ENGLISH FORM NO. 3320-762

TORO®

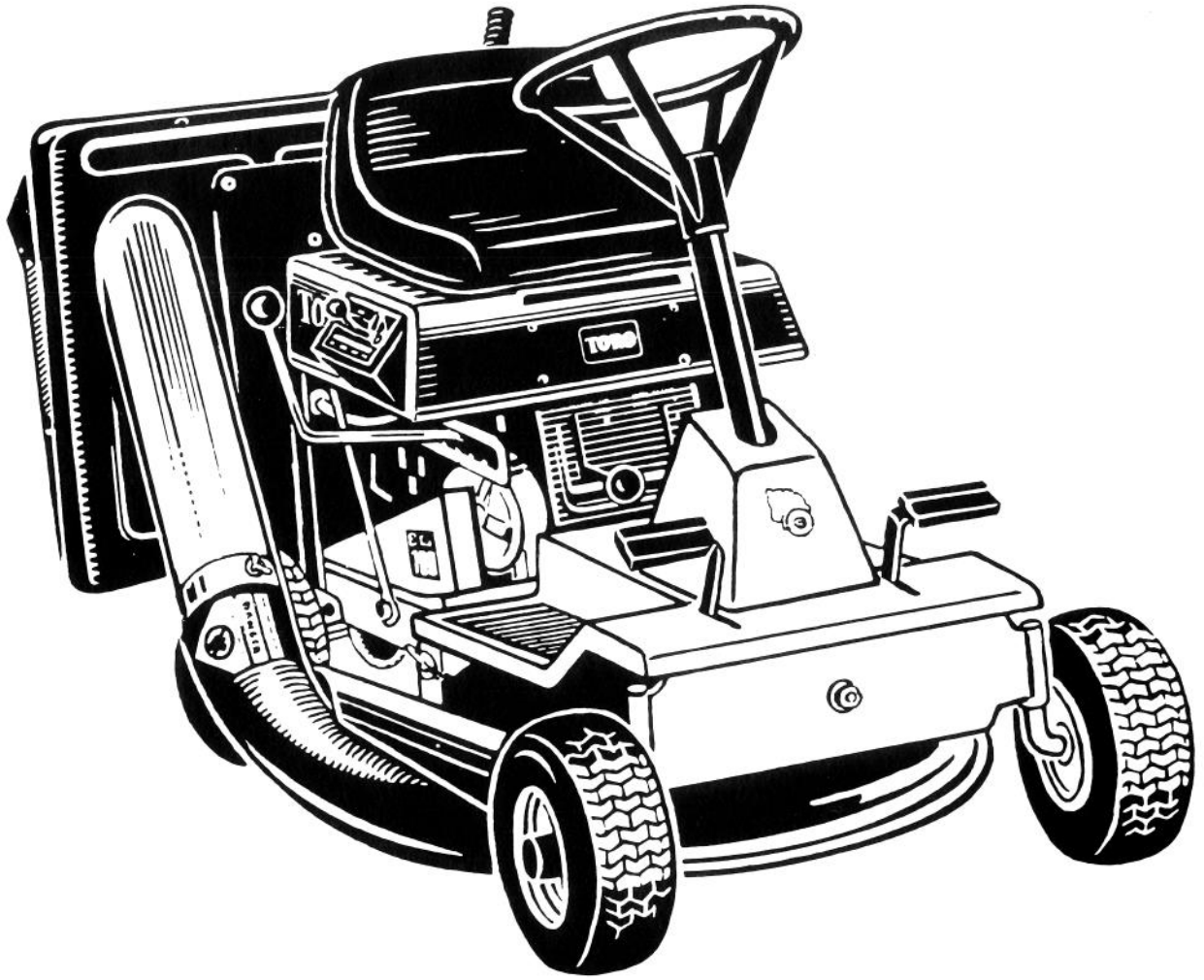
MODEL NO. 56133 - 2000001 & UP

OPERATOR'S MANUAL

TORO WHEEL HORSE®

825 REAR-ENGINE RIDER

ENGLISH



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CAUTION

This symbol marks important instructions concerning your personal safety. To avoid injury, read and follow these instructions carefully.

When the manual refers to the left or right side of the vehicle, it means your left or right when sitting on the tractor seat.

SAFE OPERATION PRACTICES—RIDING VEHICLES

WARNING

Engine exhaust contains carbon monoxide which is an odorless, deadly poison. Carbon monoxide is also known to the State of California to cause birth defects. Do not run engine indoors or in an enclosed area.

GENERAL

1. This machine can amputate hands and feet and throw objects that can cause injury and damage. KNOW the controls and how to stop the machine quickly. READ THIS OPERATOR'S MANUAL and obey all safety messages appearing on the machine and in the operator's manual. LEARN from your operator's manual and from CAREFUL EXPERIENCE how to operate your equipment correctly. Know your machine's limitations.

2. Keep hands, feet, hair and loose clothing away from the attachment discharge area, the underside of the mower deck or any moving parts while the engine is running.

3. For your personal safety: Do not operate this machine while taking drugs or medication or while drinking alcoholic beverages.

4. Only responsible persons with mature judgment and proper physical capabilities should be allowed to operate this machine, and only after instruction in the correct use of this equipment.

5. Do not allow children to operate the machine.

6. Do not carry passengers.

7. The purpose of this machine is work. Do not use it for sport or recreation.

8. Do not mow when people or pets are in the area.

9. Clear the work area of objects (wire, rocks, etc.) that might be picked up and thrown.

10. Take all possible precautions when leaving the machine unattended. Disengage the power-take-off, lower attachments, shift into NEUTRAL, set the parking brake, stop the engine and remove the key.

11. Watch out for traffic when crossing or near roadways.

12. Stop and inspect the machine and attachments for damage after striking a foreign object. Damage should be repaired before restarting and operating the equipment.

13. Do not change the engine's governor settings or overspeed the engine.

14. Wear appropriate protective clothing when operating equipment. Long pants and substantial footwear, not bare feet or open sandals, are essential.

15. Do not operate the machine unless properly seated with your feet on the footrests or pedals.

16. Keep your eyes and mind on your machine, its attachment and the working area. Do not let other interests distract you.

17. Safety switch(es) stop or prevent engine starting to help prevent accidents. TAKE PRECAUTIONS —DON'T RELY ENTIRELY ON SAFETY SWITCH(ES).

18. Take care not to touch the equipment or attachment parts that may be hot from operation. The muffler and nearby areas may exceed 150° F. Let the engine and other parts cool before attempting to maintain, adjust or service them.

19. Stereo headphones, ear protection or other sound altering/dampening devices may limit your ability to hear warning sounds (horns, shouts, etc.).

FUEL/FIRE PRECAUTIONS

20. Handle gasoline with care—it is highly flammable.

21. Use an approved gas container. Place it out of children's reach.

22. Use gasoline only as a fuel—never as a cleaner.

23. Never remove the fuel cap or add gasoline to a running or hot engine, or an engine that has not cooled for several minutes after running.

24. Never fill the fuel tank indoors. Wipe up spilled gasoline.

SAFE OPERATION PRACTICES—RIDING VEHICLES

25. Open doors if you run the engine in a garage—exhaust fumes are dangerous. Do not run the engine indoors.

26. Do not fill the machine with gasoline while smoking or when near an open flame or sparks.

27. Never store equipment with gasoline in the fuel tank inside a building where fumes may reach an open flame or spark.

28. Allow the engine to cool before storing it in any enclosure.

29. To reduce fire hazard, keep the engine and attachments free of grass, leaves or excessive grease.

30. Battery acid is a poison and can cause burns. Avoid contact with skin, eyes and clothes and protect your face, eyes and clothing when working around the battery.

31. Battery gases can explode. Keep cigarettes, sparks and flames away from battery.

EQUIPMENT USE AND OPERATION

32. We recommend that you first operate the equipment at a slow speed with any attachment disengaged until you are thoroughly familiar with the controls and have developed operating skills.

33. Disengage all attachment clutches, set the parking brake and shift into NEUTRAL before starting the engine.

34. Disengage power to the attachment(s), set the parking brake and stop the engine before leaving the operator position.

35. Disengage power to the attachment(s) and stop the engine before making any repairs or adjustments.

36. Disengage power to the attachment(s) when transporting the machine or when it is not in use.

37. Disengage the attachment clutch before removing the mower from a hole or other obstruction.

38. Disengage power to the attachment(s) before backing. Do not mow in reverse unless it is absolutely necessary and then only after careful observation of the entire area behind the machine.

39. LOOK behind the machine to make sure the area is clear before placing the transmission in reverse and continue looking behind while backing.

40. Always back the machine up loading ramps and tilt bed trailers.

41. The parking brake is designed to hold the vehicle in place at rest, with the engine off. *The parking brake will not restrain the vehicle with the engine running and the transmission engaged.*

STABILITY/TIP OVER/TRACTION

42. Know the terrain on which you operate your equipment. There are areas on which you cannot safely operate your equipment.

43. Avoid operating the machine on hillsides, slopes or rough terrain. DO NOT operate the machine on hillsides or slopes exceeding 15° (27% grade). If safety is in doubt—STAY OFF THE SLOPE.

44. Reduce speed and exercise extreme caution on slopes above 10° (18% grade) to prevent tipping or loss of control. Never mow uphill on these slopes—mow downhill only. If you must climb a steep hill, back the machine up the hill, and drive the machine forward down the hill, keeping the vehicle in gear. If necessary to turn on hill, always turn downhill.

45. Mow up and down the face of slopes greater than 5° (9% grade), never across the face. Be especially cautious when changing directions on all slopes.

46. Operate your machine smoothly and at a ground speed slow enough to ensure complete control. Avoid erratic operation and excessive speed.

47. Sharp turns on any terrain may cause loss of control. Reduce speed and use caution on sharp turns.

48. Do not stop or start suddenly when going uphill or downhill. Avoid uphill starts. If machine stops when going up a slope, turn the attachment off and back slowly down the slope, keeping the machine in gear. Do not stop or change gears (speed) on slopes.

49. Know the terrain. Find hidden obstacles by walking through and inspecting the area before operating your equipment in that area. Plainly mark obstacles, such as rocks, roots or holes and **stay well clear of these obstacles** when operating.

