(CANADA) FORM NO. 3320-122

TORO®

MODEL NO. 18090 8000001 THRU 9000001 & UP
MODEL NO. 18095 8000001 THRU 9000001 & UP

OPERATOR'S MANUAL

21" (0.533 m) TORO MULCHER™ DELUXE



CANADIAN OUTDOOR POWER EQUIPMENT ASSOCIATION
CONFORMS TO SAFETY STANDARD
CERTIFIED BY MANUFACTURER
RÉPONDANT CERTIFIÉ PAR LE FABRICANT AUX NORMES DE SÉCURITÉ
ASSOCIATION CANADIENNE DES FABRICANTS D'OUTILLAGE MÉCANIQUE POUR L'EXTÉRIEUR

PRICE $1.00

FOREWORD

Congratulations on your purchase of the all new 21" (0.533 m) TORO MULCHER DELUXE. The mower has the most advanced concepts in engineering, design and safety, and if maintained properly, will be reliable.

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

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

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

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

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MINNEAPOLIS, MN 55420 — U.S.A.

SAFETY INSTRUCTIONS



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

The following instructions are comparable to the "Instructions for Safe Mowing" B71.1b 1977 adopted by ANSI – American National Standards Institute. The TORO MULCHER DELUXE is designed and tested to offer reasonably safe service. Failure to operate mower in strict accordance with the following Safety Instructions MAY RESULT IN PERSONAL INJURY.

Before Operating

1. Operate the mower only after reading this manual. NEVER ALLOW CHILDREN TO OPERATE THE ROTARY MOWER.

2. Become familiar with the controls and know how to stop the engine quickly.

3. Keep everyone, especially children and pets, away from the area of operation. Remove sticks, stones, wire, and any other debris from the turf area to be cut.

4. Keep all shields and safety devices in place. If a shield or safety device is defective or damaged, replace it before operating the mower. Also tighten loose nuts, bolts and screws.

5. Wear long pants and substantial shoes while using the mower. Do not operate the mower while barefoot, wearing sandles, tennis shoes, sneakers, or shorts.

6. If long grass will be cut, set height-of-cut in highest position. After mowing, reinspect the area and remove all debris. Then lower the height-of-cut and mow grass again.

7. Fill fuel tank with gasoline before starting the engine. Avoid spilling any gasoline.

   A. Use an approved gasoline container.

   B. Fill mower fuel tank outdoors. Engine must be cool and not running.

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

8. **Self-Propelled Model:** Move traction control to DISENGAGE **detent** position before trying to start the engine. Engine WILL NOT start when traction control is in the ENGAGE position.

While Operating

9. Do not operate the mower if someone is near the turf area to be cut.

10. Cutting grass with a rotary mower demands attention. Always maintain secure footing, balance, and control.

11. Cut grass during the daytime or when there is adequate artificial light. Do not cut wet grass; cut grass when it is dry.

12. Cut grass slopes from side to side; not up and down. Avoid steep slopes.

13. Keep face, hands, feet, and any other part of the body or clothing away from concealed, moving, or rotating parts such as the cutter blade, wheels, self-propelled drive, and engine. Stay behind the handle and away from the mower housing when engine is running.

14. If a solid object is hit by the blade or if mower vibrates abnormally, shut engine off immediately and wait for all moving parts to stop. Disconnect high tension wire from spark plug and keep wire away from plug to prevent possibility of accidental starting. Check mower for possible damage, bent blade, an obstruction, or loose part(s). Make all repairs before using the mower.

15. Do not adjust height-of-cut while engine is running.

16. If a gravel driveway, road, or sidewalk must be crossed, shut engine off so loose sand and rocks are not thrown.

SAFETY INSTRUCTIONS

17. DO NOT WALK IN FRONT OF A SELF-PROPELLED MOWER WHILE ENGINE IS RUNNING. Before leaving the operator's position—behind handle—shut engine off by moving throttle control to STOP, then wait for all moving parts to stop.

18. Do not touch any part of the engine when it is running or shortly after it has stopped because engine is hot enough to cause a burn.

19. Before performing any maintenance or servicing mower, disconnect high tension wire from spark plug. Make sure high tension wire stays away from the plug to prevent possibility of accidental starting.

Maintaining Mower

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

21. If mower must be tipped to perform maintenance or an adjustment, drain gasoline from fuel tank.

22. If a guard, safety device, or safety decal is damaged, replace it before operating the mower. Check frequently and keep nuts, bolts, and screws tight, especially blade attaching bolt (45-60 ft-lb or 61-81 N·m) and engine mounting bolts (14-18 ft-lb or 19-24.4 N·m).

23. To reduce possibility of fire, keep engine free of dirt, grease, leaves, and any other foreign buildup.

24. Allow engine to cool before storing mower in any building, and make sure the mower fuel tank is empty. Do not store mower near any open flame or where gasoline fumes may be ignited. Store gasoline in an approved – red – metal container. The mower and gasoline storage area must be cool and dry.

25. Do not overspeed engine. Recommended speed of the engine is 2650 rpm. To assure safety and accuracy, have an Authorized TORO Service Dealer check maximum engine speed (2650 rpm $\pm$ 150) with a tachometer.

26. At the time of manufacture, the TORO MULCHER DELUXE conformed to safety standards in effect for rotary mowers. Therefore, to assure optimum performance and safety, always purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL FIT" REPLACEMENT PARTS AND ACCESSORIES. Look for the TORO logo to assure "genuine" TORO replacement parts and accessories.

SAFETY DECALS

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



SP RECOIL CONTROL PANEL



HP RECOIL CONTROL PANEL



ON RIGHT REAR CORNER OF HOUSING



ON LEFT SIDE OF HOUSING



ON TOP REAR OF HOUSING

LOOSE PARTS

PART	QTY.	WHERE USED
Lower Handle	1	Install on mounting pins.
Hair Pin Cotter	2	Secures lower handle to mounting pins.
Handle Screw	2	Insert through upper and lower handle.
Handle Release Knob	2	Install on handle screws.
Clip	1 (18090) 2 (18095)	Secure control cable to handle.
Operator's Manual	1	Read manual before operating mower.
Registration Card	1	Fill out card and send to The Toro Company.
Moist-O-Matic Brochure	1	

SETTING UP INSTRUCTIONS

Assemble Handles

1. Squeeze lower handle ends together and slide over mounting pins on cutting unit housing; secure with hairpin cotters (Fig. 1).

2. Spring handle latches inward, rotate handle rearward and allow handle studs to snap into same hole on both latches (Fig. 2).

3. Align upper handle holes with lower handle holes, insert handle screws from outside toward inside, insuring cable(s) are on engine side of lower handle (Fig. 2), and secure with handle knobs (Fig. 2).

4. Install cable clip(s) to secure control cable(s) to lower handle (Fig. 2).

5. Step behind handle and check its height. If higher or lower handle height is desired, snap handle studs into one of the other holes in handle latches (Fig. 2).

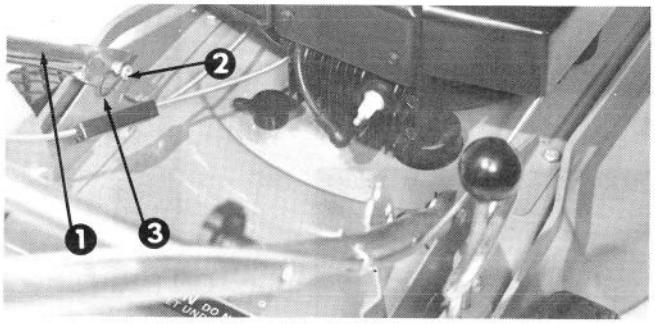


Figure 1

1. Lower Handle
2. Mounting Pin
3. Hair Pin Cotter

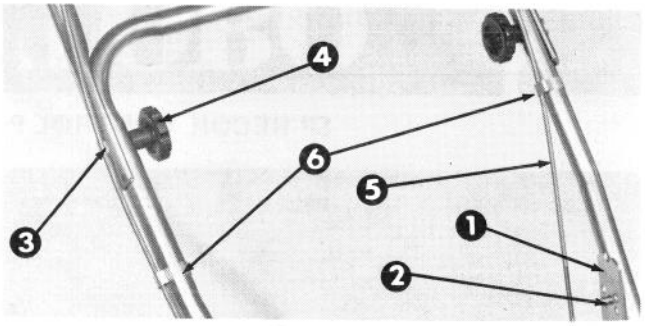


Figure 2

1. Handle Latch
2. Handle Stud
3. Handle Screw
4. Handle Knob
5. Control Cable
6. Cable Clip

PREPARATION BEFORE STARTING

Fill Crankcase With Oil

1. Move mower to level surface to assure accurate oil level reading.

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

3. Remove dipstick (Fig. 3) by rotating cap counterclockwise 1/4 turn.

4. Slowly, pour approximately 21 ounces (0.621 l) of oil into filler hole (Fig. 3). The Tecumseh engine uses any high-quality detergent oil having the American Petroleum Institute – API– "service classification" MS, SC, SD, or SE. The recommended oil to use in the TORO MULCHER DELUXE IS:

