FORM NO. 3320–700

TORO

MODEL NO. 27500 – 2000001 & UP
MODEL NO. 27501 – 2000001 & UP

OPERATOR'S MANUAL

21" (0.53 M) REAR BAGGER MOWER

⚠ SAFETY INSTRUCTIONS

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

BEFORE OPERATING

1. Read this manual carefully before operating the mower. Become familiar with the controls and proper use of the mower. Never allow children to operate the mower or adults to operate it without proper instructions.

2. Keep everyone, especially children and pets, away from area of operation. Thoroughly inspect area where mower will be used and remove sticks, stones, wire, and debris.

3. Wear long pants and substantial shoes. Do not operate mower while wearing open sandals, jewelry, loose clothing or when barefoot.

4. Always wear safety glasses or eye shields during operation to protect eyes from foreign objects that may be thrown from the machine.

5. Check fuel level before starting engine. Do not fill fuel tank indoors, when the engine is running, or until engine cools for several minutes after running. Wipe up spilled gasoline before starting engine.

6. Keep all guards, shields, grass catcher and safety devices in place. Repair or replace damaged parts, including decals.

7. Traction drive and blade are designed to stop when control bar is released. Ensure control and blade brake function properly before each use of mower.

WHILE OPERATING

8. Do not run engine indoors.

9. Always maintain secure footing. Keep a firm grip on the handle and walk; never run. Never operate mower in wet grass. Mow only in daylight or in good artificial light.

10. Mow across the face of slopes; never up and down. Use extreme caution when changing direction on slopes. Do not mow excessively steep slopes.

11. Keep face, hands, and feet away from the mower housing and cutter blade when the engine is running. Stay behind the handle until the engine stops and keep clear of discharge opening at all times.

12. When mulching, ensure mulching plug is securely in the discharge opening and discharge door is closed. When bagging grass, stop engine before the bag is removed and emptied.

13. Shut engine off and wait for all moving parts to stop before unclogging discharge tunnel.

14. Since the blade rotates for a few seconds after the blade control is released, stay behind the handle until all moving parts stop.

15. After striking a foreign object or if mower vibrates abnormally, stop engine and remove wire from spark plug. Check mower for damage and make all repairs before using mower again.

16. Stop the engine before adjusting the height–of–cut.

17. Stop the blade when crossing a gravel driveway, road, or sidewalk.

18. Stop engine before leaving the operator's position—behind the handle. Disconnect wire from spark plug if mower will be unattended or not used.

19. Do not touch engine while it is running or shortly after it is stopped because engine will be hot enough to cause a burn.

20. Refuel only when engine is cool.

MAINTENANCE

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

22. Before mower is cleaned, inspected, serviced, or adjusted, stop engine and disconnect wire from spark plug. Keep wire away from plug to prevent accidental starting.

23. To ensure the mower is in safe operating condition, frequently check and keep all nuts, bolts, and screws tight. Ensure blade nuts are tightened to 15–27 ft–lb.

24. To reduce fire hazard, keep engine free of excessive grease, grass, leaves, and accumulations of dirt.

25. Check grass catcher bag frequently for wear or deterioration. Replace with a new bag when worn or damaged for your protection. Check that replacement bags comply with TORO's original recommendations or specifications.

©The Toro Company–1992

SAFETY INSTRUCTIONS

26. Allow engine to cool before storing mower in any enclosure. Do not store mower near any open flame or where gasoline fumes may be ignited by a spark, for example, near a water heater or gas furnace.

27. Do not overspeed the engine by changing governor settings.

28. At the time of manufacture, the mower conformed to the safety standards in effect for rotary mowers. To ensure best performance and continued safety certification of the mower, use genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers may result in nonconformance with the safety standards, and that could be dangerous.

SAFETY SYMBOL GLOSSARY

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



Safety alert



Read and understand operator's manual



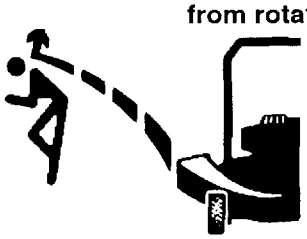
Keep hands and feet away from rotating blade



Keep hands away



Keep bystanders from area being mowed



Keep all guards in place



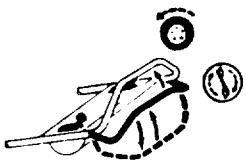
Place foot here when starting



Stop engine before leaving operator position



Never open discharge door on mower when engine is running, unless grass bag, optional side discharge attachment or optional mulching plug is installed



Squeeze control bar against handle to engage traction drive and blade



Traction drive ENGAGED



Engine speed (Throttle)



Ignition off



Engine start



Neutral



Choke on



Fast



Slow

TABLE OF CONTENTS

	Page
Set–Up Instructions	3
Before Operating	4
Operating Instructions	5
Maintenance	8
Servicing Air Cleaner	8
Replacing Spark Plug	9
Draining Gasoline	9
Changing Crankcase Oil	9
Adjusting Throttle	9
Adjusting Wheel Drive	10
Inspecting/Removing/Sharpening Blade	10
Lubrication	11
Adjusting Blade Brake	12
Charging Battery	12
Cleaning Blade Brake Clutch Shields	13
Cleaning Mower Housing	14
Preparing Mower For Storage	14
Product Identification	15
Toro Service Support	15
Optional Equipment	16
The Toro Starting Guarantee	17
Guaranteed To Start Maintenance Record	19
The Toro Total Coverage Guarantee	

SET–UP INSTRUCTIONS

INSTALL HANDLE, BAG, AND BATTERY

1. Spread handle ends and slide onto mower housing mounting studs (Fig. 1).

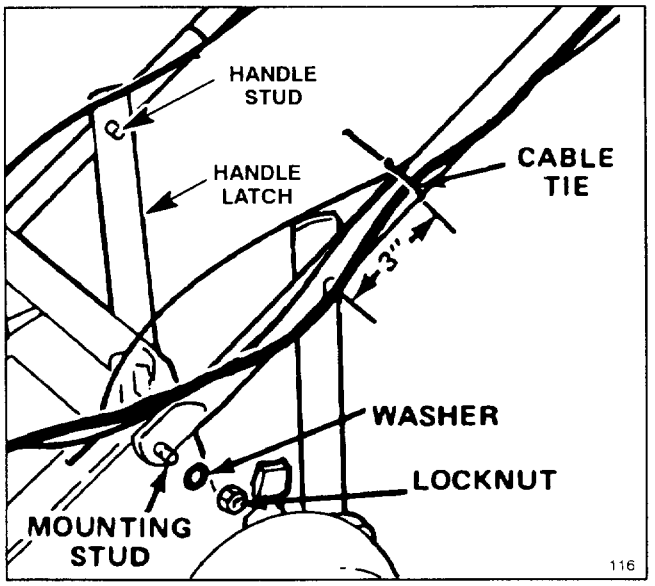


Figure 1

2. Secure each side of handle to mounting studs with a washer and locknut (Fig. 1).

3. Bend handle latches slightly inward. Move handle up or down to snap handle studs into middle hole on handle latches (Fig. 1).

Note: Handle height may be adjusted to desired position by moving handle studs to one of the other holes in handle latches.

4. Secure control cables to each side of handle, approximately 3 inches above handle stud, with cable ties (Fig. 1).

5. To install grass bag, raise discharge door and hook bag frame onto hinge pins (Fig. 2). Allow bag to rest on mower housing over discharge opening. Close door and make sure it seals around top of bag opening (Fig. 3).

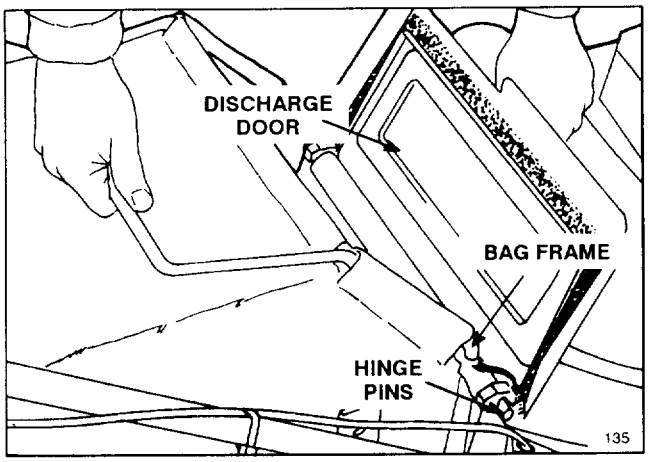


Figure 2

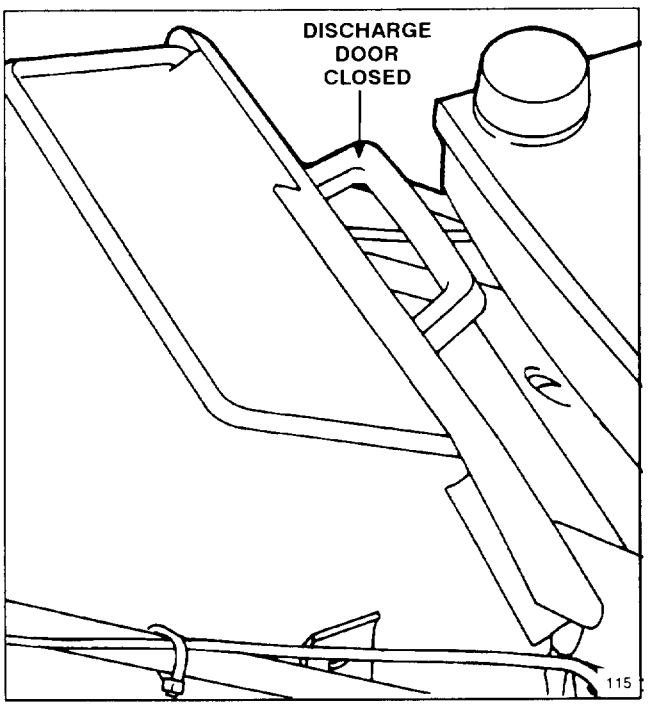


Figure 3

SET–UP INSTRUCTIONS

6. Charge battery (model 27501 only)—Refer to Charging Battery, page 12. Slide battery, decal side up, between mounting tabs on back of control panel and connect wires (Fig. 4). Insert key into switch when ready to start engine.

