly. If holes do not line up, an adjustment is required: proceed to step 2.

2. Loosen cable clamp screw and move control arm and cable until holes line up (Fig. 15). When holes are aligned, tighten cable clamp screw to hold cable in place (Fig. 15).

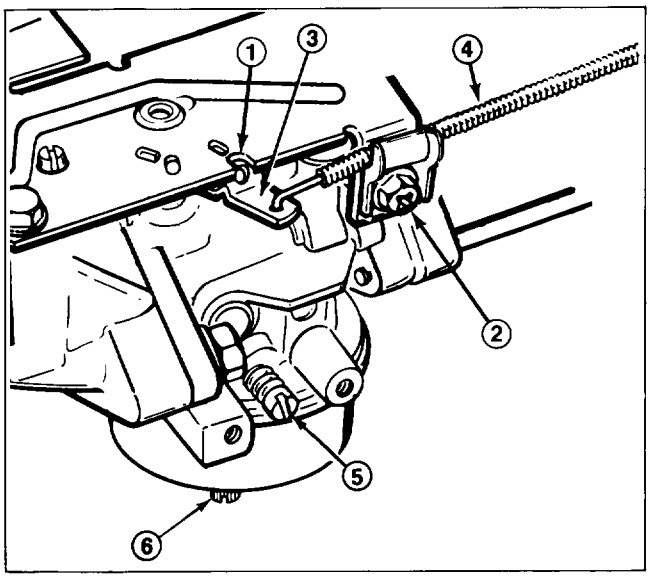


Figure 15

1. Holes
2. Cable clamp screw
3. Control arm
4. Cable
5. Idle adjusting screw
6. Main adjusting screw

MAINTENANCE

ADJUSTING CARBURETOR

IMPORTANT: Before the carburetor is adjusted, throttle control must be checked for proper operation: refer to Adjusting Throttle Control, page 19.

1. Idle Adjusting Screw (Fig. 15) — Close screw by gently rotating it clockwise.

IMPORTANT: Do not forcefully close the idle adjusting screw tight because the screw and seat in caburetor will likely be damaged.

2. Rotate — open — the idle adjusting screw 1-3/4 turns counterclockwise (Fig. 15).

3. Main Adjusting Screw (Fig. 15) — Close screw by gently rotating it clockwise. Rotate — open — idle mixture screw 2 turns counterclockwise.

IMPORTANT: Do not forcefully close main adjusting screw tight because the screw and seat in carburetor will likely be damaged.

Note: The idle adjusting and main adjusting screw settings are approximate; however, the settings will allow engine to be started so carburetor can be fine tuned.

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

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 and the discharge area.

IMPORTANT: Air cleaner must be installed on the engine whenever caburetor is being adjusted.

5. Rotate idle adjusting screw clockwise, 1/8 of a turn at a time until the engine starts to lose speed — lean, then turn the screw counterclockwise 1/4-3/8 turn.

6. Check main adjusting screw adjustment by operating rider under load (cutting grass). If engine hesitates or stops while cutting, rotate main adjusting screw counterclockwise, 1/8 turn at a time, then checking each setting under load until condition is corrected.

7. If engine smokes excessively, rotate main adjusting screw clockwise, 1/8 turn at a time, then checking each setting under load until condition is corrected.

8. After main adjusting screw is set, move throttle control to SLOW position. If engine does not idle smoothly, rotate idle adjusting screw 1/8 of a turn in either direction until engine runs smoothly.

9. After carburetor is adjusted, shut engine off. If rider 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

CAUTION

Check cutter blade every time rider is tipped on end. If lock nut holding blade is loose, tighten it to 45-60 ft-lb. If blade or sail (Fig. 18) at end of blade is worn, eroded, or cracked, replace the blade. Replace the blade if it is bent or out-of-balance. Always use genuine TORO replacement blades to assure safety and optimum performance. NEVER USE WILL-FIT REPLACEMENT BLADES.

1. Make sure engine is shut off and wire is off spark plug.

IMPORTANT: To remove blade from spindle shaft, the rider may be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider.

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 16.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 16.

4. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

5. Shift transmission into 1st gear and engage parking brake. Tip rider onto its rear end.

6. Grasp end of blade using a rag or thickly padded glove; then remove lock nut, anti-scalp cup and blade (Fig. 16).

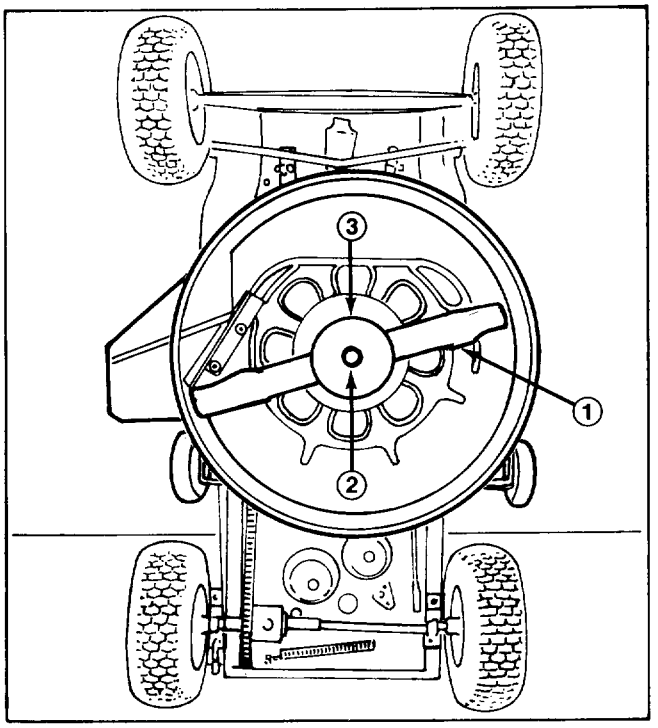


Figure 16

1. Blade
2. Locknut
3. Anti-scalp cup

Note: Since lock nut is tightened to 45-60 ft-lb at the factory, it may be difficult to remove the nut. If the nut cannot be removed, contact an Authorized TORO Service Dealer or a "service station" for assistance.

7. Using a file, sharpen cutting edge at both ends of the blade (Fig. 17).

IMPORTANT: Sharpen top side of the blade and maintain original cutting angle to assure a sharp cutting edge. The blade will remain balanced if same amount of material is removed from both cutting edges.

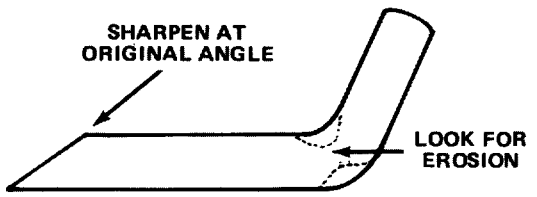


Figure 17

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 lock nut (Fig. 16). Tighten lock nut to 45-60 ft-lb.

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

10. Tip rider back to its normal operating position.

11. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

12. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

13. Install the battery: refer to Activating and Charging Battery, page 8.

CLEANING UNDERSIDE OF MOWER HOUSING

To assure a good quality-of-cut and efficient grass bagging, underside of mower housing and inside of discharge area must be kept clean. Periodically apply a coat of paste wax on inside of mower housing and grass deflector. This will retard rust and prevent dirt and grass from sticking on inside of housing.

1. Make sure engine is shut off and wire is off spark plug.

IMPORTANT: To clean underside of mower housing, the rider must be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider.

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 16.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 16.

4. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

5. Shift transmission into 1st gear and engage the parking brake. Tip rider onto its rear end.

6. Remove grass clippings and dirt that is sticking to inside of housing (Fig. 16) by spraying with a garden hose. Scrape out grass and dirt that water does not remove from housing; then spray housing again.

7. Since rider is tipped on end, check condition of blade (Fig. 17).

8. Tip rider back to its normal operating position.

9. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 8.

10. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

11. Install the battery: refer to Activating and Charging Battery, page 8.

REMOVING/INSTALLING MOWER HOUSING

1. Stop engine and pull wire off spark plug.

2. Shift transmission into 1st gear and engage the parking brake.

3. Move height-of-cut control to lowest position.

IMPORTANT: To remove mower housing from chassis, rider may be tipped on its rear end. However, before rider is tipped, gasoline must be drained from fuel tank and oil from the crankcase. Also, remove the battery so acid does not spill onto the rider.

4. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 16.

5. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 16.

6. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

7. Tip rider onto its rear end.

8. Remove blade drive belt: refer to Replacing Blade Drive Belt, page 20.

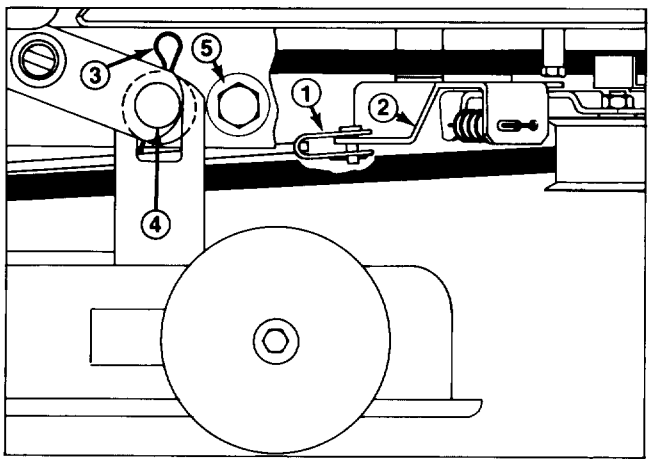


Figure 18

1. Brake rod
2. Idler bracket
3. Cotter pin
4. Mounting pin
5. Deck stops

9. Remove cotter pin and clevis pin securing deck brake rod to idler bracket (Fig. 18).

10. Remove (2) hairpin cotters and washers retaining mower housing to mounting pins (Fig. 18). Grasp mower housing and move it to the side until housing slides off pins, then forward to allow front mounts to drop.