10W-40
or
10W-30

5. Wipe end of dipstick. Insert dipstick into filler neck and rotate cap clockwise 1/4 turn.

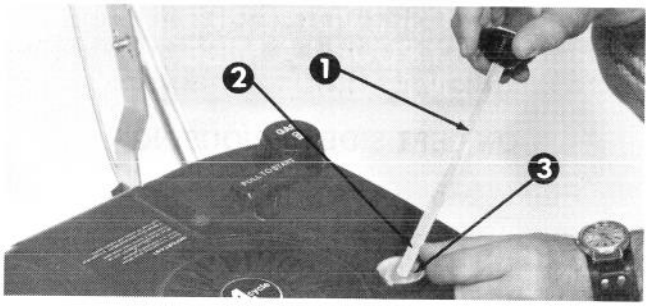


Figure 3

1. Dipstick
2. Full Mark
3. Oil Fill Hole

6. Remove dipstick and check oil level. If level of oil is low, add enough oil to raise level to FULL mark (Fig. 3) on dipstick. DO NOT OVERFILL.

7. Install dipstick into filler neck.

NOTE: Check level of oil every 5 operating hours or each time mower is used. Initially, change oil after the first 2 operating hours; thereafter, under normal conditions, change oil every 25 hours of operation. However, change oil more frequently when engine is operated in dusty or dirty conditions. If possible, run engine for about 3-5 minutes before changing oil because warm oil flows better and carries more contaminants than cold oil.

PREPARATION BEFORE STARTING

CAUTION

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 mower is in an enclosed area. Keep away from open flame and electrical spark, and DO NOT SMOKE while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outdoors and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline. Store gasoline in a clean approved container and keep the cap in place on the container. Keep gasoline in a cool, well-ventilated place; never in the house. 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 gasoline, keep it out of their reach because the fumes are explosive and dangerous to inhale.

Fill Fuel Tank With Gasoline

IMPORTANT: DO NOT MIX OIL WITH GASOLINE; doing so may cause engine damage and contribute to poor performance of the mower. Do not use premium gas, white gas, or gasoline additives. Non-leaded gasoline is recommended and leaded regular is an acceptable substitute.

1. Clean area around mower fuel tank cap so foreign matter does not enter tank when cap is removed. Next, remove cap from fuel tank (Fig. 3).

2. Fill fuel tank with fresh, non-leaded gasoline. Capacity of tank is 1-1/3 quarts (1.242 l).

NOTE: Non-leaded gasoline reduces combustion deposits and extends the valve life, and when available, this type of gasoline is recommended. Leaded regular is an acceptable substitute.

3. Install cap on fuel tank (Fig. 3).

CONTROLS

Throttle Control – The hand-propelled and self-propelled throttle controls (Fig. 4 and 5) have three positions: OFF, SLOW and FAST. Move control between SLOW and FAST to operate engine at various speeds. To stop engine, move throttle control to OFF.

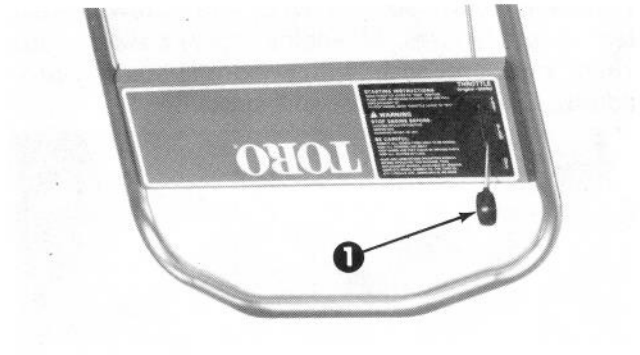


Figure 4
1. Throttle Control

Traction Control – Traction control (Fig. 5) on self-propelled model has two positions: ENGAGE and DISENGAGE. Move control to the left and forward to engage front wheel drive. Pull control backward into **detent** position to disengage front wheel drive. The traction control (Fig. 5) must be in DISENGAGE **detent** before engine on self-propelled model can be started.



Figure 5
1. Throttle Control
2. Traction Control

Recoil Starter (Fig. 6) – Pull fingertip starter to start engine.

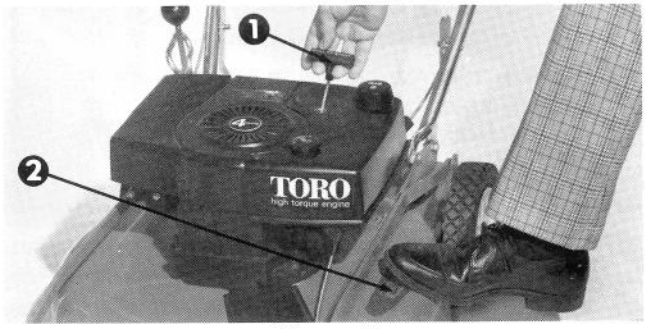


Figure 6
1. Recoil Starter
2. Step

CONTROLS

Height-of-Cut Adjuster (Fig. 7) – Front and rear height-of-cut is adjustable to one of six settings: 1 inch, 1-1/2 inches, 2 inches, 2-1/2 inches, 3 inches, and 3-1/2 inches (25, 38, 51, 64, 76 and 89 mm). All four wheels are adjusted simultaneously by a single hand lever (Fig. 7).

Carburetor Primer Bulb (Fig. 10) – The carburetor is equipped with a primer bulb to assist starting at temperatures below 50°F. (10°C). Push primer bulb once when temperature is below 50°F. (10°C) and follow normal starting procedures. Repeat if engine doesn't start after 2-3 pulls of the fingertip starter.

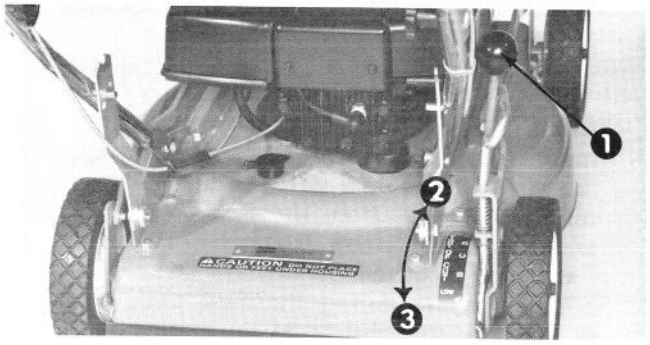


Figure 7
1. Height Control Lever
2. High Height-of-Cut Setting
3. Low Height-of-Cut Setting

STARTING AND STOPPING INSTRUCTIONS

STARTING ENGINE

1. Insure high tension wire is onto spark plug.
2. Move traction control (self-propelled model) into DISENGAGE **detent** (Fig. 8). Also move throttle control to FAST position (Fig. 8).



Figure 8
1. Traction Control
2. Throttle Control

3. Put one foot on STEP pad at left side of mower housing next to height-of-cut bar and keep other foot from beneath the housing. Pull fingertip starter up until positive engagement results (Fig. 9); then pull vigorously to start the engine.

CAUTION

Since blade rotates when starter rope is pulled, keep hands and feet away from mower housing. Contact with a moving part will likely cause personal injury.

IMPORTANT: The carburetor has a prime-well that supplies an extra-rich charge of gasoline for starting the engine. If engine does not start after 2 or 3 pulls of the fingertip starter, wait about 10 seconds to allow prime-well to refill. Repeat this procedure until engine starts.