7. Unscrew gas tank cap (Fig. 7). If there is a plastic plug over the tank opening, remove and discard it. Reinstall gas tank cap.

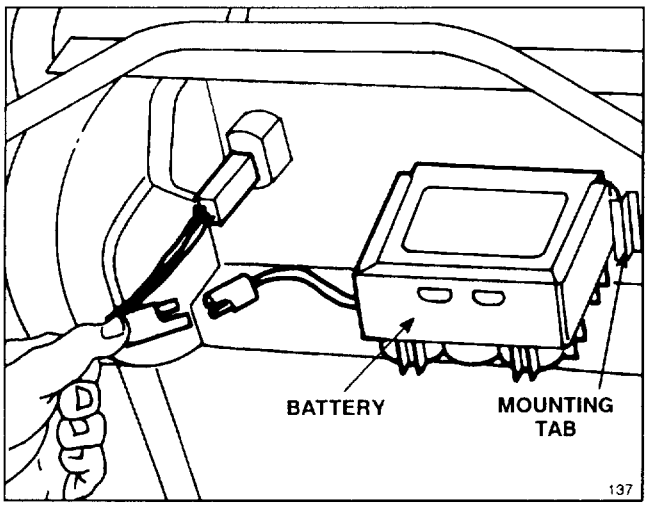


Figure 4

BEFORE OPERATING

FILL CRANKCASE WITH OIL

Fill crankcase with SAE 30 oil until oil level reaches FULL mark on dipstick as shown in Figure 5. The maximum crankcase capacity is 25 ounces (0.75 liters) of oil. Use of multi–viscosity oils (10W30, etc.) above 40° F (4° C) will result in high oil consumption and possible engine damage. Use any high quality detergent oil having the American Petroleum Institute (API) "service classification"—SE, SF or SG.

Before each use, ensure oil level is between ADD and FULL marks on dipstick (Fig. 5). Add oil if level is low.

1. Position mower on level surface and clean around oil dipstick.

2. Remove dipstick by rotating cap counterclockwise 1/4 turn.

3. Wipe dipstick and insert it into filler neck. Rotate cap clockwise 1/4 turn. Then remove dipstick and check level of oil (Fig. 5). If level is low, add only enough oil to raise level to FULL mark on dipstick. **DO NOT FILL ABOVE FULL MARK BECAUSE ENGINE COULD BE DAMAGED WHEN STARTED. POUR OIL SLOWLY.**

4. Insert dipstick into filler neck and rotate cap clockwise 1/4 turn to lock.

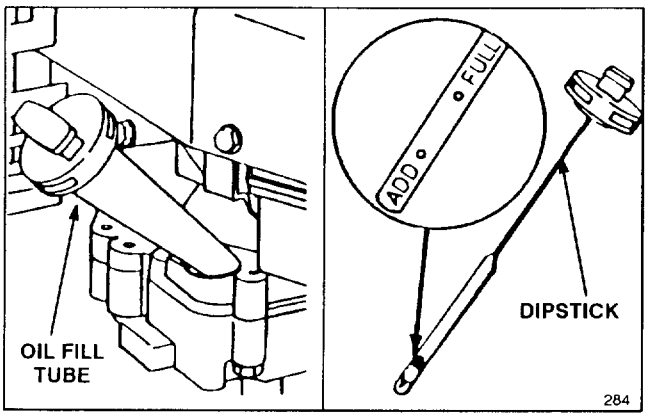


Figure 5

Note: Check oil level each time mower is used or after every 5 operating hours. Initially, change oil after the first 2 hours of operation; thereafter, change oil after every 25 hours of operation. More frequent oil changes are required in dusty or dirty conditions.

⚠ WARNING

DANGER: Gasoline is extremely flammable and explosive under certain conditions. Do not smoke when handling fuel and keep fuel far away from open flames and sparks. Never buy more than a 30 day supply of gasoline. Store it in an approved container. Keep gasoline out of reach of children.

Refuel outdoors and only when engine is cold. Do not fill the tank full. Fill tank to 1/4" to 1/2" (6 to 13 mm) from top of tank, not into the filler neck. This space is for expansion of fuel. Use funnel or spout to prevent spilling. Wipe up any spilled gas.

BEFORE OPERATING

FILL FUEL TANK WITH GASOLINE

Note: The Toro Company strongly recommends the use of fresh, clean, UNLEADED regular grade gasoline in Toro gasoline powered products. Unleaded gasoline burns cleaner, extends engine life, and promotes good starting by reducing the build–up of combustion chamber deposits. Leaded gasoline can be used if unleaded is not available.

Toro also recommends that Toro Stabilizer/Conditioner be used regularly in all Toro gasoline powered products during operation and storage seasons. Toro Stabilizer/Conditioner cleans the engine during operation and prevents gum–like varnish deposits from forming in the engine during periods of storage.

1. Clean around fuel tank cap and remove cap from tank (Fig. 7). Using unleaded gasoline, add fuel to 1/4" to 1/2" (6 to 13 mm) from top of tank, not into the filler neck. Do not fill the tank full.

2. Reinstall fuel tank cap and wipe up any spilled gasoline.

IMPORTANT: DO NOT MIX OIL WITH THE GASOLINE. NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

DO NOT USE FUEL ADDITIVES OTHER THAN THOSE MANUFACTURED FOR FUEL STABILIZATION DURING STORAGE SUCH AS TORO'S STABILIZER/CONDITIONER OR A SIMILAR PRODUCT. TORO'S STABILIZER/CONDITIONER IS A PETROLEUM DISTILLATE BASED CONDITIONER/STABILIZER. TORO DOES NOT RECOMMEND STABILIZERS WITH AN ALCOHOL BASE SUCH AS ETHANOL, METHANOL OR ISOPROPYL. ADDITIVES SHOULD NOT BE USED TO TRY TO ENHANCE THE POWER OR PERFORMANCE OF MACHINE.

OPERATING INSTRUCTIONS

OPERATING TIPS

1. CHECK OIL LEVEL—Maintain oil level between ADD and FULL marks as shown on dipstick (Fig. 5).

2. BEFORE EACH MOWING—Be sure blade brake, self–propelled drive, and control bar function properly. When control bar is released, blade and self–propelled drive are designed to stop. If controls are not functioning properly, do not use mower until controls are repaired.

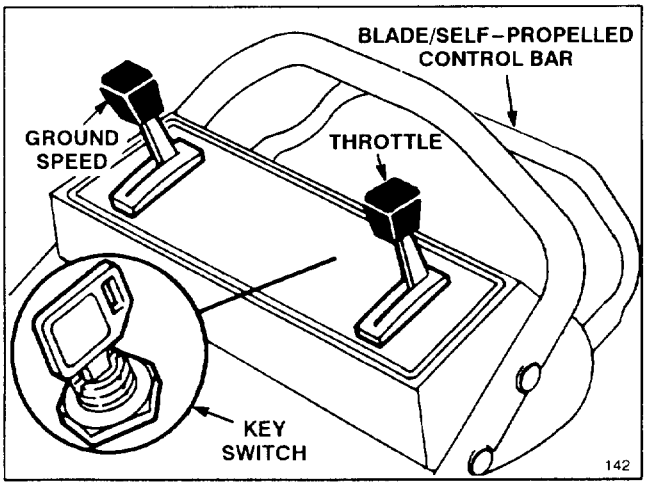
3. CUTTING AND BAGGING—Best results are achieved when engine is running at maximum speed and only about 1/3 of the grass blade is cut. If long grass must be cut, use highest height–of–cut setting for first mowing. Then recut the grass at a more normal setting. If too long of grass is cut, mower may plug and cause engine to stall.

4. MULCHING—In summer when grass grows slower and is drier, TORO recommends using the Toro Mulching Plug Kit (Model No. 59181) for best mulching results (Fig. 35). You can also mulch by removing the grass bag and closing the discharge door (Fig. 3).

5. SHARP BLADE—Begin each cutting season with a sharp blade. Periodically file down nicks.

STARTING, STOPPING, AND SELF–PROPELLING

1. CONTROLS—Key switch (model 27501 only), throttle, ground speed control, and blade/self–propelled control bar are on upper handle (Fig. 6). Recoil starter is on top of engine (Fig. 7).



Model 27501 shown

Figure 6

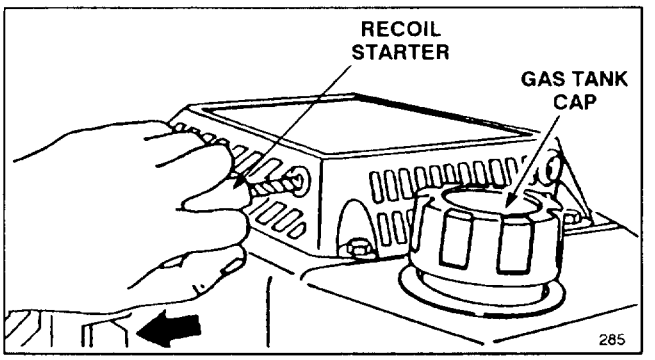


Figure 7

2. Push spark plug wire onto spark plug.

3. Move ground speed control to "N" (Fig. 6).

OPERATING INSTRUCTIONS

4a. KEY–LECTRIC STARTING (model 27501) — Move throttle (Fig. 6) to CHOKE. Turn key (Fig. 6) to START and release when engine begins running. When engine starts, remove throttle from CHOKE and regulate as desired.

Note: If the battery's charge is too weak to start the engine, the engine can be started with the recoil starter (Fig. 7).

4b. MANUAL STARTING—Move throttle to CHOKE. Brace yourself and mower securely by placing your foot on the top left side of mower housing. Pull engine mounted recoil starter out (Fig. 7) until positive engagement results; then pull vigorously to start the engine. When engine starts, remove throttle from CHOKE and regulate as desired.