50. While operating, stay alert for holes, rocks or roots, which may damage equipment or cause it to upset. Keep at least three (3) feet away from drop-offs, ditches, creeks, culverts, washouts and public highways.

51. Exercise care when mowing around a fixed object to prevent the equipment or attachment from striking it. When mowing, never deliberately run over any foreign object.

SAFE OPERATION PRACTICES—RIDING VEHICLES

52. Areas wet with dew, rain or snow will be more slippery than when dry. Areas covered with loose gravel are more slippery than firm, dry ground. Greater stopping distances are required in these slippery areas.

53. Learn to expect changes in operating conditions. Adding or removing attachments or weight to your equipment will make your machine operate differently. Rain, snow, loose gravel, wet grass, etc., change the terrain's tractive conditions. Changing tractive conditions require you to change your operating technique—including deciding not to operate on that terrain sometimes.

54. Use care when pulling loads or using heavy equipment.

A. Use only approved drawbar hitch points.

B. Limit loads to those you can safely control.

C. Do not turn sharply. Use care when backing.

D. Use counterweight(s) or wheel weights when suggested in the operator's manual.

ATTACHMENT USE

55. When using attachments, never direct the discharge of material toward bystanders, nor allow anyone near the vehicle while it operates.

56. When using the machine with a mower:

A. Mow only in daylight or in good artificial light.

B. Never adjust cutting-height while the engine is running if you must dismount to do so.

C. Shut off the engine when unclogging the chute.

D. Check the blade mounting bolts for proper tightness at frequent intervals.

57. Keep hands and feet away from rotating blade(s) underneath the mower deck. Never place your foot on the ground when the mower is engaged or in motion.

58. DO NOT operate the mower attachment without the chute deflector or complete bagger in place.

59. Exercise care while maneuvering with the grass catcher. Front-to-rear stability may change.

MAINTENANCE

60. Keep all nuts, bolts, fasteners and screws tight to ensure the equipment is in safe working condition and check them frequently. Repair or replace worn, damaged, distorted or broken parts as needed.

61. Keep the vehicle and its attachments in good operating condition and keep safety devices in place and working.

62. Under normal usage, the grass catcher bag's material will wear and deteriorate. Check often to see if the bag needs to be replaced.

63. Use only genuine TORO Wheel Horse replacement parts to maintain original standards.

64. Shields, deflectors, switches, blade controls and other safety devices must be in their proper position and functional.

65. Do not operate without a muffler or damper on the exhaust system. Damaged mufflers or spark arresters can create a fire hazard. Periodically inspect and replace whenever necessary.

66. If the equipment begins to vibrate abnormally, disengage power to the attachments and stop the engine immediately. Repair any damage before starting or continuing operation.

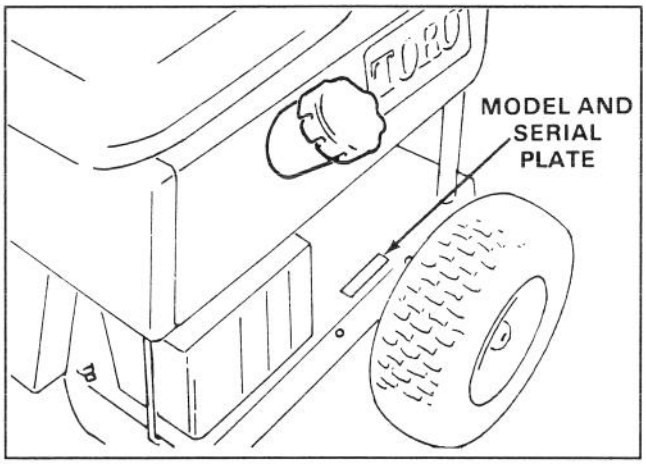
67. Periodically inspect all shafts, levers, friction devices and other moving parts that are subject to wear. Adjust or replace these parts if they are damaged, distorted or broken, or when wear affects the normal operation of the vehicle or attachment. DO NOT use equipment that is not operating properly.

MODEL AND SERIAL NUMBER LOCATIONS

Model and serial numbers identify your new rider and major attachments. Always refer to these numbers when consulting your dealer or factory about service, parts, or other information. If the plates showing the model and serial numbers are removed during repair operations, they should always be replaced.

The **rider** vehicle identification number plate is just below the seat on the rear fender. The **engine** identification numbers are on the engine shrouding and show your rider's model, specification or type number and the serial number of your rider's engine. Major attachments also have a model and serial number plate attached to them.

For your convenience and ready reference, enter the rider, and engine numbers below.



Model and Serial Number Plate Location

1. Model and serial number plate

Rider Model and Serial Number

Model _____

Serial No. _____

Engine Identification Number

Model _____

Type or Spec. No. _____

Serial No. _____

OWNER REGISTRATION AND WARRANTY

Service and warranty assurance are as important to TORO Wheel Horse as it is to you. To simplify warranty service at an Authorized TORO Wheel Horse Dealer, TORO Wheel Horse requires factory registration. We supply a registration card with each new rider and attachment. **Either you or your dealer must supply the required information and mail the card to TORO Wheel Horse.**

The TORO Wheel Horse Limited Warranty Statement is on a "hang tag" attached to each product. This statement describes the items covered by the TORO Wheel Horse Limited Warranty, your rights and obligations, and the procedure for obtaining warranty service. Please familiarize yourself with the warranty statement. **We want you to be satisfied with your TORO Wheel Horse rider; please don't hesitate to contact us for assistance.**

SPECIFICATIONS

BRIGGS & STRATTON ENGINE:

This four-cycle engine has an output of 12.7 ft/lb (17.2 Nm) torque @ 2500 rpm. Displacement is 19.44 cubic inches (319 cc). The crankcase oil capacity is approximately 36 oz. (1,06 l). The correct spark plug is a Champion RJ-LM. Recommended spark plug air gap is 0.030 of an inch (0.762 mm).

MOWER HOUSING:

This full-floating, stamped steel housing has a spiral grass chamber and right side discharge. The width of the cut is 25 inches (63.5 cm). The cast iron spindle housing with shaft is supported by sealed ball bearings. The blade pulley is driven by a belt from the engine pulley.

CUTTER BLADE:

This single blade is 25 inches (63.5 cm) long, made of 7 gauge (2.72 mm) carbon steel, and heat treated for hardness.

HEIGHT-OF-CUT RANGE:

Is adjustable to five approximate range settings: 7/8 inch to 2-7/8 in. (2-7 cm).

TRANSMISSION:

The transmission has five speeds forward and one for reverse. Heat treated, sintered metal gears are enclosed in a permanently lubricated (EP Lithium grease), die-cast aluminum housing.

DIFFERENTIAL:

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

TRACTION DRIVE:

This drive system has an "A" section V-belt from the engine pulley to the transmission input pulley. A No. 40 chain joins the transmission output sprocket with the differential sprocket.

GROUND SPEED @ 2650 ENGINE RPM:

1st gear:	1.1 mph (1.8 kph)
2nd gear:	1.6 mph (2.5 kph)
3rd gear:	2.5 mph (4.0 kph)
4th gear:	3.1 mph (5.0 kph)
5th gear:	3.7 mph (6.0 kph)
Rev.:	1.2 mph (1.9 kph)

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 to 14 psi (96.5 kPa). All tires must be equally inflated to ensure a level cut.

FUEL TANK:

Capacity is 4 quarts (3.7 l).

STEERING:

13-in. (33 cm) diameter steering wheel.

THROTTLE CONTROL:

This control is on the right side of the seat body. The hand-operated throttle control connects to and operates the carburetor-mounted throttle and choke. The control has three positions: SLOW, FAST, and CHOKE.

TRANSMISSION GEAR SHIFT:

This is a single lever, inline shifting with a Z pattern.

CLUTCH PEDAL:

This foot-operated pedal is at the left front side of the rider. Depressing the clutch pedal moves the idler pulley away from the traction drive belt, which disengages the traction drive.

BRAKE PEDAL:

This foot-operated pedal is at the right front side of the rider. Depressing the brake pedal engages a disc brake on the side of the transmission.

PARKING BRAKE CONTROL:

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

BLADE CONTROL:

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

SPECIFICATIONS

IGNITION SWITCH:

This switch is on the right side of the seat body and has three positions: ON, OFF, and START.

HEIGHT-OF-CUT CONTROL:

This control is mounted on the front of the seat body.

GENERAL DIMENSIONS (APPROX):

Wheel Base:	41 in (104 cm)
Wheel Tread:	28 in (71 cm) front outside to outside
Overall Length:	52 in (132 cm)
Overall Height:	38 in (.97 m)
Overall Width:	32 in (81 cm)
Dry Weight:	305 lb (1.6 kg)

SETTING UP INSTRUCTIONS

INSTALL THE SEAT

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

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

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

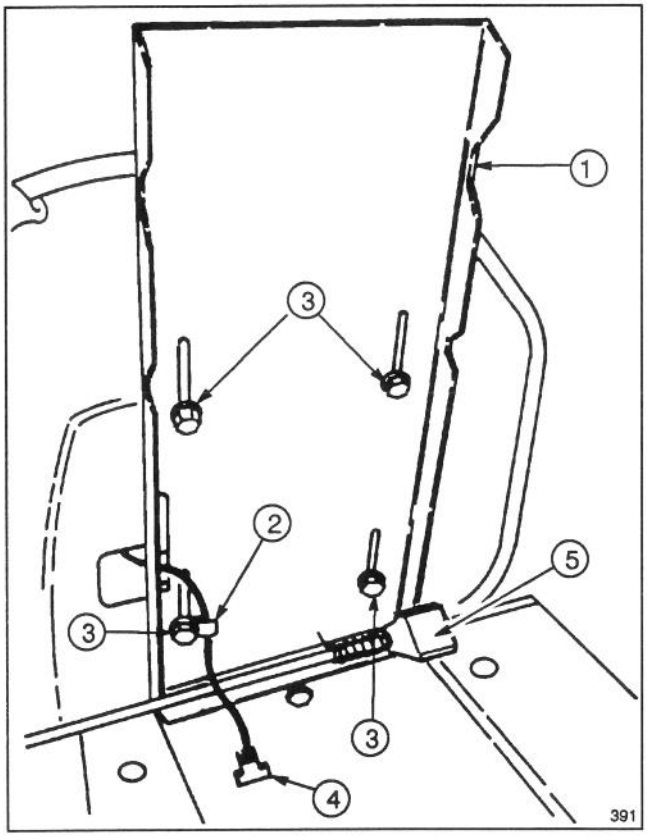


Figure 1

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

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).

