



825
Rear Engine
Rider

Model 56133



Wheel Horse®
Operator's Manual

Specifications
Operating Instructions
Maintenance Information

FOR YOUR SAFETY

BLADE CONTACT

! DANGER! Mower Blades are Designed to CUT; therefore,

ALWAYS:

- Always wear your seat belt with the tractor.
- Always wear your safety glasses.
- Always wear your safety shoes.

NEVER:

- Reach into the blade deck or the mower deck.
- Turn the blade on without the blade guard or the blade deflector in place.



RIDER/TRACTOR STABILITY

Vehicle stability changes with conditions and is affected by:

- Load, angle and weight bumps, ruts, etc.
- Operating conditions (weather, moisture and wind)
- Operator size and position, how loaded, equipment used
- Speed, braking, steering changes
- Operator physical limitations, alertness

ALWAYS:

- Use good judgement when operating the rider tractor, especially on slopes.
- Maintain the vehicle in good operating condition.
- Be attentive to changing conditions affecting vehicle stability.

NEVER:

- Operate vehicle on extreme slopes.
- Operate vehicle across slopes.
- Abruptly change speed or direction.



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These symbols mark important instructions relating to your personal safety. To avoid possibility of injury, read and follow such instructions carefully.

DANGER	<i>This symbol warns of extreme immediate hazards which will result in severe personal injury or death if proper precautions are not taken.</i>
CAUTION	<i>This symbol warns of a hazard or unsafe practice which can result in personal injury or death if proper precautions are not taken.</i>

When manual refers to left or right side of vehicle, it means your left or right when sitting in driver's seat.

SAFE OPERATION REQUIREMENTS – RIDING VEHICLES

GENERAL

1. This machine is capable of amputating hands and feet and can throw objects that can cause injury and damage. **KNOW** the controls and how to stop machine quickly. **READ THIS OPERATOR'S MANUAL** and instructions furnished with attachments. Read, understand, and obey all safety messages appearing on the machine and in the operator's manual. **LEARN** from your operator's manual and from careful EXPERI-

ENCE how to operate your equipment correctly. Know your machine's limitations.

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

3. The use of drugs or alcohol while operating any equipment will place your safety in peril. Do not attempt operation of this machine while taking drugs or medication or while drinking alcoholic beverages.

SAFE OPERATING REQUIREMENTS

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

5. Do not allow children to operate machine.

6. Do not carry passengers.

7. The purpose of this machine is to perform work. This equipment is not intended for sport or recreation.

8. Do not mow when people or pets are around.

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

10. Take all possible precautions when leaving vehicle unattended; disengage power-take-off, lower attachments, shift into neutral, set parking brake, stop engine and remove key.

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

12. Machine and attachments should be stopped and inspected for damage after striking a foreign object. Damage should be repaired before restarting and operating equipment.

13. Do not change engine governor settings or overspeed engine.

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

15. Do not operate equipment unless properly seated with feet on footrests or pedals.

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

17. Safety switches are intended to stop or prevent starting of engine to help prevent accidents. OPERATOR SHOULD TAKE PRECAUTIONS AND NOT RELY ENTIRELY ON SAFETY SWITCH(ES). Check switches for proper operation before each use.

18. Care should be used not to touch equipment or attachment parts which may be hot from operation. Muffler and nearby areas may exceed 150° F. Allow cooling to occur before attempting to maintain, adjust or service.

19. Use of 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 approved gasoline container. Place container out of reach of children.

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

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

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

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

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

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

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

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

30. Battery acid is a poison and can cause a burn. 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 cigarette sparks and flames away from battery.

EQUIPMENT USE AND OPERATION

32. It is recommended that first operation of equipment be done at a slow speed with attachment disengaged. Continue this practice until operator is thoroughly familiar with the controls and has developed operating skills.

33. Disengage all attachment clutches, set parking brake and shift into neutral before attempting to start engine.

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

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

36. Disengage power to attachment(s) when transporting or not in use.

37. Disengage attachment clutch before attempting to remove the mower from a hole or other obstruction.

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

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

SAFE OPERATING REQUIREMENTS

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

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

STABILITY / TIP OVER / TRACTION

42. Know the terrain on which you are operating your equipment. There are areas on which your equipment cannot be safely operated.

43. Avoid operating equipment on hillsides, slopes or rough terrain. DO NOT operate 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 a steep hill must be ascended, back up the hill, and drive forward down the hill, keeping tractor 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 at all times. Avoid erratic operation and excessive speed.

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

48. Do not stop or start suddenly when going uphill or downhill. Avoid uphill starts. If machine is stopped 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 on which you are working. Find hidden obstacles by walking through and inspecting the area prior to operating your equipment in that area. Plainly mark obstacles, such as rocks, ruts or holes and stay well clear of these obstacles when operating.

50. While operating, stay alert for holes, rocks or roots, which may cause damage to equipment or upset. Keep at least 3 ft. 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 the object. When mowing never deliberately run over any foreign object.

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 perform differently. Rain, snow, loose gravel, wet grass, etc., change the tractive conditions of the terrain requiring changes in your operating technique, which may include a decision not to operate on that terrain.

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 operator's manual.

ATTACHMENT USE

55. When using attachments never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.

56. When using machine with mower:

- A. Mow only in daylight or in good artificial light.
- B. Never make a cutting height adjustment while engine is running if operator must dismount to do so.
- C. Shut engine off and wait for all moving parts to stop before unclogging chute.
- D. Check blade mounting bolts for proper tightness at frequent intervals.

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

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

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

MAINTENANCE

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

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

62. Under normal usage, grass catcher bag material is subject to deterioration and wear. It should be checked frequently to determine need for bag replacement.

SAFE OPERATING REQUIREMENTS

63. Use only genuine Toro Wheel Horse replacement parts to ensure that original standards are maintained.

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

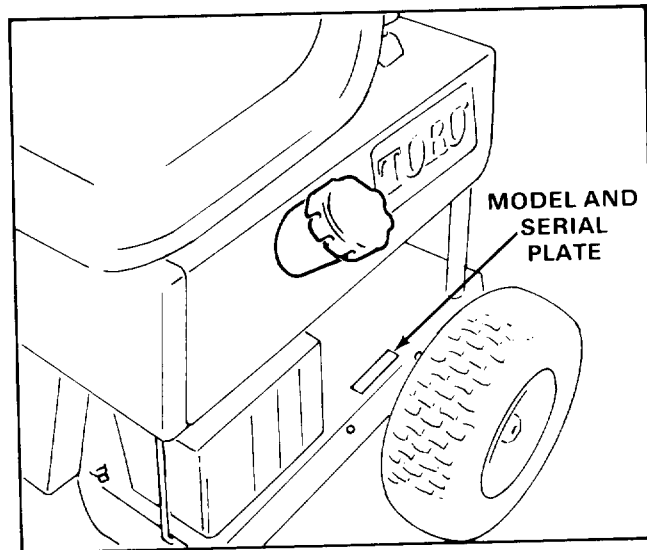
65. Do not operate without muffler or tamper with the exhaust system. Damaged mufflers or optional spark arrestors can create a fire hazard. Periodically inspect and replace if necessary.

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

67. Periodically inspect all shafts, levers, friction devices and other moving parts subject to wear. Make required adjustment or replace these parts if damaged, distorted or broken, or as soon as wear affects the normal operation of the vehicle or attachment. DO NOT operate equipment that is not functioning properly.

VEHICLE IDENTIFICATION NUMBER

Vehicle identification numbers are used to identify your new rider. These numbers should always be referred to when consulting dealer or factory concerning service, parts, or other information you may require. Rider vehicle identification number is located on top left side of rider frame. The engine identification number is stamped into the engine shrouding.



Model and Serial Number Location

Rider Identification Number

MOD. _____
SER. _____

Engine Identification Number

Model _____

Serial Number _____

OWNER REGISTRATION AND WARRANTY

Service and warranty assurance is as important to Toro Wheel Horse as it is to you, the owner. To facilitate warranty service at an Authorized Toro Wheel Horse Dealer, Toro Wheel Horse requires factory registration. A registration card is supplied with each new rider and attachment. **Either you or your dealer must fill in required information and mail the card to Toro Wheel Horse.**

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

PARTS MANUAL

A separate parts manual is available for your Toro Wheel Horse equipment. To obtain a parts manual, write to:

The Toro Company
8111 Lyndale Avenue South
Minneapolis, MN 55420
Attn: Publications Dept.

