



MODEL NO 51660 - 8000001  
thru 9000001 & UP

## OPERATOR'S MANUAL

# TC3500 GAS TRIMMER



## SAFETY INSTRUCTIONS

To assure optimum performance, and to gain knowledge of the Trimmer, it is essential that you or any other operator of the Trimmer read and understand the contents of this manual before operating Trimmer. Pay particular attention to the instructions highlighted by the safety alert symbol. Failure to comply with the safety instructions may result in personal injury.

### BEFORE OPERATING

1. Operate the machine only after reading and understanding the contents of this manual. A replacement manual is available by sending complete model and serial number to: The Toro Company, 8111 Lyndale Avenue South, Minneapolis, Minnesota 55420.

2. Never allow children to operate the Trimmer. It is not a toy. Never allow adults to operate unit without first reading the Operator's Manual.

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

4. Always wear safety goggles or safety glasses while operating trimmer. The following articles of apparel are strongly recommended and are required by some local safety and insurance regulations:

- A. Safety glasses/goggles —REQUIRED
- B. Safety shoes
- C. Long pants
- D. A long sleeved shirt
- E. Ear plugs

Dress properly — Do not wear loose clothing or jewelry. They can be caught in moving parts.

5. Keep the area of operation clear of all persons, particularly small children and pets.

6. Never operate Trimmer when you are fatigued.

7. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operating the machine.

8. Gasoline is highly flammable. Trimmer is fueled with a mixture of gasoline and oil. Indoor or outdoor heat, sunlight or engine heat may cause flammable gasoline vapors which pressurize Trimmer fuel tank. Observe all the following precautions:

- A. Use an approved fuel container for storing the gasoline/oil mixture.
- B. Do not fill tank when engine is hot or running.
- C. Do not smoke while handling gasoline.
- D. Fill fuel tank outdoors and up to about one-half inch (13 mm) from the top of the tank, not the filler neck.
- E. Wipe up any spilled gasoline before starting the engine.
- F. Before transporting Trimmer in a vehicle, drain all gasoline from fuel tank.
- G. Store Trimmer in a cool, ventilated place.
- H. Lay Trimmer on a flat surface with engine in upright position when not operating, to avoid saturating inner parts of gas cap.

### WHILE OPERATING

9. Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could be deadly.

10. Always be sure of your footing; keep a firm hold of the handles with both hands, and walk, never run, during operation. Shut the engine off before proceeding to the next area of operation.

11. The Trimmer is intended to be used as a means of trimming grassy, and weedy areas only. DO NOT use the Trimmer for such things as tree pruning or hedge trimming. Do not use the Trimmer for vertical edging. The grass shield is designed only for horizontal trimming.

12. When using a metal blade cutting attachment, the blade can be suddenly and uncontrollably thrust in any direction when blade strikes a solid object while rotating at high speed. Do not put hands or feet near or under rotating parts. Keep all people and animals far away while operating. Operator contact with rotating metal blade or debris thrown will cause severe injury.



## SAFETY INSTRUCTIONS

13. If the Trimmer should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

14. Avoid using the Trimmer near rocks, gravel, stones or other debris which could be picked up and thrown or personal injury could result.

15. Use Trimmer only in daylight or good artificial light.

16. Shut off engine and be certain all moving parts have completely stopped rotating before inverting Trimmer.

17. Never use wire or metal reinforced string in place of monofilament cutting line.

18. Wear a long sleeve or other similar arm protection to avoid possible contact with hot engine surfaces.

19. When using a cutter blade on trimmer, a shoulder harness must be worn.

## MAINTENANCE

20. Before servicing or making adjustments to the machine, stop the engine and pull wire off spark plug to prevent accidental starting of the engine.

21. Assure entire machine is in good condition. Keep all nuts, bolts and screws properly tightened.

22. Replace cracked or damaged parts before operating. If major repairs are ever needed or if assistance is desired, contact an Authorized Toro Service Dealer.

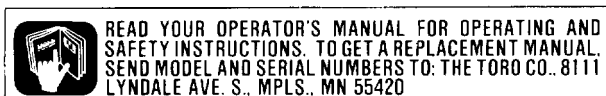
23. To reduce potential fire hazard, keep the engine area free of excessive oil, grass, leaves and accumulation of dirt.

24. If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing and any part of the body away from any moving parts. Keep everyone away.