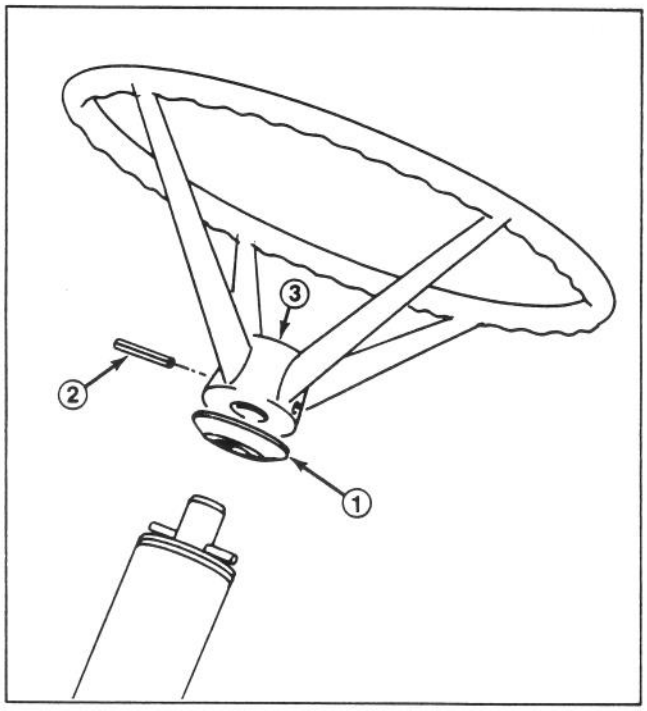


Figure 2

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

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 THE BATTERY

The battery must be removed from the rider 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 gasses 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 up to expose battery. A seat prop latch on the underside of the seat will prevent the seat from falling rearward while working with battery (Fig. 1).

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

3. Remove the battery from chassis and set it aside.

4. Remove the filler caps from battery and slowly fill each cell until electrolyte is just above the plates. To obtain best results, let battery sit for 20 minutes. Then add electrolyte to the maximum capacity (fill ring).

5. 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).

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

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

7. Slowly add electrolyte to each cell until level is up to fill ring. Reinstall the filler caps. Once battery is in service, distilled water only should be added; never add more electrolyte.

8. Reinstall the battery with terminal posts toward the rear of the machine and vent tube thru hole in the frame (Fig. 3).

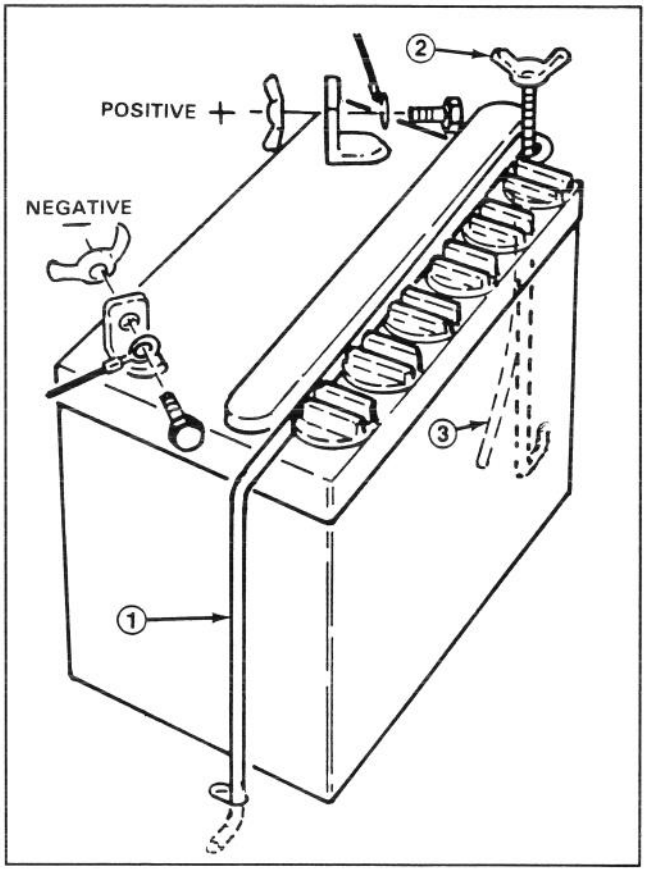


Figure 3

1. ***Battery hold down***
2. ***Wing nut***
3. ***Vent tube***

9. Reinstall the battery hold downs.

10. Reinstall 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 THE CRANKCASE WITH OIL

Before starting the engine for the first time, you must add oil to the crankcase. (The rider is shipped from the factory without oil in the crankcase.)

IMPORTANT: Check the oil level every time you fill the gas tank. Initially, change the oil after the first 2 hours of operation; after that, under normal conditions, change the oil after every 25 hours of operation. However, change the oil more often when you operate the engine in dusty or dirty conditions.

1. Move the rider to a level surface to ensure an accurate oil level reading and raise the seat to expose the oil dipstick.

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

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

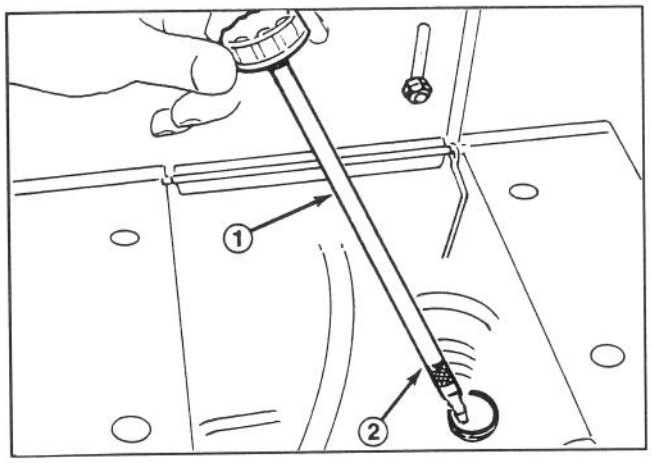


Figure 4

1. Dipstick plug *2. Full mark*

4. The crankcase capacity is approximately 36 oz. (1.06 l). The amount of oil required to fill the crankcase may be less than 36 oz. (1.06 l) due to oil remaining in the engine. **Do not overfill.**

5. Slowly pour oil into the crankcase (Fig. 4). The engine uses any high quality detergent oil having the American Petroleum Institute (API) "service classification" SF or SG. Select oil viscosity (weight) according to expected ambient temperature.

A. Above +40°F (+4°C) – Use SAE 30.

B. 0°F to 100°F (–17°C to +37°C) – Use SAE 10W30.

C. Below +20°F (7°C) – Use SAE 5W30.

Do not use SAE 10W40 oil.

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

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

BEFORE OPERATING

FILL THE FUEL TANK WITH GASOLINE

DANGER

- **Because gasoline is flammable, use caution when storing or handling it.**
- **Do not fill the fuel tank while the engine is running, hot, or 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 the fuel tank outside and wipe up any spilled gasoline before starting the engine. Use a funnel or spout to prevent spilling gasoline and fill the 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 ensure 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.**

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.

We also recommend you use TORO Stabilizer/ Conditioner be used regularly in all TORO gasoline powered products during operation and storage seasons. TORO Stabilizer/Conditioner cleans the engine during operation and prevents gum-like varnish deposits from forming in the engine during storage.

Note: Never use methanol, gasoline containing methanol, gasohol containing more than 10 percent ethanol, premium gasoline, or white gas because engine fuel system damage could result. Do not use fuel additives other than those manufactured for fuel stabilization during storage, such as TORO's Stabilizer Conditioner or a similar product. TORO's Stabilizer/Conditioner is a petroleum distillate-based stabilizer/conditioner. TORO does not recommend stabilizers with an alcohol base such as ethanol, methanol, or isopropyl. Stabilizers should not be used to try to enhance the power or performance of the machine.

1. Clean the area around the fuel tank cap so foreign matter cannot enter the tank when you remove the cap.

2. Remove the cap from the fuel tank and fill the tank with unleaded regular gasoline. Then reinstall the fuel tank cap.

3. Wipe up any gasoline that may have spilled.

CONTROLS

Gear Shift (Fig. 5)

The transmission has five forward speeds, neutral, and reverse. The gear shift lever is on the right side of the operator. An interlock switch, which prevents the engine from being started when the transmission is in gear, is mounted on top of the transmission.

Blade Control (Fig. 5)

The blade control engages and disengages the cutter blade. An interlock switch prevents the engine from starting when the control is in the **ENGAGE** position. The engine will start when the control is in the **DISENGAGE** position only.

Throttle Control (Fig. 5)

The throttle control connects to and operates the carburetor-mounted throttle and choke. The control has three positions: **SLOW, FAST, and CHOKE**.

Height-of-Cut (Fig. 5)

The height-of-cut control varies the cutting height from approximately 7/8 to 2-7/8 inches (2 to 7 cm) in five increments.

Ignition Switch (Fig. 5)

The ignition switch has three positions: ON, OFF, and START.

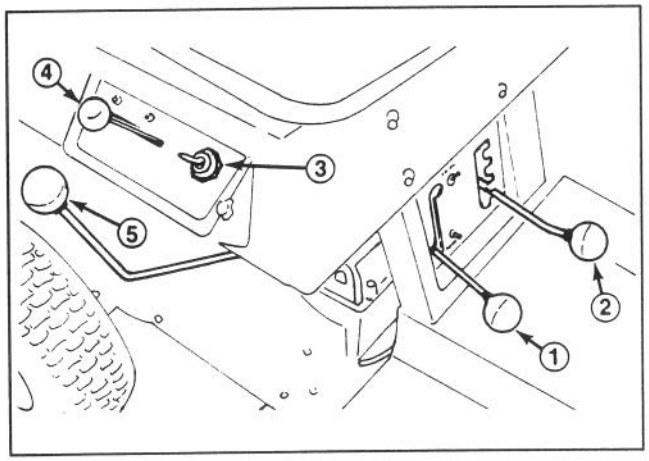


Figure 5

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

Clutch Pedal (Fig. 6)

Depress the clutch pedal fully when shifting gears. Also, depress the clutch pedal whenever you use the brake.