5. GROUND SPEED (Fig. 6)—Ground speed varies, depending on space between control bar and handle. Move ground speed control to desired setting. Number "1" is slow, "2" is medium, and "3" is a fast walking pace. Move ground speed control to (N) when using the mower for trimming and whenever leaving mower.

6. BLADE AND TRACTION OPERATION (Fig. 8)—Move control bar down to "A" and raise to "B" to engage blade. Squeeze control bar against handle "C" to drive. To disengage traction drive but keep blade engaged, gradually release control bar to mid position. To self–propel with blade disengaged, simply squeeze control bar against handle, eliminating downward movement necessary for blade engagement.

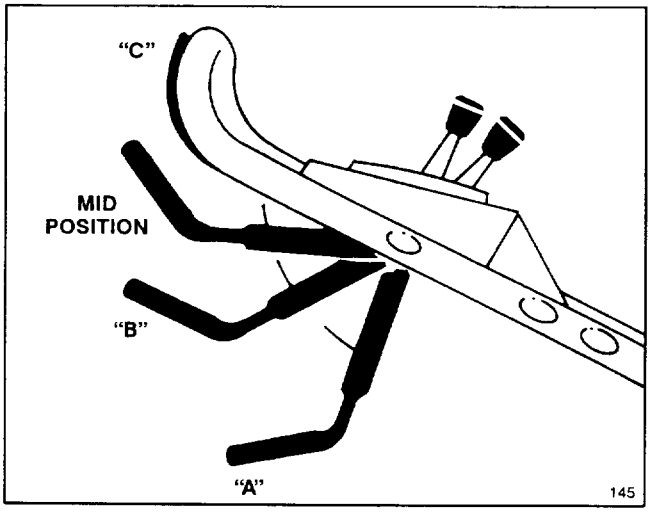


Figure 8

Note: The drive wheels are equipped with freewheeling clutches which enable the mower to be pulled rearward easier when the wheel drive is disengaged. To disengage the clutches, mower must be pushed forward at least 1" after wheel drive operation has stopped.

7. STOPPING (Fig. 6)—Release control bar to stop blade and traction drive. Move ground speed control to "N". To stop engine, move throttle to OFF. Remove key from switch on electric start model and pull wire off spark plug if mower will be unattended or not used.

USING GRASS BAG

1. Stop engine and wait for all moving parts to stop.

2. INSTALLING BAG—Raise discharge door and hook bag frame onto hinge pins (Fig. 9). Allow bag to rest on mower housing over discharge opening. Close door and make sure it seals around top of bag opening.

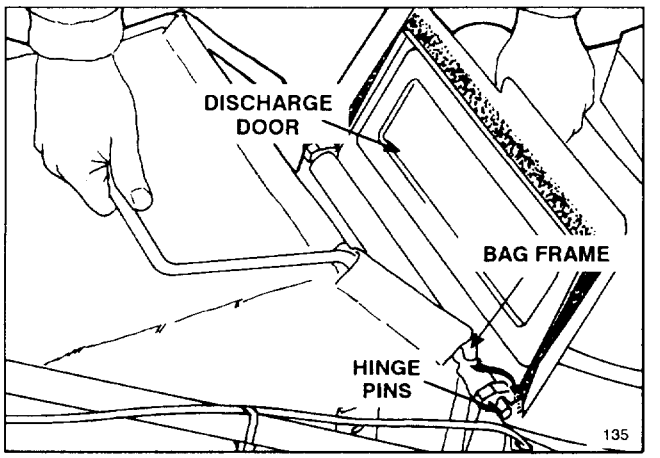


Figure 9

3. CHECKING BAG—To see if grass bag is full, release control bar and wait for blade to stop. Feel the bag to determine whether bag needs to be emptied.

DANGER

- **Grass clippings and other objects can be thrown from an open discharge tunnel.**
- **Objects thrown with enough force could cause serious personal injury or death to operator or bystander.**
- **Never open door on discharge tunnel when engine is running unless the grass bag, optional side discharge attachment or optional discharge tunnel plug is securely installed.**

OPERATING INSTRUCTIONS

⚠ DANGER

- **A worn grass bag could allow small stones and other similar debris to be thrown in operator's or bystanders' direction.**
- **Thrown objects can cause serious personal injury or death to operator or bystanders.**
- **Check the grass bag frequently. If it is damaged, install a new genuine TORO replacement bag that has this or a similar warning.**

4. REMOVING BAG—Release control bar and wait for blade to stop. Make sure engine is OFF. For protection, always keep hands and feet away from mower housing if engine is running. Open discharge door. While holding discharge door, grasp handle on grass bag and lift bag off mower. Allow discharge door to close.

5. EMPTYING BAG—Grasp bag frame handle and rear of bag. Gradually raise rear of bag while shaking bag to empty.

Note: If grass bag is overfilled, some clippings may remain in discharge opening when bag is removed. Normally, these clippings will be blown into grass bag when the bag is reinstalled and the blade is engaged.

⚠ DANGER

- **Cleaning debris from a plugged discharge tunnel could bring hands into contact with moving blade.**
- **Contact with blade could cause serious personal injury.**
- **Do not clean debris out of discharge tunnel when engine is running and blade is rotating.**
- **Remove any clippings or debris with a stick, not your hand.**

ADJUSTING HEIGHT–OF–CUT

Three numbers cast into the housing represent the height–of–cut settings. The diamond between each number represents a 1/2" increment (Fig. 10).

⚠ DANGER

- **Adjusting height–of–cut levers could bring hands into contact with moving blade.**
- **Contact with blade could cause serious personal injury.**
- **Do not adjust the height–of–cut settings when engine is running and blade is rotating.**
- **Do not put fingers under housing to lift mower when adjusting height–of–cut levers.**

1. Stop the engine and wait for all moving parts to stop.

2. For easier adjustment, lift housing up so wheel is off ground. **Do not put fingers under housing when lifting.** Squeeze adjusting lever toward wheel and move to desired setting (Fig. 10). Ensure pin on adjusting lever engages notch in housing. Adjust all wheels to the same setting.

Note: Front wheels can be adjusted to 1/2". Move adjusting lever past "1" and release pin into notch in housing.

3. In conditions when maximum power is required or when cutting in spongy thatch that causes rear wheels to sink in turf, raise rear wheel setting one increment higher. Make sure wheel settings are returned to equal settings, when cutting in normal conditions, to achieve the best quality–of–cut.

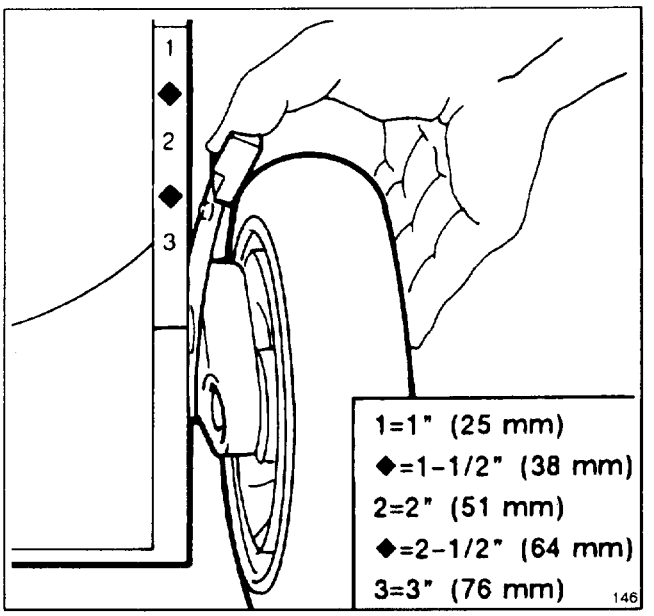


Figure 10

CHECK CONTROL BAR OPERATION

Control bar should be checked before each use to ensure the Blade Brake Clutch (BBC) system is operating properly.

1. Start engine; refer to Starting, page 5.

2. Push the control bar down to the lowest position (Fig. 11). This "latches" the BBC mechanism prior to engaging the blade.

3. Lift the control bar to the normal "blade engaged" position, about 2" below the handle. The "fan" noise and bag inflation indicate that the mower blade is engaged and rotating.

OPERATING INSTRUCTIONS

4. Release the control bar. A "bang" should be heard, and the blade should stop within 3 seconds. If the blade does not stop within 3 seconds when the control bar is released, stop using it until it has been serviced by an Authorized TORO Service Dealer.

If your unit stops within the required 3 seconds, the BBC system is operating properly. If it does not, proceed to step 5 to detect BBC system deterioration before it affects normal operation.

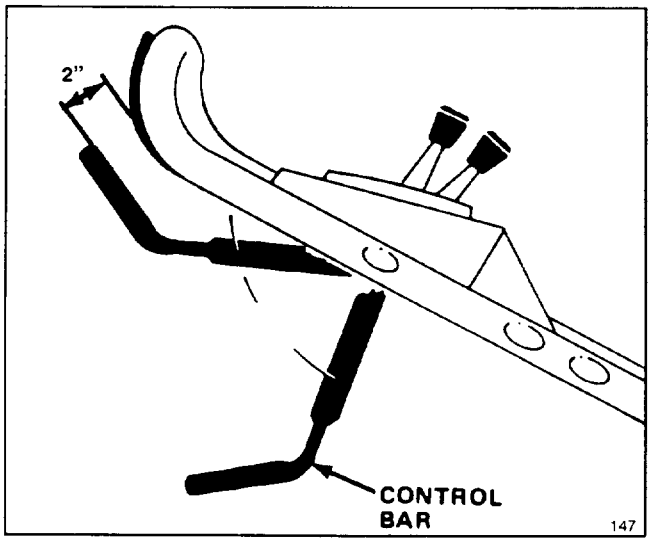


Figure 11

5. If necessary, start engine.

6. Push the control bar down to its lowest position, latching the BBC mechanism (Fig. 11).

7. Slowly lift the control bar to a point where the bag just begins to inflate (about 5" below the handle) (Fig. 11). This indicates that the mower blade is engaged and has begun to rotate.

