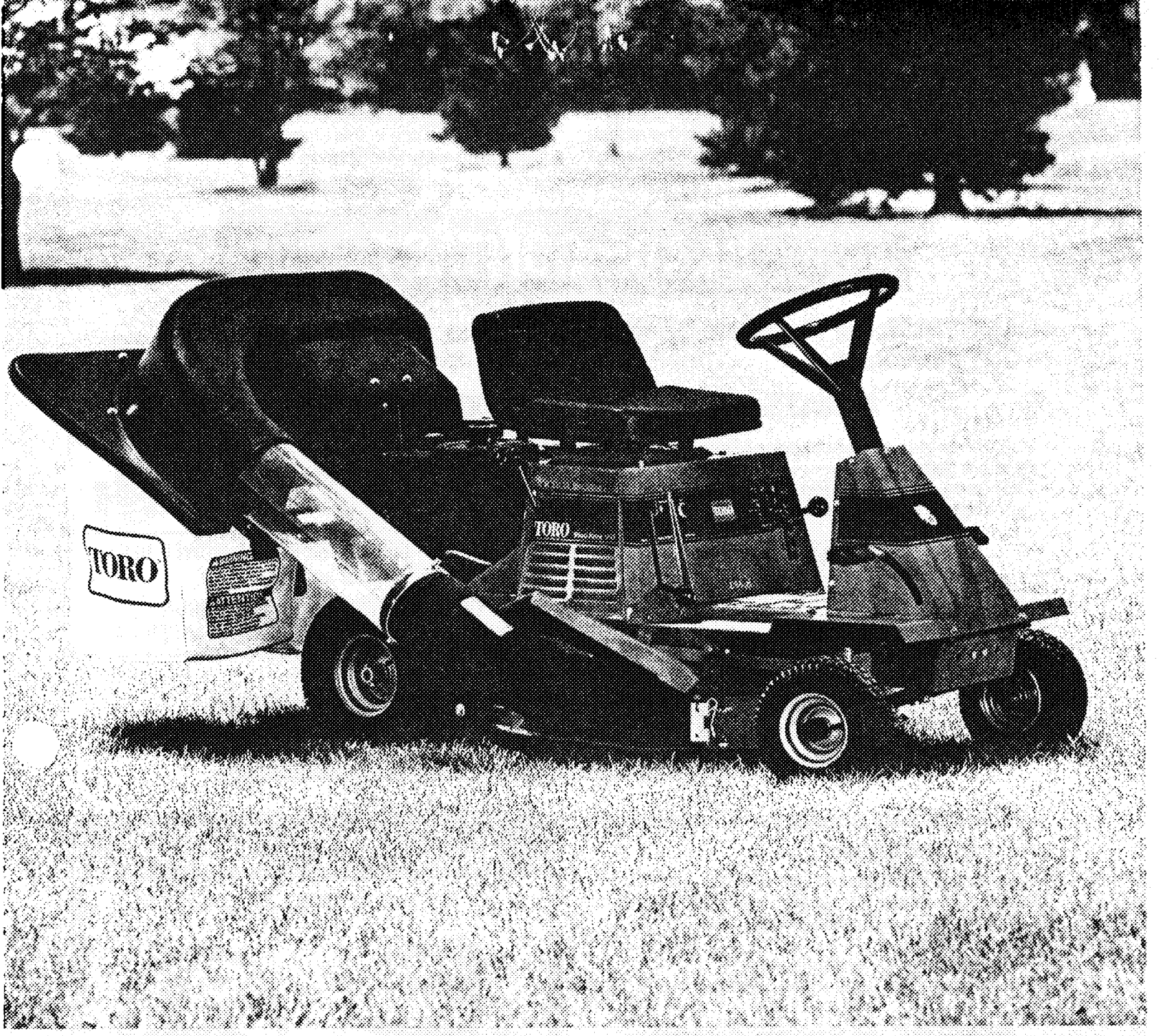

832, 1032 and 1232 Rear Engine Riders

TORO®

Wheel Horse®

Operator's Manual

Models 56145, 56165 & 56175

Specifications
Operating Instructions
Maintenance Information

Form Number 3314-115

FOR YOUR SAFETY

Two of the most potentially serious types of accidents involving power mowers are contact with the mower blade and overturning the rider/tractor. To minimize the possibility of having these types of accidents, read and follow these instructions. Also refer to the Safe Operation Practice in this Operator's Manual for other important safety information.

BLADE CONTACT

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

ALWAYS:

- Shut off engine and set parking brake.
- Remove ignition key.
- Allow moving parts to stop before dismounting, servicing, or cleaning unit.

NEVER:

- Perform ANY work on the mower with engine running.
- Mow with other people around, especially children.
- Leave mower unattended.

RIDER/TRACTOR STABILITY

Vehicle stability changes with conditions and is affected by:

- Slope angle and length/bumps/holes, etc.
- Slippery conditions (lawn moisture and length)
- 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 *This symbol warns of extreme immediate hazards which will result in severe personal injury or death if proper precautions are not taken.*

CAUTION *This symbol warns of a hazard or unsafe practice which can result in personal injury or death if proper precautions are not taken.*

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

SAFE OPERATION PRACTICES - 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 EXPERIENCE 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 PRACTICES

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, such as disengaging power-take-off, lowering attachments, shifting into neutral, setting parking brake, stopping engine and removing 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, not barefoot or open sandals, are essential.

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).

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 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.

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

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

SAFE OPERATING PRACTICES

STABILITY / TIP OVER / TRACTION

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

43. Avoid operating equipment on hillsides, slopes or rough terrain. DO NOT operate machine on hill-sides 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 insure 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 when 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.

60. When using machine with snowthrower and auger becomes plugged or jammed:

A. Declutch snowthrower and stop tractor engine immediately.

B. Disconnect spark plug wire(s).

C. Clear snow from discharge chute if plugged.

D. If auger is jammed, remove foreign object and repair any damage to snowthrower before continuing.

E. Reconnect spark plug wire(s) and resume operation.

61. Never permit anyone to stand near snowthrower auger or discharge opening. Objects may be present in snow, which when thrown, could cause injury.

SAFE OPERATING PRACTICES

62. When using snow/dozer blades:

A. Avoid hitting solid objects. This can damage blade and injure operator.

B. Always travel at a safe, slow speed.

63. Keep all persons a safe distance away when operating tillers. Always disengage the PTO, lower the attachment and remove the ignition key before making any adjustments.

64. If tiller starts to push tractor, disengage PTO clutch immediately.

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

MAINTENANCE

66. 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.

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

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

69. Use only genuine Wheel Horse replacement parts to assure that original standards are maintained.

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

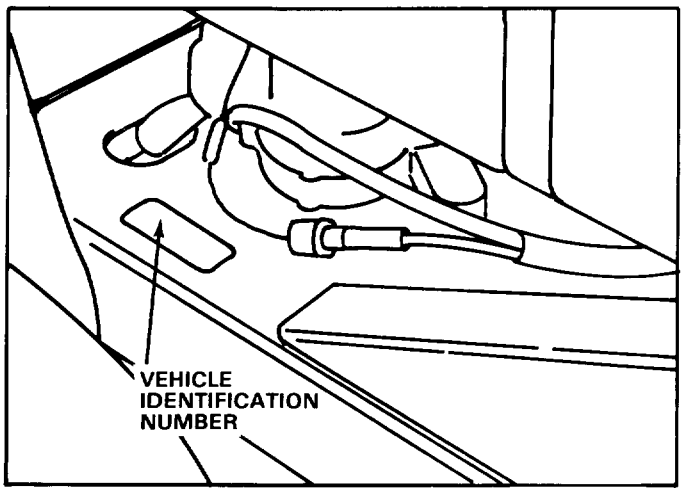
71. Do not operate without muffler or tamper with the exhaust system. Damaged mufflers or spark arresters can create a fire hazard. Periodically inspect and replace if necessary.

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

73. 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 engine plate, near the spark plug.



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 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, see ordering information at end of this publication.

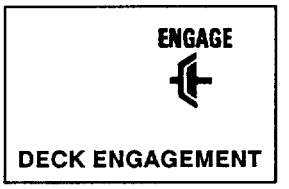
BE SURE TO INCLUDE VEHICLE IDENTIFICATION NUMBER OF EQUIPMENT.

SAFETY DECALS

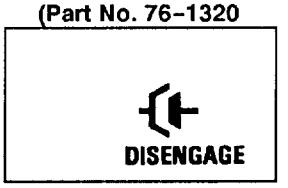
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged.

ON DEFLECTOR
(Part No. 54-9220)

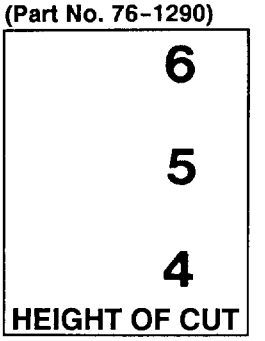
IN FRONT OF SEAT
(Part No. 76-1310)



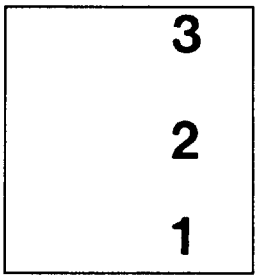
IN FRONT OF SEAT
(Part No. 76-1320



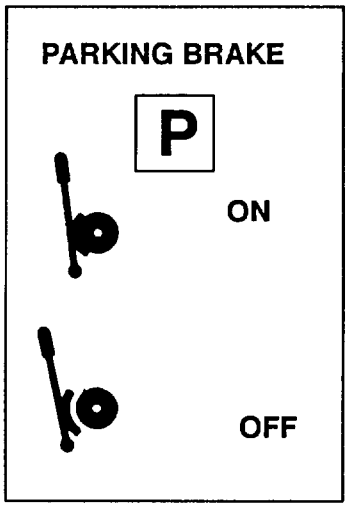
IN FRONT OF SEAT
(Part No. 76-1290)



IN FRONT OF SEAT
(Part No. 76-1300)

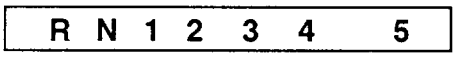


ON REAR OF STEERING TOWER
(Part No. 56-7810)