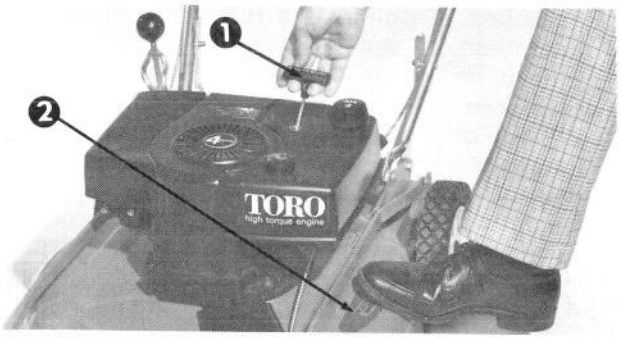


Figure 9
1. Recoil Starter *2. Step*

The carburetor is also equipped with a primer bulb to assist starting at temperatures below 50°F. (10°C) (Fig. 10). Push primer bulb once when temperature is below 50°F. (10°C) and follow normal starting procedures. If engine doesn't start, push primer bulb and again follow normal starting procedures. Continue until engine starts.

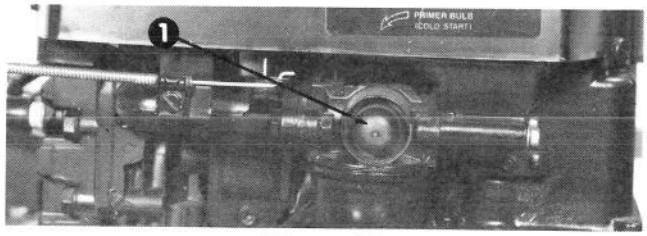


Figure 10
1. Primer Bulb

NOTE: Do not pull recoil rope to its limit or let go of fingertip starter when rope is pulled out, because starter mechanism or rope may break. If rope is allowed to snap back into place, starter gear may not retract fully; consequently, traction control will not engage. So, if starter gear malfunctions, pull recoil starter handle out about 10 inches (25.4 cm); then let it return slowly. Gear will return to its normal fully retracted position.

STARTING AND STOPPING INSTRUCTIONS

4. After engine starts and is running smoothly, move throttle control (Fig. 8) to desired speed.

5. To stop engine, move traction control into DISENGAGE **detent** (self-propelled model) and throttle control to OFF position (Fig. 8).

CAUTION

Since blade rotates for a few seconds after throttle control is moved to OFF position, stay behind the handle until engine, blade, and all moving parts stop. Do not get hands or feet close to mower housing. Contact with blade or another moving part will likely cause personal injury.

6. Pull high tension wire off spark plug (Fig. 11) to prevent possibility of accidental starting when mower is unattended or not used.

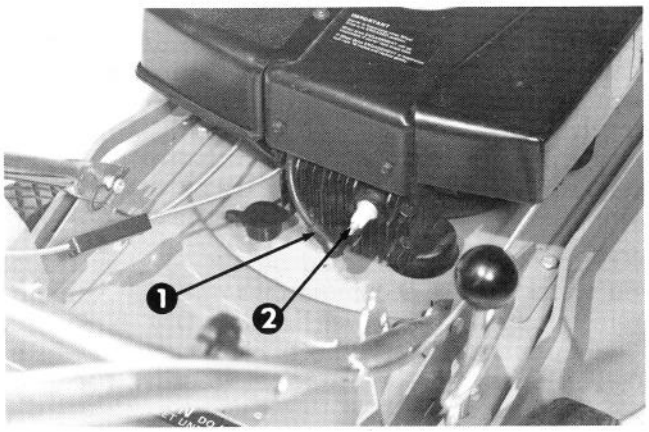


Figure 11
1. High Tension Wire 2. Spark Plug

OPERATING INSTRUCTIONS

REAR SHIELD

CAUTION

The rear shield (Fig. 12) is a safety device; therefore, DO NOT REMOVE REAR SHIELD FROM MOWER HOUSING. The shield protects the operator, pivots to ride over uneven turf and does not affect mobility, even when backing up. If shield is ever damaged or does not operate properly, replace it. Without the shield mounted in place, debris or rocks could possibly be thrown rearward from under the mower housing.

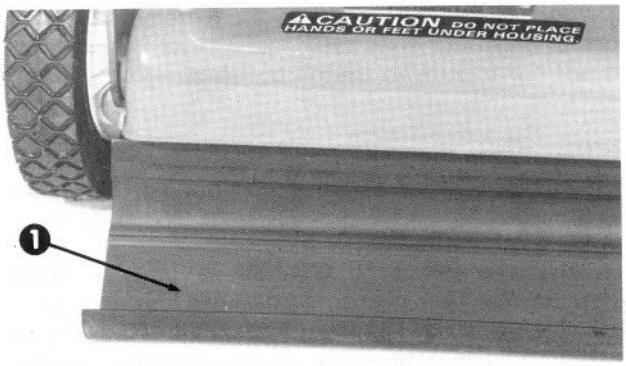


Figure 12
1. Rear Shield

USING WASH-OUT PORT

After mower is used, underside of mower housing must be cleaned to prevent grass clippings from adhering to the housing and affecting cutting efficiency. To clean underside of mower housing, use the wash-out-port (Fig. 13).

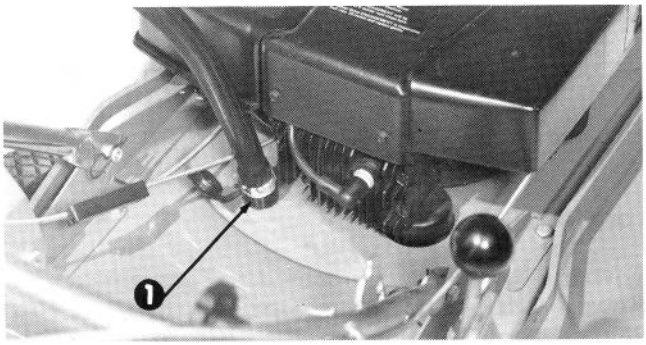


Figure 13
1. Wash-Out Port

CAUTION

Before using the wash-out port, move traction control into DISENGAGE *detent* (self-propelled model), shut engine off. Keep hands from under mower housing. Contact with a moving part or discharged material can cause personal injury.

OPERATING INSTRUCTIONS

1. After engine is shut off, set height-of-cut in the lowest position – shortest cut.

2. Open the wash-out port (Fig. 13).

3. Move traction control into DISENGAGE **detent** (self-propelled model) and start engine. Using moderate water pressure, put end of hose, without nozzle, into wash-out port opening (Fig. 13). Allow engine and water to run for approximately 2 minutes; then shut engine off. Pull high tension wire off spark plug after all moving parts stop.

NOTE: The action created by the rotating blade and water flushes accumulations of grass clippings from underside of mower housing. Dry, bulky accumulations of grass must be cleaned with a scraper: refer to Cleaning Mower Housing, page 14.

ADJUSTING HEIGHT-OF-CUT

The height-of-cut is adjustable to one of six approximate settings: 1 inch, 1-1/2 inches, 2 inches, 2-1/2 inches, 3 inches, or 3-1/2 inches (25, 38, 51, 64, 76 or 89 mm). The height is adjusted for all four wheels simultaneously with a single control lever (Fig. 14). Grasp handle firmly with left hand to prevent mower from moving (Fig. 14). Place right hand on top of knob, insert fingers into height-of-cut handle from the outside and squeeze to release lock (Fig. 14). Rotate assembly to desired height setting and release handle to lock assembly in place.

NOTE: The six settings from 1 to 3-1/2 inches have letters on the housing for specific heights-of-cut.

Letter		Height Setting (Approx.)
A.	=	1 inch (25 mm)
B.	=	1-1/2 inches (38 mm)
C.	=	2 inches (51 mm)
D.	=	2-1/2 inches (64 mm)
E.	=	3 inches (76 mm)
F.	=	3-1/2 inches (89 mm)

CAUTION

Move traction control into DISENGAGE *detent* and shut engine off before adjusting height-of-cut. Contact with blade or another moving part will likely cause personal injury.

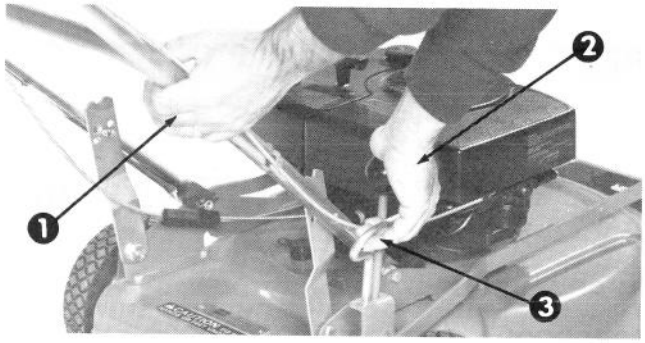


Figure 14
1. *Left Hand on Handle*
2. *Right Hand on Knob*
3. *Fingers into Height-of-Cut Handle from Outside*

OPERATING CHARACTERISTICS

Toro Mulcher Tips

Now that you have purchased a Toro mulcher, a mower with a new and completely different cutting concept, we would like to explain how it works. With proper use, it will enable you to have a good looking and healthy lawn that will make you the envy of your neighborhood. Your neighbors will wonder how you did it so fast and without ever having to bag or rake the grass clippings.