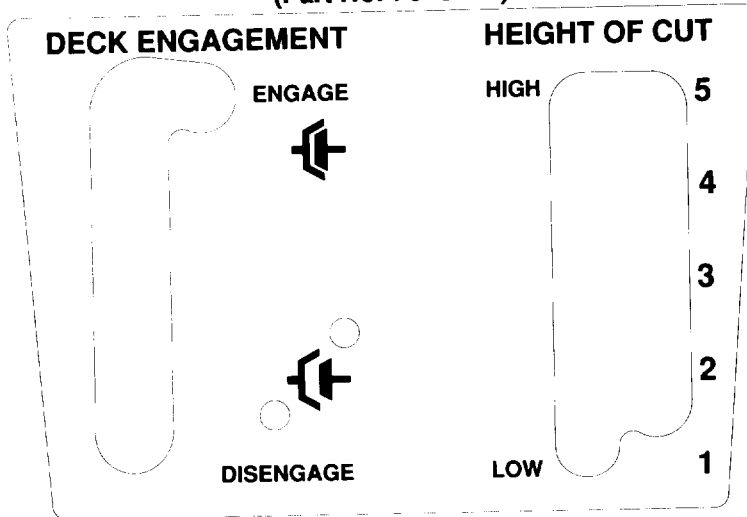
BE SURE TO INCLUDE VEHICLE IDENTIFICATION NUMBER OF EQUIPMENT.

SAFETY DECALS AND INSTRUCTIONS

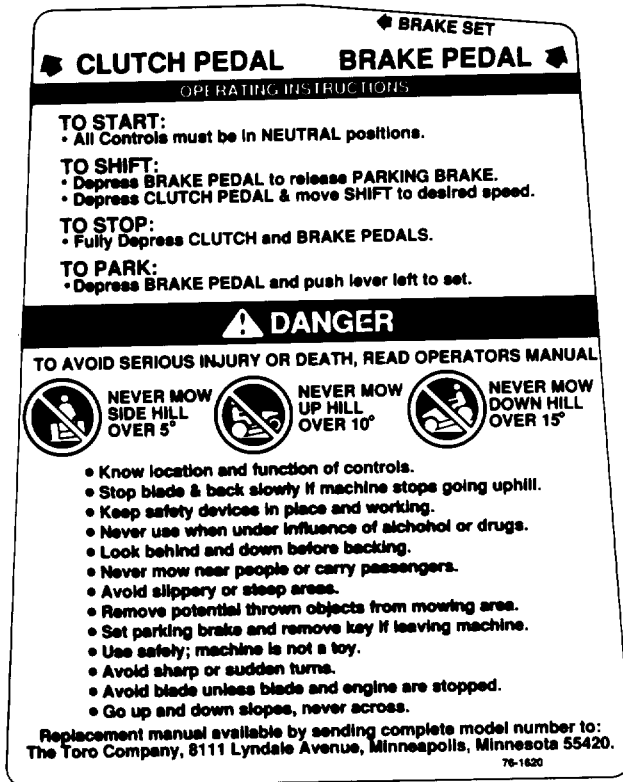


Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.

ON FRONT OF SEAT BODY (Part No. 76-3910)



ON CENTER CHANNEL (Part No. 76-1620)



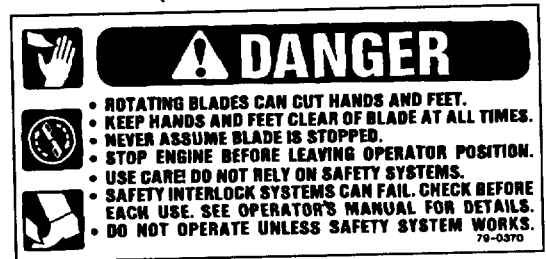
ON UNDERSIDE OF GRASS DEFLECTOR (Part No. 68-3650)



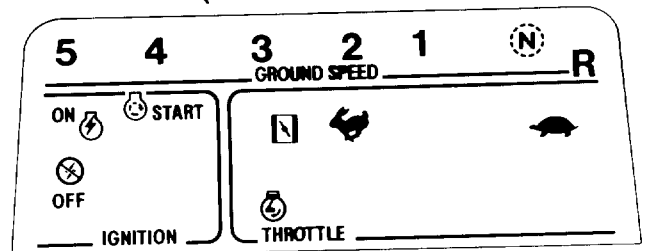
ON DEFLECTOR (Part No. 54-9220)



ON STEERING COLUMN TOWER (Part No. 79-0370)



ON RIGHT SIDE OF SEAT BODY (Part No. 67-1270)



ON CUTTER DECK (Part No. 76-4070)



SPECIFICATIONS

825 REAR ENGINE RIDER – ELECTRIC START, MODEL 56133

Briggs & Stratton Engine: Four cycle engine has output of 8 hp (6 KW) @ 3600 rpm and 12.7 ft/lb (17.2 N·m) torque @ 2500 rpm. Displacement is 19.44 cubic inches (319 cc). Crankcase oil capacity is approximately 36 oz. Correct spark plug is a Champion RJ-19LM. Recommended spark plug air gap is 0.030 of an inch (0.762 mm).

Mower Housing: Full floating, stamped steel housing has spiral grass chamber and right side discharge. Width of cut is 25 inches (63.5 cm). 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 (63.5 cm) long, made of 7 gauge (2.72 mm) carbon steel and heat treated for hardness.

Blade Tip Speed: Tip speed of blade is 17,420 ft/min @ 3400 engine rpm.

Height-of-Cut Range: Adjustable to five approximate range settings: 7/8 inch to 2-7/8 inches.

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

Ground Speed @ 2650 Engine rpm:

1st gear	– 1.1 mph
2nd gear	– 1.6 mph
3rd gear	– 2.5 mph
4th gear	– 3.1 mph
5th gear	– 3.7 mph
Rev.	– 1.2 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 ensure a level cut.

Fuel Tank: Capacity is 4 quarts (3.7 l).

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 disc brake 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 positions: 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 has three positions: ON, OFF and START.

Height-Of-Cut Control: Control is mounted on front of 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)

Specifications and design subject to change without notice.

LOOSE PARTS

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

DESCRIPTION	QTY	USE
Seat	1	Install Seat, page 10.
Clamp	1	
Washer	4	
Capscrew	4	
Steering Wheel	1	Install Steering Wheel, page 10.
Roll Pin	1	
Spacer	1	
Key	1	Use in ignition switch.
Operator's Manual	1	Read 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).

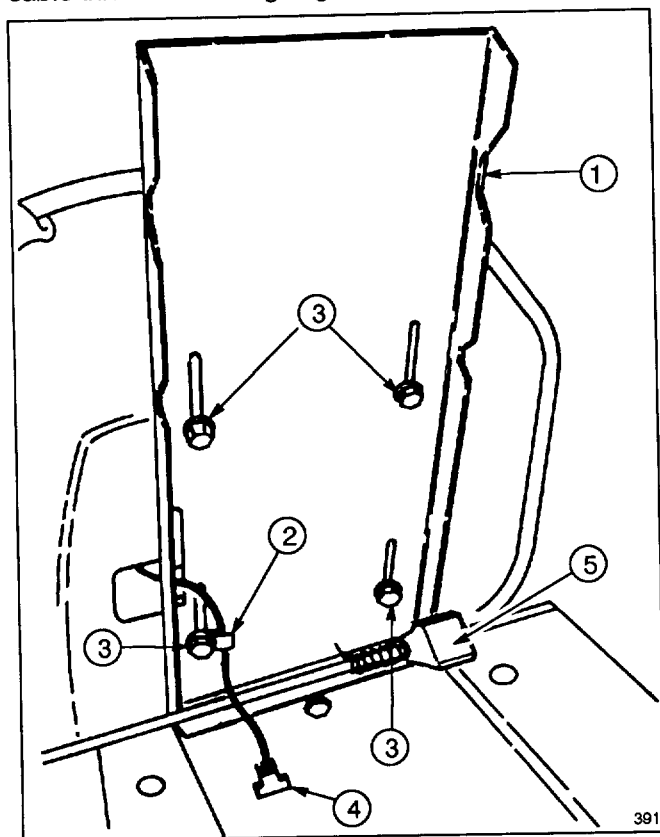


Figure 1

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

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).

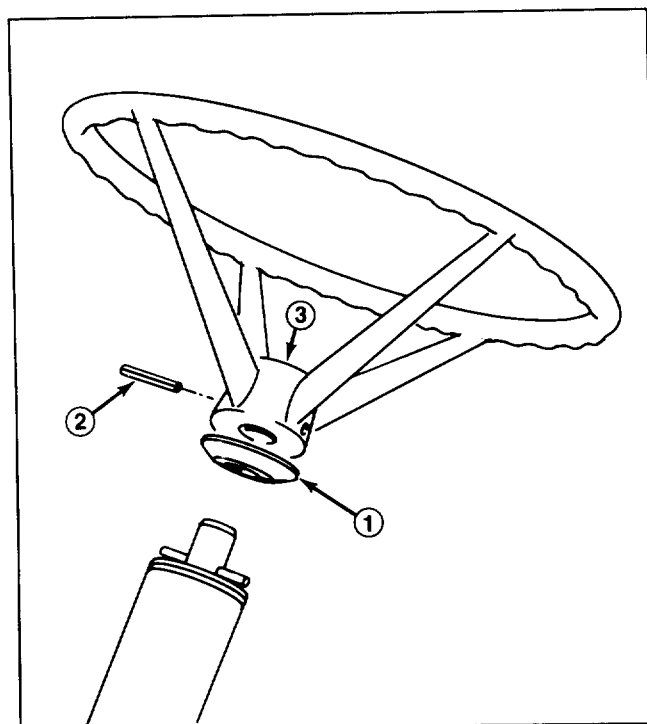


Figure 2

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

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 gases are explosive, keep open flame and electrical spark away from the battery; do not smoke. Nausea may result if the gases are inhaled. Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.