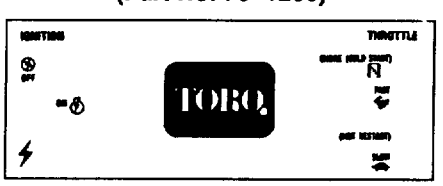


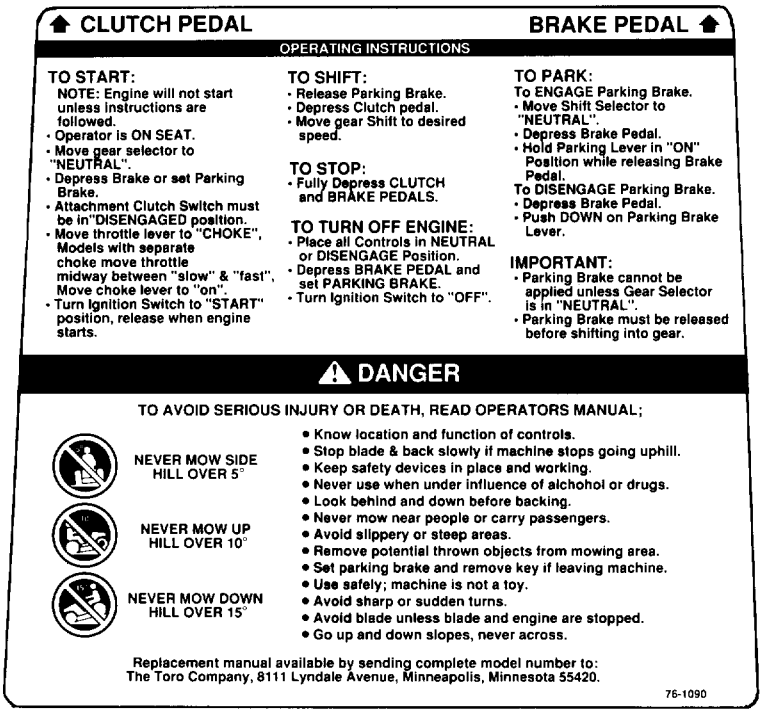
ON LEFT SIDE OF DECK
(Part No. 66-1340)

ON RIGHT SIDE OF SEAT
(Part No. 76-1280)



IN FRONT OF SEAT
(Part No. 76-1260)





ON FLOOR PANEL
(Part No. 76-1090)

SPECIFICATIONS

832 REAR ENGINE RIDER - ELECTRIC START, MODEL 56145
1032 REAR ENGINE RIDER - ELECTRIC START, MODEL 56165
1232 REAR ENGINE RIDER - ELECTRIC START, MODEL 56175

8-32 – Briggs & Stratton Engine (56145): Electric start with alternator, four cycle engine, has output of 8 hp (6 KW) @ 3600 rpm and 12.7 ft/lb (17.2 N·m) torque @ 2500 rpm. Displacement is 19.44 cubic inches (318.6 cc). Crankcase oil capacity is 2-1/4 pints (1.0651) and fuel tank capacity is 5 quarts (4.73 l). Correct spark plug is a Champion RJ-19 LM or equivalent resistor type. Recommended spark plug air gap is 0.030 of an inch (0.762 mm).

10-32 – Briggs & Stratton Engine (56165): IC Series, electric start with alternator, four cycle engine, has output of 10 hp (7.5 KW) @ 3600 rpm and 14.8 ft/lb (20 N·m) torque @ 2500 rpm. Displacement is 24.36 cubic inches (400 cc). Crankcase oil capacity is 3 pints (1.42 l) and fuel tank capacity is 5 quarts (4.731). Correct spark plug is a Champion RJ-19 LM or equivalent resistor type. Recommended spark plug air gap is 0.030 of an inch (0.762 mm).

12-32 – Briggs & Stratton Engine (56175): IC Series, electric start with alternator, four cycle engine, has output of 12 hp (9.0 KW) @ 3600 rpm and 20 ft/lb (38.5 N·m) torque @ 2800 rpm. Displacement is 28.40 cubic inches (465 cc). Crankcase oil capacity is 3 pints (1.42 l) and fuel tank capacity is 5 quarts (4.731). Correct spark plug is a Champion RJ-19 LM or equivalent resistor type. Recommended spark plug air gap is 0.030 of an inch (0.762 mm).

Mower Housing: Full floating, front to rear, side to side. 12 gauge (2.64 mm) stamped steel housing with right side discharge. Deck diameter is 31.75 inches (.0806 m). Steel spindle housing with shaft is supported by two double seal ball bearings. Blade spindle pulley is driven by "A" section V-belt from engine crankshaft.

Cutter Blade: Single blade is 31.35 inches (0.796 m) long, made of one piece hardened 7 gauge (2.72 mm) carbon steel.

Blade Tip Speed: 17,000 ft./min (86.36 m/s) @ 3300 engine rpm. Height of Cut Range: Height of cut is adjustable to one of six appropriate settings from 1-1/2 inches to 4 inches (38 to 101 mm).

Transmission: Transmission fully enclosed, permanently lubricated with five speeds forward and one reverse.

Gear Reductions:

1st – 7.0:1	4th – 2.4:1
2nd – 4.5:1	5th – 2.0:1
3rd – 3.0:1	Rev. – 4.2:1

Differential: Sintered powdered metal bevel gears are enclosed in a permanently lubricated housing. Axle shafts are 3/4 inch (19 mm) dia.

Wheels and Tires: The front 11 x 4.00-5 and the rear 15 x 6.00-6 tubeless, pneumatic turf tires are installed on demountable stamped steel wheels.

Ground Speed @ 3300 Engine rpm:

1st gear	– 1.55 mph (2.50 km/hr)
2nd gear	– 2.41 mph (3.88 km/hr)
3rd gear	– 3.61 mph (5.81 km/hr)
4th gear	– 4.59 mph (7.39 km/hr)
5th gear	– 5.42 mph (8.72 km/hr)
Rev. gear	– 1.81 mph (2.92 km/hr)

Steering: 4 spoke, dished steering wheel on pinion and sector gear to tie rods controlling wheels 5.1:1 reduction. Turning diameter of approximately 6.6 ft. (2 m).

Engine Controls: Control wire and casing with FAST, SLOW and CHOKE positions. key switch with ON. OFF and START positions (electric). Both controls mounted in convenient position.

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

Traction Clutch: Foot operated pedal on left side. Depressing pedal disengages idler pulley.

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

Parking Brake Control: Hand operated lever on rear of steering tower which locks brake pedal and/or clutch pedal.

Cutter Blade Control: Hand operated lever in front of operator releases blade brake and engages clutch.

Height-Of-Cut Control Lever: Hand Operated lever in front of operator. Height of cut selection is variable in six increments from 1-1/2 to 4 inches (38 to 102 mm).

General Dimensions:

Wheel Base	– 45 in (1.14 m)
Tread Width	–30 in (.76 m) front outside to outside
Length	–58 in (1.48 m)
Height	–38 in (.97 m)
Width	–40 in (1.02 m)
Weight	–360 lb (163.30 kg) 8-32 E (Model 56145)
	–365 lb (164.54 kg) 10-32 E (Model 56165)
	–370 lb (167.84 kg) 12-32 E (Model 56175)

SPECIFICATIONS

Safety Features: Meets B71.1 – 1986 ANSI safety specifications.
Traction drive, blade drive and seat interlock.
Full foot rests.
Convenient, easy to operate controls.
Automatic blade brake.
Stable-Wide track and low center of gravity.

Optional Accessories Attachments:
Easy Empty Grass Catcher, Model #59176
Twin Bagger, Model #59184.

LOOSE PARTS

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

DESCRIPTION	QTY.	USE
Seat	1	Install Seat, page 11.
Wire Tie	1	
Clamp	1	
Seat Spacer	4	
Locknut	4	
Front Wheel Assembly	2	Install Front Wheels, page 11.
Flat Washer	2	
Hub Cap	2	
Cotter Pin	2	
Steering Wheel	1	Install Steering Wheel, page 11.
Roll Pin	1	
Steering Shaft Cover	1	
Key	2	Use in Ignition Switch
Capscrew	2	Secure battery cables to battery, page 12
Wing Nut	2	
Operator's Manual	1	Read manual before operating Rider.
Registration Card	1	Fill out and mail to Toro

SETTING UP INSTRUCTIONS

INSTALL FRONT WHEELS

Note: Grease axle shafts before installing wheels.

1. Install wheel onto axle.

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

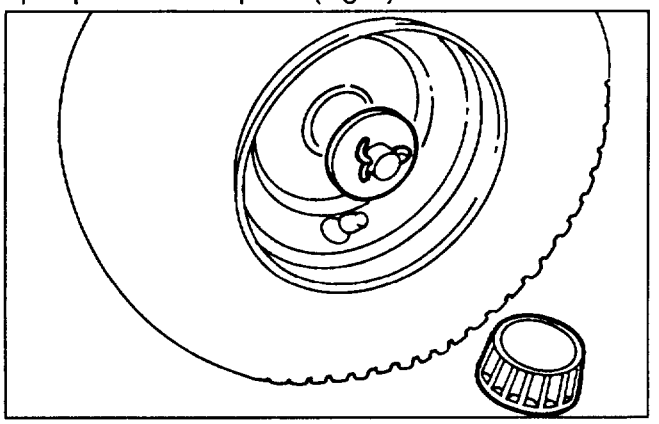


Figure 1

3. Install hub caps.

4. Repeat steps 1-3 on opposite side.

5. Check front and rear tires for 12 psi (82.7 kPa) inflation.

6. Lubricate both front wheels w/No. 2 general purpose grease. Pump grease gun until grease comes through bearings. Wipe up any excess grease.

INSTALL STEERING WHEEL ASSEMBLY

1. Position wheels in straight ahead direction and slide steering shaft cover over steering shaft.

2. Slip steering wheel over shaft and line the steering wheel mount hole with the shaft mounting hole (Fig. 2). Toro Logo should be readable from operator's position.