11. To reinstall mower housing, reverse removal procedure.

12. Reinstall blade drive belt: refer to Replacing Blade Drive Belt, page 20.

13. Tip rider back to its normal operating position.

14. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

15. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

16. Install the battery: refer to Activating and Charging Battery, page 8.

REPLACING BLADE DRIVE BELT

IMPORTANT: To replace the blade drive belt, the rider may be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider.

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 16.

2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 16.

3. Remove battery from chassis: refer to Remove Battery From Chassis, page 8.

4. Shift transmission into 1st gear and engage the parking brake. Tip rider onto its rear end.

5. Remove capscrews, retainers and locknuts securing deck stops to each side of mower frame (Fig. 18). Slide mower housing rearward to release belt tension.

6. Move height-of-cut control to lowest position.

7. Loosen capscrews securing (2) engine pulley belt guides and move guides away from pulley. Remove deck drive belt from engine pulley (Fig. 19).

8. Move blade control into ENGAGE detent so brake is away from mower housing pulley.

9. Remove (2) screws securing belt guide to mower housing and remove belt guide. Remove belt from pulley.

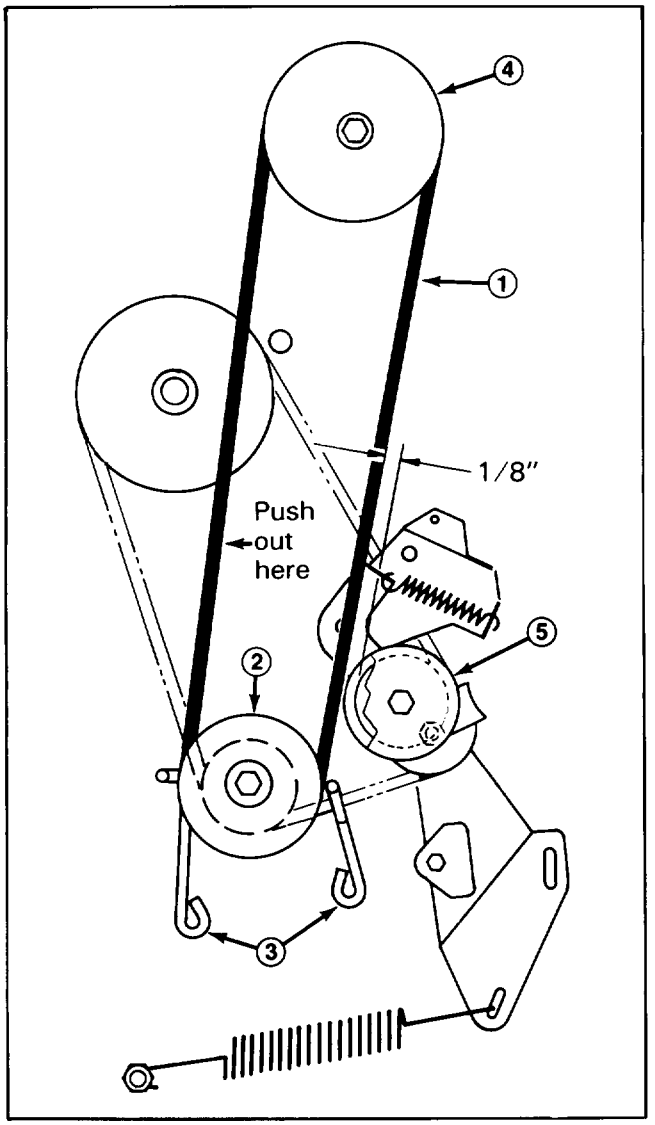


Figure 19

1. Blade drive belt
2. Engine pulley
3. Engine pulley belt guides
4. Mower housing pulley
5. Idler pulley

10. Make sure blade control is in ENGAGE detent so brake is away from mower housing pulley and install new belt around pulley. Reinstall belt guide to mower housing.

11. Route belt around engine pulley and reinstall belt guides. Make sure belt guides are within 1/8" of pulley or belt but not making contact.

12. Pushing out on belt (removing slack), as shown in fig. 19, check clearance between outside of belt and inside of idler pulley (Fig. 19). Clearance should be approximately 1/8".

13. If clearance between belt and pulley is correct, proceed to step 16, otherwise preceed to next step for adjustment procedure.

14. Locate deck engagement rod end on left side of transmission (Fig. 20). Remove clevis pin retainer and rotate clevis to lengthen or shorten rod until desired clearance between belt and pulley is attained.