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

3. Remove battery from chassis and set it aside.

4. Remove 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 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 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 frame (Fig. 3).

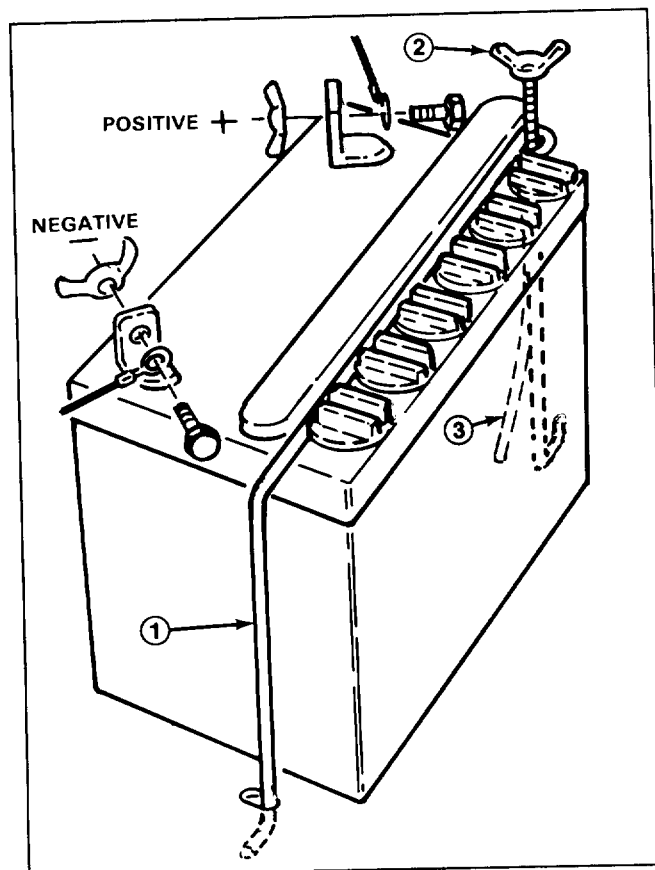


Figure 3

1. Battery hold down

2. Wing nut

3. Vent tube

9. Reinstall 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 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 oil more frequently when engine is operated in dusty or dirty conditions.

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

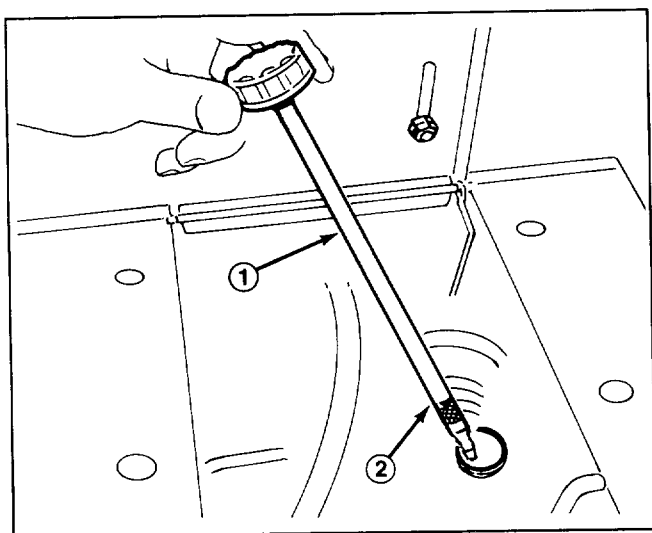


Figure 4

1. Dipstick plug

2. Full mark

4. Crankcase capacity is approx. 36 oz. Amount of oil required to fill crankcase may be less than 36 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” SF or SG. Oil viscosity — weight — must be selected according to anticipated ambient temperature.

- A. Above +40°F — Use SAE 30.
 - B. 0°F to 100°F — Use SAE 10W-30.
 - C. Below +20°F — Use SAE 5W-30.
- DO NOT USE SAE 10W40 OIL.**

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



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 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.

Toro also recommends that 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, GASOLINE CONTAINING MORE THAN 10% ETHANOL, PREMIUM GASOLINE OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

BEFORE OPERATING

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 EN-

HANCE THE POWER OR PERFORMANCE OF MACHINE.

1. Clean area around fuel tank cap so foreign matter cannot enter tank when cap is removed.
2. Remove cap from fuel tank and fill tank with unleaded regular gasoline. Then reinstall 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 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.

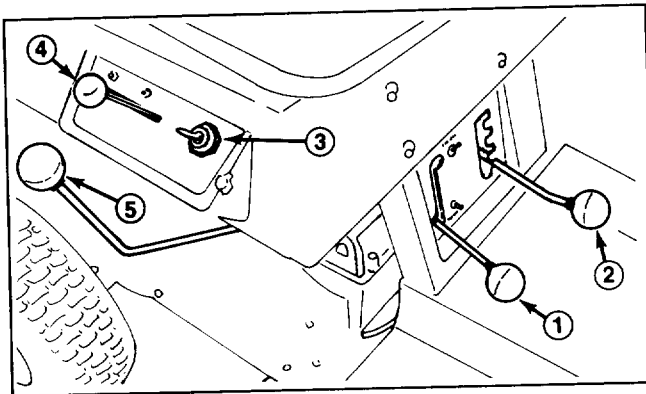


Figure 5

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

Clutch Pedal (Fig. 6) – Foot-operated clutch pedal is used in conjunction with gear shift. Depress clutch pedal fully when shifting gears. 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 on the side of the transmission. Always 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 brake pedal in depressed position, a caliper engages the brake disc at side of transmission.

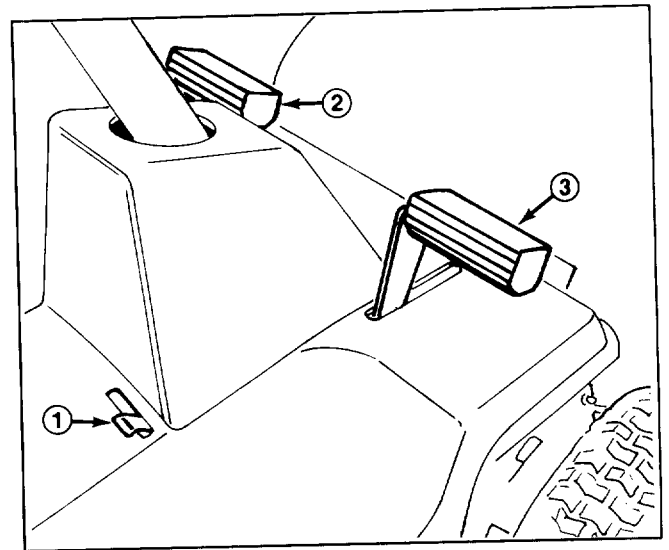


Figure 6

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

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 the 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 approx. 1-1/2 to 3-1/2 inches in five increments.

Ignition Switch (Fig. 6) – Switch has three positions: ON, OFF and START.

STARTING AND STOPPING INSTRUCTIONS

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

1. Engage the parking brake (Fig. 6): refer to using Parking Brake, page 14.
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 operator is on seat, 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 to FAST position 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.

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 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. Some oil consumption will be noticed during break in, but will improve as used. 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 PARKING BRAKE



CAUTION

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

1. Depress brake pedal fully.
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: 7/8 inch to 2-7/8 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; therefore, do not remove deflector from mower housing. If the deflector is ever damaged, replace it. Without the deflector or complete grass catcher assembly mounted in place, discharged material could cause personal injury or blade contact could occur.

OPERATING PROCEDURE

1. Move blade control into DISENGAGE detent.
2. Start the engine: refer to Starting/Stopping Instructions, page 14.

IMPORTANT: When rider is used for the first time, operate the transmission in all gears to ensure 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 adjustments 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. If shifting into reverse gear is difficult, jog clutch pedal in and out to get gears to mesh. Do not force the gear shift because damage may result. Should you encounter a jerking or grabbing condition during operation, contact your local Authorized TORO Service Dealer for assistance.

OPERATING INSTRUCTIONS



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 ensure area is clear before backing.

4. To engage blade for cutting, move height-of-cut control to the desired setting. Place throttle in FAST position. Start the blade whirling by slowly moving blade control into ENGAGE detent.
5. To stop engine, in sequence, depress clutch and brake pedals, move blade control into DISENGAGE detent, gear shift into neutral, and throttle to SLOW; rotate key to OFF position after allowing the engine to idle a short period of time.