Note: This intermediate position is not the "natural" operating position of the control bar. However, it has proven to be useful in early detection of latent BBC sticking which could create an unsafe condition later in the life of the mower.

8. Release the control bar.

Note: If a "bang" is heard and the bag immediately deflates, the control bar had been raised too far. Repeat steps 6, 7 & 8, but do not raise the handle as high as in step 7.

If the control bar "hangs up" and the blade does not stop quickly, it indicates possible deterioration has set in, which could result in an unsafe operating condition. Have mower inspected by an Authorized TORO Service Dealer.

CAUTION: If the control bar "hangs up", and the blade does not stop quickly, you should stop the blade before shutting off the engine. This can be done by raising the control bar to the normal operating position and releasing it.

MAINTENANCE

⚠ CAUTION

- **Engine could start accidentally.**
- **Accidental starting of engine could cause serious injury to operator or bystanders.**
- **Pull wire off spark plug before performing any maintenance or adjustments.**

SERVICING AIR CLEANER

Normally, clean air cleaner after every 25 operating hours. More frequent cleaning is required when mower is operated in dusty or dirty conditions.

1. Stop engine wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Rotate knob securing air cleaner cover to engine until cover can be removed. Clean cover thoroughly (Fig. 12).

3. If the foam element is dirty, remove it from air cleaner body (Fig. 12). Clean thoroughly.

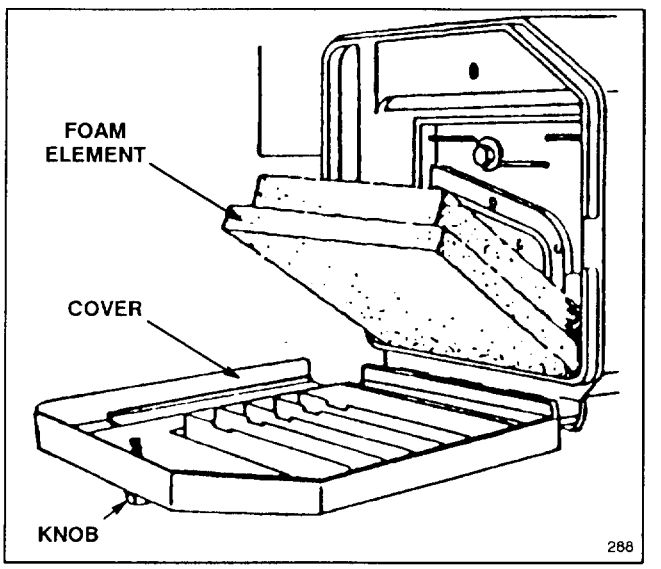


Figure 12

A. WASH foam element in a solution of liquid soap and warm water. Squeeze to remove dirt, but do not twist because foam may tear. Rinse thoroughly in clear water.

B. DRY by wrapping in a clean rag. Squeeze rag and foam element to dry.

C. SATURATE element with approximately 5 ounces (150 ml) of SAE 30 engine oil. Squeeze element to remove excess oil and to distribute oil thoroughly. A damp element is desirable.

4. Reinstall foam element and air cleaner cover.

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

REPLACING SPARK PLUG

Use a CHAMPION RC12YC spark plug or equivalent. Correct air gap is 0.030" (0.76 mm). Remove plug after every 25 operating hours and check its condition.

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Clean around spark plug and remove plug from cylinder head.

IMPORTANT: Replace a cracked, fouled, or dirty spark plug. Do not sand blast, scrape, or clean electrodes because engine damage could result from grit entering cylinder.

3. Set air gap at 0.030" (0.76 mm) (Fig. 13). Install correctly gapped spark plug and gasket seal. Tighten plug firmly to 14 ft–lb (19 N·m).

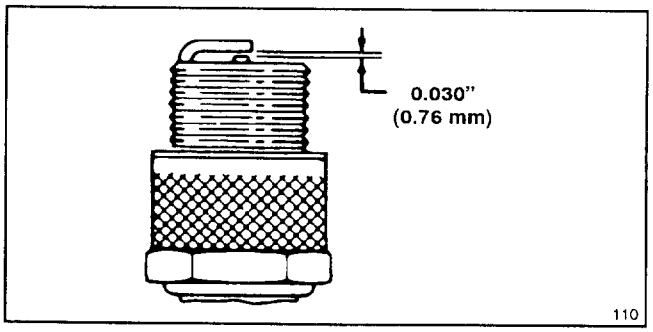


Figure 13

DRAINING GASOLINE

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

Note: Drain gasoline from a cold engine only.

2. Remove cap from fuel tank and use pump–type syphon to drain fuel into clean gas can.

Note: This is the only procedure recommended for draining fuel.

CHANGING CRANKCASE OIL

Change oil after the first 2 operating hours and after every 25 hours thereafter. Since warm oil drains better and carries more contaminants than cold, run engine for a minute or so before draining oil.

1. Stop engine and and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Remove grass bag. Drain gasoline from fuel tank: refer to Draining Gasoline, page 9.

3. Remove dipstick from oil fill tube and place a drain pan next to left side of mower.

4. Tip mower on its left side, allowing oil to drain into drain pan (Fig. 14).

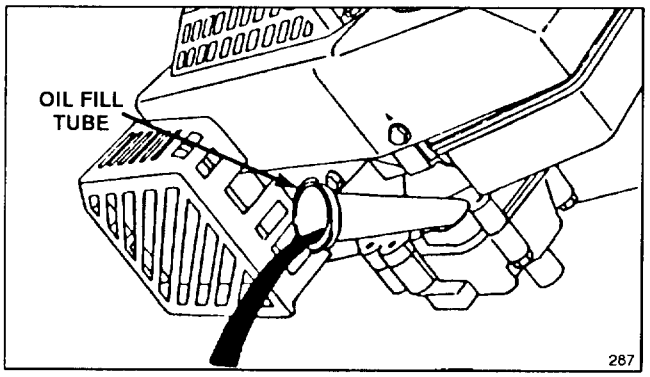


Figure 14

5. When oil is drained, return mower to upright position and add fresh oil to engine. Refer to Fill Crankcase With Oil, page 4.

ADJUSTING THROTTLE

Throttle control adjustment may be required if engine does not start or stop. Whenever a new throttle control cable is installed, throttle must be adjusted.

1. Stop engine and and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Move throttle control to 🐇 (FAST position).

3. Loosen cable clamp screw until throttle cable slides (Fig. 15).

4. Move throttle cable left or right until holes in throttle lever and throttle bracket align (Fig. 15).

5. Pull throttle cable slightly to remove any slack and tighten cable clamp screw to lock adjustment in place.

MAINTENANCE

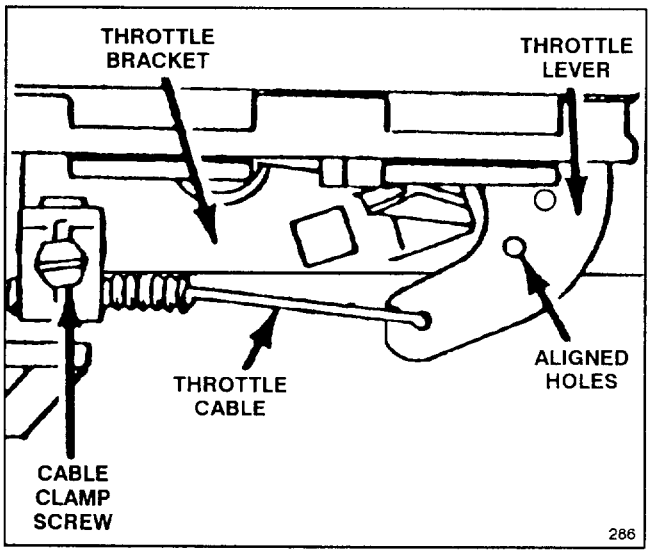


Figure 15

ADJUSTING WHEEL DRIVE

If mower does not self–propel or has a tendency to creep forward when drive is not engaged, an adjustment to the wheel traction control cable is necessary.

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Lift control bar until some resistance is felt. Control bar should be 1–1/2" from handle when properly adjusted (Fig. 16).

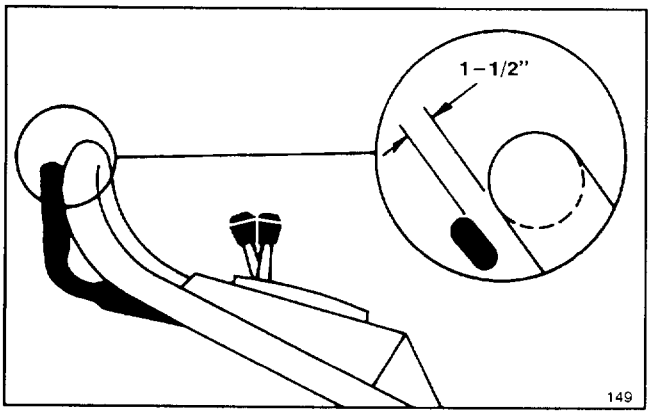


Figure 16

3. To adjust wheel drive cable, rotate knob under left front of control panel (Fig. 17). Rotate knob in positive (+) direction to increase the distance between the control bar and handle. Turn knob in negative direction (–) to decrease the distance between the control bar and handle.