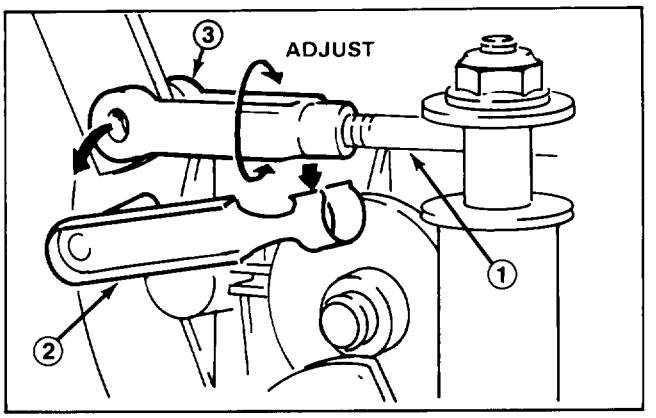


Figure 20

1. Deck engagement rod
2. Clevis pin retainer
3. Clevis

15. Reconnect clevis and recheck adjustment.

16. Tip rider back to its normal position.

17. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

18. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

19. Install the battery: refer to Activating and Charging Battery, page 8.

REPLACING TRACTION DRIVE BELT

IMPORTANT: To replace the traction drive belt, the rider may be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider.

1. Drain gasoline from fuel tank; refer to Draining Gasoline From Fuel Tank, page 16.

2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 16.

3. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

4. Shift transmission into 1st gear and engage the parking brake. Tip rider onto its rear end.

5. Remove blade drive belt: refer to Replacing Blade Drive Belt, page 20.

6. Remove the mower housing: refer to Installing/Removing Housing, page 20.

7. Unhook large traction spring from mounting screw (Fig. 21). Use caution when removing spring as it is heavily tensioned.

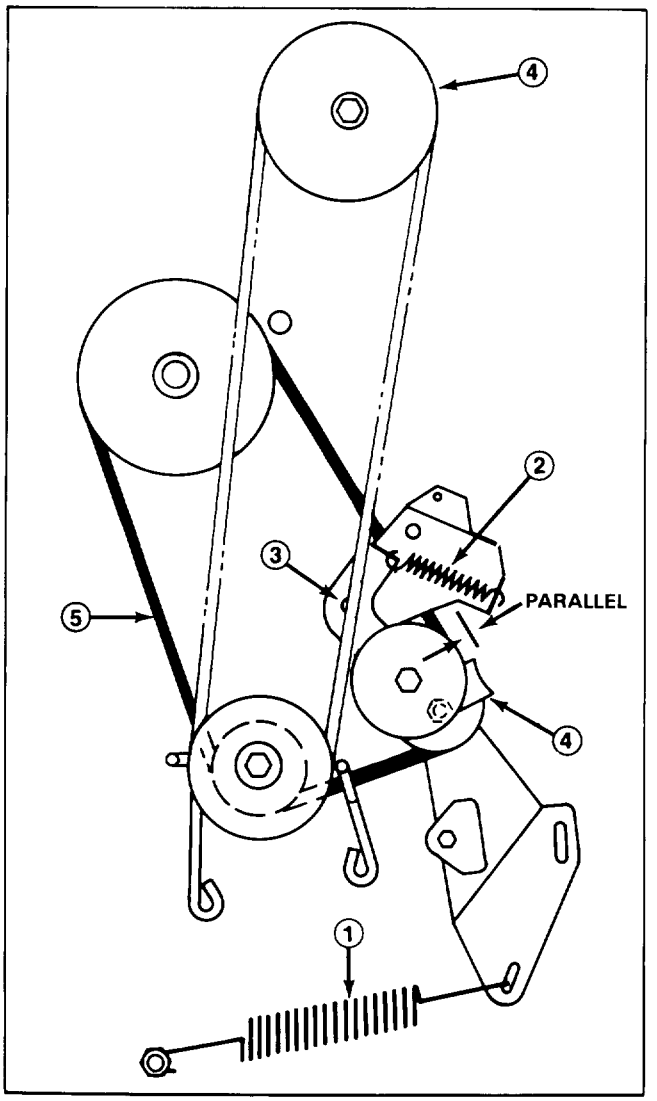


Figure 21

1. *Traction spring*
2. *Idler spring*
3. *Locknut & washer securing idler bracket*
4. *Pulley belt guide*
5. *Traction drive belt*

8. Unhook idler spring from idler bracket (Fig. 21).

9. Remove locknut and washer securing idler bracket to frame and remove bracket (Fig. 21).

10. Loosen the locknut on pulley until belt guide can be removed (Fig. 21). Remove belt from all pulleys.

11. Reverse procedure to reinstall belt.

Note: When reinstalling belt guide to idler pulley, make sure edge of belt guide is parallel to belt as shown in Figure 21.

12. Install mower housing: refer to Removing/ Installing Mower Housing, steps 11-14, page 20.

13. Tip rider back to its normal operating position.

14. Fill crankcase with oil: refer to Fill Crankcase with Oil, page 9.

15. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

16. Install the battery: refer to Activating and Charging Battery, page 8.

CHECKING/ADJUSTING DRIVE CHAIN

The drive chain must be adjusted to maintain 1/8 of an inch deflection at mid span between transmission and differential sprockets. Check chain deflection after every 25 hours of operation.