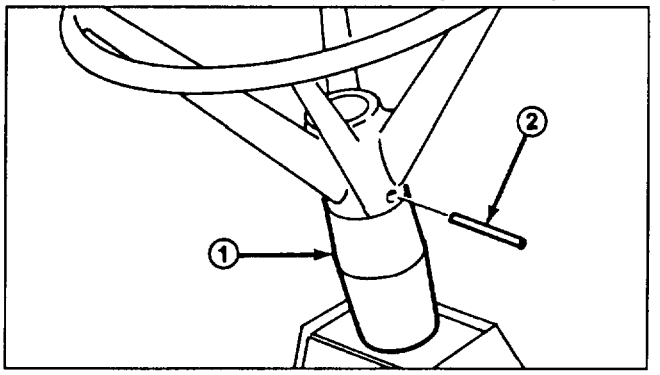


Figure 2

1. Steering Shaft Cover
2. Roll Pin

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

4. Drive the roll pin in until it is flush with the outside of the wheel (Fig. 2).

INSTALL SEAT

1. Thread (4) seat spacers into bottom of seat (Fig. 3).

2. Position seat onto seat base, inserting seat switch cable thru slot and spacer studs thru mounting holes (Fig. 3).

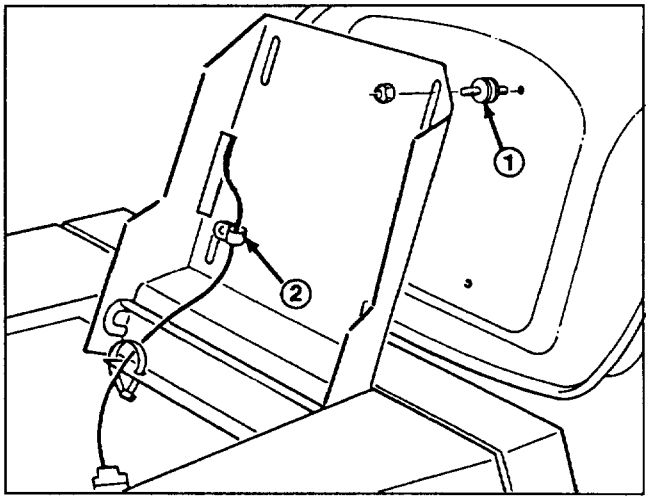


Figure 3

1. Seat Spacers
2. Wire Clamp

3. Slide wire clamp over seat switch wire (Fig. 3).

4. Using left rear spacer stud, loosely secure wire clamp and seat to seat base with a locknut (Fig. 3).

5. Mount seat to seat base with (3) remaining locknuts.

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

6. Tighten all locknuts.

7. Insert seat switch connector into wire harness connector.

8. Secure wire harness to front of seat base with wire tie.

BEFORE OPERATING

ACTIVATING AND CHARGING BATTERY

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

1. Tip seat forward exposing battery.

2. Remove wing nut securing battery hold downs to rider chassis. (Fig. 4)

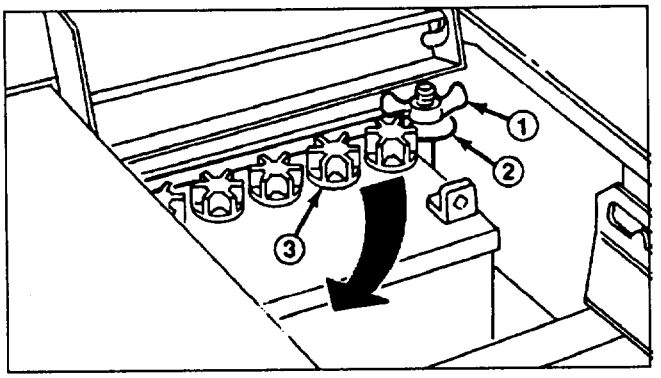


Figure 4

1. Wing Nut
2. Battery Hold Downs
3. Filler Cap

3. Lift up on top battery hold down and pivot rearward.

4. Remove battery from chassis and set it aside.

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

6. 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).

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

8. Slowly add electrolyte to each cell until level is up to fill ring. Install filler caps.

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

9. Install the battery with the terminal posts toward the rear of the machine and vent tube on left side of battery, thru hole in frame (Fig. 5).

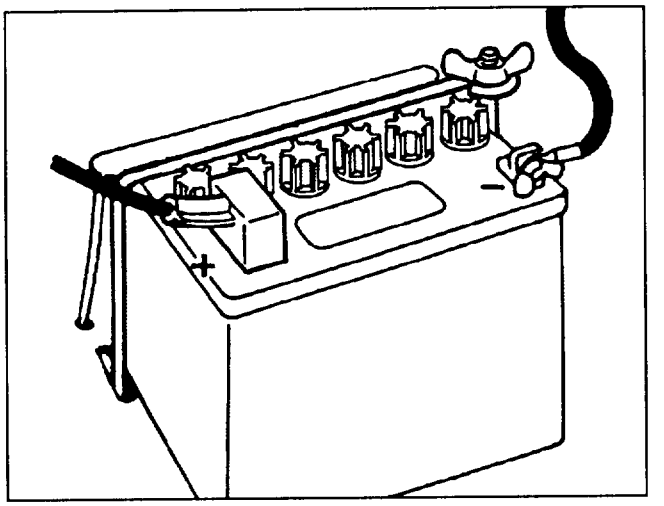


Figure 5

10. Reinstall battery hold downs.

11. Install the positive cable (rubber boot over end) to the positive (+) terminal and the negative cable (black) to the negative (-) terminal of the battery and 1.secure with capscrews and wing nuts. Slide the rubber boot over the positive terminal to prevent possible short-out from occurring (Fig. 5).

CHECK CRANKCASE OIL LEVEL

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

1. Place rider on a level surface to assure accurate oil level reading.

2. Unscrew and remove the dipstick from the oil fill tube (Fig. 6).

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

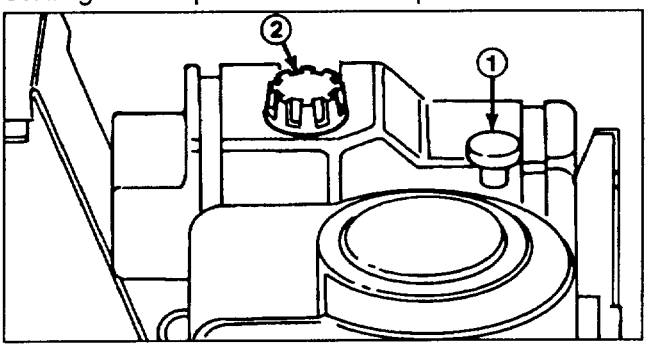


Figure 6

1. Dipstick
2. Fuel Tank Cap

A. Above + 40° F (4° C) — Use SAE 30; 10W-30 as a substitute.

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

C. Below 0° (-18° C) — Use SAE 10W or 10W-30 diluted 10% with kerosene (1.6 oz. per pint of oil).

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

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

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

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

FILL FUEL TANK WITH GASOLINE

The Toro Company strongly recommends the use of clean, fresh *Unleaded* Regular Gasoline in Toro Gasoline Powered Products Unleaded gasoline burns cleaner, extends engine life, and promotes good starting by reducing the build-up of combustion chamber deposits Leaded gasoline can be used if unleaded is not available.

Note: Never use Methanol, gasoline containing Methanol, gasohol containing more than 10% ethanol, gasoline additives, premium gasoline, or white gas because engine fuel system damage could result.

DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. DO NOT SMOKE while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline, and fill tank to about 1/2 inch (13 mm) : below the filler neck. Store gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

1. Clean area around fuel tank cap so foreign matter cannot enter tank when cap is removed (Fig. 6).

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

3. Wipe up any gasoline that may have spilled.

CHECK TIRE PRESSURE

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

CONTROLS

Gear Shift (Fig. 7) - Transmission has five forward speeds, neutral and reverse. Single lever in-line shifting with "Z" pattern located at right side of operator. An interlock switch, which prevents engine from being started when transmission is in gear, is mounted on top of transmission.

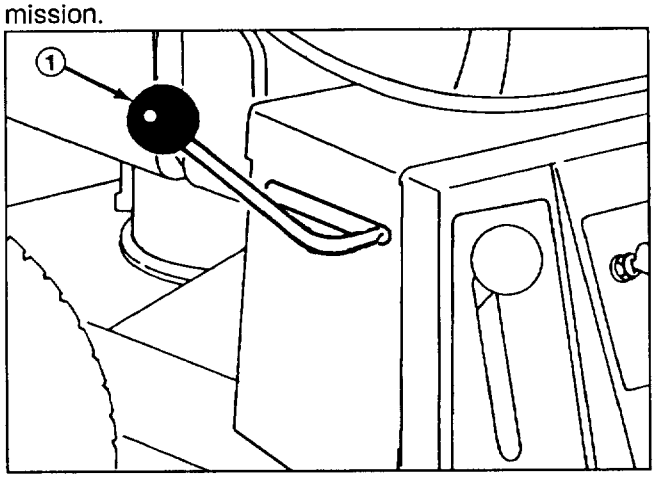


Figure 7

1. Gear Shift

Clutch Pedal (Fig. 8) - Foot-operated clutch pedal is used in conjunction with gear shift. Depress clutch pedal fully when shifting gears, which moves idler pulley away from traction drive belt and disengages power to wheels. Depress clutch pedal whenever brake is used.

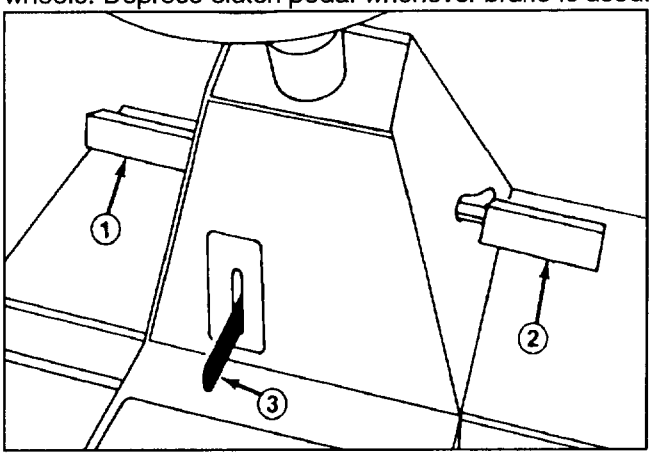


Figure 8

1. Clutch Pedal
2. Brake Pedal
3. Parking Brake

Brake Pedal (Fig. 8) - Foot-operated brake pedal must be depressed to slow down or stop the rider. When pedal is depressed, a caliper engages the brake disc at side of transmission. Remember to depress clutch pedal when using brake.

Parking Brake (Fig. 8) - Parking brake must be used in conjunction with clutch and brake pedals. When pedals are depressed, end of parking brake lever holds brake and clutch pedals in depressed position, a caliper engages the brake disc at side of transmission.

Deck Engagement Lever (Fig. 9) - Deck engagement lever engages and disengages the cutter blade. An interlock switch, which is mounted on front of seat base, prevents engine from starting when control is in the ENGAGE position. Engine will start when control is in DISENGAGE position only.

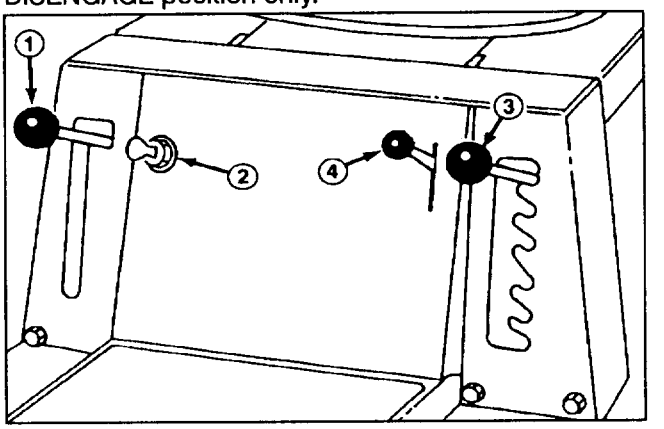


Figure 9

1 Deck Engagement Lever
2. Ignition Switch
3. Height of Cut Control
4. Throttle Control

Ignition Switch (Fig. 9) - Switch is part of engine ignition system, and it has three positions: OFF, ON and START Key automatically returns to ON position from START position when released after engine starts.