Brake Pedal (Fig. 6)

The foot-operated brake pedal must be depressed to slow down or stop the rider. When you depress the pedal, a caliper engages the brake disc on the side of the transmission. Always depress the clutch pedal when using the brake.

Parking Brake (Fig. 6)

The parking brake must be used with the brake pedal. When you depress the pedal, the end of the parking brake lever holds the brake pedal in a depressed position and a caliper engages the brake disc at the side of the transmission.

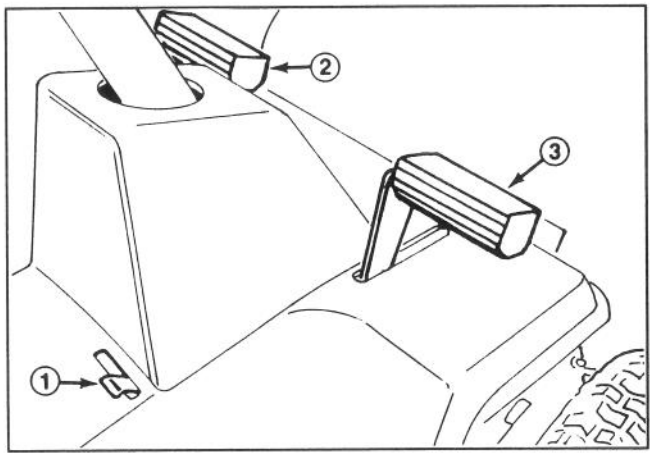


Figure 6

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

STARTING AND STOPPING INSTRUCTIONS

TO START

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

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

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

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

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

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

TO STOP

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

OPERATING INSTRUCTIONS

BREAK-IN

The engine requires no special break-in other than checking the oil level each time you fill the gas tank and changing the oil after the first two hours of operation. You may notice some oil consumption during break-in, but it will improve the longer you use the rider. Operate the transmission in all gears to ensure that the drive system is functioning correctly. After the first five hours of operation, check the condition and adjustment of the drive chain and belts.

USING THE 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 the parking brake engaged.

1. Depress the brake pedal fully.

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

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

IMPORTANT: Disengage the parking brake before shifting into gear to begin operation. If you drive the rider with the parking brake engaged, brake wear will accelerate.

ADJUSTING HEIGHT-OF-CUT

The height-of-cut may be set in one of five positions: 7/8 to 2-7/8 inches (2-7 cm).

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

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

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

GRASS DEFLECTOR

⚠ WARNING

The grass deflector is a safety device that routes discharged material down toward the turf; therefore, do not remove the deflector from the 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 PROCEDURE

1. Move the blade control into the DISENGAGE detent.

2. Start the engine: refer to the Starting/Stopping instructions.

IMPORTANT: When you use the rider for the first time, operate the transmission in all gears to ensure the drive system functions correctly, and to become familiar with the rider's controls and operating characteristics. Also check the condition of the drive chain and belts and make any adjustments that may be needed.

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

IMPORTANT: To avoid a jerky start and putting a heavy load on the transmission, move the throttle to a slow speed and release the clutch pedal slowly. If shifting into reverse gear is difficult, jog the 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 up and changing direction. Look behind the rider to ensure the area is clear before backing up.

4. To engage the blade for cutting, move the height-of-cut control to the desired setting. Place the throttle in the FAST position. Start the blade whirling by slowly moving the blade control into the ENGAGE detent.

5. To stop the engine, in sequence, depress the clutch and brake pedals, move the blade control into the DISENGAGE detent, gear shift into NEUTRAL, and throttle to SLOW; turn the ignition key to the OFF position after allowing the engine to idle a short period.

GRASS CUTTING TIPS

1. When using the rider to cut a lawn for the first time, cut the grass slightly longer than normal to ensure that the cutting height of the mower housing will not cause scalping that could result from an uneven ground surface.

2. If the grass is allowed to grow slightly longer than normal, or if it contains high moisture, cut with the cutting height set higher than usual. Next, cut the grass again using the lower, normal setting. This method of cutting long grass yields an even distribution of clippings and an acceptable quality of cut.

3. Very long or extremely wet grass can be cut, but you must use special operating technique. Start by setting the height-of-cut in the highest position. Using first gear and maximum throttle speed, move into the grass and cut a swath that is only half as wide as the mower housing. When side discharging, direct grass clippings toward an area that was cut previously. Pause occasionally to allow the discharge area to clear itself. Cutting too much grass may clog the mower housing and discharge area. If the mower housing clots, shut the engine off, disengage the blade, and remove the obstruction with a stick.

⚠ DANGER

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

OPTIONAL BAGGING OPERATION

To ensure efficient operation of the optional grass catchers, you must understand their operating characteristics. Besides 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, some 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 channel for this air. And if the channel is obstructed, conveying will be inefficient. So don't set the height-of-cut too low because grass surrounding the cutter deck will prevent air from entering under the cutter deck and into the conveying system.

A second condition that may cause a malfunction is when long, wet and heavy grass clippings cannot be propelled into the catcher. 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 build-up of grass clippings in the duct, discharge chute, and against the inside of the cutter deck. The chute and duct may even become plugged. To ensure efficient grass collecting, try different heights-of-cut until you get good results.

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. To ensure efficiency, cut the grass when it is dry. Since even dry grass has some moisture content, clippings may stick to the duct, discharge chute, and on the inside of the cutter deck. This slight build-up is normal, but the rear hopper, duct, discharge chute, and cutter deck must be cleaned to prevent an undesirable build-up of clippings.

Also, consider ground speed. As the engine overloads (slows down) air velocity decreases. Therefore, the 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.

OPERATING INSTRUCTIONS

BAGGING TIPS

1. To ensure maximum air currents in the system, move the throttle to FAST and the gear shift to first gear (which is the slowest ground speed).

2. Don't bag grass when it is wet or too long. However, you can cut it with the grass deflector installed. Several hours later, pick up the dry grass clippings with the complete rear grass catcher installed.

3. Cut the grass often, especially when 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 by moving the gear shift to NEUTRAL, raising the cutter deck to the highest position and slapping the side of the installed duct near the obstruction. If the obstruction does not pass into the catcher when the duct is slapped, move the blade control to DISENGAGE and turn the ignition key to OFF. Then remove the duct and clear any obstruction from the duct or discharge chute with a stick or similar object. After you remove the obstruction, install the duct, restart the engine, and continue grass collecting.

6. After using the grass catcher, remove the mulch from inside the catcher, duct, discharge chute, and from the underside of the 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 ensure good grooming and conveying results.

DANGER

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

MAINTENANCE

MAINTENANCE INTERVAL CHART

	2 Hours	25 Hours	Storage Service	Spring Service	2 Years	Notes
Change Oil (Initial)	X					
Change Oil (Periodic)		X	X			
Check Safety Interlock	X	X		X	X	Before each use
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	X			More often in dusty, dirty conditions
Drain Gasoline			X			
Clean Outside of Engine		X	X			
Clean Mower Housing	X		X			
Clean Blower Screen on Engine		X	X	X		
Paint Chipped Surfaces			X			
Replace Interlock Switches					X	

⚠ CAUTION

To prevent accidental engine starting while doing maintenance, shut the engine off, remove the key from ignition switch, and pull the wire off the spark plug (Fig. 7). Make sure the wire does not contact the plug accidentally.

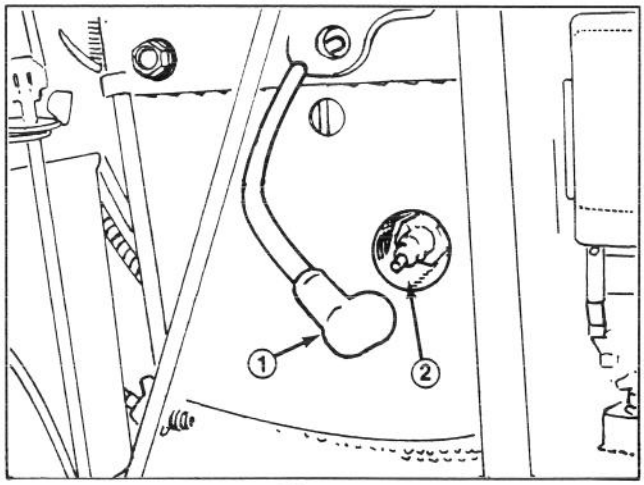


Figure 7

1. Spark plug wire *2. Spark plug*

MAINTENANCE

GREASE FRONT AXLE SPINDLES AND WHEELS

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

1. Wipe the grease fittings on spindles and wheels (Fig. 8) with a clean cloth. If there is paint on the front of the fittings, scrape it off.

2. Lubricate both axle spindles with No. 2 general purpose grease (Fig. 8). Continue to pump grease until it oozes out of the spindle. Wipe up any excess grease.

3. Lubricate both front wheels with No. 2 general purpose grease (Fig. 8). Pump the grease gun about four times. Wipe up any excess grease.

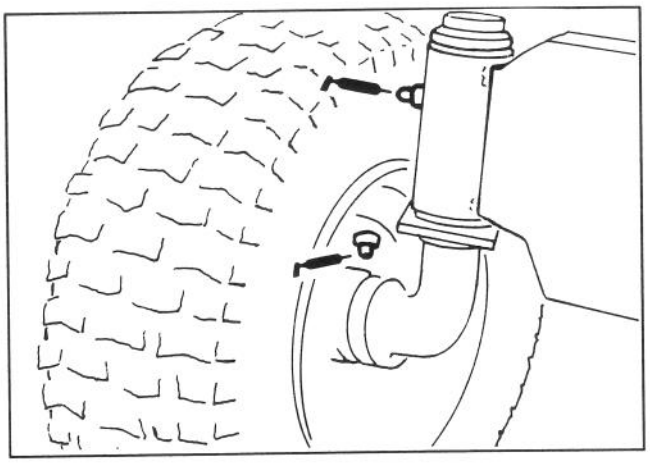


Figure 8

GREASE THE 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 you tip the rider, drain all gasoline from the fuel tank and oil from the crankcase. Also remove battery so acid does not spill on the rider.