Unlike a conventional lawnmower, the Toro Mulcher doesn't discharge the clippings out onto the top of the lawn leaving an unsightly appearance. Instead, the Toro Mulcher employs a vacuum-like action which keeps the clippings inside the fully enclosed mower housing where they are cut time and time again by a specially designed blade until they are cut into small mulched particles. These small particles are then forced downward ultimately reaching the soil level where they decompose and enrich the soil with the nutrients they contain. These particles not only add their nutrients to the soil, but because they are smaller than normal clippings they will decompose quickly and do not contribute to thatch buildup.

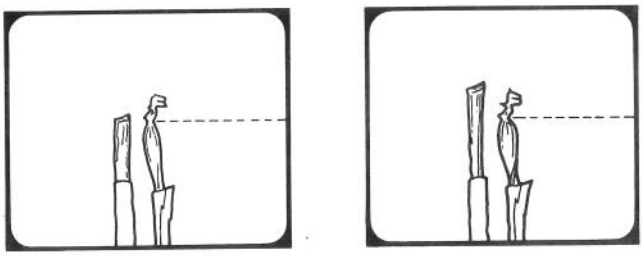
Following are recommended practices to insure the best possible performance from your Toro Mulcher.

1. MOW WHEN THE GRASS IS DRY – Mow either in the late morning to avoid the dew or in late afternoon to avoid the damage that can be caused by direct sunlight on the sensitive, freshly mowed grass. You'll also lessen the danger of slipping on wet grass.

2. SELECT A HEIGHT-OF-CUT SETTING TO SUIT CONDITIONS – Removal of one-third or less of the grass blade cannot be emphasized too strongly. For example, in 3" (76 mm) high grass remove but 1" (25 mm) of the grass. Grass, being a living plant, is very sensitive to stress. If you remove more than one-third, the grass may be shocked and unable to maintain the deep root structure it needs to reach an adequate water supply in the soil. Grass will also be more prone to attacks from weeds, insects, pests and disease.

3. MOW AT PROPER INTERVALS – Under most normal conditions you'll need to mow approximately every 4-5 days. But remember, grass grows at different rates at different times. This means that in order to maintain the same height-of-cut, which is good practice, you'll need to cut more frequently in early Spring, perhaps every 4 or 5 days; as the grass growth rate slows in mid-Summer, only every 8-10 days. If you are unable to mow for an extended period due to vacation, weather conditions, or other reasons, mow first with the height-of-cut at a high level; then mow again 2-3 days later with a lower height setting.

4. ALWAYS MOW WITH A SHARP BLADE – A sharp blade cuts cleanly and without tearing or shredding the grass blades like a dull blade. Tearing and shredding will cause the grass to turn brown at the edges which will impair growth and increase susceptibility to diseases. About every 30 days remove the high tension wire from the spark plug and check the cutter blade for sharpness. If the blade needs sharpening, refer to Sharpening or Replacing Cutter Blade, page 15.



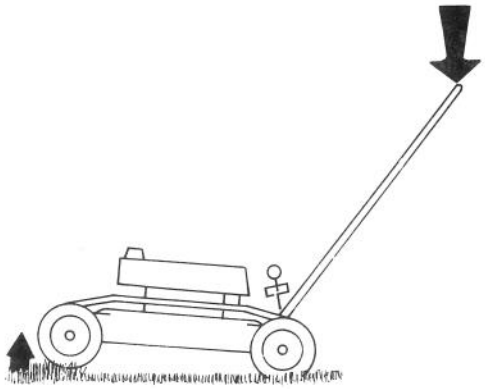
3 HOURS AFTER CUT

24 HOURS AFTER CUT

EFFECT OF SHARP VERSUS DULL CUT ON GROWTH RATE ON TWO NEARLY IDENTICAL BLADES OF BLUEGRASS. (SKETCHED FROM ACTUAL TIME-LAPSE PHOTOS)

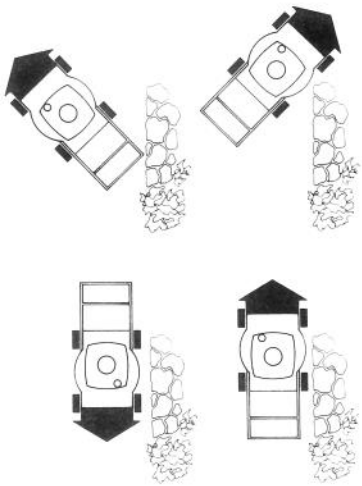
5. WATCH FOR CLIPPING BUILDUP UNDER THE HOUSING – If grass clippings have accumulated on the underside of the mower housing, wash the housing thoroughly through the washout port. Accumulated clippings can affect cutting performance. See Using Washout Port, page 9.

6. SOME PROPER MOWING TIPS – Overlap each cut path slightly to make sure all grass is cut. Push down lightly on the mower handle to raise the front wheels slightly and "skim" the mower over the grass area to line up for the next pass. If you raise the wheels too high you lose the vacuuming action under the mower housing and some clippings may drop before they are mulched. Should some unmulched clippings fall during a turn, run the mower over them once or twice.



7. FOR A BETTER LOOKING LAWN – Change mowing direction occasionally. This will encourage the grass to grow upright rather than flat thus insuring an even cut and a better looking lawn.

8. Your mulcher is equipped with a below deck muffler. This is a feature which reduces engine noise irritation, directs exhaust gases well away from the operator, and protects the mower deck finish from discoloration. Some minor heat build-up, however, will be experienced in the mulching chamber beneath the deck from the engine exhaust. If the mulcher is left standing in one spot for any length of time with the engine running, some grass browning beneath the mulcher will occur. If you must stop the mulcher in one spot for any period of time, turn off the engine.



MAINTENANCE

CAUTION

To prevent accidental starting of the engine while performing maintenance, shut engine off and pull high tension wire off spark plug (Fig. 15). Make sure wire does not touch plug accidentally.

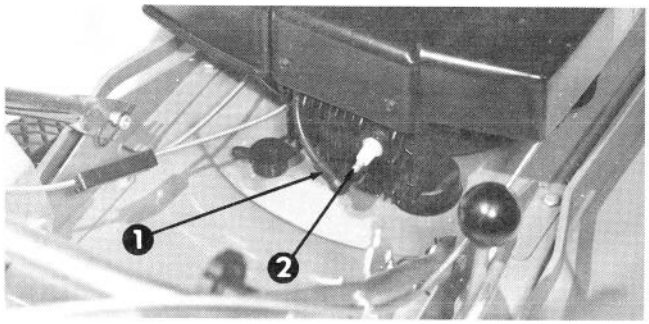


Figure 15
1. High Tension Wire
2. Spark Plug

LUBRICATING WHEEL BUSHINGS

Tools Required: Clean Rag and Oil

1. After every 25 operating hours, apply 2 or 3 drops of oil on inside of wheel bolts that hold front wheels in place (Fig. 16).
2. Spin the wheel to distribute the oil.
3. Wipe up any excess oil.

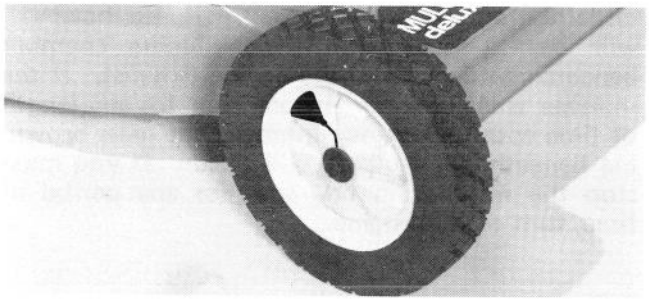


Figure 16

LUBRICATING AXLE PIVOTS

After every 25 operating hours, grease the front axle pivots with No. 2 Multi-Purpose Lithium Base Grease. A grease gun equipped with a standard end fitting is necessary (Fig. 17).