Height-of-Cut Control (Fig. 9) - Height-of-cut control varies the cutting height from 1-1/2 to 4 inches (38 to 102 mm) in six increments.

Throttle Control (Fig. 9) - Throttle control connects to and operates carburetor mounted throttle and choke. Control has three positions: SLOW, FAST and CHOKE. Push control slightly to the left and upward to obtain CHOKE position.

Back Up Recoil Starter (Fig. 10) - (Models 56165 & 56175 Only) Recoil starter must be used in conjunction with ignition switch. After turning ignition key to ON position, pull recoil starter handle to start engine.

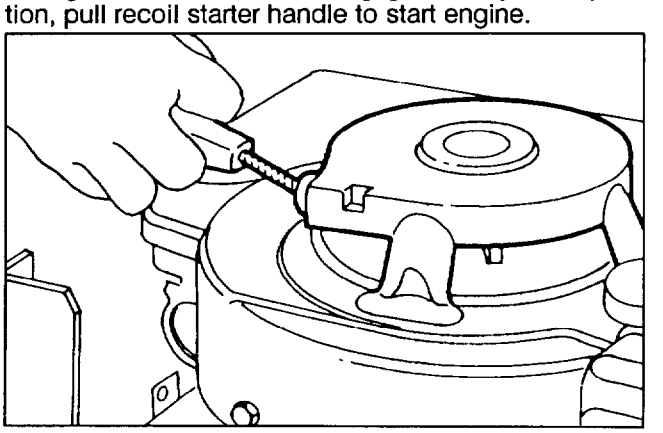


Figure 10

STARTING AND STOPPING INSTRUCTIONS

IMPORTANT: Starter motor can be activated but, rider engine will not start unless deck engagement lever is DISENGAGED, and shift lever is in NEUTRAL. To avoid unnecessary drain on battery, make sure deck engagement lever and shift lever are correctly positioned before attempting to start rider.

START AND OPERATE MACHINE

1. Sit on seat, shift into neutral, move deck engagement lever to DISENGAGE.

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

3. Select desired height-of-cut and move deck engagement lever to ENGAGE.

4. Release parking brake, depress clutch pedal and shift into gear.

RECOIL STARTING

(Models 56165 & 56175 only)

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

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

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

3. Select desired height-of-cut and move blade control to ENGAGE.

4. Release parking brake, depress clutch pedal and shift into gear.

TO STOP

1. Depress brake and clutch pedals, move throttle control lever to SLOW position, move deck engagement lever to DISENGAGE, and rotate ignition key to OFF.

2. Shift transmission to neutral and engage parking brake.

3. Remove key from ignition switch.

BREAK-IN

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

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 and clutch pedals fully, shift transmission to neutral.

2. Move parking brake control upward and release brake and clutch pedal.

3. To release the parking brake, depress brake and clutch pedal, and push parking brake lever down to return it to its disengaged position. Release brake pedal slowly.

ADJUSTING HEIGHT-OF-CUT

The height-of-cut may be set in one of six positions from approximately 1-1/2 to 4 inches (38 to 102 mm).

1. Assure the deck engagement lever is in DISENGAGE position.

2. Move height-of-cut control into desired setting.

3. To engage blade for cutting, move deck engagement lever to ENGAGE.

OPERATING INSTRUCTIONS

GRASS DEFLECTOR

WARNING

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

OPERATING PROCEDURE

WARNING

If drive chain comes off sprockets, there are no brakes or traction drive. Check chain adjustment and condition regularly. (Refer to Adjusting Drive Chain, page 24.

1. Move deck engagement lever into DISENGAGE.

2. Start the engine: refer to Starting/Stopping Instructions, page 15.

IMPORTANT: When rider is used for the first time, operate the transmission in all gears to assure that drive system is functioning correctly, and become familiar with the controls and operating characteristics. Never shift while the machine is moving or without first depressing the clutch pedal or transmission damage could result.

WARNING

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

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

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

4. To engage blade for cutting, move height-of-cut control to the desired setting, then move deck engagement lever to ENGAGE.

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

GRASS CUTTING TIPS

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

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

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

DANGER

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

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

MAINTENANCE INTERVAL CHART

	5 Hours	10 Hours	25 Hours (Monthly)	Storage Service	Spring Service	2 Years	Notes
Change Oil (Initial)	X						
Change Oil (Periodic)			X	X			
Check Safety Interlock	X		X		X		
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	X		More often in dusty, dirty, conditions.
Drain Gasoline				X			
Clean Outside of Engine				X			
Clean Mower Housing				X			
Paint Chipped Surfaces				X			
Remove Rear Wheels and Grease Axles				X			
Check Interlock Switches						X	

MAINTENANCE

⚠ CAUTION

To prevent accidental starting of the engine, while performing maintenance, shut engine off and remove key from ignition switch. Also, pull wire off spark plug (Fig. 11). Make sure wire does not contact plug accidentally.

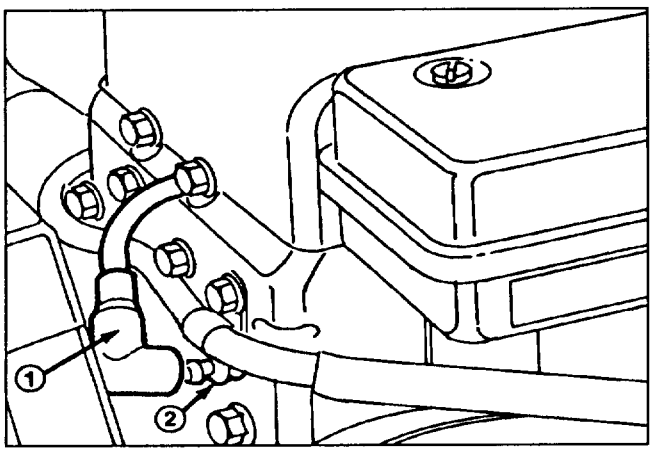


Figure 11

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

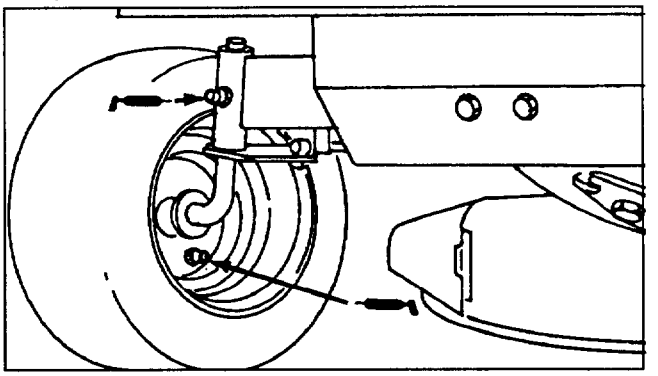


Figure 12

2. Lubricate both axle spindles w/No. 2 general purpose grease (Fig. 12). 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. 12). Pump grease gun about four times. Wipe up any excess grease.

MAINTENANCE

LUBRICATE PIVOT POINTS

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

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

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 21.

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 12.

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

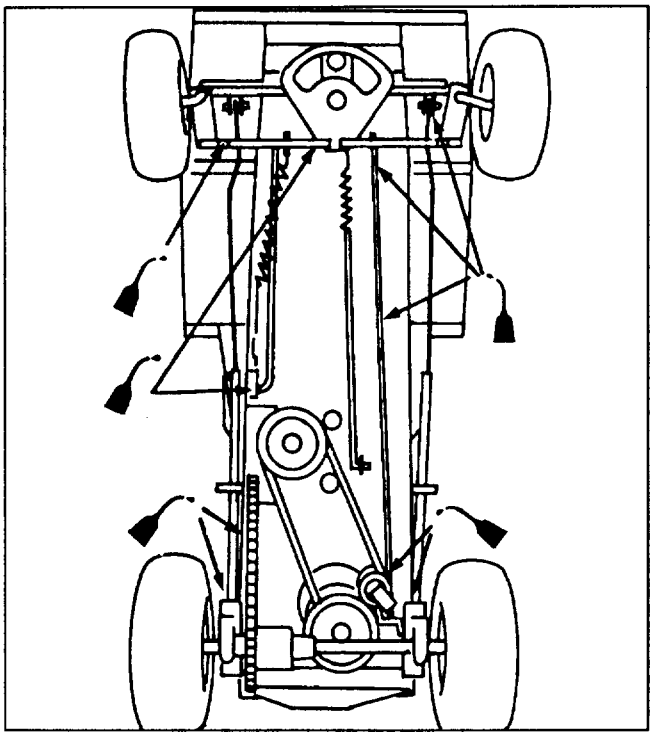


Figure 13

5. Remove mower housing from rider chassis: refer to Removing / Installing Cutting Unit, steps 1-5, page 23.

6. Tip rider up and onto its rear end.

7. Lubricate pivot points in the steering, drive, brake, clutch, and deck engagement linkage with light oil (Fig. 13). Also lubricate mower housing (Fig. 14). Wipe up any excess oil.

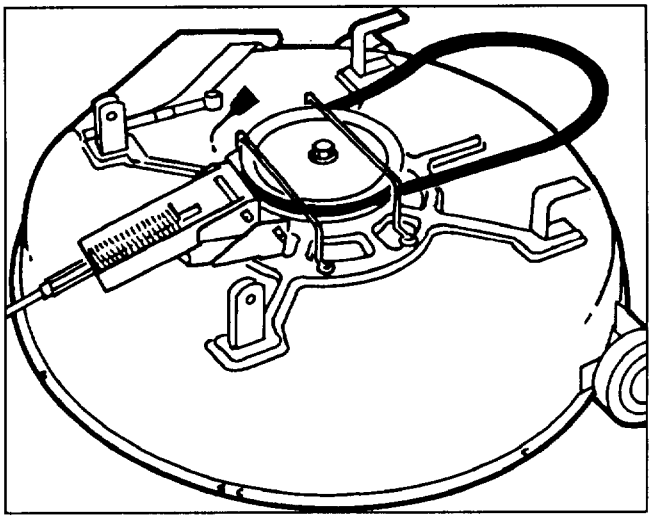


Figure 14

8. Tip rider back to its normal operating position.

9. Install mower housing onto rider chassis: refer to Removing / Installing Cutting Unit, page 23.

10. Fill crankcase with oil: refer to Check Crankcase Oil Level, page 12.

11. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page13.

12. Install the battery: refer to Activating and Charging Battery, steps 12-14, page 12.

CHANGING CRANKCASE OIL

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

To check level of oil:

A. Position rider on level surface.

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

C. Unscrew dipstick and wipe oil off.

D. Screw dipstick fully in to filler neck; then remove it and check oil level on dipstick. If level is low, add only enough oil to raise level to FULL mark. Do not overfill or engine damage may result.