1. Remove two screws securing chain cover to rider chassis and lift off chain cover (Fig. 22).

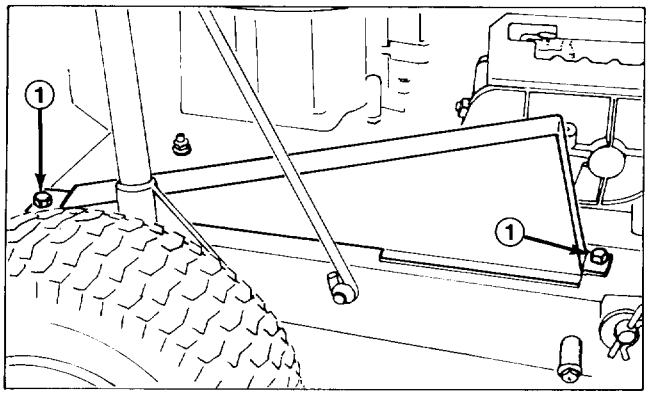


Figure 22

1. *Screws*

2. Check deflection of drive chain by lifting up and pressing down on chain with moderate pressure at mid span (Fig. 23). There should be 1/8 of an inch total deflection (Fig. 24). If deflection is not as specified, an adjustment is required — steps 3-14.

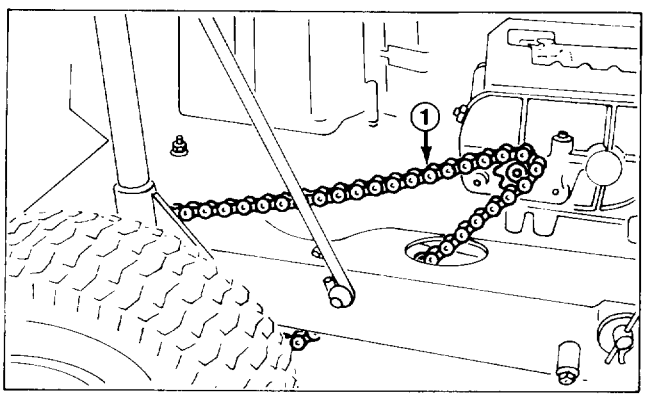


Figure 23

1. *Drive chain*

IMPORTANT: To adjust drive chain, the rider must be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove the battery so acid does not spill onto the rider.

3. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 18.

4. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 17.

5. Remove battery from chassis: refer to Activating and Charging Battery, page 8.

6. Shift transmission into 1st gear and engage the parking brake. Tip rider onto its rear end so chassis is on top of 2" x 4" blocks (Fig. 24). Wheels must be off the floor so axle can be moved.

7. Loosen four flange nuts securing pillow blocks w/differential axle to the rider frame (Fig. 24).

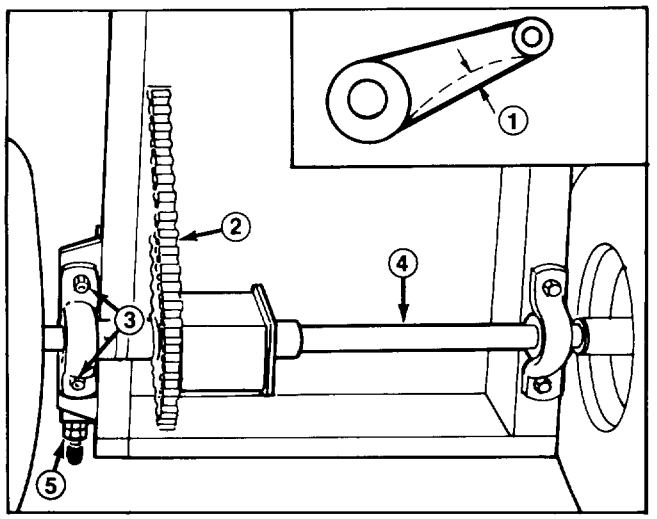


Figure 24

1. .12 inch
2. Drive chain
3. Locknuts
4. Axle
5. Chain tensioner

8. Loosen rear jamnut on chain tensioner (Fig. 24).

9. Rotate inside nut on chain tensioner until desired chain deflection is attained.

10. Tighten flange nuts securing right pillow block (chain side) to rider frame.

11. Since differential axle must be parallel to rear of chassis, measure distance from center of pillow blocks to rear of chassis (Fig. 24). Difference between the two measurements must not exceed 1/8 inch. If difference exceeds 1/8 inch, differential axle is not parallel with chassis: therefore it must be readjusted.

12. Check the deflection of the drive chain from bottom of rider (refer to Step 2).

13. Tip rider back to its normal operating position.

14. Reinstall chain cover.

15. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

16. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 9.