1. Drain gasoline from the fuel tank: refer to *Draining Gasoline.*

2. Drain oil from the crankcase: refer to *Changing The Crankcase Oil,* steps 1–6.

3. Remove the battery from the chassis.

4. Shift the transmission into first gear and engage the parking brake.

5. Tip the rider up onto its rear end.

6. Remove the mower housing from the rider chassis: refer to *Removing/Installing The Mower Housing,* steps 1–10.

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

8. Install the mower housing onto the rider chassis: refer to *Removing/Installing The Mower Housing.*

9. Tip the rider back to its normal operating position.

10. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

11. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

12. Install the battery.

CLEANING THE COOLING SYSTEM

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

MAINTENANCE

SERVICING THE AIR CLEANER

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

1. Remove the wire from the spark plug.

2. Unsnap and lift the air cleaner cover off the carburetor (Fig. 9).

3. Remove the foam element (Fig. 9). Examine the element for dirt or discoloration and clean if necessary.

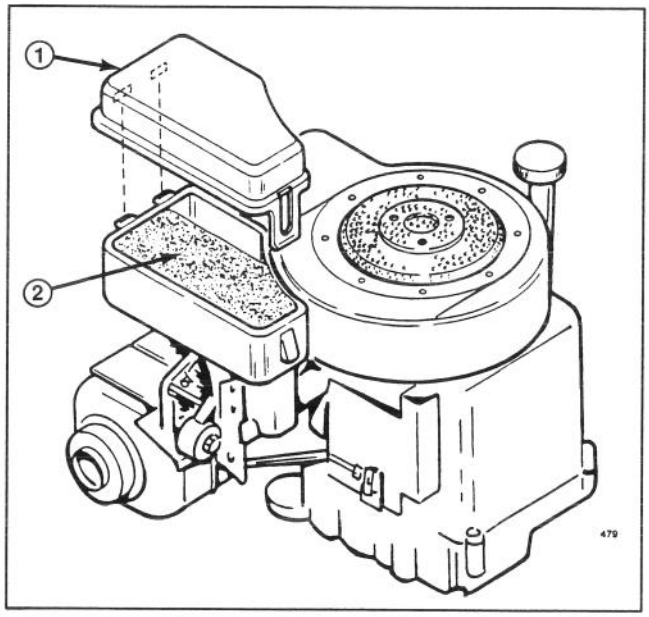


Figure 9

1. Cover *2. Foam Element*

4. Clean the element as follows:

A. Wash the foam element in a solution of liquid detergent and water to remove dirt. Then rinse it thoroughly in clear water.

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.

5. Reinstall air cleaner foam element and snap cover back on carburetor.

IMPORTANT: Do not operate the engine with the air cleaner element removed or engine damage will result.

CHANGING THE CRANKCASE OIL

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

1. Position the rider on a level surface so the oil drains completely and you can get an accurate dipstick reading when the crankcase is refilled.

2. Stop the engine and pull the wire off the spark plug (Fig. 7).

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

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

5. Remove the drain cap (Fig. 10).

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

7. With the rider parked on a level surface, fill the crank case with oil: refer to *Fill The Crankcase With Oil.*

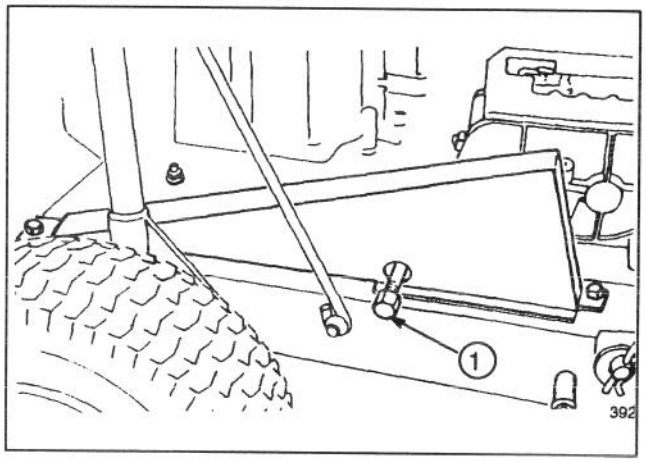


Figure 10

1. Drain plug

MAINTENANCE

DRAINING GASOLINE

CAUTION

Gasoline is highly flammable; drain it outdoors and make sure the engine is cool to prevent a 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 when handling gasoline.

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

1. Clean around the fuel tank cap so foreign matter cannot enter the filler hole when the cap is removed. Next, remove the cap from the fuel tank (Fig. 11).

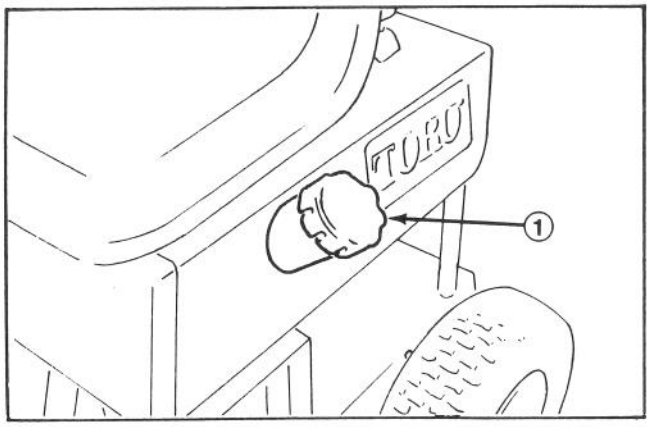


Figure 11

1. Fuel tank cap

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

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

REPLACING A SPARK PLUG

Since the air gap between the center and side electrodes of the spark plug increase gradually during normal operation of the engine, check the condition of the electrodes after every 25 operating hours. The recommended air gap is 0.030 of an inch (0.762 mm). The correct spark plug to use is a Champion RJ-19LM.

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

1. Clean the area around the spark plug so foreign matter cannot fall into the cylinder when you remove the plug.

2. Pull the wire off the spark plug and remove the plug from the cylinder head.

3. Check the condition of the side electrode, center electrode, and the center electrode insulator to ensure there is no damage.

IMPORTANT: A cracked, fouled, dirty, or defective spark plug must be replaced. Do not sand blast, scrape, or clean the electrodes by using a wire brush because grit may eventually come loose from the plug and fall into the cylinder. The result is usually a damaged engine.

4. Set the air gap between the center and side electrodes at 0.030 in. (0.762 mm) (Fig. 12). Install the correctly gapped spark plug with a gasket seal and tighten the plug to 15 ft/lb (20.4 Nm). If you don't use a torque wrench, tighten the plug firmly.

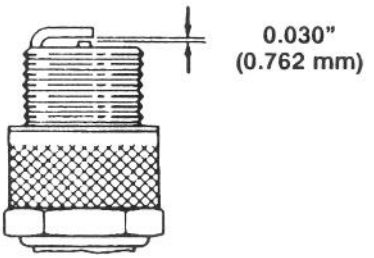


Figure 12

5. Push the wire onto the spark plug but do not leave the key in the ignition. This will prevent accidental starting when you store the mower.

MAINTENANCE

ADJUSTING THE THROTTLE/CHOKE CONTROL

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

1. Move the throttle control lever to the FAST detent position.

2. The throttle lever should be just touching the choke link; if they are not in this position, an adjustment is necessary:

A. Place the remote control lever in the FAST position.

B. Loosen the throttle cable clamp screw (Fig. 13) and move the control cable casing and wire until the trottle lever touches the choke link.

C. Tighten the cable clamp screw. Move control to SLOW then back to FAST to ensure proper adjustment. Repeat procedure if necessary.

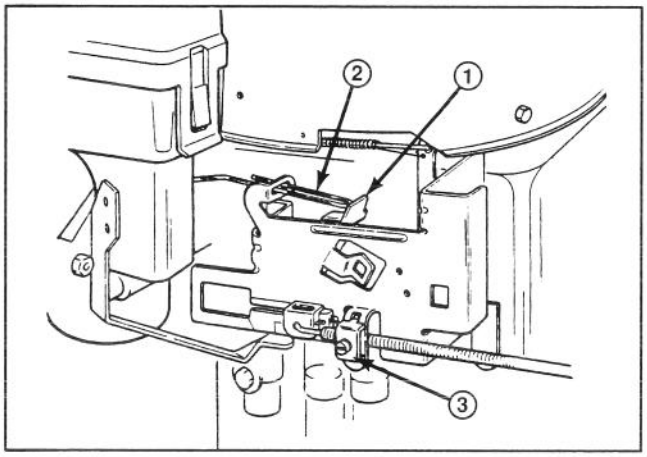


Figure 13

1. Throttle lever
2. Choke link
3. Throttle cable clamp

ADJUSTING THE CARBURETOR

The carburetor has been set at the factory, but 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, altitude and load.

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

1. Gently turn the idle mixture valve clockwise until it **just** closes (Fig. 14). Turning the valve in too far may cause damage.

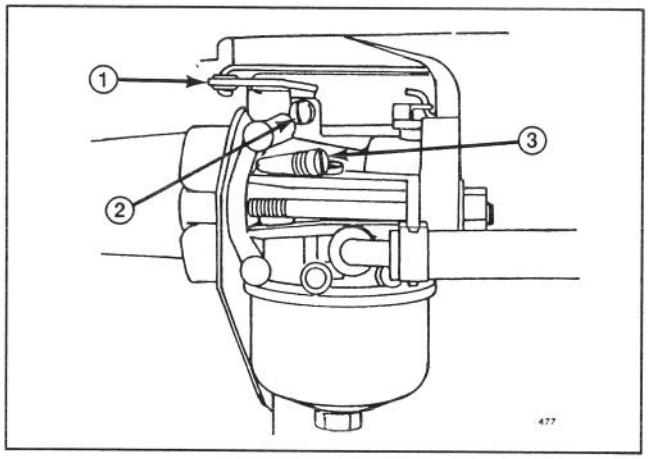


Figure 14

1. Throttle
2. Idle speed adjusting screw
3. Idle mixture valve

2. Open the idle mixture valve one turn counterclockwise. This initial adjustment will permit the engine to be started and warmed up (approximately 5 minutes) prior to final adjustment.