E. Screw dipstick back into filler neck.

2. Change oil after first 5 hours of operation; every 25 hours thereafter. Change oil more frequently when operating conditions are extremely dusty or dirty.

To change oil:

A. Position rider on level surface. Start and run engine for a period to warm the oil.

B. Turn engine off and place drain pan below drain plug (Fig. 15). Support drain pipe with pipe wrench, remove drain plug, and allow all oil to flow into drain pan. Install drain plug after oil stops flowing.

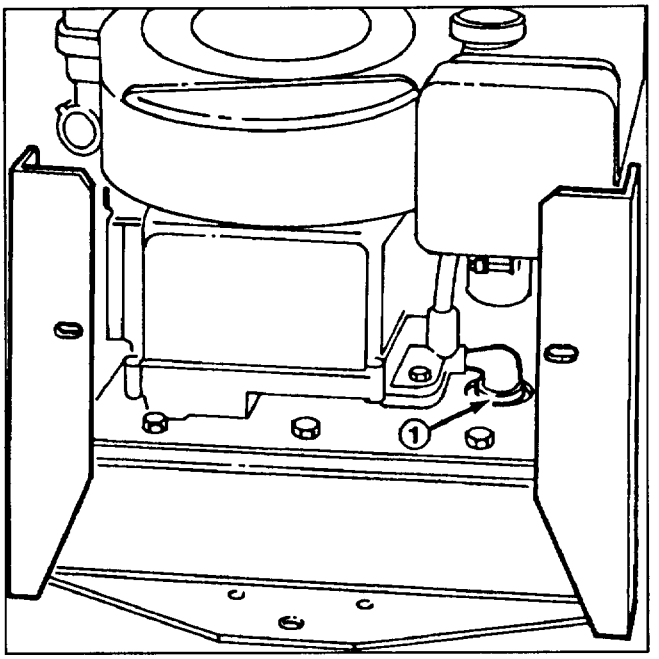


Figure 15

1. Drain Plug

Note: To ease removal of drain plug, use a 3/8" drive extension with the square drive socket over the plug and turn with a crescent wrench (Fig. 15, Insert).

C. Unscrew dipstick and add oil to crankcase. Refer to CHECK CRANKCASE OIL LEVEL. Capacity of 8 hp rider crankcase is 36 oz. (1.065 1) and10 & 12 hp riders are 48 oz. (1.42 1) **DO NOT OVERFILL** or engine damage may result.

SERVICING AIR CLEANER

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

Models 56165 and 56175 only

1. Remove wire from spark plug.

2. Remove air cleaner stud, screw and cover. Replace cover gasket if damaged (Fig. 16).

3. Remove plate screw, washer and plate (Fig. 17).

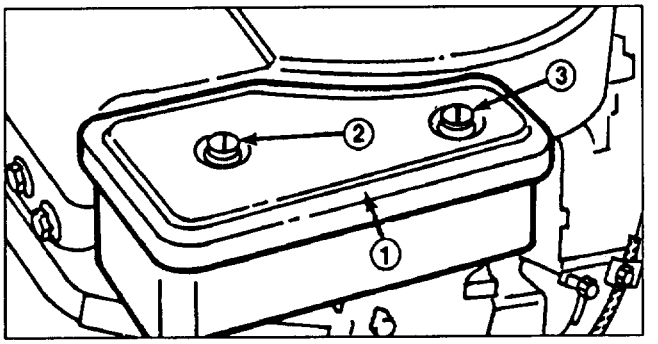


Figure 16

1. Cover
2. Screws
3. Stud

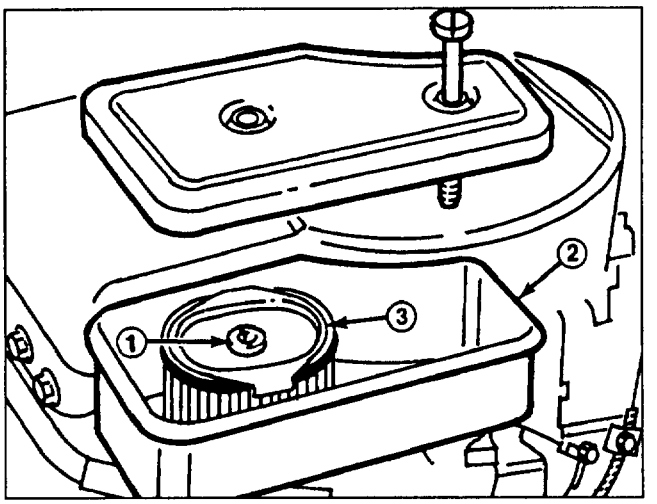


Figure 17

1. Plate screw & washer
2. Air cleaner body
3. Cartridge

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

5. Clean cartridge by tapping gently on flat surface.
   A. If very dirty, replace cartridge or wash in a low or non-sudsing detergent and warm water solution.
   B. Rinse thoroughly from **OUTSIDE IN** until water is clear.
   C. Cartridge must be allowed to stand and air dry thoroughly before using.

⚠ CAUTION

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

6. Reassemble air cleaner.

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

Models 56145 only

1. Remove wire from spark plug.

2. Remove two scews and lift complete air cleaner assembly off carburetor (Fig. 18).

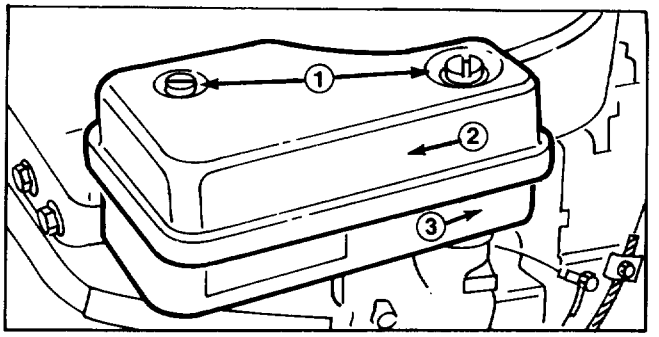


Figure 18

1. Cover
2. Screws
3. Body

3. Remove cover and screen from foam element, remove spacers from element and element from body (Fig. 19). 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.
   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 rmove 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 so it will form a protective seal.

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

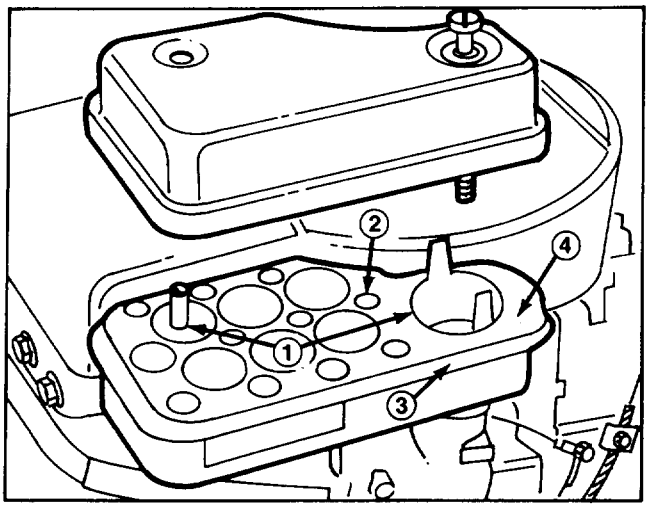


Figure 19

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

REPLACING SPARK PLUG

Since air gap between center and side electrodes of the spark plug increases gradually during normal operation of the engine, check condition of electrodes after every 25 operating hours. Recommended air gap is 0.030 of an inch (0.762 mm). Correct spark plug to use is:
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 assure there is no damage.

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

4. Set air gap between center and side electrodes at 0.030 of an inch (0.762 mm) (Fig. 20). Install correctly gapped spark plug w/gasket seal, and tighten plug to 15 ft-lb (20.4 N m). If torque wrench is not used, tighten plug firmly.

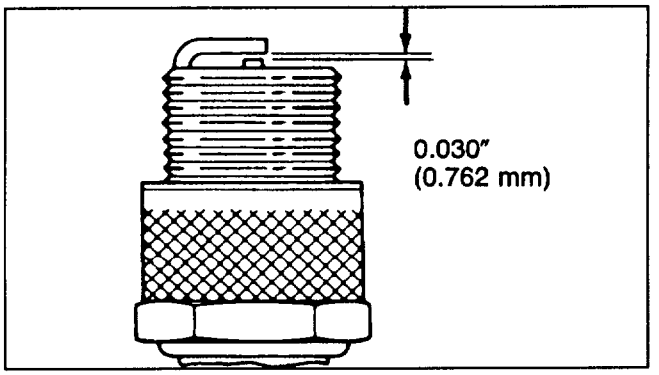


Figure 20

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

DRAINING GASOLINE FROM FUEL TANK

CAUTION

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

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

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

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.

ADJUSTING THROTTLE/CHOKE CONTROL

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

1. Remove the screws holding air cleaner in place and lift complete air cleaner assembly off carburetor (Fig. 21).

2. Move throttle control lever to CHOKE position and check the position of the choke butterfly; it should be fully closed (Fig. 21).

3. Move throttle control lever to FAST position. The butterfly should be in the fully open position (Fig. 21).

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.

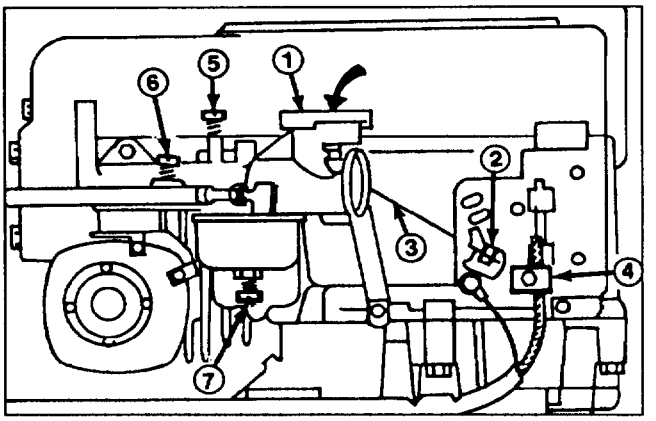


Figure 21

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

2. Loosen the throttle cable clamp screw (Fig. 21) and move the control cable casing and wire until the throttle lever touches link.

3. Tighten the cable clamp and assemble 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 21.

1. Needle Valve (Fig. 21) – 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. 21).

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 run.

4. Rotate needle valve (Fig. 21) 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. 21) 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. 21) 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.

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

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

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

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 21 .

3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-6, page18 .

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 lock nut, anti-scalp cup and blade (Fig. 22).