17. Install the battery: refer to Activating and Charging Battery, page 8.

ADJUSTING BRAKE

Adjust the brake assembly if free travel of brake pedal exceeds 1 inch or if braking power or parking brake is not sufficient.

1. Stop engine and pull wire off spark plug.

2. Remove battery from chassis: refer to Remove Battery From Chassis, page 8.

3. Tighten locknut approximately 1/4 turn clockwise (Fig. 25).

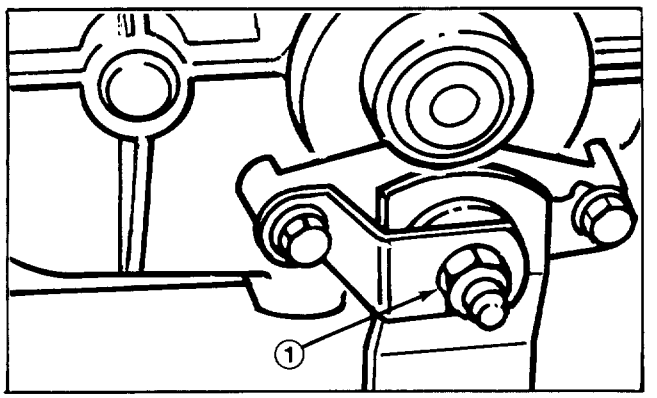


Figure 25

1. Locknut

4. Check operation of the brake by pushing rider: no brake drag should be evident. If drag is evident, rotate locknut an additional 1/8 turn counterclockwise or until there is no contact.

5. Install the battery: refer to Activating and Charging Battery, page 8.

CHECKING ELECTRICAL CONNECTIONS

1. Make sure wires on starter motor terminal and battery terminals are secured tightly.

2. Make sure two wires are connected to transmission interlock switch.

3. Push module connectors together to assure a connection.

4. Also check wires that connect to ignition switch to assure good contact.

5. Check all interlock switches to be sure wires are not broken and connectors are making good contact.

CHECKING SAFETY INTERLOCK SYSTEM

WARNING

Do not operate the rider if the interlock system is malfunctioning because it is a safety device, designed to protect the operator.

The interlock switches in the electrical system prevent the engine from starting unless the gear shift is in neutral and blade control is disengaged. In addition, the engine will stop – because of a seat switch – if the operator gets off the seat when blade drive control is engaged or gear shift is in gear. To assure interlock system is operating correctly, check it before each use of the rider. Have the switches checked by an Authorized TORO Service Dealer every two years to assure safe operation of the rider.

1. Check all electrical connections: refer to Checking Electrical Connections, page 23.

2. Move gear shift into neutral.

3. Move blade control into ENGAGE detent. Sit on the seat and rotate ignition key to START. Engine should not start; but if it does, the interlock system is malfunctioning and it must be repaired by an Authorized TORO Service Dealer. If engine does not start, proceed to step 4.

4. Move blade control into DISENGAGED detent. Sit on the seat, engage the parking brake, depress clutch pedal, shift into gear and hold clutch pedal in depressed position. Rotate ignition key to START. Engine should not start; but if it does, the interlock system is malfunctioning and must be repaired by an Authorized TORO Service Dealer. If engine does not start, proceed to step 5.

5. Sit on the seat, move gear shift into neutral, blade control into DISENGAGE detent and assure parking brake is engaged. Rotate ignition key to START. Engine should start and continue to run. Then engage blade control and carefully raise off the seat: the engine should stop. 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 the seat, the interlock system is functioning correctly and the rider can be operated safely.

PREPARING MOWER FOR STORAGE

1. Drain gasoline from fuel tank and fuel line: refer to Draining Gasoline From Fuel Tank, page 16. Next, start engine and let it run at idle speed until it stops because all gasoline is used.

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 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 20 ft-lb. If torque wrench is not used, tighten plug firmly. DO NOT INSTALL WIRE ON SPARK PLUG.

3. Drain oil from crankcase; refer to Changing Crankcase Oil, steps 1-6, page 16. However, do not fill crankcase with oil at this time.

4. Remove battery from chassis: refer to Activating and Charging Battery, page 8. Remove corrosion from battery terminal and wipe any grease and dirt off the battery case. Check level of electrolyte. If level is low, add drinkable water to the affected cell. Fill only to the fill ring below the filler cap. Reinstall filler caps.

5. 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.

6. Clean underside of mower housing: refer to Cleaning Underside of Mower Housing, page 19.

7. Check condition of blade: refer to Servicing Cutter Blade, page 18.

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

9. Lubricate wheels and spindles with grease: refer to Grease Front Axle Spindles and Wheels, page 14.

MAINTENANCE

10. Remove dust and dirt from air cleaner element: refer to Servicing Air Cleaner, page 15.

11. 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.