1. Set height-of-cut to highest height setting.
2. Wipe grease fitting with a clean rag, install end fitting on grease gun onto grease fitting (Fig. 17) and apply two to three pumps with the grease gun to the fitting.
3. Repeat procedure on opposite side, reset height-of-cut to normal height setting and resume operation.

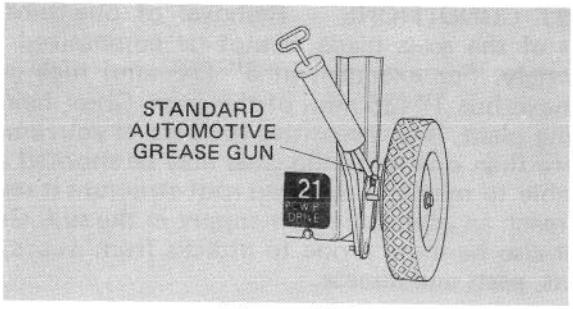


Figure 17

SERVICING AIR CLEANER

The air cleaner element must be cleaned after every 25 hours of engine operation if the engine is operated in clean air conditions. However, element must be cleaned more frequently when mower is operated in dusty or dirty conditions.

1. Place fingers under front of cover and lift it up (Fig. 18). Clean cover if it is dirty.



Figure 18

2. Look at top of air cleaner element (Fig. 19). If it is dirty, the element must be removed from air cleaner body (Fig. 19); then cleaned.

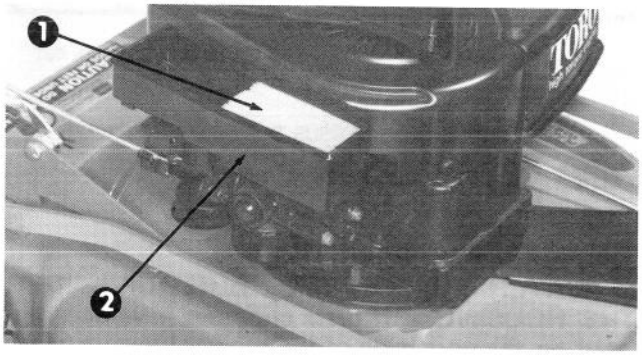


Figure 19
1. Element
2. Air Cleaner Body

A. WASH element in a solution of liquid soap detergent and water. Squeeze the element to remove dirt. Do not twist element because it may tear.

B. DRY the element by wrapping it in a clean rag. Squeeze the rag and element until element is dry.

C. SATURATE the element with 5 teaspoons (25 ml) of 10W-40 oil; then squeeze it to distribute oil thorougly. Also, squeeze element to remove excess oil. A damp element is desirable.

D. Place element into air cleaner body (Fig. 19).

3. Install cover on air cleaner body. Make sure cover snaps in place and is seated securely on air cleaner body.

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

CHANGING CRANKCASE OIL

Change oil after the first 2 hours of engine operation; thereafter, change oil after 25 hours of engine operation. If possible, run engine just before changing oil because warm oil drains better and carries more contaminants than cold oil.

NOTE: Drain oil when fuel tank is empty to prevent spilling of gasoline. Oil can be drained two ways: one way is out the bottom of the oil sump — steps 1-4 and 6 — and the other way is out the filler neck — steps 1, 5, and 6.

1. Make sure engine is shut off. Also pull high tension wire off spark plug.

CAUTION

Drain gasoline from fuel tank to prevent a potential hazard.

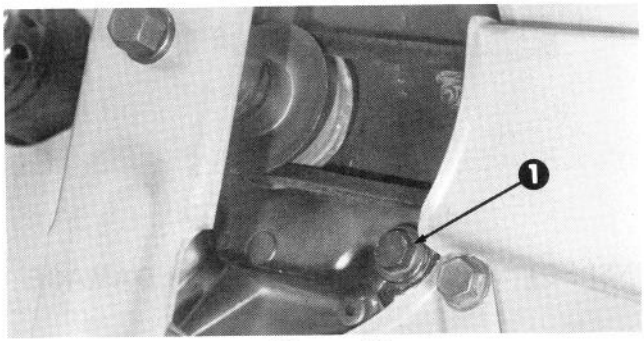


Figure 20

1. Oil Drain Plug

2. Tip mower on left side and place drain pan below drain plug. **Allow mower to remain in tipped position for a short time only, and avoid rotating blade when mower is tipped because starting problems may result.**

3. Clean area around drain plug. Remove drain plug and tip mower gradually back to its normal position so oil flows into drain pan.

4. After all oil is drained, tip mower back on its left side and reinstall oil drain plug. Tip mower back to its normal position.

5. Remove dipstick from filler neck. Tip mower forward so all oil drains out filler neck and into drain pan (Fig. 21). Install dipstick in filler neck.

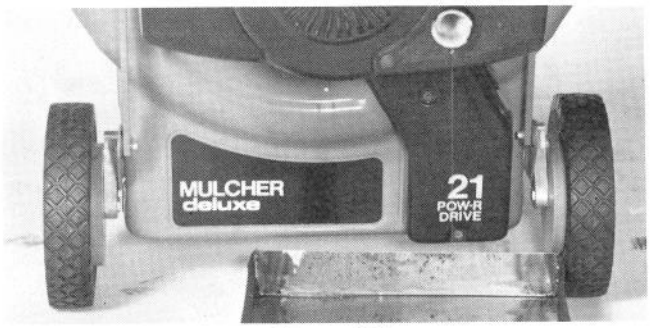


Figure 21

NOTE: Tip mower down and forward again if all the oil does not drain out when mower is originally tipped.

6. Move mower to a level surface. Fill crankcase with oil to FULL mark on dipstick: refer to Fill Crankcase With Oil, page 6.

DRAINING GASOLINE

Tools Required: Pliers and Shallow Drain Pan

1. Place a clean, shallow drain pan below the fuel tank.

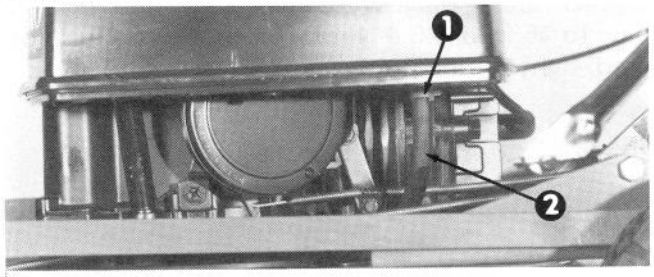


Figure 22

1. Clip *2. Fuel Line*

2. Compress clip holding fuel line on fuel tank fitting (Fig. 22); then slide clip down fuel line.

3. Carefully pull fuel line off fitting to allow gasoline to flow into drain pan.

4. When gasoline is drained, install fuel line on fuel tank fitting. Reinstall fuel line clip.

5. Start and run engine to use fuel in carburetor if mower is to be stored.

MAINTENANCE

REPLACING SPARK PLUG

Recommended spark plug to use is a Champion RJ-17 LM or equivalent, and correct air gap is 0.030 of an inch (0.76 mm). Since air gap between center and side electrodes of the spark plug increases gradually during normal engine operation, remove plug after every 25 hours of engine operation and check its condition.

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

2. Pull high tension wire off spark plug and remove plug from cylinder head (Fig. 23).

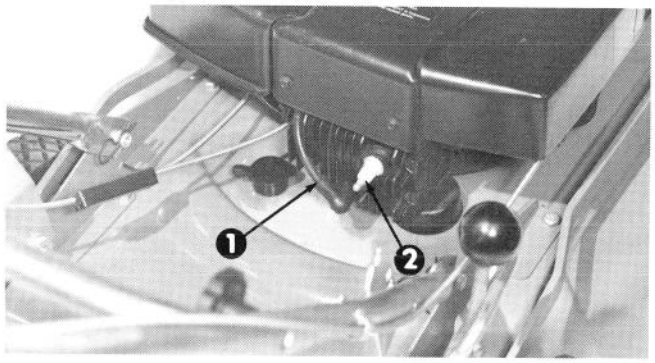


Figure 23
1. High Tension Wire
2. Spark Plug

IMPORTANT: A cracked, fouled, or dirty spark plug must be replaced. Do not sandblast, scrape, or clean electrodes using a wire brush, because grit may eventually release from the plug and fall into the cylinder. The result will likely be engine damage.