## SAFETY INSTRUCTION DECALS

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



ON DRIVE SHAFT TUBE  
(Part No. 65-3100)



ON ENGINE  
(Part No. 65-2690)



ON DRIVE SHAFT TUBE  
(Part No. 65-3090)

# TABLE OF CONTENTS

	Page		Page
Assembly Instructions . . . . .	3	Servicing Muffler . . . . .	10
Mount J-Handle . . . . .	3	Replacing Spark Plug . . . . .	11
Attach Harness . . . . .	3	Cooling System Service . . . . .	11
Installing Optional Cutter Blade . . . . .	3	Servicing Air Cleaner . . . . .	11
Before Operation . . . . .	5	Replacing Fuel Filter . . . . .	12
Mix Gasoline & Oil . . . . .	5	Adjusting Throttle Control . . . . .	12
Operation . . . . .	6	Removing Cutting Head . . . . .	12
Starting & Stopping Instructions . . . . .	6	Lubricate Gear Case . . . . .	13
Centrifugal Clutch . . . . .	6	Preparing Trimmer For Storage . . . . .	13
Engine Operation . . . . .	7	Optional Spark Arrestor . . . . .	14
Operating Tips . . . . .	7	Product Identification . . . . .	14
Lengthening Cutting Line . . . . .	8	Toro Service Support . . . . .	14
Maintenance . . . . .	9-13	Accessories . . . . .	14
Replacing Cutting Line . . . . .	9	Troubleshooting Chart . . . . .	15
Adjusting Carburetor . . . . .	9		

## ASSEMBLY INSTRUCTIONS

### MOUNT J-HANDLE (Fig. 1)

1. Loosely secure J-handle to tube (between decals) with handle clamp. Do not cover safety decals with handle clamp.

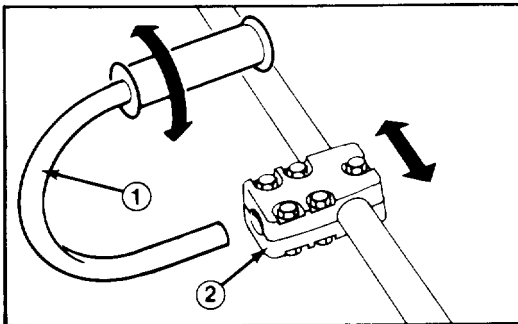


Figure 1

1. Handle  
2. Handle clamp

2. Position handle to assure maximum comfort and balance for operator. Handle can be adjusted for right or left hand operator. Position on right side of tube for right handed operator. Tighten clamp screws.

### ATTACH HARNESS (Fig. 2)

1. Stand on left side of unit, hang belt over left shoulder with harness hook assembly located by right hip. Shoulder harness should lie diagonally across chest with harness hook assembly at right hip.

2. Snap harness hook through ring in hanger ring.

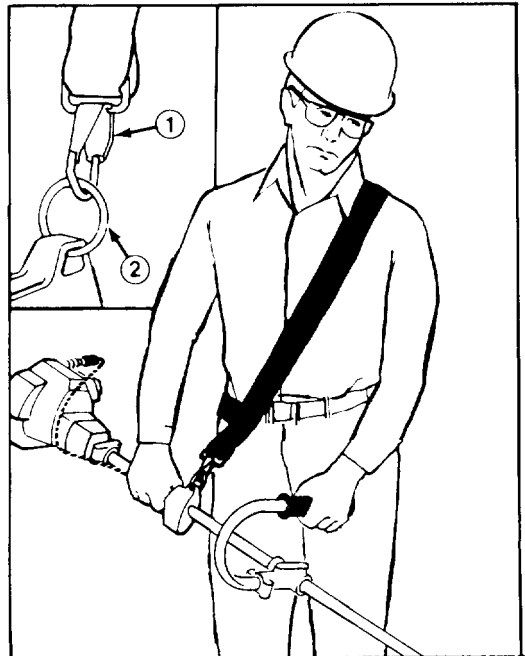


Figure 2

1. Harness hook 2. Ring

3. Adjust harness to comfortable position for holding trimmer.

### TO RELEASE HARNESS:

1. Unsnap harness hook from hanger ring.

# ASSEMBLY INSTRUCTIONS



## WARNING

Stop engine and wait for cutting head to stop. Disconnect wire from spark plug before inverting trimmer.