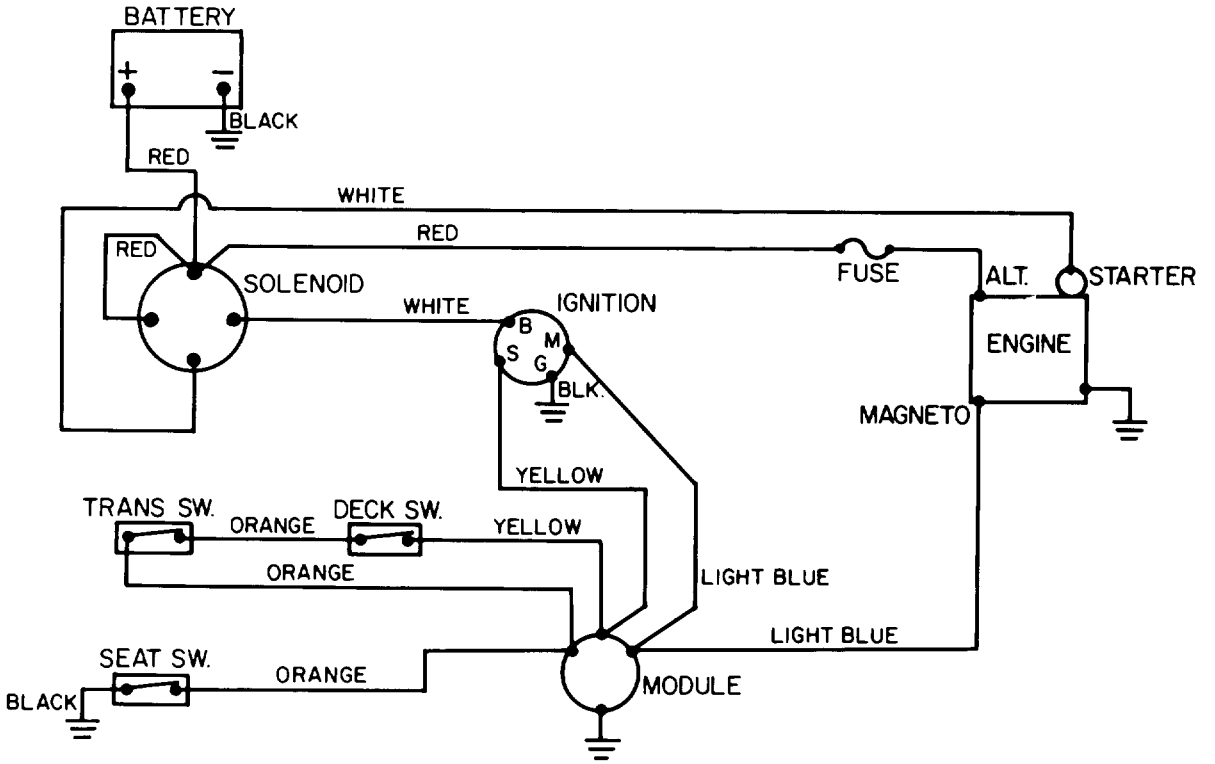
12. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 9.

13. Install the battery: refer to Activating and Charging Battery, page 8. Charge battery for 48 hours to assure full charge.

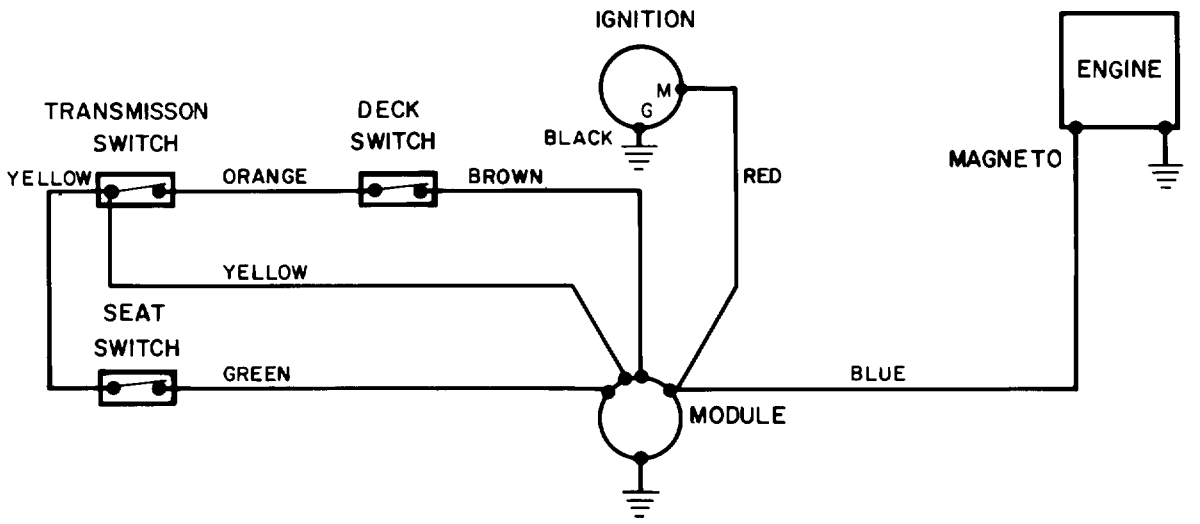
IMPORTANT: Improper storage or failure to recharge may cause battery failure.