4. Repeat steps 2 and 3 until properly adjusted.

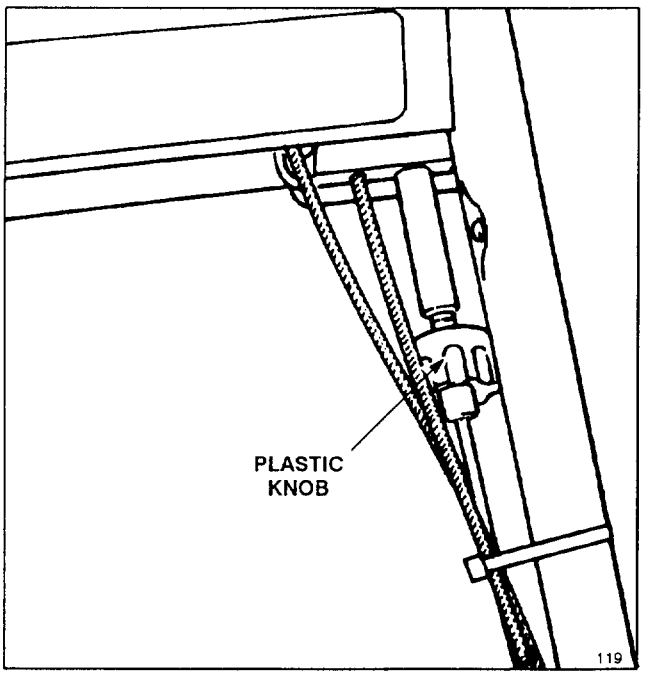


Figure 17

INSPECTING/REMOVING/SHARPENING BLADE

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Drain gasoline from fuel tank; refer to Draining Gasoline, page 9.

3. Tip mower on its left side (Fig. 18).

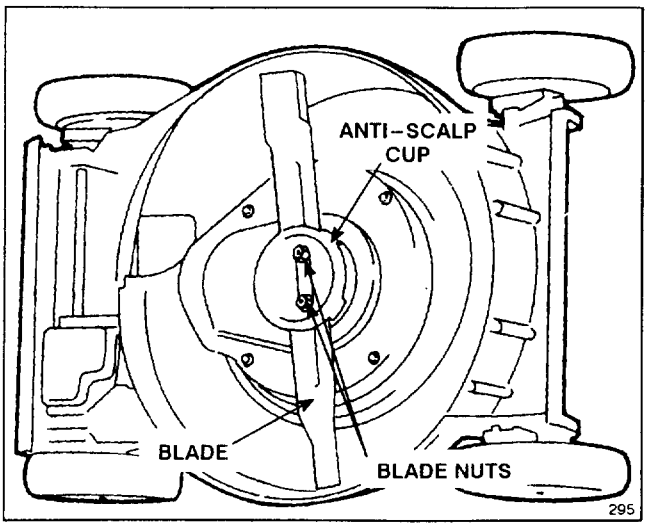


Figure 18

4. INSPECTING BLADE—Carefully examine blade for sharpness and wear, especially where flat and curved parts meet (Fig. 19A). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check blade before using the mower. If a slot or wear is noticed, (Fig. 19B & C), replace blade. Refer to step 5.

MAINTENANCE

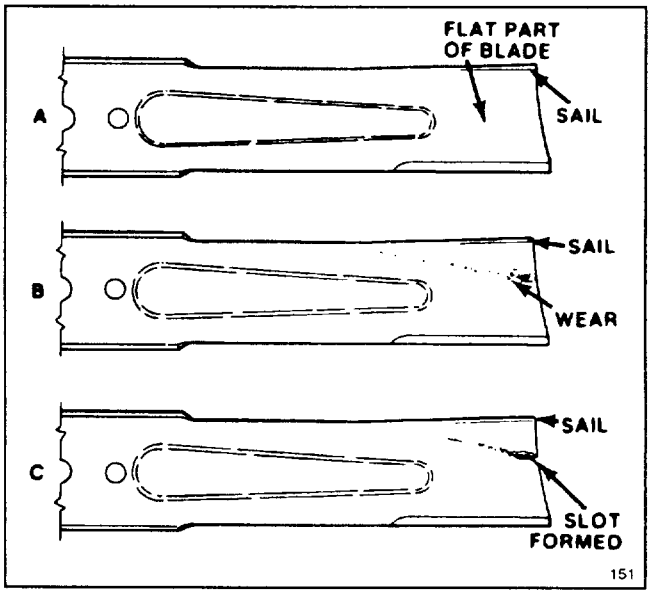


Figure 19

⚠ DANGER

- **A worn or damaged blade could break and a piece of blade could be thrown into operator's or bystander's area.**
- **A thrown piece of blade could cause serious personal injury or death to operator or bystanders.**
- **Inspect blade periodically for wear or damage.**
- **Replace a worn or damaged blade.**

5. REMOVING BLADE—Grasp end of blade using a rag or thickly padded glove. Remove blade nuts, anti-scalp cup, blade, blade spacer, and rotating screen (Fig. 18 & 20).

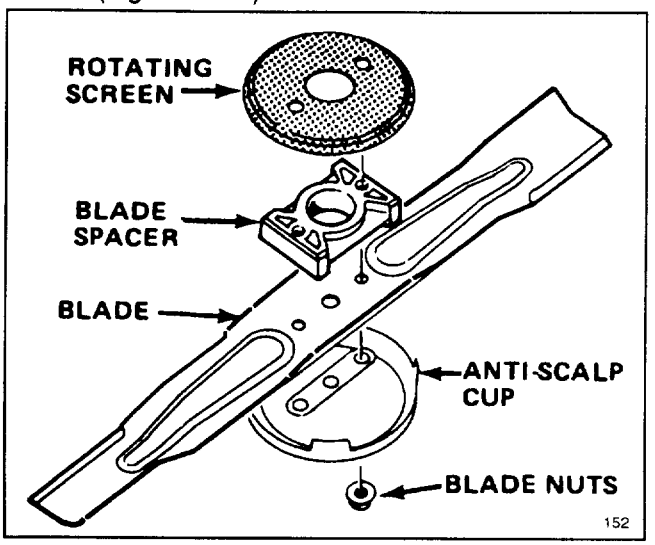


Figure 20

Note: For best performance, install new blade before cutting season begins. During the year, file down small nicks to maintain the cutting edge.

6. SHARPENING BLADE—Using a file, sharpen top side of blade and maintain original cutting angle (Fig. 21). The blade will remain balanced if the same amount of material is removed from both cutting edges.

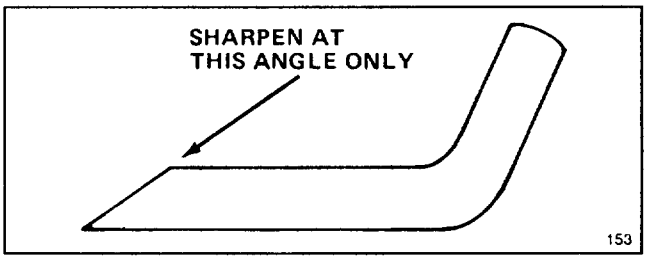


Figure 21

IMPORTANT: 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 and an unbalanced blade will settle to the heavy side. If the blade is not balanced, file more metal off cutting edge on heavy end of blade.

7. Install rotating screen (outside flange pointing away from housing), blade spacer, sharp, balanced blade, and anti-scalp cup with blade nuts. Sail part of blade must point toward top of mower housing to ensure correct installation. Tighten the blade nuts to 15-27 ft-lb.

LUBRICATION

After every 25 operating hours or when season ends, front and rear wheels must be lubricated.

1. Apply 2 or 3 drops of light oil on inside and outside of all wheel bolts. Spin wheels to distribute oil into bushings. Wipe up excess oil.

2. Move rear wheel height-of-cut levers to "C" setting. Wipe grease fittings with clean rag (Fig. 22). Install grease gun onto fitting and gently apply two or three pumps of #2 Multi-Purpose Lithium Base Grease.

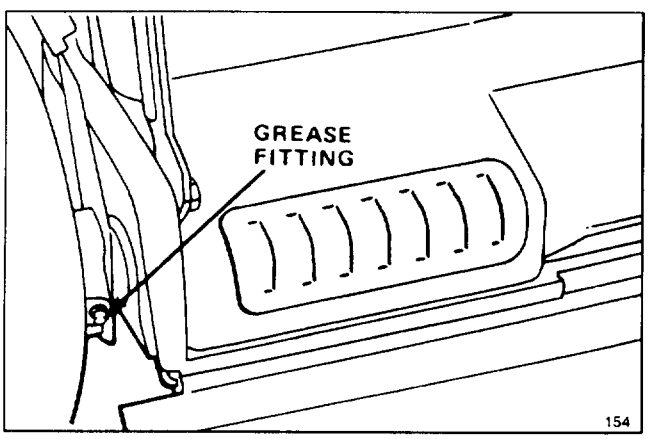


Figure 22

MAINTENANCE

ADJUSTING BLADE BRAKE

Blade brake adjustment may be necessary if the quality of cut deteriorates, the bagging ability degrades, or the engine rpm is audibly faster than the blade rpm when cutting grass.

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Remove (2) screws securing screen panel to top of mower housing (Fig. 23). Remove panel.

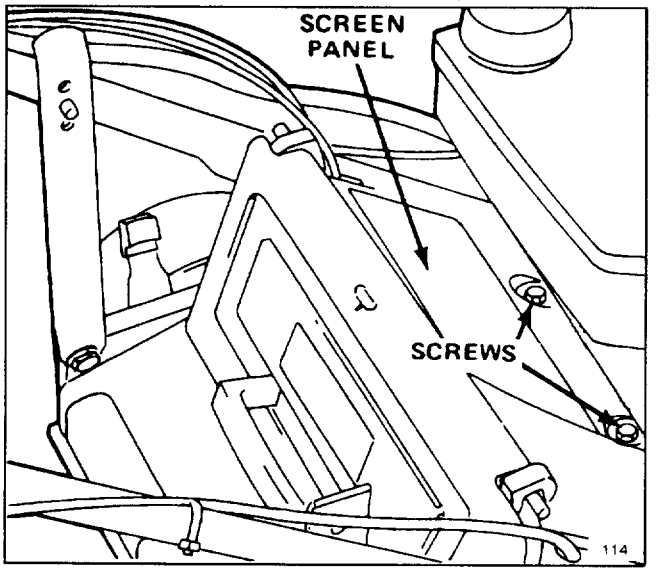


Figure 23

3. Move control bar down and lift up against handle. With control bar against handle, measure spring length (L) at the front of the spring as shown in Figure 24.