### INSTALLING OPTIONAL CUTTER BLADE (Fig. 3 & 4);

1. Remove cutting head assembly installed on trimmer. Refer to Removing Cutting head, page 12.

**Note:** Blade mounting plate has a cup shaped recess for nut.

2. Install blade (teeth pointing in clockwise direction when viewed from bottom), Mounting plate, and nut onto shaft.

**Note:** Hole in blade fits over raised diameter of gearbox cap.

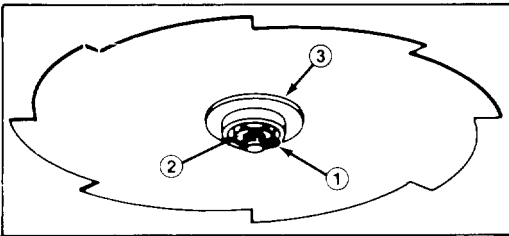


Figure 3

1. Cotter pin 2. Nut 3. Mounting plate

3. Rotate gearbox cap until notch in cap is aligned with slot in shield. Insert medium blade screwdriver thru slot in shield and into notch in gearbox cap.

4. Keep shaft from rotating by holding screwdriver as shown and tightening nut securely with wrench (Left hand thread) (Fig. 4).

5. Insert cotter pin through hole in shaft and wrap ends around shaft (Fig. 3).

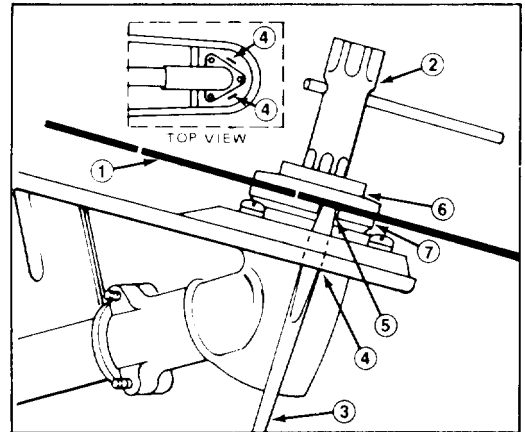


Figure 4

1. Blade  
2. Wrench  
3. Screwdriver  
4. Slot in shield

5. Notch in gearbox cap  
6. Mounting plate  
7. Gearbox cap



## WARNING

To prevent blade from loosening and possible personal injury, insert a new cotter pin through hole in shaft and wrap ends around shaft (Fig. 3).



## WARNING

Inspect blade before each use and discard if cracked, nicked, bent or damaged in any way.

**Note:** If a blade needs sharpening, contact a reputable saw sharpening service.

# BEFORE OPERATING

**⚠ 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 gasoline in an approved container and keep it out of the reach of children.

Refuel outdoors, only when engine is cold. Fill tank to within 1/4" to 1/2" (6 to 13 mm) from its top. This space is for expansion of fuel. Use funnel or spout to prevent spilling. Wipe up any spilled gas.

## MIX GASOLINE AND OIL - 32:1 RATIO

1. Approved Mixture — For simplicity and best engine performance, mix the contents of one 8-ounce bottle of Toro 32:1 Two-Cycle Oil with two gallons of fresh unleaded regular gasoline. Leaded regular gasoline may be used if unleaded regular is not available.

Toro Two-Cycle Oil is specially formulated to provide superior lubrication, make starting easy and prolong engine life. If Toro Two-Cycle Oil is not available, mix two gallons of gasoline and 8 ounces of another high grade two-cycle oil that has the NMMA or BIA-TCW certification printed on the label.

**IMPORTANT:** YOU CAN ALSO USE TORO "EASY MIX" TWO-CYCLE OIL (3.2 OUNCE BOTTLE MIXED ONE PER GALLON OF GASOLINE 40:1 RATIO) IN THIS TORO TWO-CYCLE ENGINE.

**NEVER USE AUTOMOTIVE OIL** (i.e. SAE 30, 10W30 etc.). TWO-CYCLE OIL THAT IS NOT CERTIFIED NMMA/BIA-TCW OR THE WRONG MIX RATIO BECAUSE THE ENGINE CAN

BE DAMAGED AND IT WOULD NOT BE COVERED BY THE TORO WARRANTY.

2. Mixing Gasoline and Oil — Pour correct amount of two-cycle oil into an approved gasoline container and add a half gallon of gasoline. Install cap on gasoline container and shake the container to mix oil and gas thoroughly. Remove cap and add remaining amount of gasoline.