GRASS CUTTING TIPS

1. When the rider is used to cut a lawn for the first time, cut grass slightly longer than normal to ensure 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 cutting width of the rider is wider than the mower previously used, raise height-of-cut setting one notch to ensure undulations in turf are not cut too short.
3. 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.
4. 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. When side discharging, direct grass clippings toward area that was cut previously. Stop forward movement occasionally to allow discharge area to clear itself. Cutting too much grass may clog the mower housing and discharge area. If mower housing does clog, shut engine off, disengage blade and remove the obstruction with a stick.



DANGER

Before removing obstruction from mower housing, move 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 ensure 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 ensure 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 ensure 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.

OPERATING INSTRUCTIONS

BAGGING TIPS

1. To ensure 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, re-start 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 ensure 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	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	

MAINTENANCE

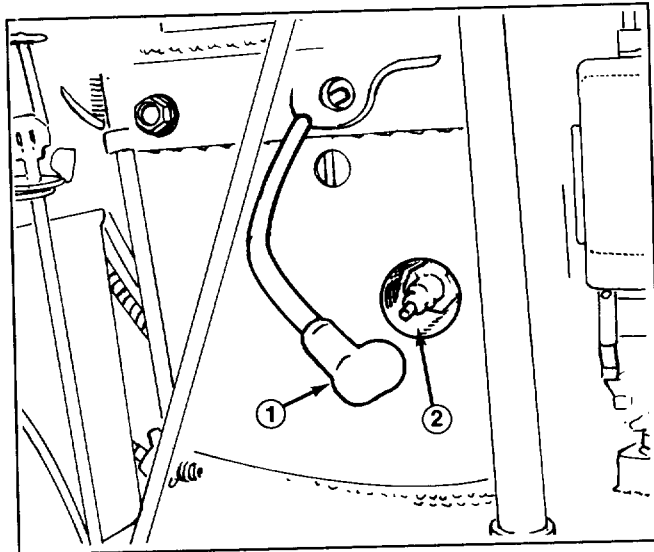
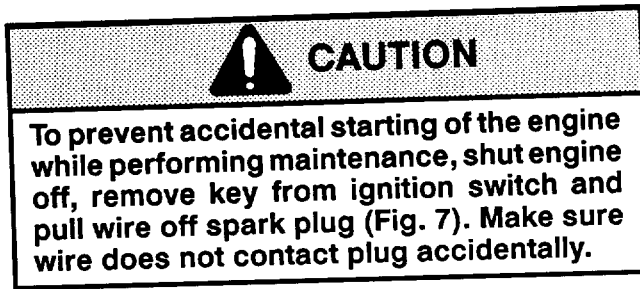


Figure 7

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.
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.

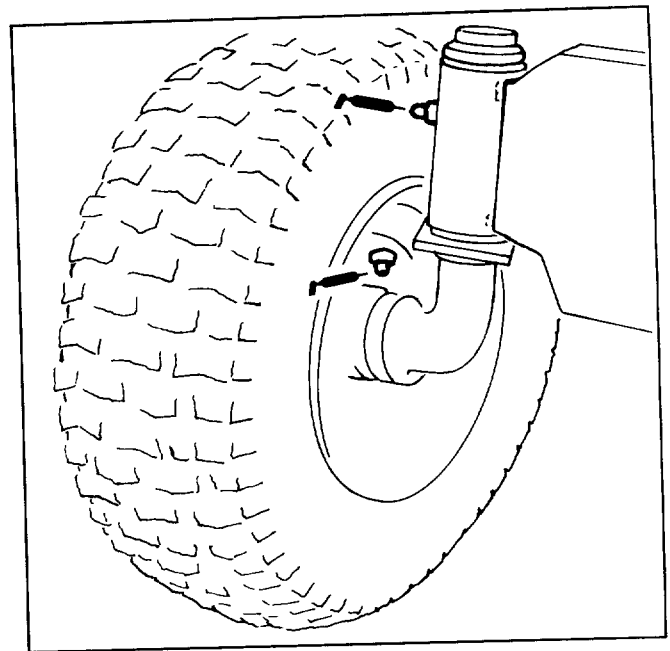


Figure 8

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 on the rider.

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 19.
2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 18.
3. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
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 22.
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, page 22.

MAINTENANCE

9. Tip rider back to its normal operating position.
10. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 12.
11. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 12.
12. Install the battery: refer to Activating and Charging Battery, page 11.

SERVICING AIR CLEANER

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

1. Remove wire from spark plug.
2. Remove two screws and lift complete air cleaner assembly off carburetor (Fig. 9).

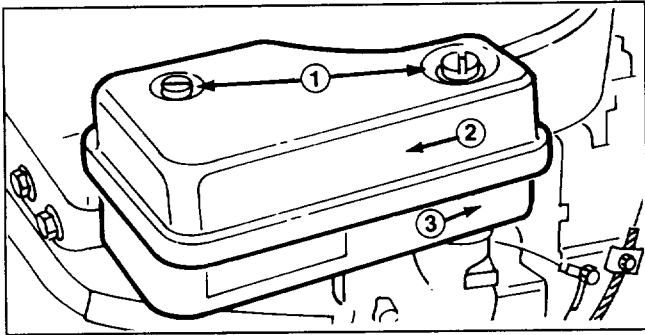


Figure 9

1. Screws 2. Cover 3. Body

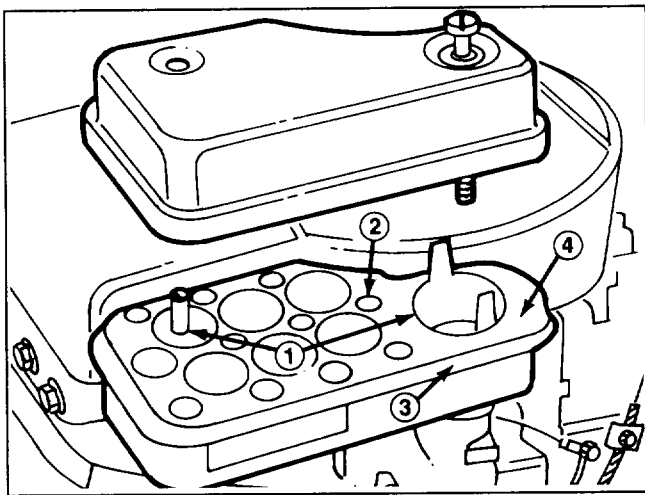


Figure 10

1. Spacers 3. Element Lip
2. Screen 4. Element

3. Remove cover and screen from foam element, remove spacers from element and element from body (Fig. 10). Examine element for dirt or discoloration and clean if necessary.

4. Clean element as follows:

- A. Wash foam element in solution of liquid detergent and water to remove dirt. Rinse 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. Assemble the air cleaner assembly, mount it on the carburetor and secure it in place with the screws.

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

IMPORTANT: Always operate engine with air cleaner element in place or engine damage will 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 ensure 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 a level surface so oil drains completely and a true reading results when crankcase is refilled.
2. Stop engine and pull wire off spark plug (Fig. 7).
3. Move blade control into DISENGAGE detent and set height-of-cut in lowest position.
4. Clean area around drain cap. Next, put a shallow drain pan under rider to catch the oil.
5. Remove drain cap (Fig. 11).
6. When oil is drained completely, reinstall drain cap 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 12.

MAINTENANCE

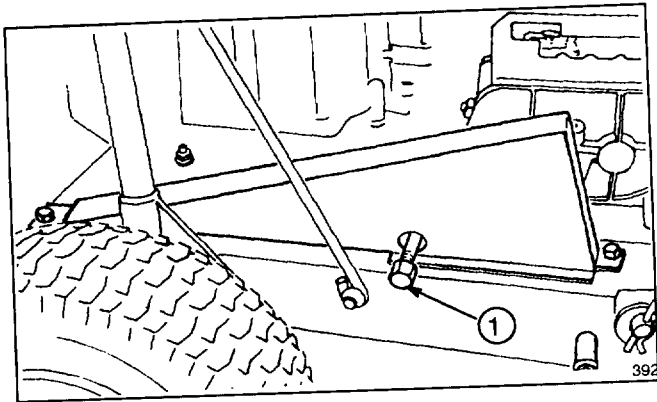


Figure 11

1. Drain plug

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

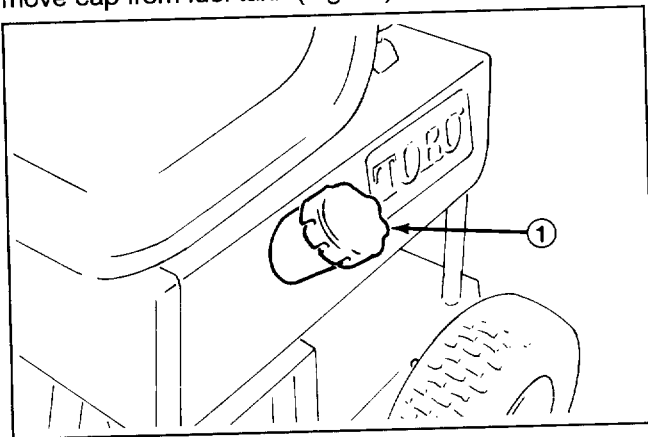


Figure 12

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.