3. Set air gap between electrodes at 0.030 of an inch (0.76 mm) (Fig. 24). Next, install correctly gapped spark plug with gasket seal and tighten plug to 15 ft-lb (20.4 N·m). If torque wrench is not used, tighten plug firmly.

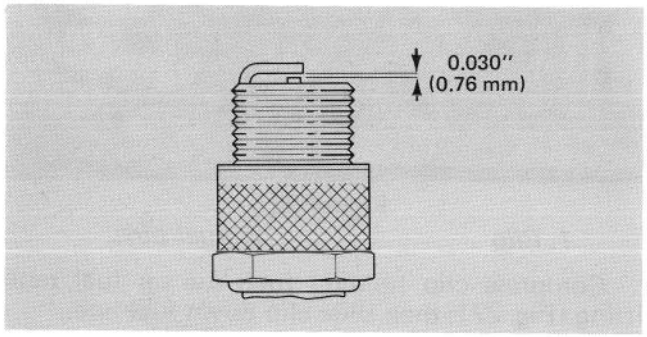


Figure 24

4. If mower will be used immediately, push high tension wire onto spark plug. However, do not install high tension wire if mower will not be used: accidental starting will be prevented.

CLEANING MOWER HOUSING

To assure a good cut, underside of mower housing and inside of discharge area must be kept clean.

1. Pull high tension wire off spark plug.

CAUTION
Drain gasoline from fuel tank to prevent a potential hazard.

2. Tip mower on left side (Fig. 25) and allow mower to remain in tipped position for a short time only. **Avoid rotating blade when mower is tipped because starting problems may result.**

3. Remove grass clippings and dirt that sticks to the housing (Fig. 25) by spraying with a garden hose. Scrape out any grass that water does not remove from housing; then spray housing again with water.

4. Set mower upright.

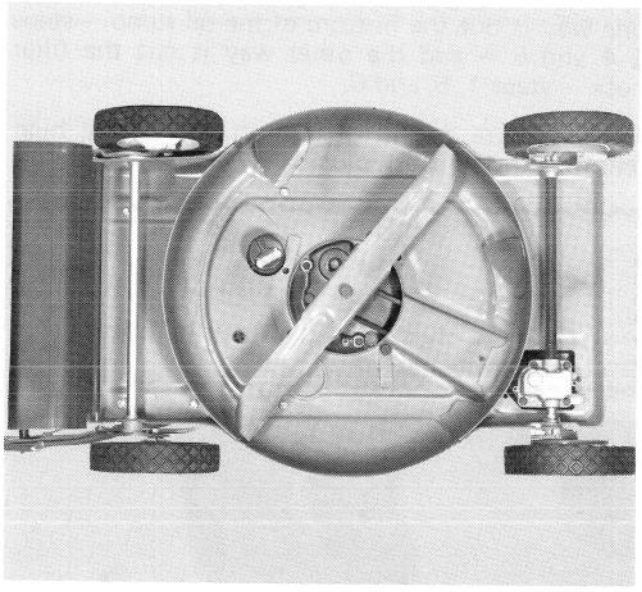


Figure 25

INSPECTING CUTTER BLADE FOR DAMAGE

1. Assure engine is not running and high tension wire is pulled off spark plug.

2. ⚠ Drain gasoline from fuel tank: refer to Draining Gasoline, page 13.

3. Tip mower on its left side (Fig. 25) and allow it to remain tipped for a short time. Avoid rotating the blade when mower is tipped because starting problems may result.

4. Examine cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet (Fig. 26A). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check the blade before using the mower. If any wear is noticed (Fig. 26B), replace the blade: refer to Sharpening or Replacing Cutter Blade, page 15.

> ⚠ CAUTION
>
> If the blade is allowed to wear excessively, a slot will form between the sail and flat part of the blade (Fig. 26C). Eventually, a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to yourself or bystander.

5. Set mower upright.

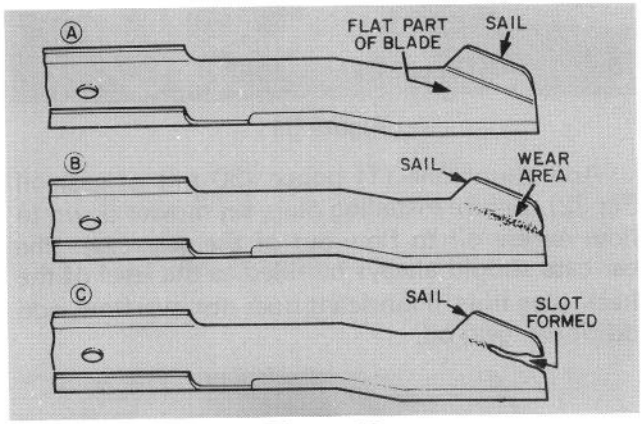


Figure 26

SHARPENING OR REPLACING CUTTER BLADE

1. ⚠ Assure engine is not running and high tension wire is pulled off spark plug.

2. ⚠ Drain gasoline from fuel tank: refer to Draining Gasoline , page 13.

3. Tip mower on its left side and allow it to remain tipped for a short time. **Avoid rotating the blade when mower is tipped because starting problems may result.**

4. Grasp end of blade using a rag or thickly padded glove. Remove capscrew, lockwasher and blade (Fig. 25).

Note: To assure optimum cutting performance, install a new blade at the start of the cutting season. During the year, file down small nicks to maintain a fine cutting edge.

5. Using a file, sharpen cutting edge at both ends of the blade (Fig. 27).

IMPORTANT: Sharpen top side of blade and maintain original cutting angle to assure a sharp cutting edge (Fig. 27). The blade will remain balanced if same amount of material is removed from both cutting edges.

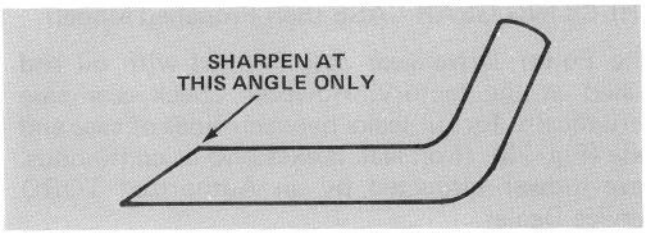


Figure 27

6. Check balance of blade by putting it on a blade balancer. 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 some metal off heavy "end" of the blade, not off the cutting edge. Then check the blade balance again.

Note: An inexpensive blade balancer can be purchased at a hardware store.

7. Install sharp, balanced blade with lockwasher and capscrew. Sail part of the blade must point toward the mower housing to assure correct installation. Tighten capscrew to 45-60 ft-lb (61-81 N·m).

8. Set mower upright.

ADJUSTING THROTTLE

If engine does not stop or start, or if throttle control is replaced, an adjustment may be required.

1. Loosen cable clamp screw until throttle cable is free to slide (Fig. 28).

2. Move panel-mounted throttle control fully to the rear.

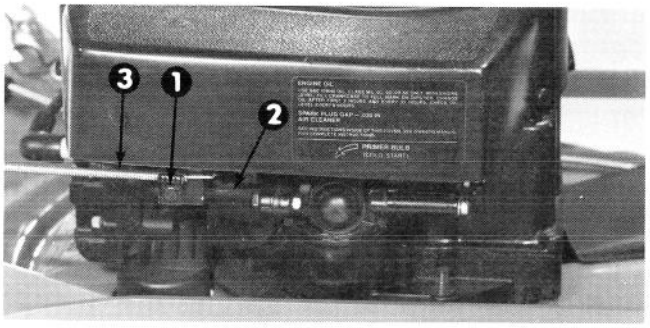


Figure 28
1. Clamp Screw
2. Carburetor Arm
3. Cable

3. Move carburetor control arm to the left until it contacts grounding bracket (Fig. 28).

4. Pull throttle cable slightly to remove any slack; then tighten cable clamp screw (Fig. 28).

CHECKING GEAR CASE (Self-Propelled Model)

The Power Drive gear case is filled with oil and sealed at the factory. However, check gear case periodically for oil leaks between sides of case and axle (Fig. 29). If oil leak is excessive or continuous, have mower inspected by an Authorized TORO Service Dealer.

Slight leakage may be occurring which may not be obvious. Therefore, check the oil level in the gear case every 25 hours of operation.