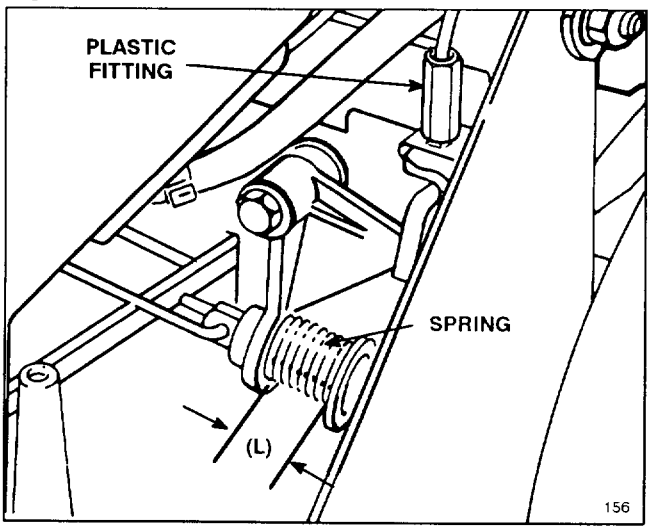


Figure 24

4. If spring dimension is greater than 1-1/4" or less than 1", an adjustment is needed.

5. To adjust, rotate plastic fitting on blade brake cable (Fig. 24) until spring dimension is as near as possible to but not less than 1". (See following note.)

Note: If the spring cannot be adjusted to less than 1-1/4" before reaching the end of the adjustment on the plastic fitting, the clutch belt is worn out and should be replaced. After replacing belt, adjust cable as explained in the above procedure.

6. Reinstall screen panel.

CHARGING BATTERY (model 27501)

Although a new battery is not fully charged, a partial charge of 4 hours provides enough energy for several starts. However, a new battery must be charged for 72 continuous hours to ensure full charge. Also charge battery for 72 hours when mower is stored and in the spring. During normal operation, engine alternator keeps battery charged.

1. Stop engine and wait for all moving parts to stop. Disconnect wire harness from battery terminal (Fig. 25).

2. If desired, battery can be removed by sliding it out of mounting tabs. However, removal is not required if mower can be positioned near an electrical outlet.

3. Connect TORO electro charger to battery and plug into 120VAC power outlet. After charging battery for specified time, unplug charger and disconnect from battery.

4. Connect wiring harness to battery terminal.

IMPORTANT: Only the TORO electro charger is recommended because other chargers could damage the battery. Always use charger indoors and charge battery at room temperature (+70°F) whenever possible. Do not charge battery longer than 72 hours because damage could result.

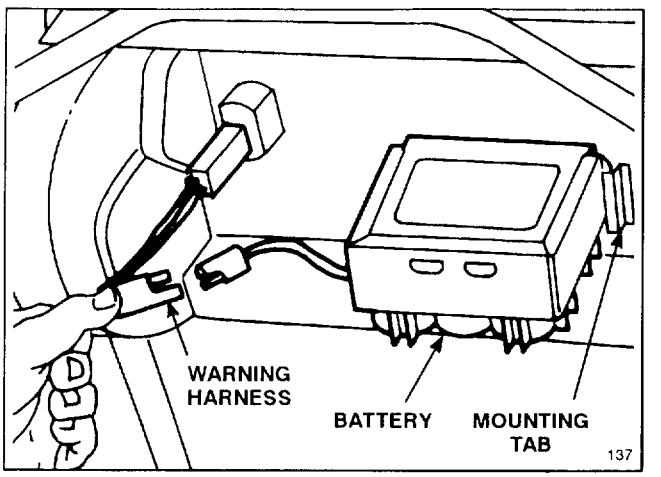


Figure 25

MAINTENANCE

CLEANING BLADE BRAKE CLUTCH SHIELDS

The BBC (Blade Brake Clutch) shield and the area behind the panel screen should be cleaned periodically, at the end of each mowing season at minimum, to ensure best performance and to prevent parts degradation.

CLEANING BEHIND PANEL SCREEN

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Remove (2) 1/2" self tapping screws securing panel screen to mower deck and remove panel screen (Fig. 26).

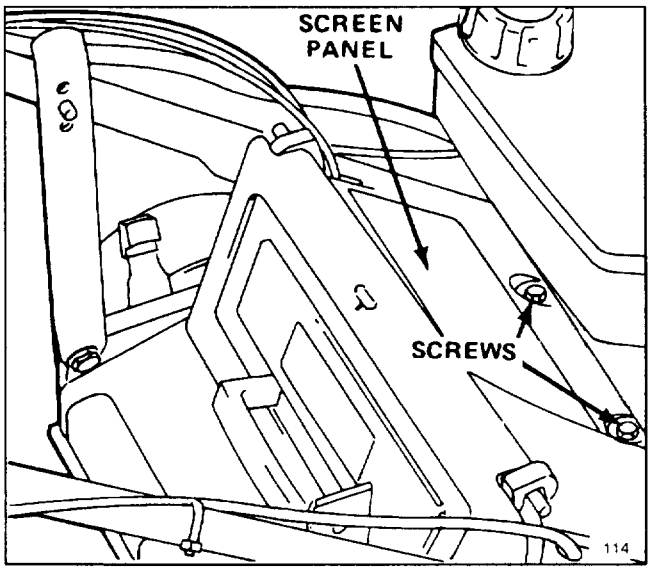


Figure 26

3. Remove the vertical panel in front of the transmission by pulling straight up (Fig. 27).

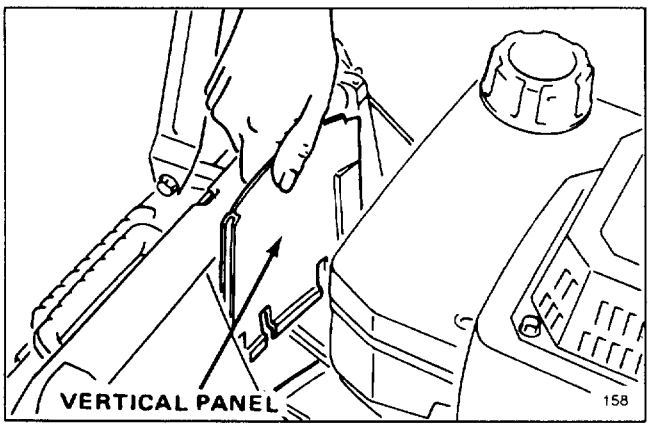


Figure 27

4. Remove any debris that may have accumulated in area behind panel (Fig. 28).

5. Reinstall vertical panel. Secure panel screen to mower deck with (2) 1/2" self tapping screws.

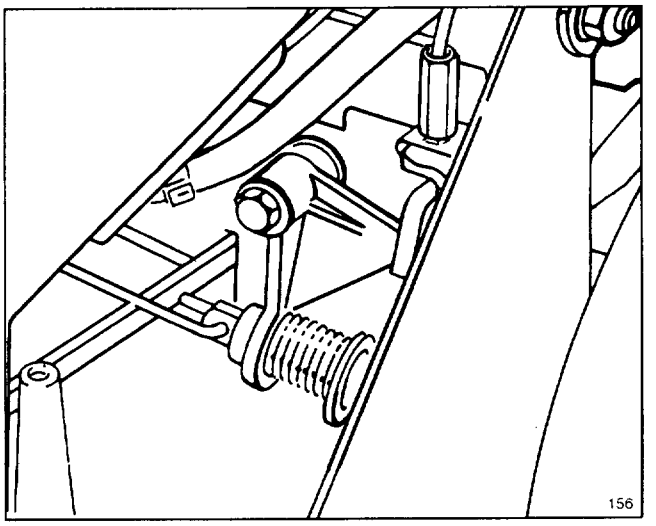


Figure 28

6. Reinstall spark plug wire.

CLEANING BLADE BRAKE CLUTCH SHIELD

1. Stop engine and and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Drain gasoline from fuel tank; refer to Draining Gasoline, page 9.

3. Tip mower on its left side.

4. Remove (2) blade nuts, anti-scalp cup, blade, blade spacer, and (4) bolts securing BBC shield to mower deck (Figs. 29 & 30).

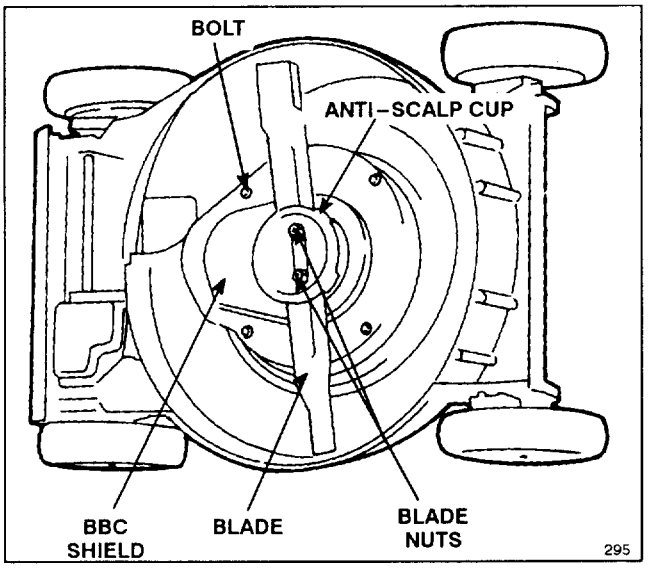


Figure 29

5. Brush or scrape debris from inside of shield.

6. Reinstall BBC shield using (4) bolts, blade spacer, blade, anti-scalp cup, and (2) blade nuts.

7. Reinstall spark plug wire.

MAINTENANCE

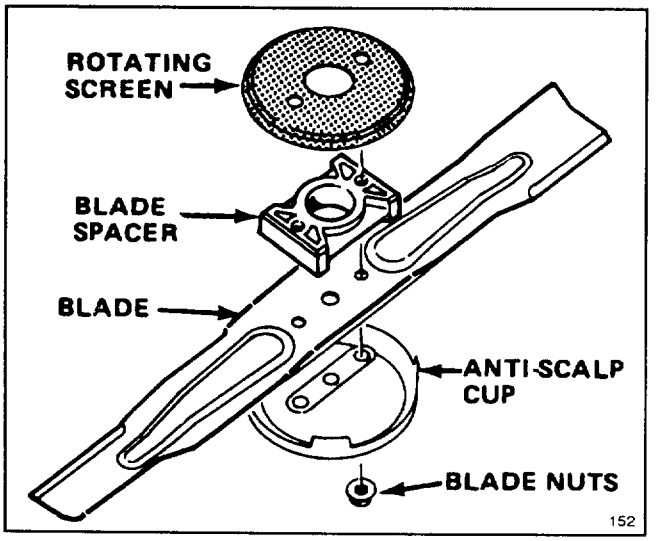


Figure 30

CLEANING MOWER HOUSING

To ensure best performance, keep underside of mower housing and inside of discharge area clean.