**IMPORTANT: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOLINE CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GAS OR WHITE GAS BECAUSE THE ENGINE FUEL SYSTEM COULD BE DAMAGED.**

**FUEL STABILIZERS WITH ISOPROPYL ALCOHOL CAN BE USED, HOWEVER. TORO GAS STABILIZER AND FUEL CONDITIONER IS RECOMMENDED TO KEEP THE ENGINE CLEAN AND ASSURE EASY STARTS.**

**NOTE:** Do not mix gasoline and oil in the product fuel tank. Oil that is at room temperature mixes easier and more thoroughly than cold oil.

## 32:1 GAS/OIL Mixing Chart

U.S. GALLON	
Gasoline	Oil
0.8 gallon	3.2 oz.
1 gallon	4 oz.
2 gallons	8 oz.

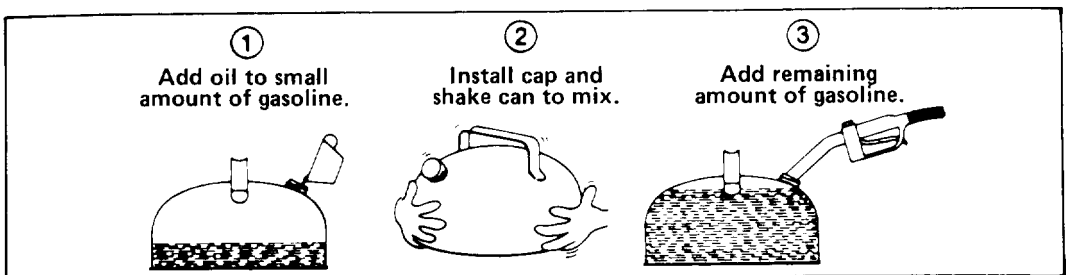


Figure 5

# OPERATION

## STARTING AND STOPPING INSTRUCTIONS (Fig. 6, 7 & 8)

### Cold Engine

1. Lay trimmer on a flat surface with engine in upright position.
2. Raise Tickler button and hold up while pushing primer bulb repeatedly until fuel begins to enter sight tube.

**Note:** If primer bulb is pushed repeatedly without holding tickler button, engine flooding may result.

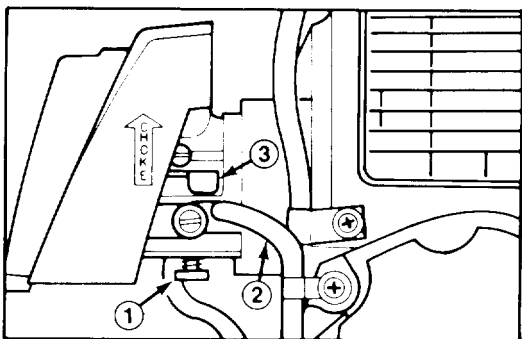


Figure 6

- 1 Tickler button
- 2 Sight tube
- 3 Choke lever

3. Move ignition switch to "ON" position.
4. Leave throttle trigger in idle position and move choke to "UP" position.

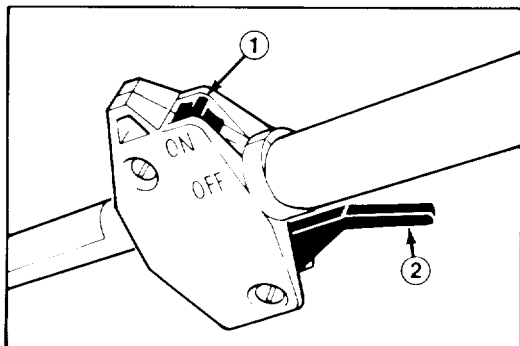


Figure 7

1. Ignition switch
2. Throttle trigger

5. Pull recoil starter handle out slowly until starter ratchets are engaged, then pull handle with short, sharp strokes until engine starts. Lower choke halfway for 10-30 seconds, then lower completely.

**Note:** If engine fails to start, lower choke completely and squeeze and hold throttle trigger halfway, then repeat step 5.

### Warm Engine

1. Move ignition switch to "ON" position.

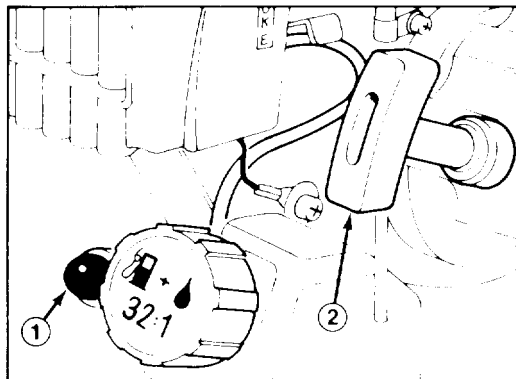


Figure 8

1. Primer bulb
2. Recoil starter

2. Leave throttle in idle position.
3. Pull recoil starter (3) times. If engine does not start; raise choke, pull recoil starter once, lower choke, then pull starter until engine starts.