REPLACING SPARK PLUG

Since air gap between center and side electrodes of the spark plug increased gradually during normal operation of the engine, check condition of electrodes after every 25 operating hours. Recommended air gap is 0.030 of an inch (0.762 mm). Correct spark plug to use:

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 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.
3. Check condition of side electrode, center electrode, and 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 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 (0.762 mm) (Fig. 13). Install correctly gapped spark plug w/gasket seal, and tighten plug to 15 ft-lb (20.4 N.m). If a torque wrench is not used, tighten plug firmly.

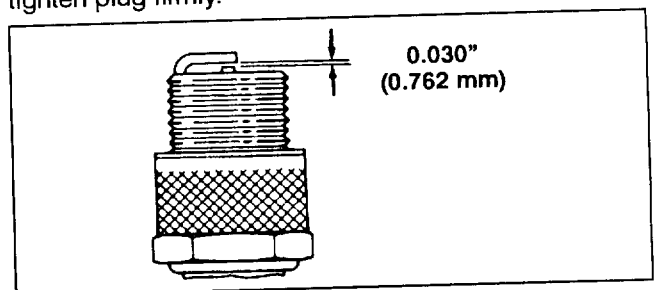


Figure 13

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 a memorable place so it is not lost.

ADJUSTING THROTTLE/CHOKE CONTROL

To ensure 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, ensure that throttle control is operating properly.

MAINTENANCE

1. Remove the screws holding air cleaner in place and lift complete air cleaner assembly off carburetor (Fig. 9).

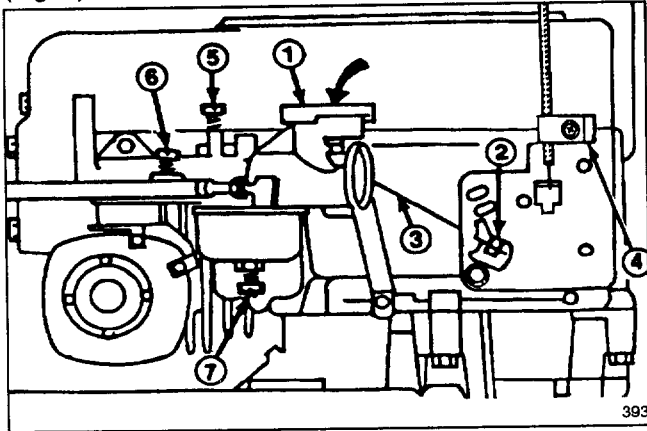


Figure 14

- | | |
|-------------------------|--------------------------|
| 1. Choke Butterfly | 5. Idle Valve |
| 2. Throttle Lever | 6. Idle Speed Adj. Screw |
| 3. Choke link | 7. Needle Valve |
| 4. Throttle Cable Clamp | |

2. Move throttle control lever to CHOKE position and check the position of the choke butterfly; it should be fully closed (Fig. 14).

3. Move throttle control lever to FAST position. The butterfly should be in the fully open position (Fig. 14).

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

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

1. Place remote control lever in FAST position.
2. Loosen the throttle cable clamp screw (Fig. 14) and move the control cable casing and wire until the throttle lever touches choke link. Check for proper choke operation.
3. Tighten the cable clamp and assembly the air cleaner assembly to the carburetor.

ADJUSTING CARBURETOR

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

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

1. Needle Valve (Fig. 14) — Close valve by gently rotating it clockwise.

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

2. Rotate — open — the needle valve 2 turns counterclockwise (Fig. 14).

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

3. Start engine and let it warm up for approximately two minutes. Next, move throttle control into FAST 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 high speed is being adjusted. The air cleaner mounting screw must also be installed when engine is running.

4. Rotate needle valve (Fig. 14) clockwise, 1/8 turn at a time, until engine starts to lose speed. Let engine react to each 1/8 turn setting.

5. Rotate needle valve (Fig. 14) counterclockwise — out — 1/8 turn at a time, until engine first runs rough. Let engine react to each 1/8 turn setting.

6. Rotate needle valve (Fig. 14) clockwise — in — very slowly until engine starts to run smoothly. This setting, under no load, may be slightly rich; however, the slightly rich setting will assure proper operation when engine is under load.

7. Move throttle control so engine idles. If engine stalls, rotate idle adjusting screw until engine speed increases (1750 rpm).

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

8. Turn idle valve in (lean) and out (rich) slowly until engine idles smoothly.

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

MAINTENANCE

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

SERVICING CUTTER BLADE



WARNING

Check cutter blade every time rider is tipped on end. If bolt holding blade is loose, tighten it to 45-60 ft-lb. If blade or sail (Fig. 16) 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 blade to ensure safety and best performance. NEVER USE A WILL-FIT REPLACEMENT BLADE.

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

IMPORTANT: To remove blade from spindle shaft, the rider must be tipped on its rear end. 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. (ALL BAGGING ATTACHMENTS MUST BE REMOVED BEFORE TIPPING RIDER.)

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 19.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 18.

4. Remove battery from chassis: refer to Activating and Charging Battery, page 12.

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 blade bolt, washer and blade (Fig. 15).

Note: Since blade bolt is tightened to 45-60 ft-lb (61-81 N·m) at the factory, it may be difficult to remove the bolt. If the bolt 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. 16).

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

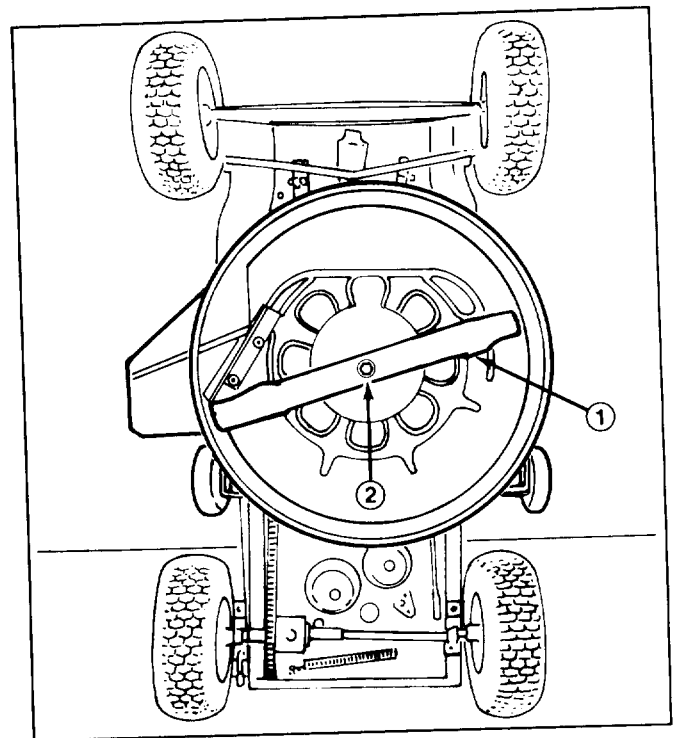


Figure 15

1. Blade

2. Blade bolt & washer

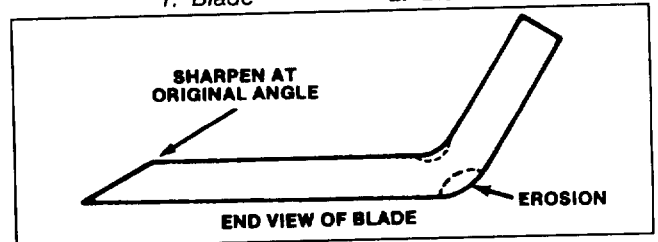


Figure 16

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, reinstall blade, washer and blade bolt (Fig. 15). Tighten blade bolt to 45-60 ft-lb (61-81 N·m).

IMPORTANT: Make sure cutting edge of blade is away from mower housing. While blade bolt 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 12.

12. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 13.

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

MAINTENANCE

CLEANING UNDERSIDE OF MOWER HOUSING

To ensure 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 past 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. 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 19.
3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1–6, page 18.
4. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
5. Shift transmission into 1st gear and engage the parking brake. Tip rider onto its rear end.
6. Remove grass clippings and dirt that are sticking to inside of housing (Fig. 15) 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. 15).
8. Tip rider back to its normal operating position.
9. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 12.
10. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 12.
11. Install the battery: refer to Activating and Charging Battery, page 11.

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. 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 12.

5. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1–6, page 18.

6. Remove battery from chassis: refer to Activating and Charging Battery, page 11.

7. Tip rider onto its rear end.

8. Remove blade drive belt: refer to Replacing Blade Drive Belt, page 22.

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

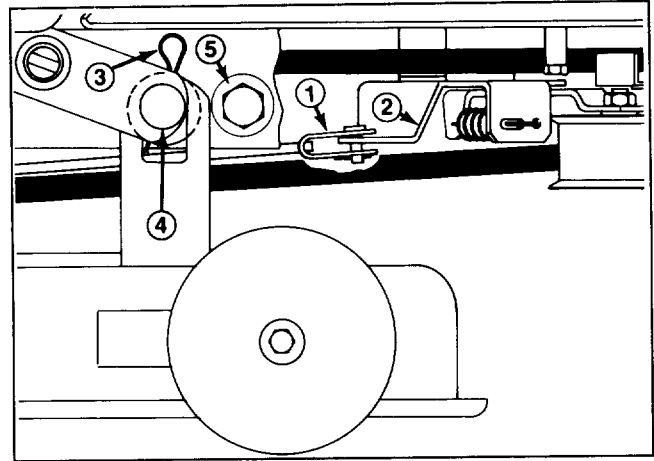


Figure 17

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

10. Remove (2) hairpin cotters and washers retaining mower housing to mounting pins (Fig. 17). 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 22.