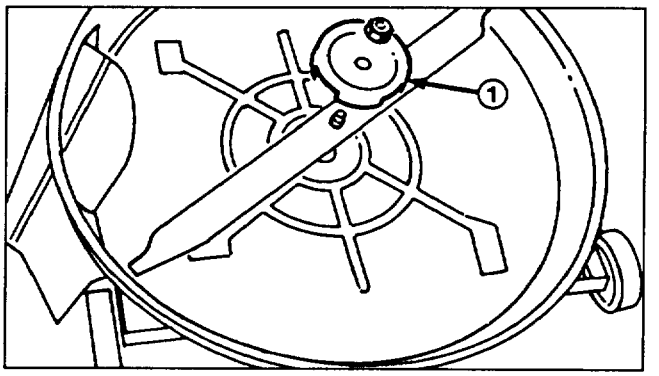


Figure 22

1. Anti-Scalp Cup

Note: Since lock nut is tightened to 45-60 ft-lb (61-81 N·m) at the factory, it may be difficult to remove the nut. If the nut cannot be removed, contact an Authorized TORO Service Dealer or a "service station" for assistance.

7. Using a file, sharpen cutting edge at both ends of the blade (Fig. 22).

MAINTENANCE

CAUTION

Check cutter blade every time rider is tipped on end. If lock nut holding blade is loose, tighten it to 45-60 ft-lb (61-81 N·m). If blade or sail (Fig. 23) at end of blade is worn, eroded, or cracked, replace the blade. Replace the blade if it is bent or out-of-balance. Always use genuine TORO replacement blades to assure safety and optimum performance. NEVER USE WILL-FIT REPLACEMENT BLADES.

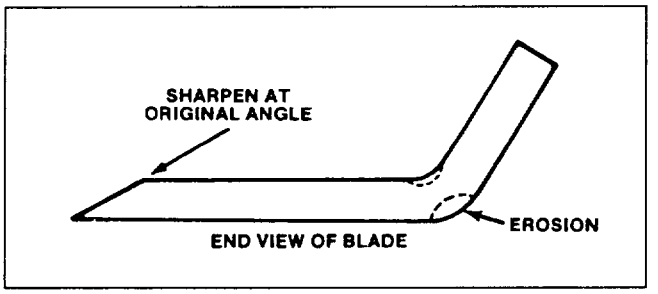


Figure 23

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

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

9. In sequence, install blade, anti-scalp cup and lock nut (Fig. 22). Tighten lock nut to 45-60 ft-lb (61-81 N·m).

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

10. Tip rider back to its normal operating position.

11. Fill crankcase with oil: refer to Check Crankcase Oil Level, 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, page12 .

CLEANING UNDERSIDE OF MOWER HOUSING

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

1. Make sure engine is shut off. Then pull wire off spark plug.

IMPORTANT: To clean underside of mower housing, the rider must be tipped on its rear end. However, before the rider is tipped, drain all gasoline from fuel tank and oil from crankcase. Also remove battery so acid does not spill onto the rider. (ALL BAGGING ATTACHMENTS MUST BE REMOVED BEFORE TIPPING RIDER).

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 21 .

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 the parking brake. Tip rider onto its rear end.

6. Remove grass clippings and dirt sticking to inside of housing by spraying with a garden hose. Scrape out any grass and dirt not removed; then spray housing again.

7. Since rider is tipped on end, check condition of blade (Fig. 22).

8. Tip rider back to its normal operating position.

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

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

11. Install the battery: refer to Activating and Charging Battery, page12 .

REMOVING / INSTALLING CUTTING UNIT

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

2. Set height-of-cut control to lowest setting and loosen belt guides near engine pulley. Remove belt from engine pulley (Fig. 24).

3. Remove cotter pin from Adjustment Rod and pull from Pivot Tube Arm (Fig. 24).

4. Remove cotterpins from clevis pins on front hanger brackets. Hold front of cutting unit in place with one hand, to prevent falling, and remove clevis pins to lower cutting unit to ground. Pull rear hanger brackets off pins on rear suspension arms. Set height-of-cut control to highest position and slide cutting unit from under Rider (Fig. 24).

5. Install in reverse order.

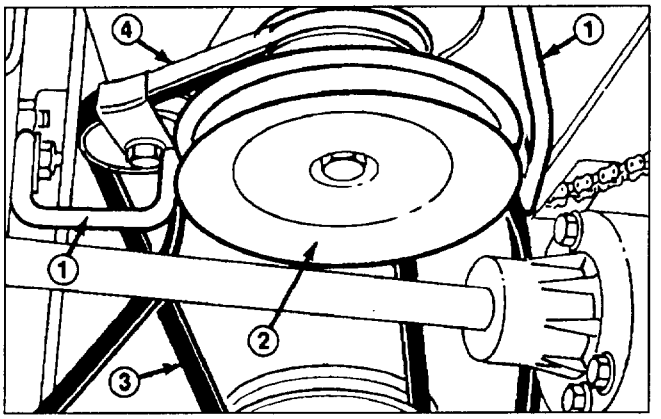


Figure 24

1 . Belt Guides
2. Engine Pulley
3. Blade Drive Belt
4 Traction Drive Belt

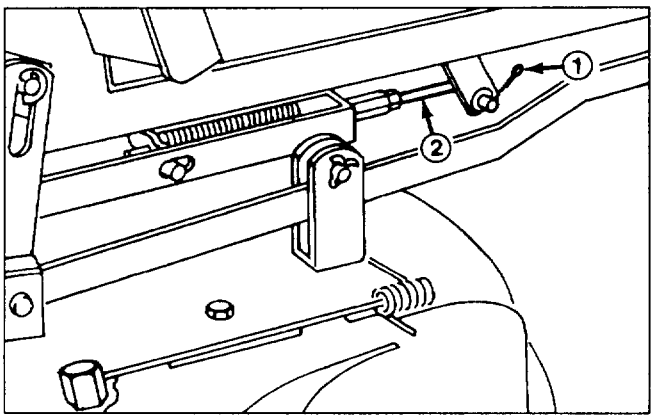


Figure 25

1 . Cotter Pin
2 Adjustment Rod

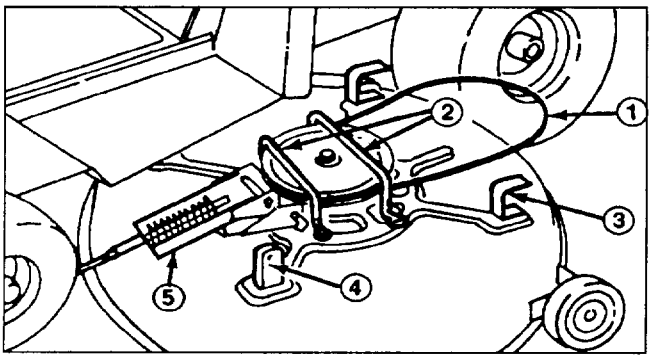


Figure 26

1. Drive Belt
2. Belt Guide
3. Pear Hanger Bracket
4. Front Hanger Bracket
5. Brake Engagement Bracket

REPLACING BLADE DRIVE BELT

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

2. Remove cutting unit: refer to Removing Cutting Unit, page 23.

3. Loosen and remove (1) mounting screw securing each belt guide to cutting unit. Pivot belt guides away from spindle pulley and remove belt. Visually inspect belt for wear or damage (Fig. 26).

4. Install new belt if needed and reinstall belt guide.

5. Install cutting unit: refer to Installing Cutting Unit, page 23.

ADJUSTING BLADE DRIVE BELT

1. Set height-of-cut lever in lowest setting and deck engagement lever to 'Engage'.

2. Loosen jam nut and turn adjusting hub until there is 0.060 inch (1.5 mm) or less between end of slot in engagement bracket and outer diameter of pin. Retighten jam nut at new hub setting (Fig. 27).

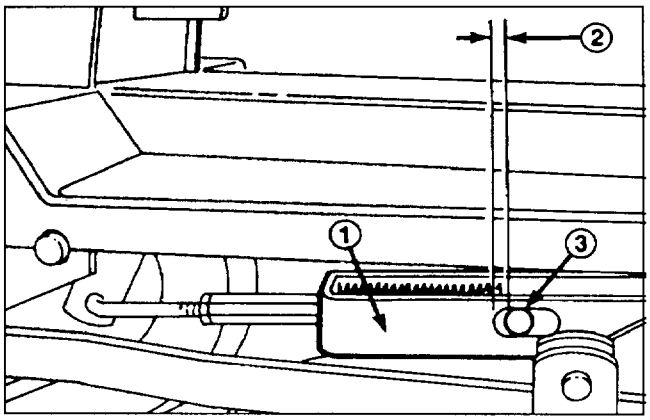


Figure 27

1. Engagement Bracket
2. 0.060 Inch Max. (1.5 mm)
3. Pin

REPLACING TRACTION DRIVE BELT

1. Remove cutting unit: refer to Removing/Installing Cutting Unit, page 23 .

2. Remove belt guides from transmission pulley and loosen belt guides at engine pulley. Loosen locknut and remove belt retainer from idler pulley.

3. Pull idler arm to release belt tension and remove drive belt. Inspect belt for damage or wear and install new belt if needed.

4. Replace belt guides for transmission pulley and retighten belt guides on engine pulley. Install belt retainer on idler pulley positioned toward rear as shown (Fig. 24).

5. Reinstall cutting unit: refer to Removing/Installing Cutting Unit page 23 .

IMPORTANT: Belt retainer must be installed toward rear per step 4 or rider may creep forward in neutral.

MAINTENANCE

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 thereafter.

IMPORTANT: If chain is worn, loose or adjusted incorrectly, chain could come off sprockets, resulting in no brakes or traction drive. If assistance is needed, contact your local authorized Toro Dealer.

1. Check deflection of drive chain by lifting up on chain with moderate pressure at mid span (Fig. 28). There should be 1/8 of an inch (3 mm) deflection (Fig. 28). If deflection is not as specified, an adjustment is required – steps 2-13.

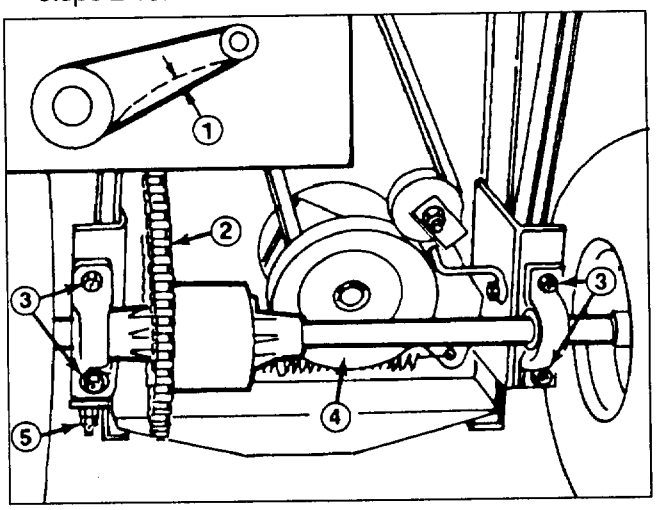


Figure 28

1. 12 Inch (3o mm)
2. Drive Chain
3. Locknuts
4 . Differential Axle
5. Chain Tensioner

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

2. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 21.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, page 18.