WARNING

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

3. Start the engine and move the throttle control into the SLOW position.

4. Rotate the throttle (Fig. 14) counterclockwise and hold against the idle speed adjusting screw (Fig. 14) while turning the idle speed adjusting screw to obtain 1750 rpm.

5. While still holding the throttle against the idle speed adjusting screw, turn the idle mixture valve in (lean) and out (rich) slowly until the engine idles smoothly. Recheck the idle rpm and readjust if required.

6. Release the throttle. The engine should accelerate smoothly. If it does not, the carburetor should be readjusted, usually to a slightly richer mixture.

7. After the carburetor is adjusted, shut off the engine. If the mower will not be used immediately, remove the key from the switch to prevent the possibility of accidental starting.

SERVICING THE CUTTER BLADE

WARNING

Check the cutter blade each time you tip the rider on end. If the bolt holding the blade is loose, tighten it to 45-60 ft/lb (61-81 Nm). If the blade or the sail (Fig. 16) at the end of the blade is worn, eroded, or cracked, replace the blade. Replace the blade if it is bent or out of balance. Always use a genuine TORO replacement blade to ensure safety and best performance. NEVER USE A WILL-FIT REPLACEMENT BLADE.

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

IMPORTANT: To remove the blade from the spindle shaft, the rider must be tipped on its rear end. Before you tip the rider, drain all gasoline from the fuel tank and oil from the crankcase. Also, remove the battery so the acid does not spill onto the rider. (ALL BAGGING ATTACHMENTS MUST BE REMOVED BEFORE TIPPING RIDER.)

2. Drain the gasoline from the fuel tank: refer to *Draining Gasoline*.

3. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil.*

4. Remove the battery from the chassis.

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

6. Grasp the end of the blade using a cloth or a thickly padded glove. Then remove the blade bolt, washer, and blade (Fig. 15).

Note: Since the blade bolt is tightened to 45-60 ft/lb (61-81 Nm) at the factory, it may be difficult to remove. If the bolt cannot be removed, contact an authorized TORO Service Dealer or a "service station" for assistance.

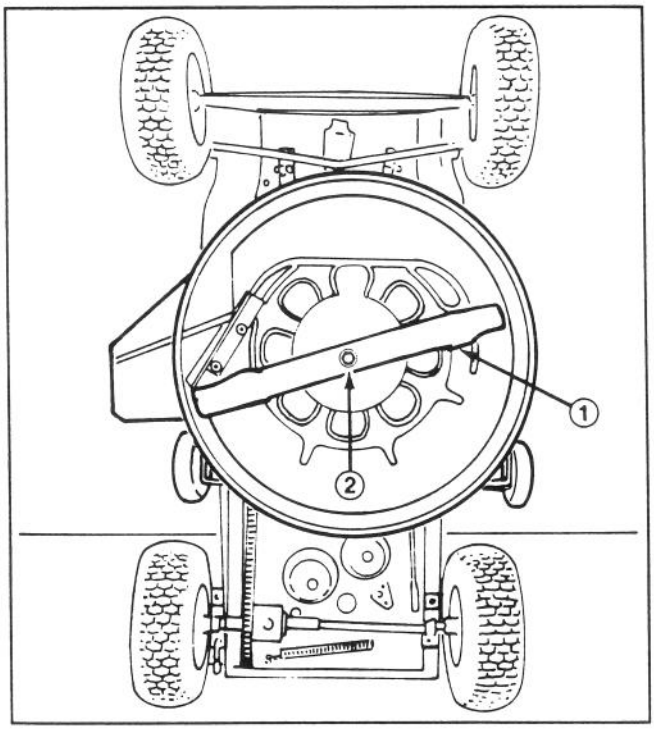


Figure 15

1. Blade *2. Blade bolt & washer*

7. Using a file, sharpen the cutting edge at both ends of the blade (Fig. 16).

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

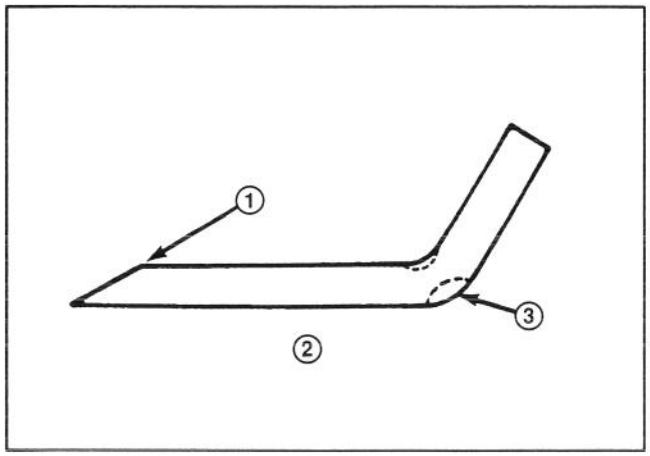


Figure 16

1. Sharpen at original angle 3. Erosion
2. End of blade

8. Check the balance of the 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, an unbalanced blade balanced will settle to the heavy side. If the blade is not balanced, file off more material from its cutting edge. Continue to file and check the blade until it is balanced.

9. In sequence, reinstall the blade, washer, and blade bolt (Fig. 15). Tighten the blade bolt to 45–60 ft/lb (61–81 Nm).

IMPORTANT: Make sure the cutting edge of the blade is away from the mower housing. While you tighten the blade bolt, move the blade slightly so it seats between the sides of the blade retainer.

10. Tip the rider back to its normal operating position.

11. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

12. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

13. Install the battery.

CLEANING THE UNDERSIDE OF THE MOWER HOUSING

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

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

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

2. Drain the gasoline from the fuel tank: refer to *Draining Gasoline*.

3. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil*, steps 1–6.

4. Remove the battery from the chassis.

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

6. Remove the grass clippings and dirt that are sticking to the inside of the housing (Fig. 15) by spraying it with a garden hose. Scrape out any grass and dirt that the water does not remove from the housing, then spray the housing again.

7. Since the rider is tipped on end, check the condition of the blade (Fig. 15).

8. Tip the rider back to its normal operating position.

9. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

10. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

11. Install the battery.

REMOVING/INSTALLING THE MOWER HOUSING

1. Stop the engine and pull the wire off the spark plug.

2. Shift the transmission into first gear and engage the parking brake.

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

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

4. Drain the gasoline from the fuel tank: refer to *Draining Gasoline.*

5. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil,* steps 1-6.

6. Remove the battery from the chassis.

7. Tip the rider onto its rear end.

8. Remove the blade drive belt: refer to *Replacing The Blade Drive Belt.*

9. Remove the cotter pin and clevis pin securing the deck brake rod to the idler bracket (Fig. 17).

10. Remove the (2) hairpin cotters and washers retaining the mower housing to the mounting pins (Fig. 17). Grasp the mower housing and move it to the side until the housing slides off the pins, then move it forward to allow the front mounts to drop.

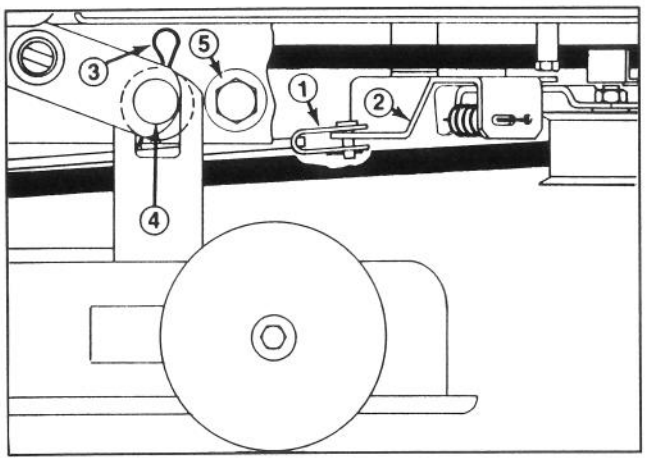


Figure 17

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

11. To reinstall the mower housing, reverse removal procedure.

12. Reinstall the blade drive belt: refer to *Replacing The Blade Drive Belt.*

13. Tip the rider back to its normal operating position.

14. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

15. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

16. Install the battery.

REPLACING THE BLADE DRIVE BELT

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

1. Drain the gasoline from the fuel tank: refer to *Draining Gasoline.*

2. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil,* steps 1-6.

3. Remove the battery from the chassis: refer to *Activating And Charging The Battery,* steps 1-3.

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

5. Remove the capscrews, retainers, and locknuts securing the deck stops to each side of the mower frame (Fig. 17). Slide the mower housing rearward to release the belt tension.

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

7. Loosen the capscrews securing the (2) engine pulley belt guides and move the guides away from the pulley. Remove the deck drive belt from the engine pulley (Fig. 18).