14. Store the rider in a clean, dry garage or storage area. Remove key from ignition switch and keep it in a memorable place. Cover the rider to protect it and keep it clean.

WIRING DIAGRAM



825 Electric Start RER



825 Recoil RER

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. Battery is dead.	2. Charge the battery.
	3. Transmission is in gear.	3. Shift transmission into neutral.
	4. Blade control is in ENGAGE detent.	4. Move blade control into DISENGAGE detent.
	5. Spark plug is loose.	5. Tighten plug to 20 ft-lb.
	6. Spark plug wire is loose or disconnected from spark plug.	6. Install wire on spark plug.
	7. Spark plug gap is incorrect.	7. Set gap between electrodes at 0.030 of an inch.
	8. Spark plug is pitted, fouled, or defective in some other way.	8. Install new correctly gapped spark plug.
	9. Wrong spark plug is used.	9. Install correct spark plug.
	10. Electrical connections are loose.	10. Check electrical system to assure good contact.
	11. Carburetor is adjusted incorrectly.	11. Adjust the carburetor.
	12. Air cleaner is dirty.	12. Clean the air cleaner element.
	13. Dirt, water, or stale fuel in fuel system.	13. Have rider serviced by Authorized TORO Service Dealer.
	14. Module or switch is defective.	14. Have rider serviced by Authorized TORO Service Dealer.
	15. Engine headbolt loose.	15. Tighten headbolt to 200 in-lb.
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. Dirt, water, or stale fuel is in fuel system.	5. Have rider serviced by Authorized TORO Service Dealer.
	6. Spark plug is pitted, fouled or defective in some other way.	6. 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. Dirt, water, or stale fuel is in fuel system.	5. Have rider serviced by Authorized TORO Service Dealer.
	6. Carburetor is adjusted incorrectly.	6. Adjust the carburetor.
	7. Spark plug is pitted, fouled or defective in some other way.	7. 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.
Rider vibrates abnormally.	1. Engine mounting bolts are loose.	1. Tighten engine mounting bolts.
	2. Differential axle is misaligned.	2. Adjust the drive chain, which includes the differential axle.
	3. Loose PTO pulley, idler pulley or blade pulley.	3. Tighten the appropriate pulley.
	4. Cutter blade is unbalanced.	4. Install new cutter blade.
	5. Lock nut holding blade is loose.	5. Tighten nut to 45-60 ft-lb
	6. Drive pulley is damaged.	6. 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 and check idler pulley and belt guides for correct position.
Rider 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. Drive chain is off sprockets.	3. Install and adjust drive chain.
	4. Transmission does not shift gear.	4. Have rider serviced by Authorized TORO Service Dealer.
	5. Traction idler is adjusted incorrectly.	5. Adjust traction drive belt.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The 8 hp Rear Engine Rider has two identification numbers: a model number and a serial number. The two numbers are stamped on a decal that is located on top left side of engine plate, near the spark plug. 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.

The Toro Total Coverage Guarantee

A Two Year Limited Warranty
On All
Toro Riding Mowers

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

Residential Product ..... 2 Years
Residential Products Used Commercially:
Riders With 25" Cutting Decks ..... 45 Days
Riders With 32" or Larger Cutting Decks ..... 90 Days

The costs of parts and labor are included, as are transportation costs within a 15 mile radius of the servicing dealer. Just contact any Authorized TORO Service Dealer or TORO Distributor. Should you feel your TORO Rider is defective and wish to rely on The Toro Total Coverage Guarantee, the following procedure is recommended:

1. Contact the dealer where you purchased the rider. If this is not convenient, just 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. The Service Dealer will either instruct you to return the product to him or recommend another Authorized TORO Service Outlet which might be more suitable (not all TORO Dealers are equipped to service Riding Mowers).

3. Pickup and delivery of your TORO Rider by the servicing dealer is covered up to a 15 mile radius from the dealer's place of business. Mileage charges beyond a 15 mile radius are not covered by this warranty and are the responsibility of the owner.

   If you wish to bring the rider in yourself, first obtain prior approval from your dealer and the dealer will provide reasonable monetary compensation as specified by Toro.

   If repairs to your rider are not covered by this warranty, transportation charges connected with repairs will be charged at the dealer's prevailing rates.

4. Please make the original sales slip, copy of the TORO Registration Card, or other evidence of purchase date available to the dealer when the unit is brought to the dealer's place of business.

   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, MN 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 FOR THIS PRODUCT. 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 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 this warranty must be performed by an Authorized TORO Service Dealer using TORO approved replacement parts and maintenance procedures.

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.

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.

Compliance with Radio Interference Regulations Certified.
Certifie Conforme au Reglement sur le Brouillage Radioelectrique.

Litho in U.S.A.