1. Stop engine and wait for all moving parts to stop. Pull wire off spark plug. Remove key from switch on electric start model.

2. Drain gasoline from fuel tank: refer to Draining Gasoline, page 9.

3. Tip mower on its left side (Fig. 31).

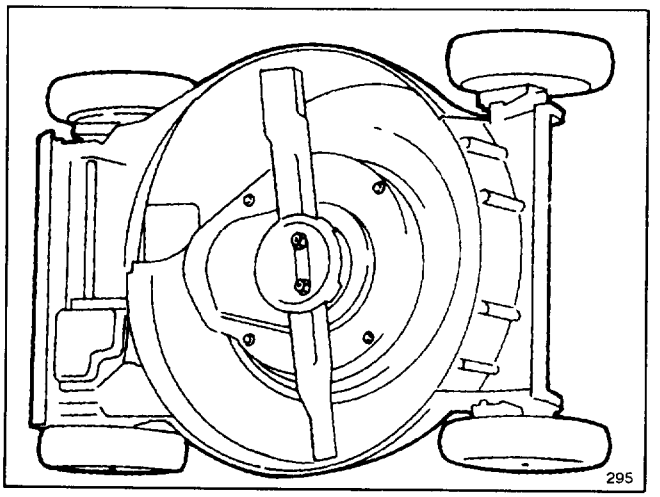


Figure 31

4. Remove dirt and grass clippings that stick to housing by scraping out debris with a hardwood scraper. Avoid burrs and sharp edges.

5. Clean discharge door and hinges of grass or debris that may impair operation of door. Use caution when cleaning door so you do not damage foam seal.

6. Remove screen panel on mower housing and clean around blade brake mechanism (Fig. 32 & 33).

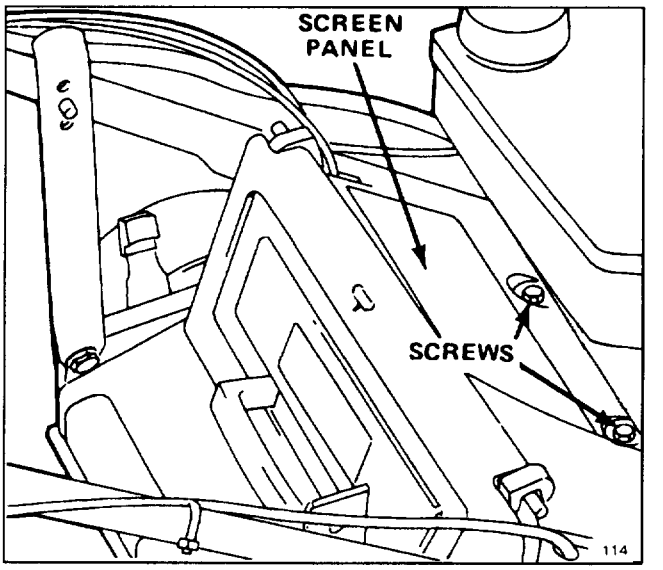


Figure 32

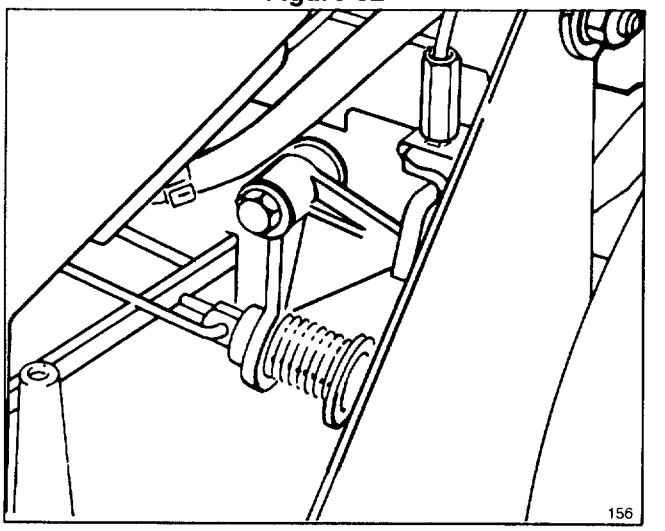


Figure 33

PREPARING MOWER FOR STORAGE

1. For long term storage, either drain gasoline from fuel tank or add a fuel stabilizer to the gasoline. To drain gasoline, refer to Draining Gasoline, page 9. After fuel is drained, start engine and let it idle until all fuel is consumed and engine stops. Repeat the starting procedure two more times to ensure all gas is removed from the engine. If gasoline is not drained, gum–like varnish deposits will form and cause poor engine operation, even starting problems.

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

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

MAINTENANCE

2. Drain oil: refer to Changing Crankcase Oil, page 9. After oil is drained, do not fill crankcase with oil until the following steps (3–11) are completed.

3. Remove spark plug and pour 2 tablespoons of SAE 30 oil into hole in cylinder. Pull starter rope slowly to coat inside of cylinder. Install spark plug and tighten to 14 ft–lb (19 N·m). **DO NOT INSTALL WIRE ON SPARK PLUG.**

4. Clean mower housing: refer to Cleaning Mower Housing, page 14.

5. Clean BBC shields: refer to Cleaning Blade Brake Clutch Shields, page 13.

6. Check condition of blade: refer to Inspecting/Removing/Sharpening Blade, page 10.

7. Tighten all nuts, bolts, and screws.

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

9. Clean air cleaner: refer to Servicing Air Cleaner, page 8.

10. Lubricate the wheels: refer to Lubrication, page 11.

11. Touch up all rusted or chipped paint surfaces. Toro Re–Kote paint is available from an Authorized TORO Service Dealer.

12. Fill crankcase with oil: refer to Fill Crankcase With Oil, page 4.

13. Charge battery for 72 hour (electric start model): refer to Charging Battery, page 12.

14. Store mower in a clean, dry place. Cover mower to keep it clean and protected.

PRODUCT IDENTIFICATION

A model and a serial number decal is located on underside of control panel. Always refer to specific numbers on this decal in correspondence or when replacement parts are needed.

TORO SERVICE SUPPORT

If help – concerning safety, set–up, operation, maintenance, or troubleshooting – 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 factory approved accessories and replacement parts. Keep your Toro all TORO. Buy genuine TORO replacement parts and accessories.

OPTIONAL EQUIPMENT

For special conditions the following accessories may be purchased at your local authorized TORO Service Dealer.

1. Side Discharge Kit, Model No. 59112—Installs in seconds. Rear mounted in place of the grass bag. Disperses clippings while trimming on both sides (Fig. 34).

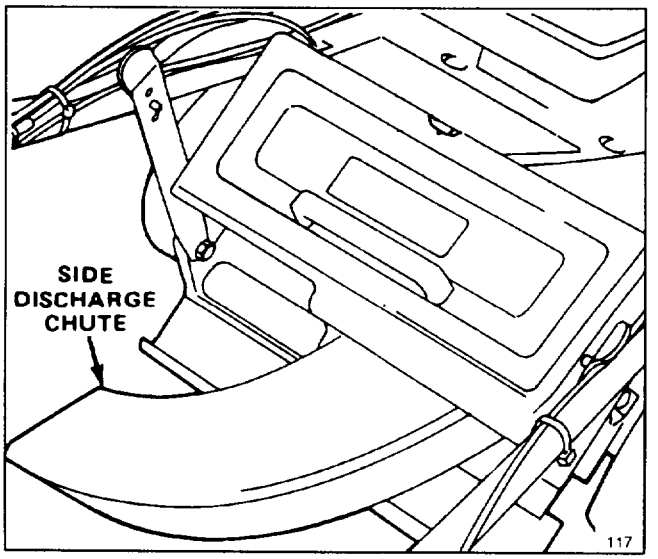


Figure 34

2. Mulching Plug Kit, Model No. 59181—Includes mulching plug (Fig. 35), mulching blade, blade stiffener and anti-scalp cup. Coverts rear bagging mower into a mulching mower.

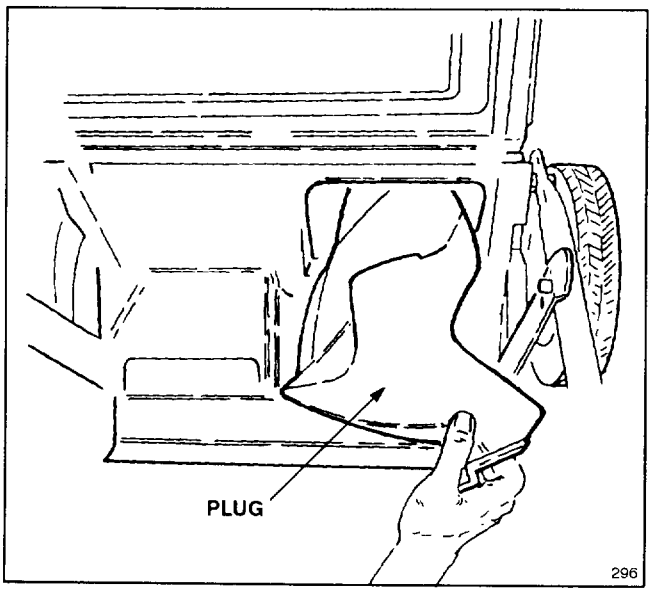


Figure 35

3. Dethatcher Kit, Model No. 59131—Installs in minutes. Front mounted for easy maneuverability. Spring tines loosen thatch for clean vacuuming into grass bag (Fig. 36) and convenient disposal.