13. Tip rider back to its normal operating position.

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

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

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

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.

MAINTENANCE

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 19.
2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page 18.
3. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
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. 17). Slide mower housing rearward to release belt tension.

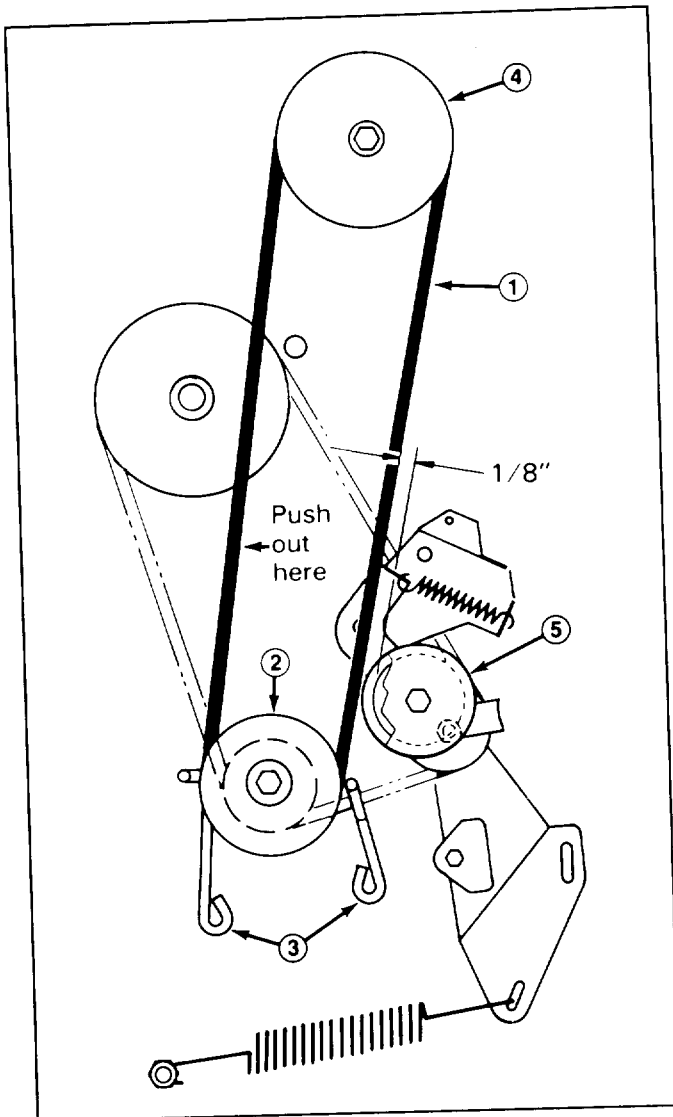


Figure 18

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

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. 18).

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.

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. 18, check clearance between outside of belt and inside of idler pulley (Fig. 18). Clearance should be approximately 1/8".

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

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

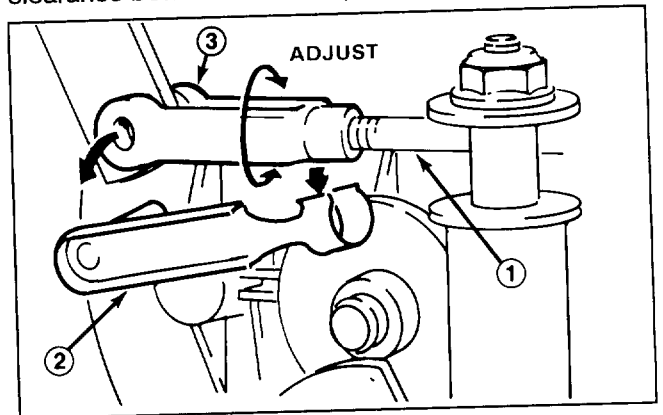


Figure 19

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

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 12.

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

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

MAINTENANCE

REPLACING TRACTION DRIVE BELT

IMPORTANT: To replace the traction drive belt, the rider may be tipped on its rear end. 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 19.
 2. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1–6, page 18.
 3. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
 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 22.
 6. Remove the mower housing: refer to Installing/Removing Housing, page 22.
 7. Unhook large traction spring from mounting screw (Fig. 20). Use caution when removing spring as it is heavily tensioned.
 8. Unhook idler spring from idler bracket (Fig. 20).
 9. Remove locknut and washer securing idler bracket to frame and remove bracket (Fig. 20).
 10. Loosen the locknut on pulley until belt guide can be removed (Fig. 20). 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 20.
12. Install mower housing: refer to Removing/Installing Mower Housing, steps 11–14, page 22.
 13. Tip rider back to its normal operating position.
 14. Fill crankcase with oil: refer to Fill Crankcase with Oil, page 12.

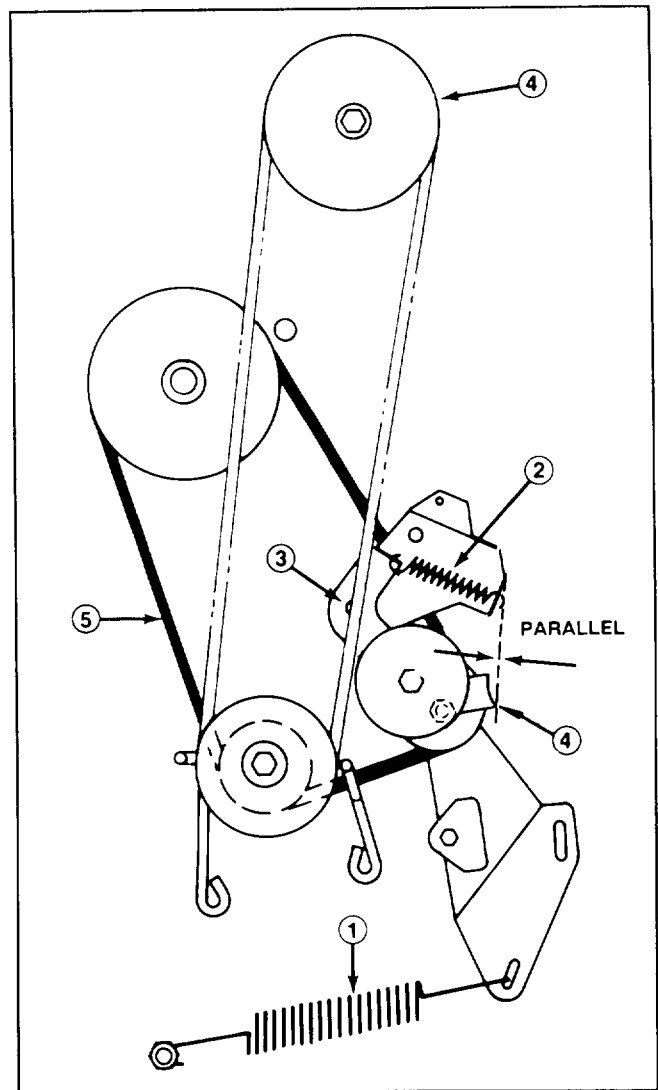


Figure 20

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

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

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

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 the first 5 hours of operation and after every 25 hours of operation.

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

MAINTENANCE

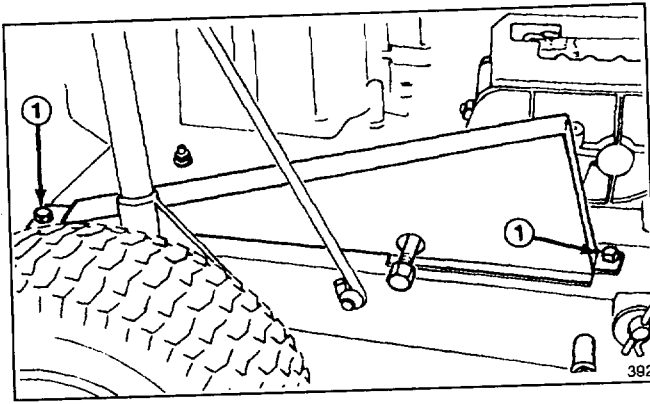


Figure 21
1. Screws

IMPORTANT: If chain is worn, loose or adjusted incorrectly, chain could come off sprockets, resulting in loss of brakes or traction drive. If assistance is needed, contact your local authorized Toro Dealer.

2. Check deflection of drive chain by lifting up and pressing down on 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.