The service life of the transmission is directly dependent of the lubricant level being maintained and on the type of lubricant used. Use only a national brand gear oil rated SAE 80W/90EP with an API classification of GL-5 or GL-6 for extreme pressure applications. A nylon check plug is threaded into the front of the gear case at the proper lubricant level so that gear oil can be checked and, if necessary, added periodically (Fig. 29).

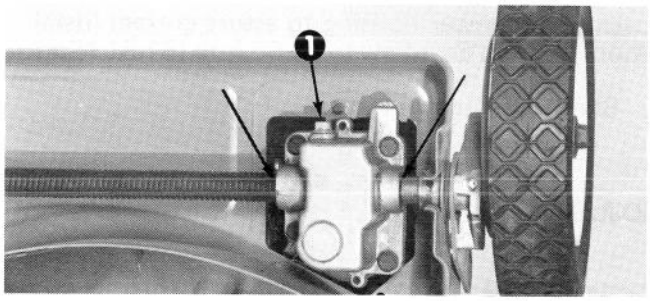


Figure 29
1. Check Plug

1. Shut off engine, set mower on level surface and pull high tension wire off spark plug.

2. Remove screws securing POW-R-DRIVE cover, set cover aside, loosen jam nut and turn stop screw counter-clockwise to allow gear case to pivot (Fig. 30).

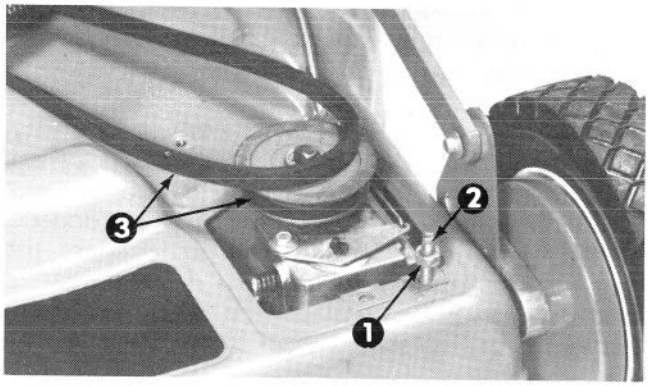


Figure 30
1. Jam Nut
2. Stop Screw
3. Belt and pulley

3. Tip gear case upward, remove belt assembly from pulley (Fig. 30), tip front of unit up, clean area around plastic plug and remove plastic plug from gear case (Fig. 31).

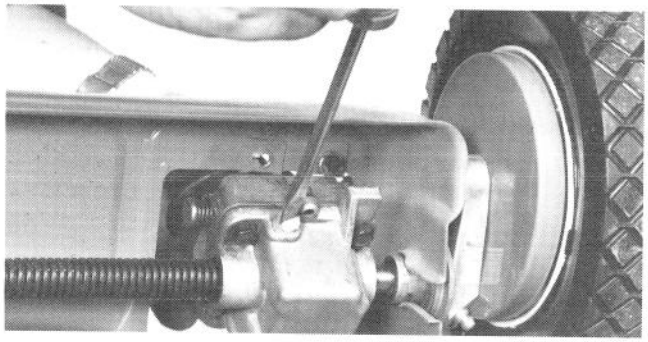


Figure 31

4. Add about one (1) ounce (30 ml) of gear oil (Fig 32). Before installing plug, set mower down to allow excess oil to flow out of the gear case. The gear case should always be filled to the level of the check plug hole. If lubricant does not overflow, add additional gear oil.



Figure 32
1. Fill Hole

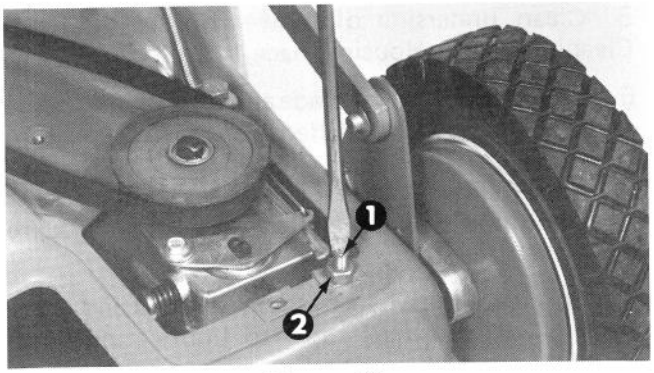


Figure 33
1. Stop Screw *2. Jam Nut*

5. Install plastic plug. Take care while tightening so plug threads will not strip out. Set unit down, install belt onto pulley, install stop screw and jam nut (Fig. 33). Insure stop screw is set to its original setting and lock jam nut.

6. Install cover.

ADJUSTING TRACTION CONTROL (Self-Propelled Model)

If a new traction control cable is ever installed, an adjustment is required.

1. Shut engine off and pull high tension wire off spark plug.

2. Remove screws holding POW-R-DRIVE cover and set aside.

NOTE: Check the stop screw (Fig. 34); it must contact tab at front of gear case. The Screw stops gear case from moving and belt from jumping off pulley.

3. Loosen cable retaining screw until cable is free to slide (Fig. 34).

4. Move panel-mounted traction control into the DISENGAGE **detent.**

5. Push shifter arm (Fig. 34) backward until it stops, and hold it in place.

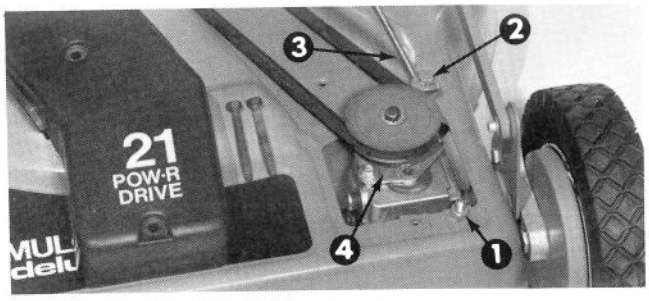


Figure 34
1. Stop Screw *3. Cable*
2. Cable Retaining Screw *4. Shifter Arm*

6. Pull control cable and wire backward to remove any slack; then secure cable in place by tightening the retaining screw (Fig. 34). This adjustment will assure that POW-R-DRIVE is disengaged when panel-mounted traction control is in DISENGAGE **detent.**

7. Adjust traction lockout: refer to Adjusting Recoil Traction Lockout.

8. Install POW-R-DRIVE cover with screws.

9. If mower will be used immediately, push high tension wire onto spark plug. However, do not install high tension wire if mower will not be used: accidental starting will be prevented.

ADJUSTING RECOIL TRACTION LOCKOUT (Self-Propelled Model)

There is a recoil lockout arm at front of engine. In conjunction with traction control, it disengages the recoil starter so engine cannot be started when traction control is in the ENGAGE position. Unless the control cable and wire breaks and is replaced, an adjustment should not be required.

1. Shut engine off and pull high tension wire off spark plug.

2. Adjust the traction control: refer to Adjusting Traction Control, steps 1-6.

3. Move the panel-mounted traction control into DISENGAGE **detent.**

4. Loosen cable clamp screw until cable is free to slide (Fig. 35).

5. Pull recoil starter handle out about 10 inches (25.4 cm) and hold it in that postion so starter gear is engaged in engine flywheel.

6. With recoil handle pulled out 10 inches (25.4 cm), move control cable, wire, and lockout arm to the left until lockout arm stops (Fig. 35).

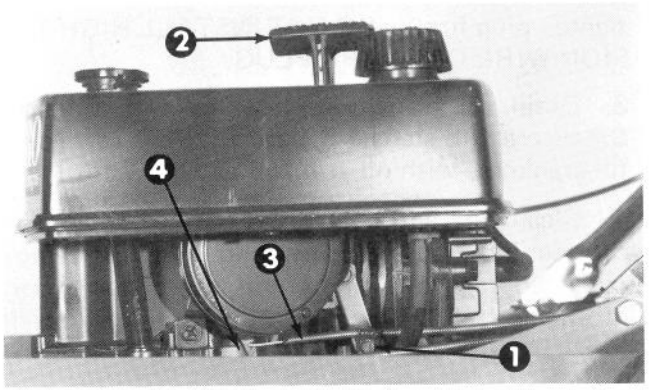


Figure 35
1. Cable Clamp Screw *3. Cable*
2. Recoil Starter Handle *4. Lockout Arm*

7. Allow starter rope to retract slowly.

8. Move control cable, wire, and arm 1/16 of an inch (1.6 mm) or one coil of the cable to the right, and secure cable in place by tightening cable clamp screw (Fig. 35).