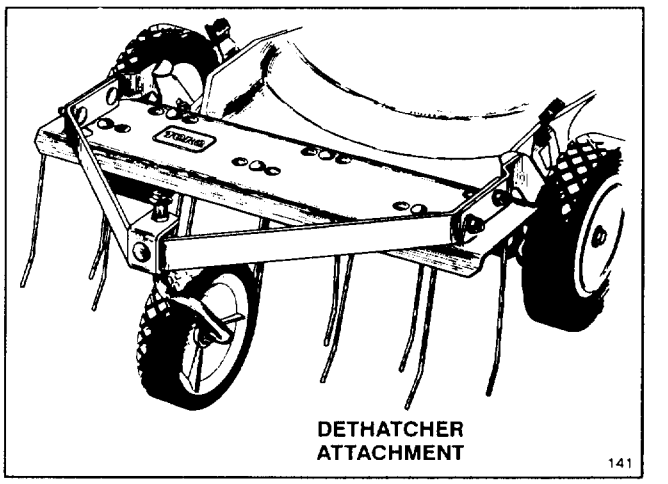


Figure 36

4. Leaf Shredder Kit, Model No. 59180—Installs on underside of mower in minutes without requiring removal of blade. Shreds leaves into small pieces for clean vacuuming into grass bag and convenient disposal (Fig. 37).

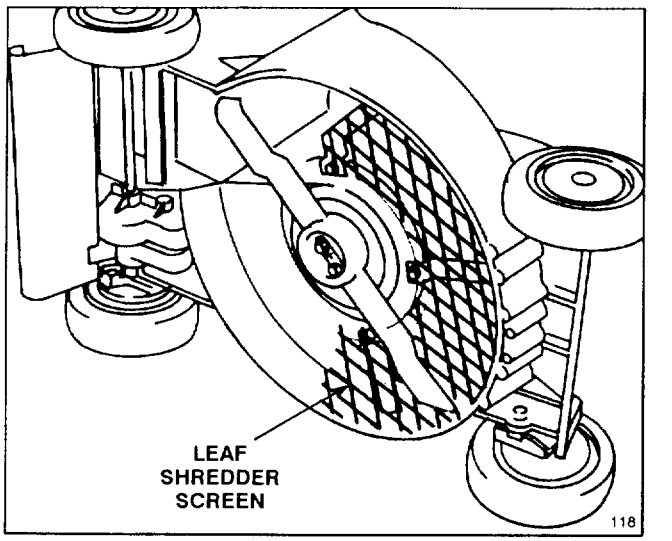


Figure 37

5. Spark Arrestor, Part No. 77-9040—If a spark arrestor is required because of local, state, or federal regulations, it may be purchased at your local Authorized TORO Service Dealer. If mower is operated on any California forest, brush, or grass covered land without a properly operating spark arrestor, the operator is violating state law, Section 4442 Public Resources Code.

It is Toro's policy to design and produce high quality products. To ensure customer satisfaction, Toro has extensive warranty coverage on its products. Your TORO GTS Engine powered product has two warranty statements covering it. The Toro Promise is our standard warranty statement and is printed on the last page of this manual.

In addition to The Toro Promise, we are so confident that the TORO GTS Engine will provide a high level of performance and durability that we are providing a *Starting Guarantee!* Please read the details of this additional warranty coverage printed below.

THE TORO STARTING GUARANTEE

A Five Year Limited Warranty
On All Toro GTS Engines

What Is Covered?

The Toro Company guarantees that your TORO GTS Engine will start on the first or second pull for five years from the date of purchase—if you provide the routine maintenance it requires—or we will fix it. The cost of parts and labor are included, but you must pay transportation costs. This covers TORO GTS rotary mower engines purchased after September 1, 1988, and TORO GTS snow engines (Models 38180 and 38185) purchased after August 31, 1989.

What Must You Do To Keep The Warranty In Effect?

You must maintain your TORO GTS Engine by following the maintenance schedule detailed in the operator's manual, at your expense. You must record this work in the maintenance chart provided in your owner's manual and keep your proof of purchase.

How Do You Get Service?

If the starting performance of your TORO GTS Engine should diminish to the point where it will not start in one or two pulls by a normal, able–bodied adult, you should follow the procedures below:

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, your maintenance records, and proof of purchase to the Service Dealer.

If, for any reason, you are dissatisfied with the Dealer's analysis of your engine's starting condition, or the assistance provided, please feel free to contact us:

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

What Does This Warranty Not Cover?

This Warranty does not cover:

1. Any repairs on products used commercially.
2. Normal maintenance including replacement of spark plugs, air filter, fuel filter, and carburetor adjustments.
3. Oil change and lubrication.
4. Repairs or adjustments due to:
   a. Failure to follow proper maintenance procedures;
   b. Rotary mower blade striking an object;
   c. Contaminants in the fuel system;
   d. Improper fuel or fuel mixture (consult your owner's manual if in doubt);
   e. Failure to drain the fuel system prior to any period of non-use over three months;
   f. Operation misuse, neglect or accidents;
   g. Repairs or attempted repairs by anyone other than an Authorized TORO Service Dealer.
5. Special operational conditions where starting may require more than two pulls, including:
   a. First time starts after extended period of non-use or seasonal storage;
   b. Cool temperature starts such as those found in early spring and late fall may require an additional pull or two (applies to rotary products only);
   c. Improper starting procedures. If you are having difficulty starting your unit, please check the operator's manual to ensure you are using the correct starting procedures. This can save an unnecessary visit to a Service Dealer.

All warranty repairs reimbursable under this warranty must be performed by an Authorized TORO Service Dealer using Toro approved replacement parts.
The above remedy through repair by an Authorized TORO Service Dealer is the purchaser's sole remedy.

How Does State Law Relate To This Warranty?

There is no other express warranty except for The Toro Promise. All implied warranties of merchantability (that the product is fit for ordinary use) and fitness for use (that the product is fit for a particular purpose) are limited to the duration of the express warranty.

Some states do not allow limitation on how long implied warranties last, so the above exclusion may not apply to you.

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 exclusions 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.

GUARANTEED TO START MAINTENANCE RECORD

To keep the starting guarantee in effect, you must perform the following maintenance after every 25 operating hours, more often in dusty and dirty conditions. Follow the procedures in this Operator's Manual and record information on this chart.

Date	Hours Used	Air Cleaner Service	Change Oil Doesn't Apply to 2-Cycle	Lubricate Wheels	Check Spark Plug	Mower Storage

TORO Consumer Products

THE TORO TOTAL COVERAGE GUARANTEE

A Full Two–Year Warranty
(Limited Warranty for Commercial Use)

What Is Covered By This Express Warranty?

The Toro Company promises to repair any TORO Product used for residential purposes if defective in materials or workmanship for a period of two years from the date of purchase. The cost of parts and labor are included, but the customer pays the transportation costs.

Transportation within a 15 mile radius of the servicing dealer is covered under this warranty for two–stage snowthrowers, walk behind debris equipment and all TORO Wheel Horse riding products. Walk power mowers, single stage snowthrowers, and other products not specifically covered, are excluded from the transportation coverage provided by this warranty.

What Products Are Covered By This Warranty?

This warranty applies to all gasoline powered Consumer Products (including TORO Wheel Horse riding products). Wide area walk behind mowers, ProLine 118, and 21" Commercial mowers without blade stop controls are covered by separate warranty statements.

How About Commercial Use?

TORO Consumer Products used for commercial, institutional or rental use are covered by a limited warranty for the following time periods from the date of purchase:

Products	Warranty Period
• 300 through 700 Series Tractors (except 612–Z) and 1600 HMR	
Chassis	1 year limited warranty
Engine	2 year limited warranty
• 21" Commercial Duty Walk Mower with blade stop controls	1 year limited warranty
• 200 Series Tractors, Rear Engine Riders, 612–Z, 1200 HMR 3.0 and 3.5 HP Edgers Straight Shaft Trimmers, and Backpack Blowers	90 day limited warranty
• All Others	45 day limited warranty

How Do You Get Warranty Service?

Should you feel your TORO product contains a defect in material or workmanship, contact the dealer who sold you the product or any Authorized TORO Service Dealer or TORO Master Service Dealer. The Yellow Pages of your telephone directory is a good reference source. The dealer will either arrange service at his/her dealership or recommend another Authorized Service Dealer who may be more convenient. You may need proof of purchase (copy of registration card, sales receipt, etc.) for warranty validation.

If for any reason you are dissatisfied with the Service Dealer's analysis of the defect in materials or workmanship or if you need a referral to a TORO Service Dealer, please feel free to contact us at the following address:

Toro Customer Service Department
8111 Lyndale Avenue South
Minneapolis, MN 55420
612–888–8801

What Must You Do To Keep The Warranty In Effect?

You must maintain your TORO Product by following the maintenance procedures described in the operator's manual. Such routine maintenance, whether performed by a dealer or by you, is at your expense.

What Does This Warranty Not Cover? and How Does Your State Law Relate To This Warranty?

There is no other express warranty except the TORO Starting Guarantee on GTS Engines. This express warranty does not cover:

- Cost of regular maintenance service or parts, such as filters, fuel, lubricants, tune–up parts, blade sharpening, brake and clutch adjustments.
- Any product or part which has been altered or misused or required replacement or repair due to normal wear, accidents, or lack of proper maintenance.
- Repairs necessary due to improper fuel, contaminants in the fuel system, or failure to properly prepare the fuel system prior to any period of non–use over three months.
- Pickup and delivery charges for distances beyond a 15 mile radius from an Authorized TORO Service Dealer (covered products only).

All repairs covered by this warranty must be performed by an Authorized TORO Service Dealer using Toro approved replacement parts.

Repair by an Authorized TORO Service Dealer is your sole remedy under this warranty.

The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the TORO Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non–use pending completion of repairs under this warranty. Some states do not allow exclusions of incidental or consequential damages, so the above exclusion may not apply to you.

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

COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the TORO importer. If all other remedies fail, you may contact us at The Toro Company.