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

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

6. Loosen four flange nuts securing pillow blocks w/ differential axle to the rider frame (Fig. 28).

7. Loosen rear jamnut on chain tensioner (Fig. 28).

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

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

10. Since differential axle must be parallel to rear of chassis, measure distance from center of pillow blocks to rear of chassis (Fig .28). Difference between the two measurements must not exceed 1/4 inch (6 mm). If difference exceeds 1/4 inch (6 mm), differential axle is not parallel with chassis; therefore left side must be repositioned to attain desired dimension. Tighten locknuts securing left pillow block to rider frame.

11. Check the deflection of the drive chain from bottom of rider.

12. Tip rider back to its normal operating position.

13. Fill crankcase with oil; refer to Check Crankcase Oil Level, page12 .

14. Fill fuel tank with gasoline; refer to Fill Fuel Tank With Gasoline, page13 .

15. Install the battery; refer to Activating and Charging Battery, page 12.

ADJUSTING FRONT WHEEL ALIGNMENT

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

1. Drain gasoline from fuel tank: refer to Draining Gasoline From Fuel Tank, page 21.

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 12.

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

5. Tip rider up and onto its rear end.

6. Insure rear axle is adjusted properly: refer to step 10 of Adjusting Drive Chain page 25 .

7. To align front wheels, loosen jamnut and turn tie rods until centerline distance across front of wheels is .06 inch (1.5 mm) to .25 inch (6.3 mm) less than centerline distance across rear of front wheels (Fig. 29).

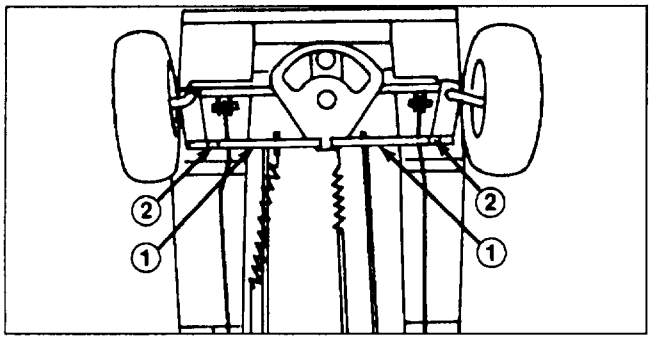


Figure 29

1. Tie Rod 2. Jam Nut

8. Retighten jamnuts and tip rider back to its normal operating position.

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

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

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

ADJUSTING BRAKE

Adjust brake pucks if the parking brake does not hold or braking power is not sufficient when brake pedal is depressed.

1. Shut engine off and remove wire from spark plug.

2. Raise seat or remove left side panel from rider.

3. Tighten locknut approximately 1/4 turn clockwise (Fig. 30).

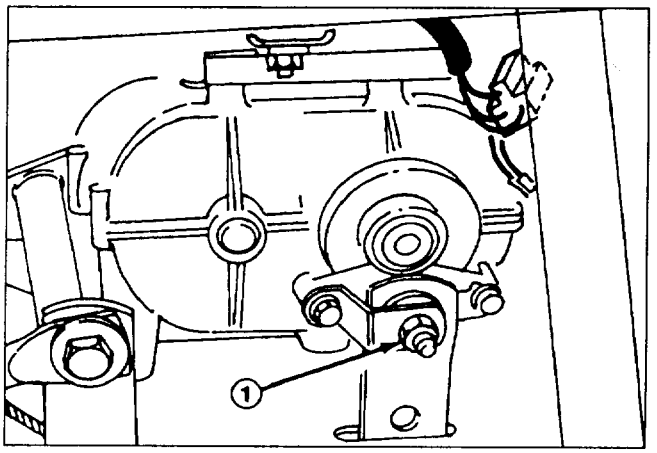


Figure 30

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 counter-clockwise or until there is no contact.

LEVELING CUTTING UNIT

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

1. Place rider on level surface, lock parking brake, shut off engine and remove key from ignition switch.

2. Raise seat or remove left side panel from rider.

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

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

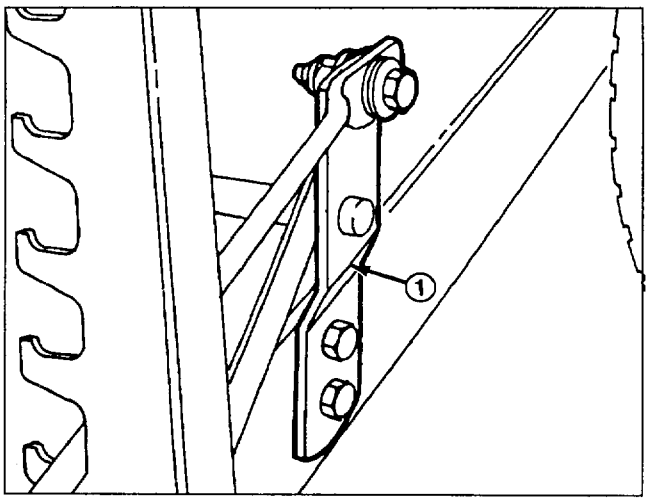


Figure 31

1. Height-of-Cut Support Bracket

5. If blade tip height is not within 1/8 inch (3 mm), level cutting unit by loosening height-of-cut support bracket capscrews and raising or lowering the bracket (Fig. 31).

6. Assure blade tip height is within 1/8 inch (3 mm) and retighten capscrews.

ADJUSTING GEAR SHIFT NEUTRAL POSITION

An adjustment to the gear shift guide may be required if gear shift will not go into neutral position.

1. Raise seat to expose gear shift guide.

2. Loosen (2) capscrews mounting gear shift guide to transmission (Fig. 32).

3. Move guide so neutral position aligns with gear shift lever when in neutral position.

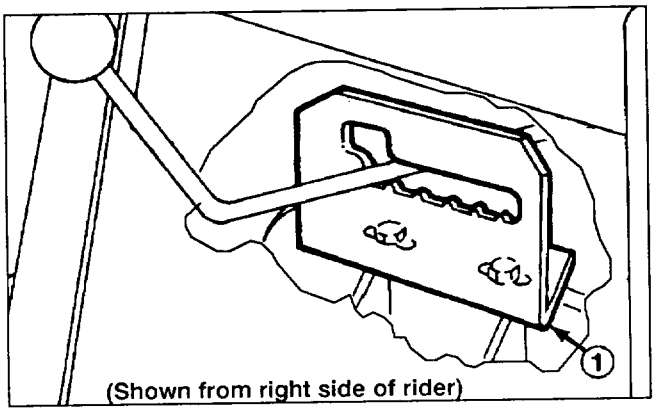


Figure 32

1. Gear Shift Guide

4. Tighten capscrews.

CHECKING ELECTRICAL CONNECTIONS

1. Raise seat or remove left side panel from rider.

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

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

4. Push module connectors together to assure connection (Fig. 33).

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

6. Check wires to interlock switch on deck engagement lever support for good contact.

7. Check the interlock switch inside front of the seat base to be making good contact. Also, assure seat switch connectors are together and wires are making good contact.

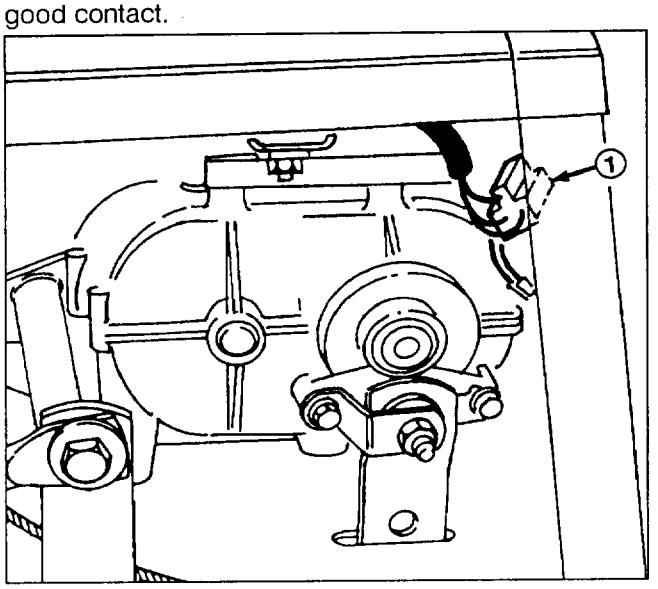


Figure 33

1. Connectors

CHECKING SAFETY INTERLOCK SYSTEM

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

1. Check all electrical connections: refer to Checking Electrical Connections, page 27.

2. Move gear shift into neutral.

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

4. Move deck engagement lever into DISENGAGE. Sit on the seat, depress the brake and clutch pedals, engage the parking brake and shift into gear. Rotate ignition key to START. Engine should not start; but if it does, the interlock system is malfunctioning and must be repaired by an Authorized TORO Service Dealer. If engine does not start, proceed to step 5.

5. Sit on the seat, move gear shift into neutral, deck engagement lever into DISENGAGE and assure parking brake is engaged. Rotate ignition key to START. Engine should start and continue to run. Then engage deck engagement lever and carefully raise off the seat: the engine should stop. If engine does not stop running, shut engine off and have interlock system repaired by an Authorized TORO Service Dealer. If engine shuts off when you raised off the seat, the interlock system is functioning correctly and the rider can be operated safely.

WARNING

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

MAINTENANCE

PREPARING MOWER FOR STORAGE

1. Drain gasoline from fuel tank and fuel line: refer to Draining Gasoline From Fuel Tank, page 21. Next, start engine and let it run at idle speed until it stops because all gasoline is used.

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

2. 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 15 ft-lb (20.4 N·m) If torque wrench is not used, tighten plug firmly. DO NOT INSTALL WIRE ON SPARK PLUG.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, page 18. However, do not fill crank- case with oil at this time.

4. Remove battery from chassis: refer to Activating and Charging Battery, page 12. Remove corrosion from battery terminal and wipe any grease and dirt off the battery case. Check level of electrolyte. If level is low, add drinkable water to the affected cell. Fill only to the fill ring below the filler cap. Reinstall filler caps.

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

6. Clean underside of mower housing: refer to Cleaning Underside of Mower Housing, page 23.

7. Check condition of blade: refer to Servicing Cutter Blade, page 22.

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 19.