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

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

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

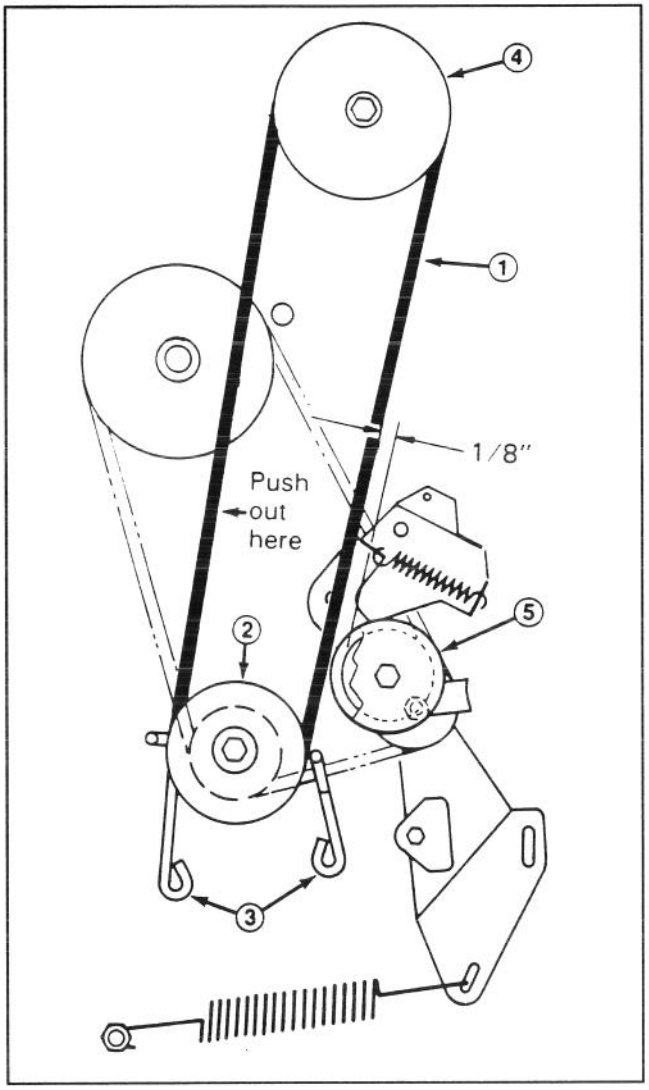


Figure 18

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

11. Route the belt around the engine pulley and reinstall the belt guides. Make sure the belt guides are within 1/8 in. (3 mm) of the pulley or belt but not making contact.

12. Pushing out on the belt (removing the slack) (Fig. 18), check the clearance between the outside of the belt and the inside of the idler pulley. Clearance should be approximately 1/8 in. (3 mm).

13. If the clearance between the belt and pulley is correct, go to step 16. Otherwise, go to the next step for the adjustment procedure.

14. Locate the deck engagement rod end on the left side of the transmission (Fig. 19). Remove the clevis pin retainer and turn the clevis to lengthen or shorten the rod until you attain the desired clearance between the belt and pulley.

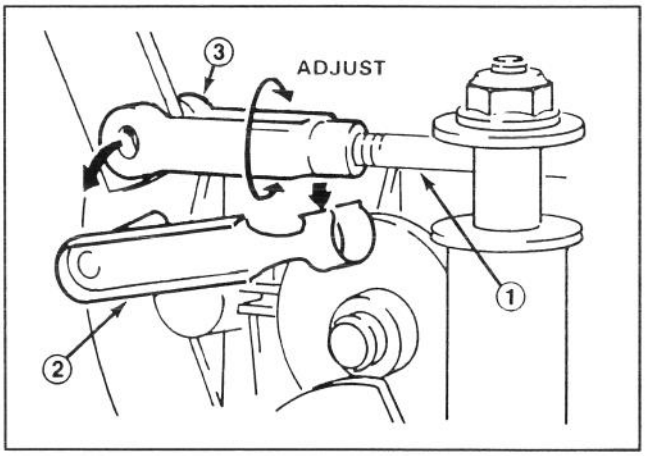


Figure 19

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

15. Reconnect the clevis and recheck the adjustment.

16. Tip the rider back to its normal position.

17. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

18. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

19. Install the battery: refer to *Activating And Charging The Battery,* steps 8–10.

REPLACING THE TRACTION DRIVE BELT

1. Drain the gasoline from the fuel tank: refer to *Draining Gasoline.*

2. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil,* steps 1–6.

3. Remove the battery from the chassis.

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

5. Remove the blade drive belt: refer to *Replacing The Blade Drive Belt.*

6. Remove the mower housing: refer to *Removing/ Installing The Mower Housing.*

7. Unhook the large traction spring from the mounting screw (Fig. 20). Use caution when removing the spring as it is highly tensioned.

8. Unhook the idler spring from the idler bracket (Fig. 20).

9. Remove the locknut and washer securing the idler bracket to the frame and remove the bracket (Fig. 20).

10. Loosen the locknut on the pulley until the belt guide can be removed (Fig. 20). Remove the belt from all pulleys.

11. Reverse procedure to reinstall the belt.

Note: When reinstalling the belt guide to the idler pulley, make sure the edge of the belt guide is parallel to the belt as shown in Figure 20.

12. Install the mower housing: refer to *Removing/ Installing The Mower Housing,* steps 11–14.

13. Tip the rider back to its normal operating position.

14. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

15. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

16. Install the battery.

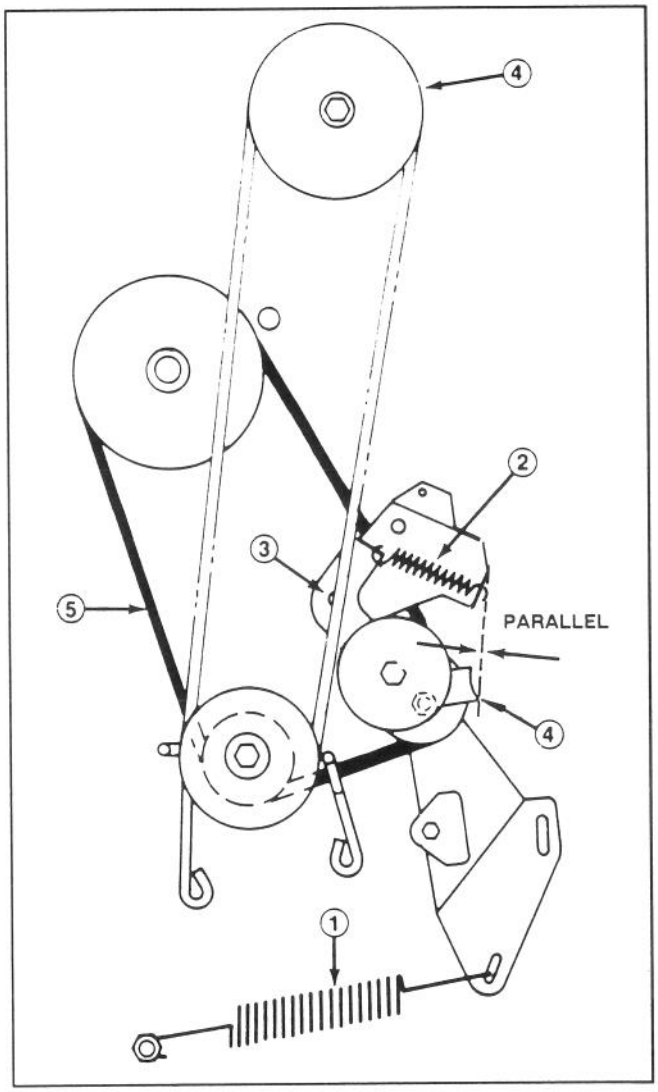


Figure 20

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

CHECKING/ADJUSTING THE DRIVE CHAIN

The drive chain must be adjusted to maintain 1/8 in. (3 mm) deflection at mid-span between the transmission and differential sprockets. Check the chain deflection after the first 5 hours of operation and after every 25 hours of operation.

1. Remove the two screws securing the chain cover to the rider chassis and lift it off (Fig. 21).

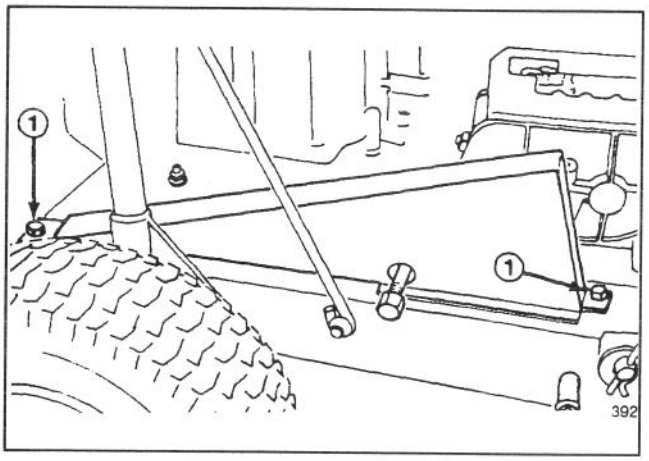


Figure 21

1. Screws

IMPORTANT: If the chain is worn, loose, or adjusted incorrectly, it could come off the sprockets, resulting in loss of brakes or traction drive. If you need assistance, contact your local authorized TORO dealer.

2. Check the deflection of the drive chain by lifting up and pressing down on the chain with moderate pressure at mid-span (Fig. 22). There should be 1/8 of an inch (3 mm) total deflection (Fig. 23). If deflection is not as specified, an adjustment is required – steps 2-13.

IMPORTANT: To adjust the drive chain, the rider must be tipped on its rear end. Before tipping the rider, drain all gasoline from the fuel tank and oil from the crankcase. Also, remove the battery so acid does not spill onto the rider. (ALL BAGGING ATTACHMENTS MUST BE REMOVED BEFORE TIPPING RIDER.)

3. Drain the gasoline from the fuel tank: refer to *Draining Gasoline.*

4. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil,* steps 1-6.

5. Remove the battery from the chassis.

6. Shift the transmission into first gear and engage the parking brake. Tip the rider onto its rear end so the chassis is on top of 2 x 4 foot (5 x 10 cm) wooden blocks. The wheels must be off the floor so the axle can be moved.