NOTE: This adjustment provides slight clearance between lockout arm and starter gear. Clearance allows starter gear to engage with engine ring gear when panel-mounted traction control is in DISENGAGE **detent.**

9. Test the adjustment by moving panel-mounted traction control to ENGAGE position. Pull recoil starter handle slowly: it must be very easy to pull, and engine must not turn over.

10. If mower will be used immediately, push high tension wire onto spark plug. However, do not install high tension wire if mower will not be used: accidental starting will be prevented.

PREPARING MOWER FOR STORAGE

1. Drain gasoline from fuel tank and fuel line: refer to Draining Gasoline, page 13. Next, start engine and let it run at idle speed until it stops because all gasoline is used.

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

2. Pull high tension wire off spark plug and clean area around the plug so foreign matter cannot fall into cylinder when plug is removed. Next, remove plug from cylinder head and pour two tablespoons (25-30 ml) of 10W-40 oil into spark plug hole. Pull recoil starter handle slowly to distribute oil on inside of cylinder. Then reinstall spark plug and tighten it to 15 ft-lb (20.4 N·m). If torque wrench is not used, tighten plug firmly. DO NOT INSTALL HIGH TENSION WIRE ON SPARK PLUG.

3. Drain oil from crankcase: refer to Changing Crankcase Oil, steps 1-5, page 13. However, do not fill crankcase with oil at this time.

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

5. Clean underside of mower housing: refer to Cleaning Mower Housing, page 14.

6. Check condition of blade and blade capscrew: refer to Inspecting Cutter Blade for Damage, page 14.

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

8. Lubricate the wheel bushings with oil and grease front pivot housings: refer to Lubricating Wheel Bushings and Lubricating Axle Pivots, page 12.

9. Wash the air cleaner element in a liquid soap detergent and water and oil with SAE 10W-40 oil: refer to Servicing Air Cleaner, page 12.

10. Check gear case oil level: refer to Checking Gear Case, page 16.

11. Fill crankcase with oil: refer to Fill Crankcase with Oil, page 6.

12. "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.

13. Store the mower in a clean, dry place. For convenience, handle can be folded for more compact storage (Fig. 36). Also, an upright storage position, which is notched into the handle latch, may be used to store handle vertically. Cover the mower to protect it and keep it clean. Assure handles are properly latched and secured when mower is removed from storage.



Figure 36

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The TORO MULCHER DELUXE has two identification numbers: a model number and a serial number. The two numbers are stamped on a decal (Fig. 37) that is located on the mower housing, between the rear wheels. In any correspondence concerning the mower, supply model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an Authorized TORO Service Dealer, supply the following information:

1. Model and serial numbers of the mower.

2. Part number, description and quantity of part(s) desired.

NOTE: Do not order by reference number if a parts catalog is being used; use the PART NUMBER.

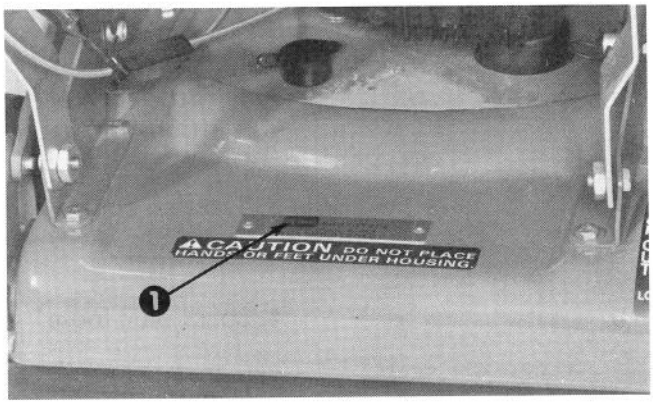


Figure 37
1. Model and Serial Number

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Engine does not start.	1. Gas tank is empty.	1. Fill fuel tank with gasoline: refer to Fill Fuel Tank With Gasoline, page 7.
	2. Throttle control not in FAST position.	2. Move throttle control to FAST: refer to Starting/Stopping Instructions, pages 8-9.
	3. Traction control (SP model) not in DISENGAGE **detent** position.	3. Move traction control to DISENGAGE **detent:** refer to Starting/Stopping Instructions, pages 8-9.
	4. Spark plug loose.	4. Tighten spark plug to 15 ft-lb (20.4 N·m).
	5. High tension wire loose or disconnected from spark plug.	5. Install high tension wire on spark plug.
	6. Spark plug gap is incorrect.	6. Set gap between electrodes at 0.030 of an inch (0.76 mm).
	7. Spark plug is defective.	7. Install new, correctly gapped plug: refer to Replacing Spark Plug, page 14.
	8. Blade bolt is loose.	8. Tighten blade bolt to 45-60 ft-lb (61-81 N·m).
	9. Faulty points or condenser.	9. Contact Authorized TORO Service Dealer.
Engine starts hard or loses power.	1. Dirt or water in gas tank.	1. Drain gas and clean fuel tank. Fill tank with clean, fresh gasoline: refer to Fill Fuel Tank With Gasoline, page 7.
	2. Vent hole in fuel tank cap is plugged.	2. Clean or replace fuel tank cap.
	3. Air cleaner is dirty.	3. Clean the air cleaner element: refer to Servicing Air Cleaner, page 12.
	4. Blade bolt is loose.	4. Tighten blade bolt to 45-60 ft-lb (61-81 N·m).
Engine operates erratically.	1. Spark plug is defective.	1. Install new, correctly gapped, plug: refer to Replacing Spark Plug, page 14.
	2. Spark plug gapped incorrectly.	2. Set gap between electrodes at 0.030 of an inch (0.76 mm).
	3. Air cleaner is dirty.	3. Clean the air cleaner element: refer to Servicing Air Cleaner, page 12.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Engine idles poorly.	1. Air cleaner is dirty.	1. Clean the air cleaner element: refer to Servicing Air Cleaner, page 12.
	2. Oil level in crankcase is low.	2. Add oil to crankcase: refer to Fill Crankcase With Oil, page 6.
	3. Air slots in engine shroud are plugged.	3. Remove obstruction from slots.
	4. Cooling fins and air passages under engine blower housing are plugged.	4. Remove obstruction from cooling fins and air passages.
Engine skips at high speed.	1. Air gap between electrodes of spark plug is too close.	1. Set air gap at 0.030 of an inch (0.76 mm).
Engine overheats.	1. Cooling air flow is restricted.	1. Remove any obstruction from slots in shroud, blower housing, air passages, and cooling fins on engine.
	2. Oil level in crankcase is low.	2. Add oil to crankcase: refer to Fill Crankcase With Oil, page 6.
	3. Incorrect spark plug.	3. Install Champion RJ-17 LM spark plug that is gapped at 0.030 of an inch (0.76 mm).
Mower vibrates abnormally.	1. Blade bolt is loose.	1. Tighten blade bolt to 45-60 ft-lb (61-81 N·m).
	2. Cutter blade is unbalanced.	2. Sharpen cutter blade and check the balance: refer to Sharpening or Replacing Cutter Blade, page 15. Replace the blade if it cannot be balanced.

MAINTENANCE RECORD

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

MAINTENANCE RECORD

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

The Toro Promise

A One Year Limited Warranty

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

Residential Product . . . . . 1 Year
Residential Products Used Commercially . . . . . 45 Days

The costs of parts and labor are included, but the customer pays the transportation costs. Just return any residential product to an Authorized TORO Service Dealer or TORO Distributor.

Should you feel your TORO is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact any Authorized TORO Service Dealer, TORO Master Service Dealer, or TORO Distributor (the Yellow Pages of your telephone directory is a good reference source).
2. He will either instruct you to return the product to him or recommend another Authorized TORO Service outlet which might be more convenient.
3. Bring the product along with your original sales slip, or other evidence of purchase date, to the service dealer.
4. The servicing dealer will inspect the unit, advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without extra charge to you.

If for any reason you are dissatisfied with the dealer's analysis of the defect or the service performed, you may contact us.

Write:

TORO Customer Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Service Dealer is the purchaser's sole remedy for any defect.

THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.

Some states do not allow limitation on how long implied warranty lasts, so the above limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper operating condition is the reponsibility of the owner.

All warranty repairs reimbursable under The Toro Promise must be performed by an Authorized TORO Service Dealer using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Service Account are not reimbursable under The Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the product including any cost or expense of providing substitute equipment or service during periods of malfunction or non-use.

Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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

Litho in U.S.A.