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

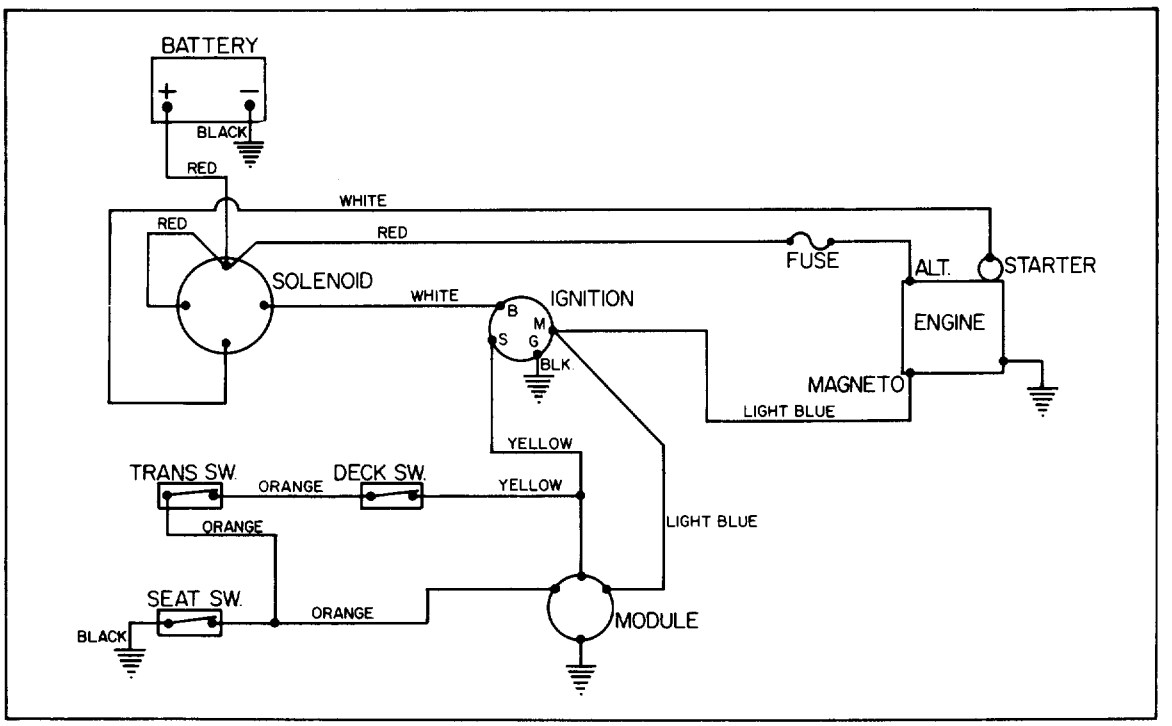
Note: TORO Re-Kote "touch-up" paint is available from any Authorized TORO Service Dealer. The spray paint dries in minutes to a glossy, factory-finish.

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

13. Install the battery: refer to Activating and Charging Battery, page 12. Charge battery for 48 hours to assure full charge.

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

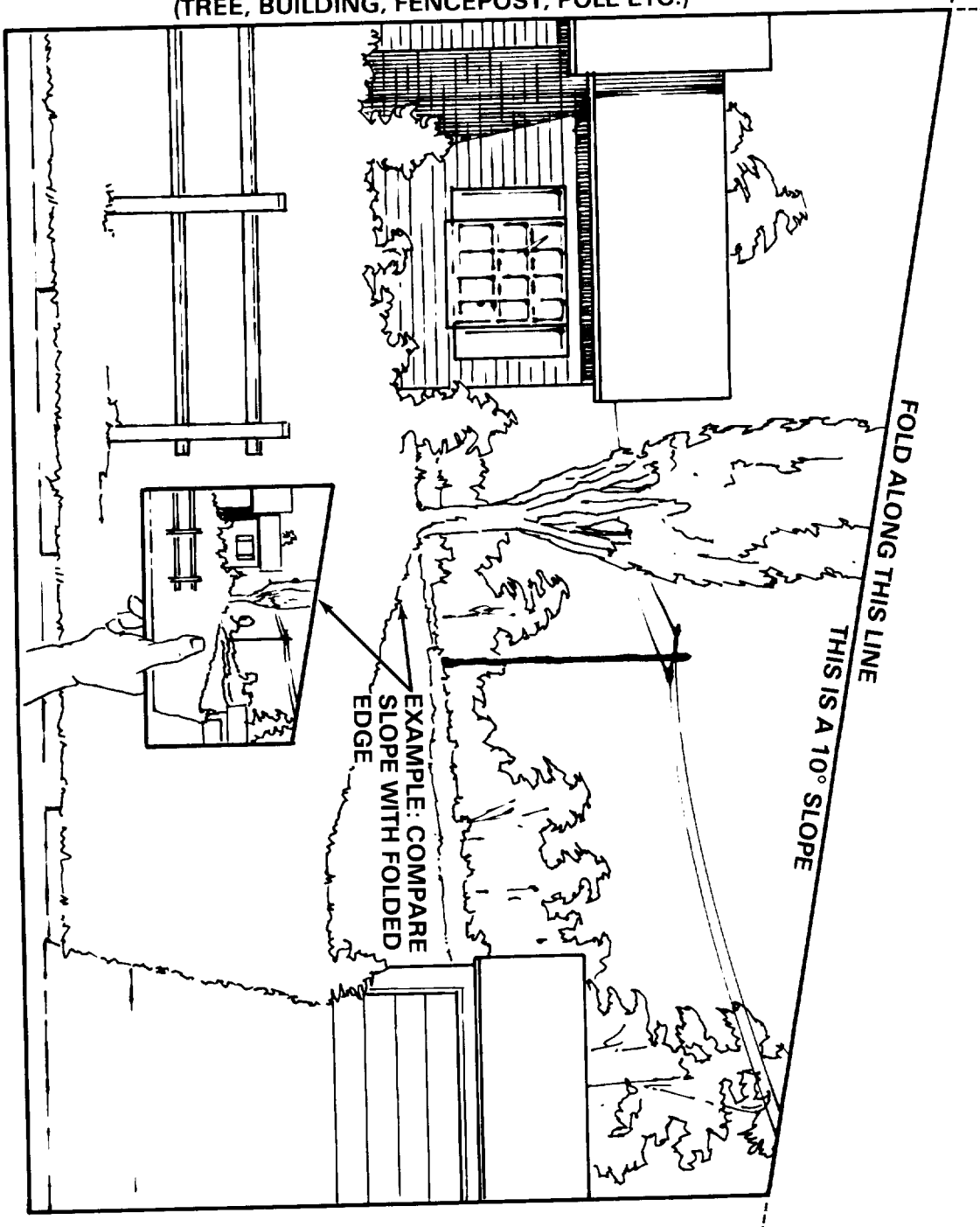
Problem	Possible Causes	Corrective Action
Engine does not start, starts hard, loses power, or fails to keep running.	1. Gas tank is empty.	1. Fill fuel tank with gasoline.
	2. Battery is dead.	2. Charge the battery.
	3. Transmission is in gear.	3. Shift transmission into neutral.
	4. Deck engagement lever is in ENGAGE	4. Move deck engagement lever into DISENGAGE.
	5. Spark plug is loose.	5. Tighten plug to 15 ft-lb (20.4 N-m).
	6. Wire is loose or disconnected from spark plug.	6. Install wire on spark plug.
	7. Spark plug gap is incorrect.	7. Set gap between electrodes at 0.030 of an inch (0.76) mm).
	8. Spark plug is pitted, fouled, or defective in some other way.	8. Install new correctly gapped spark plug.
	9. Wrong spark plug is used.	9. Install correct spark plug.
	10. Electrical connections are loose.	10. Check electrical system to assure good contact.
	11. Carburetor is adjusted incorrectly.	11. Adjust the carburetor.
	12. Air cleaner is dirty.	12. Clean the air cleaner element.
	13. Vent hole in fuel tank cap is plugged.	13. Clean or replace the fuel cap.
	14. Dirt, water, or stale fuel in fuel system.	14. Have rider serviced by Authorized TORO Service Dealer.
	15. Module or switch is defective.	15. Have rider serviced by Authorized TORO Service Dealer.
Engine does not idle or idles poorly.	1. Air cleaner is dirty.	1. Clean air cleaner element.
	2. Oil level in crankcase is low.	2. Add oil to crankcase.
	3. Cooling fins and air passages under engine blower housing are plugged.	3. Remove obstruction from cooling fins and air passages.
	4. Idle speed is too low or high speed mixture is incorrect.	4. Adjust the carburetor.
	5. Dirt, water, or stale fuel is in the fuel system.	5. Have rider serviced by Authorized TORO Service Dealer.
	6. Vent hole in fuel tank cap is plugged.	6. Clean or replace fuel tank cap.
	7. Spark plug is pitted, fouled or defective in some other way.	7. Install new correctly gapped spark plug.

TROUBLE SHOOTING

Problem	Possible Causes	Corrective Action
Engine loses power	1. Oil level in crankcase is low.	1. Add oil to crank case.
	2. Cooling fins and air passages under engine blower housing are plugged.	2. Remove obstruction from cooling fins and air passages.
	3. Engine load is excessive.	3. Shift into lower gear to reduce load.
	4. Air cleaner is dirty.	4. Clean air cleaner element.
	5. Dirt, water, or stale fuel is in fuel system.	5. Have rider serviced by Authorized TORO Service Dealer.
	6. Carburetor is adjusted incorrectly.	6. Adjust the carburetor.
	7. Spark plug is pitted, fouled or defective in some other way.	7. Install new correctly gapped spark plug.
Engine over heats	1. Cooling fins and air passages under engine blower housing are plugged.	1. Remove obstruction from cooling fins and air passages.
	2. Carburetor is adjusted incorrectly.	2. Adjust the carburetor.
	3. Oil level in crankcase is low.	3. Add oil to crankcase.
	4. Engine load is excessive.	4. Shift into lower gear to reduce load.
Rider vibrates abnormally	1. Engine mounting bolts are loose.	1. Tighten engine mounting bolts.
	2. Differential axle is misaligned.	2. Adjust the drive chain, which includes the differential axle.
	3. Loose PTO pulley, idler pulley or blade pulley.	3. Tighten the appropriate pulley.
	4. Cutter blade is unbalanced.	4. Install new cutter blade.
	5. Lock nut holding blade is loose.	5. Tighten nut to 45-60 ft-lb (61-81 N-m).
	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 does not shift gear.	4. Have rider serviced by Authorized TORO Service Dealer.
	5. Traction idler is adjusted incorrectly.	5. Adjust traction drive belt.

10° SLOPE CHART

Read all safety instructions on pages 3–6



A separate parts manual for your Toro Wheel Horse product can be obtained by completing the attached form below. You will receive an invoice with manual.

PUBLICATIONS
TORO WHEEL HORSE
P.O. Box 2649
South Bend, Indiana 46680

PARTS MANUAL ORDER FORM

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