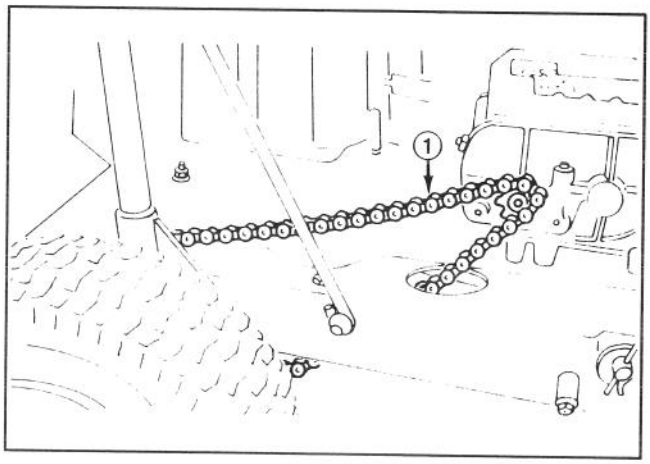


Figure 22

1. Drive chain

7. Loosen the four flange nuts securing the pillow blocks w/differential axle to the rider frame (Fig. 23).

8. Loosen the rear jam nut on the chain tensioner (Fig. 23).

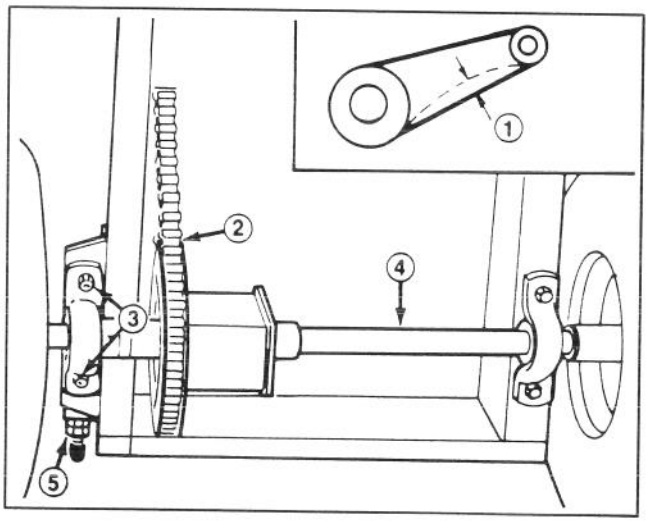


Figure 23

1. 12 inch (3.5 cm)
2. Drive chain
3. Locknuts
4. Axle
5. Chain tensioner

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

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

11. Since the differential axle must be parallel to the rear of the chassis, measure the distance from the center of the pillow blocks to the rear of the chassis (Fig. 23). The difference between the two measurements must not exceed 1/8 in. (3 mm). If it does, the differential axle is not parallel with the chassis; therefore, it must be readjusted.

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

13. Tip the rider back to its normal operating position.

14. Reinstall the chain cover.

15. Fill the crankcase with oil: refer to *Fill The Crankcase With Oil.*

16. Fill the fuel tank with gasoline: refer to *Fill The Fuel Tank With Gasoline.*

17. Install the battery.

ADJUSTING THE BRAKE

Adjust the brake assembly if free travel of the brake pedal exceeds 1 in. (2.2 cm) or if the braking power or parking brake is not sufficient.

1. Stop the engine and pull the wire off the spark plug.

2. Remove the battery from the chassis.

3. Tighten the locknut approximately 1/4 of a turn clockwise (Fig. 24).

4. Check the operation of the brake by pushing the rider; no brake drag should be evident. If a drag is evident, turn the locknut an additional 1/8 of a turn counterclockwise or until there is not contact.

5. Reinstall the battery.

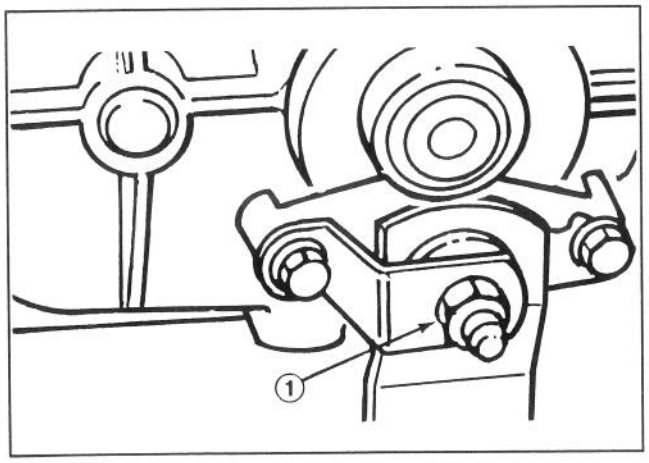


Figure 24

1. Locknut

CHECKING ELECTRICAL CONNECTIONS

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

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

3. Push the module connectors together to ensure a connection.

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

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

CHECKING THE 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 the blade control is disengaged. Also, the engine will stop because of the seat switch if you rise off the seat while the blade control is engaged or the gear shift is in gear.

To ensure the interlock system is operating correctly, check it each time before you use of the rider. Have the system checked by an Authorized TORO Service Dealer every two years to ensure safe operation.

1. Check all electrical connections: refer to *Checking Electrical Connections.*

2. Move the gear shift into neutral.

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

4. Move the blade control into the DISENGAGE detent. Sit on the seat, engage the parking brake, depress the clutch pedal, shift into gear, and hold the clutch pedal in a depressed position. Rotate the ignition key to start. The engine should not start; if it does, the interlock system is malfunctioning and must be repaired by an authorized TORO service dealer. If the engine does not start, go to step 5.

5. Sit on the seat, move the gear shift into NEUTRAL, the blade control into the DISENGAGE detent, and make sure the parking brake is engaged. Turn the ignition key to start. The engine should start and continue to run. Then engage the blade control and carefully rise off the seat. The engine should stop. If it does not, shut the engine off and have the interlock system repaired by an Authorized TORO Service Dealer. If the engine shuts off when you rise off the seat, the interlock system is functioning correctly.

PREPARING THE MOWER FOR STORAGE

1. For long-term storage, either drain the gasoline from the fuel tank or use a fuel additive before storing. To drain the gasoline, refer to *Draining Gasoline.* After the fuel is drained, start the engine and let it idle until all fuel is consumed and the engine stops. Repeat the starting procedure two more times to assure all gas is removed from the engine. If gasoline is not drained, gum-like varnish deposits will form and cause poor engine operation, even starting problems.

Fuel can be left in the gas tank only if a fuel additive such as TORO's Stabilizer/Conditioner is added to the gasoline before storing. TORO's Stabilizer/ Conditioner is a petroleum distillate-based conditioner/stabilizer. TORO does not recommend stabilizers with an alcohol base such as ethanol, methanol or isopropyl. Use the fuel additive in the quantities recommended on the container.

Under normal conditions, fuel additives remain effective for 6 to 8 months.

2. Remove the wire from the spark plug and clean the area around the plug so foreign matter cannot fall into the cylinder when you remove the plug. Next, remove the plug from the cylinder head and pour two tablespoons of engine oil into the spark plug hole. Rotate the engine by hand to distribute oil on the inside of the cylinder. Then reinstall the spark plug and tighten it to 20 ft/lb (27 Nm). If you don't use a torque wrench, tighten the plug firmly. **Do not reinstall the wire on the spark plug.**

3. Drain the oil from the crankcase: refer to *Changing The Crankcase Oil.* However, do not fill the crankcase with oil at this time.

4. Remove the battery from the chassis. Remove any corrosion from the battery terminal and wipe any grease and dirt off the battery case. Check the level of electrolyte. If it is low, add distilled water to the affected cell. Fill only to the fill ring below the filler cap. Reinstall the filler caps.

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

6. Clean the underside of the mower housing: refer to *Cleaning The Underside Of The Mower Housing.*

7. Check the condition of the blade: refer to *Servicing The Cutter Blade.*

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

9. Lubricate the wheels and spindles with grease: refer to *Front Axle Spindles and Wheels.*

10. Remove dust and dirt from the air cleaner element: refer to *Servicing The Air Cleaner.*

11. Touch up all rusted or chipped paint surfaces. Make sure to sand the 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 the crankcase with oil: refer to *Fill The Crankcase With Oil.*

13. Install the battery. Charge the battery for 48 hours to assure a 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 the key from the ignition switch and keep it in a memorable place. Cover the rider to protect it and keep it clean.

TROUBLESHOOTING

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 the ENGAGE detent.	4. Move blade control into the DISENGAGE detent.
	5. Spark plug is loose.	5. Tighten the plug to 15 ft/lb. (20 Nm)
	6. Spark plug wire is loose or disconnected from spark plug.	6. Install the wire on the spark plug.
	7. Spark plug gap is incorrect.	7. Set the gap between electrodes at 0.030 of an inch (0.76 mm).
	8. Spark plug is pitted, fouled, or defective in another 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 ensure good contact.
	11. Carburetor is adjusted incorrectly.	11. Adjust the carburetor.
	12. The air cleaner is dirty.	12. Clean the air cleaner element.
	13. Dirt, water, or stale fuel in fuel system.	13. Have the rider serviced by an Authorized TORO Service Dealer.
	14. Module or switch is inoperative.	14. Have the rider serviced by an Authorized TORO Service Dealer.
	15. Engine headbolt loose.	15. Tighten the headbolt to 200 in/lb. (22.6 Nm).
	16. Operator not in seat.	16. Check the seat switch.
Engine does not idle or idles poorly.	1. The air cleaner is dirty.	1. Clean the air cleaner element.
	2. Cooling fins and air passages under the engine blower housing are plugged.	2. Remove obstruction from the cooling fins and air passages.
	3. Idle speed is too low. Speed mixture is incorrect.	3. Adjust the carburetor.
	4. Dirt, water, or stale fuel is in fuel system.	4. Have rider serviced by an Authorized TORO Service Dealer.
	5. Spark plug is pitted, fouled, or damaged in another way.	5. Install new, correctly gapped spark plug.
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. The carburetor is adjusted incorrectly.	6. Adjust the carburetor.
	7. Spark plug is pitted, fouled, or defective in another way.	7. Install a new, correctly-gapped spark plug.

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TROUBLESHOOTING

Problem	Possible Causes	Corrective Action
Engine overheats.	1. The cooling fins and air passages under engine blower housing are plugged.	1. Remove obstructions from cooling fin and air passages.
	2. The 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. Loosen PTO pulley, idler pulley, or blade pulley.	3. Tighten the appropriate pulley.
	4. Cutter blade is unbalanced.	4. Install new cutter blade.
	5. Blade bolt holding blade is loose.	5. Tighten blade bolt to 45–60 ft/lb. (61–81 Nm).
	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 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.	4. Have rider serviced by an Authorized TORO Service Dealer.
	5. Traction idler is adjusted incorrectly.	5. Adjust traction drive belt.