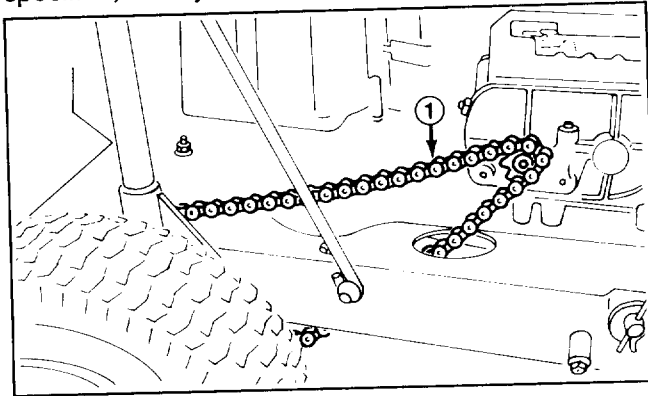


Figure 22
1. Drive chain

IMPORTANT: To adjust drive chain, the rider must be tipped on its rear end. 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. (ALL BAGGING ATTACHMENTS MUST BE REMOVED BEFORE TIPPING RIDER.)

3. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 19.
4. Drain oil from crankcase: refer to Changing Crankcase Oil, page 18.
5. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
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" wood blocks. 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. 23).

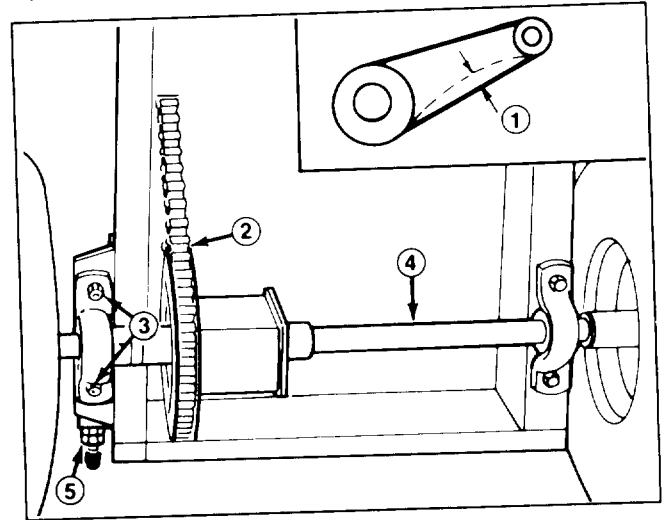


Figure 23

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

8. Loosen rear jamnut on chain tensioner (Fig. 23).
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. 23). 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 12.
16. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 13.
17. Install the battery: refer to Activating and Charging Battery, page 12.

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.

MAINTENANCE

1. Stop engine and pull wire off spark plug.
2. Remove battery from chassis: refer to Activating and Charging Battery, page 11.
3. Tighten locknut approximately 1/4 turn clockwise (Fig. 24).

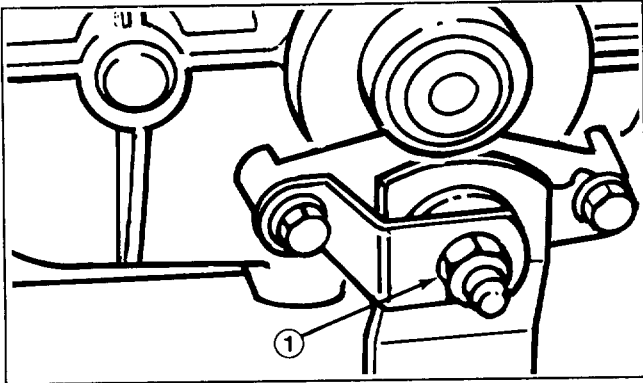


Figure 24


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 not contact.
5. Reinstall the battery: refer to Activating and Charging Battery, page 11.

CHECKING ELECTRICAL CONNECTIONS

1. Make sure wire 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 ensure a connection.
4. Also check wires that connect to ignition switch to ensure 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 control is engaged or gear shift is in gear. To ensure interlock system is operating correctly, check it before each use of the rider. Have the system checked by an Authorized TORO Service Dealer every two years to ensure safe operation of the rider.

1. Check all electrical connections: refer to Checking Electrical Connections, page 26.
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; 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; 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 ensure 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 raise off the seat, the interlock system is functioning correctly and the rider can be operated safely.

PREPARING MOWER FOR STORAGE

7. For long term storage, either drain gasoline from fuel tank or use a fuel additive before storing. To drain gasoline, refer to Draining Gasoline From Fuel Tank, page 19. After fuel is drained, start engine and let it idle until all fuel is consumed and 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 gas tank only if a fuel additive, such as Toro's Stabilizer/Conditioner, is added to 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 fuel additive in recommended quantities as specified on container.

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

MAINTENANCE

2. Remove wire from 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 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 REINSTALL WIRE ON SPARK PLUG.**
3. Drain oil from crankcase: refer to Changing Crankcase Oil, page 18. However, do not fill crankcase with oil at this time.
4. Remove battery from chassis: refer to Activating and Charging Battery, page 11. Remove corrosion from battery terminal and wipe any grease and dirt off the battery case. Check level of electrolyte. If level is low, add distilled 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 22.
7. Check condition of blade: refer to Servicing Cutter Blade, page 21.

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 17.

10. Remove dust and dirt from air cleaner element: refer to Servicing Air Cleaner, page 18.

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.

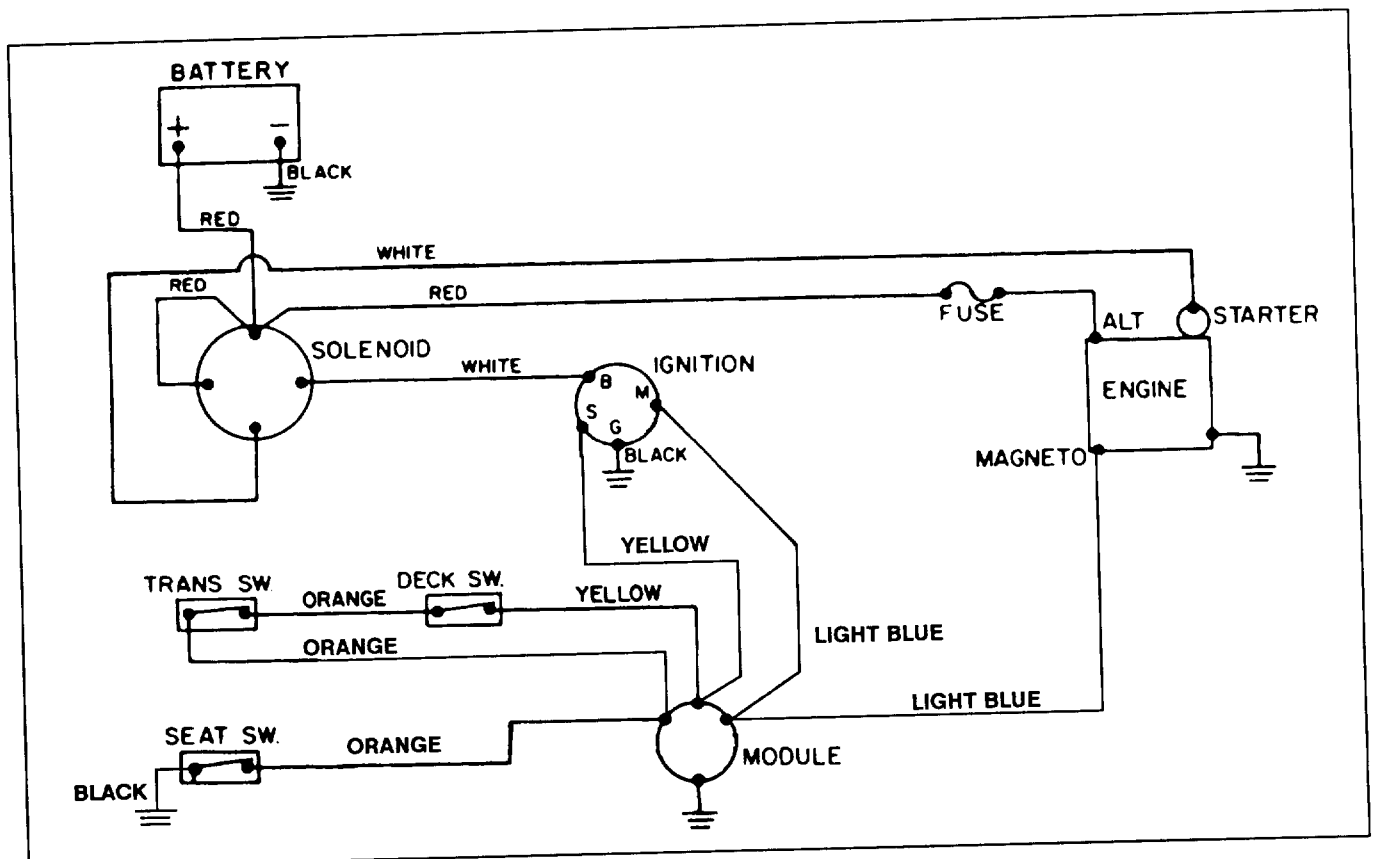
12. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 12.

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



TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine does not start, starts hard, loses power or fails to keep running	<ol style="list-style-type: none"> 1. Gas tank is empty. 2. Battery is dead. 3. Transmission is in gear. 4. Blade control is in ENGAGE detent. 5. Spark plug is loose. 6. Spark plug wire is loose or disconnected from spark plug. 7. Spark plug gap is incorrect. 8. Spark plug is pitted, fouled, or defective in some other way. 9. Wrong spark plug is used. 10. Electrical connections are loose. 11. Carburetor is adjusted incorrectly. 12. Air cleaner is dirty. 13. Dirt, water or stale fuel in fuel system. 14. Module or switch is inoperative. 15. Engine headbolt loose. 16. Operator not in seat. 	<ol style="list-style-type: none"> 1. Fill fuel tank with gasoline. 2. Charge the battery. 3. Shift transmission into neutral. 4. Move blade control into DISENGAGE detent. 5. Tighten plug to 15 ft-lb. 6. Install wire on spark plug. 7. Set gap between electrodes at 0.030 of an inch (0.76 mm). 8. Install new, correctly gapped spark plug. 9. Install correct spark plug. 10. Check electrical system to ensure good contact. 11. Adjust the carburetor. 12. Clean the air cleaner element. 13. Have rider serviced by Authorized TORO Service Dealer. 14. Have rider serviced by Authorized TORO Service Dealer. 15. Tighten headbolt to 200 in-lb. 16. Check seat switch.
Engine does not idle or idles poorly	<ol style="list-style-type: none"> 1. Air cleaner is dirty. 2. Cooling fins and air passages under engine blower housing are plugged. 3. Idle speed is too low. Speed mixture is incorrect. 4. Dirt, water or stale fuel is in fuel system. 5. Spark plug is pitted, fouled or damaged in some other way. 	<ol style="list-style-type: none"> 1. Clean air cleaner element. 2. Remove obstruction from cooling fins and air passages. 3. Adjust the carburetor. 4. Have rider serviced by an Authorized TORO Service Dealer. 5. Install new, correctly gapped spark plug.

TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine loses power	<ol style="list-style-type: none"> 1. Oil level in crankcase is low. 2. Cooling fins and air passages under engine blower housing are plugged. 3. Engine load is excessive. 4. Air cleaner is dirty. 5. Dirt, water, or stale fuel is in fuel system. 6. Carburetor is adjusted incorrectly. 7. Spark plug is pitted, fouled or defective in some other way. 	<ol style="list-style-type: none"> 1. Add oil to crankcase. 2. Remove obstruction from cooling fins and air passages. 3. Shift into lower gear to reduce load. 4. Clean air cleaner element. 5. Have rider serviced by Authorized TORO Service Dealer. 6. Adjust the carburetor. 7. Install new, correctly gapped spark plug.
Engine over heats	<ol style="list-style-type: none"> 1. Cooling fins and air passages under engine blower housing are plugged. 2. Carburetor is adjusted incorrectly. 3. Oil level in crankcase is low. 4. Engine load is excessive. 	<ol style="list-style-type: none"> 1. Remove obstruction from cooling fins and air passages. 2. Adjust the carburetor. 3. Add oil to crankcase. 4. Shift into lower gear to reduce load.
Rider vibrates abnormally	<ol style="list-style-type: none"> 1. Engine mounting bolts are loose. 2. Differential axle is misaligned. 3. Loose PTO pulley, idler pulley or blade pulley. 4. Cutter blade is unbalanced. 5. Blade bolt holding blade is loose. 6. Drive pulley is damaged. 	<ol style="list-style-type: none"> 1. Tighten engine mounting bolts. 2. Adjust the drive chain, which includes the differential axle. 3. Tighten the appropriate pulley. 4. Install new cutter blade. 5. Tighten blade bolt to 45-60 ft-lb (61-81 N-m). 6. Replace drive pulley.
Blade does not rotate	<ol style="list-style-type: none"> 1. Blade drive belt is worn, loose or broken. 2. Blade drive belt is off pulley. 	<ol style="list-style-type: none"> 1. Install new blade drive belt. 2. Install blade drive belt and check idler pulley and belt guides for correct position.
Rider does not drive	<ol style="list-style-type: none"> 1. Traction belt is worn, loose or broken. 2. Traction drive belt is off pulley. 3. Drive chain is off sprockets. 4. Transmission. 5. Traction idler is adjusted incorrectly. 	<ol style="list-style-type: none"> 1. Install new traction drive belt. 2. Install traction drive belt. 3. Install and adjust drive chain. 4. Have rider serviced by Authorized Toro Service Dealer. 5. Adjust traction drive belt.

MAINTENANCE RECORD

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MAINTENANCE RECORD

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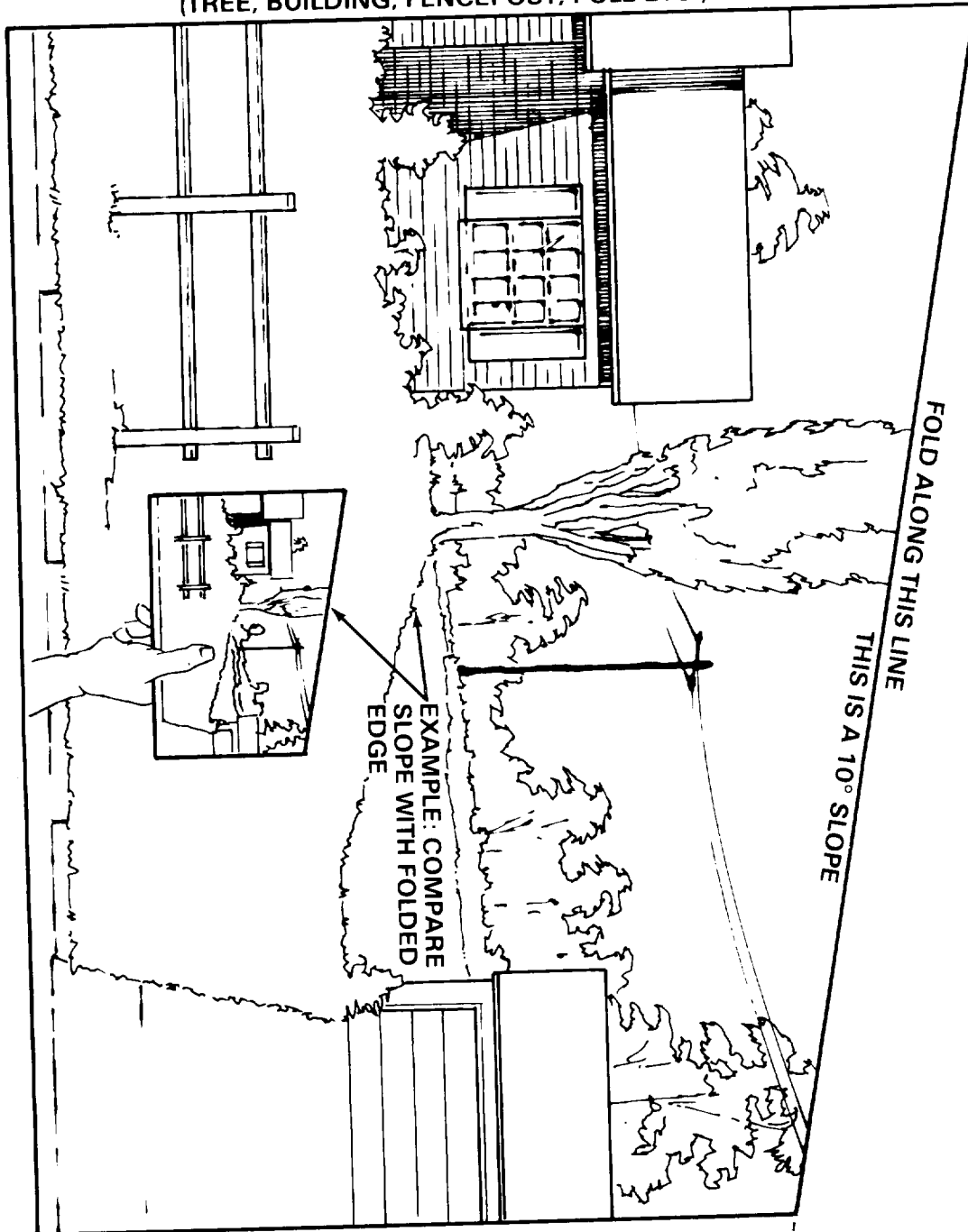
MAINTENANCE RECORD

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10° SLOPE CHART

Read all safety instructions on pages 3-6

ALIGN THIS EDGE WITH A VERTICAL SURFACE
(TREE, BUILDING, FENCEPOST, POLE ETC.)



Your TORO Wheel Horse
does more at home when it's equipped
with TORO Wheel Horse attachments.

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