**NOTE:** If using gasohol or gasoline containing ethanol (noted on fuel pump where purchased), partial choke may be necessary when starting trimmer.

### To Stop Engine:

1. Release throttle trigger and move ignition switch to "OFF" position.



### WARNING

The cutter head continues to rotate for a few seconds after the engine is shut off. Do not place any part of the body in the cutter head area until you are sure the cutter head has stopped.

### CENTRIFUGAL CLUTCH

This machine is equipped with a centrifugal clutch which is designed to engage when engine speed reaches approximately 3600 - 4200 RPM. This is the point at which the cutter head begins to rotate. The clutch will slip to prevent possible engine damage should the cutter head be prevented from rotating. Should this situation occur, STOP ENGINE, remove obstruction and resume operation.

# OPERATION

## ENGINE OPERATION

1. Allow the engine to run at idle speed a few minutes to warm up before using.

**IMPORTANT:** The cutting head should not rotate at engine idle speed. If cutting head rotates at idle, decrease idle speed by adjusting idle speed screw. Refer to Adjusting Carburetor, page 9.

**Note:** DO NOT have engine under load during this warm up period.

2. By squeezing throttle lever, increase engine RPM to speed required for operation before placing trimmer under load.

**IMPORTANT:** Do not use trimmer at very low engine speeds (below 6000 RPM). Cutting efficiency will be poor and clutch damage could result.

3. ALWAYS reduce engine speed to idle when not trimming.

4. NEVER operate the engine at high RPM without line extended.

5. When starting trimmer engine initially, check carburetor adjustments, refer to Adjusting Carburetor, page 9.

## OPERATING TIPS




### WARNING

Always wear safety goggles or other suitable eye protection and long pants and shoes while operating Trimmer. Wear a long sleeve shirt or other similar arm protection to avoid possible contact with hot muffler surface. Ear protection must be worn when operating trimmer for prolonged periods of time (over 2½ hours).

1. The Trimmer will cut grass, weeds, ivy and other similar grasses, and can be used to cut areas around shrubs, foundation walls, along fences, sidewalks and patios.

Be sure to inspect area to be trimmed for any wire, cord, or string-like matter which could become entangled in and thrown by the rotating line.

2. Do not force the unit. Remember it is only the tip of the cutting line that does the job. Forcing the line against an object like a foundation wall or fence could cause the line to break.

3.  Get comfortable. Adjust the harness so it fits snugly and adjust the handle according to your height and the job you are doing. When trimming you should be standing in a natural



### CAUTION

Always be sure of your footing when operating Trimmer.

position without having to bend over or stand on your toes.

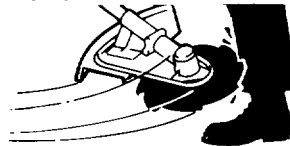
4. Slowly move Trimmer in a side to side motion into the area being cut, while, at the same time, holding the unit at the desired height of cut. Always tip the leading edge of the cutter slightly downward to gain maximum efficiency.

5. The life of your cutting line is dependent upon following the above trimming techniques, as well as what is being cut, and where the cutting is being done. **EXAMPLE:** Line will wear faster when run against a foundation wall as compared to trimming around a tree. Some line breakage will occur from moving unit too fast, from entanglement with foreign matter, from normal line fatigue, and from attempting to cut thick, stalky weeds in excess of unit's capability.

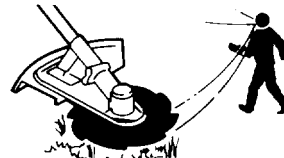


### DANGER

When using a metal blade cutting attachment, the blade can be suddenly and uncontrollably thrust in any direction when blade strikes a solid object while rotating at high speed. Contact of rotating blade with nearby persons or animals will cause severe injury.



Debris thrown by blade or nylon line cutting attachments can cause severe injury to nearby persons or animals.



**KEEP ALL PEOPLE AND ANIMALS FAR AWAY FROM TRIMMER/BRUSHCUTTER WHILE OPERATING.**



# OPERATION



## DANGER

DO NOT USE THE 8-TOOTH METAL BLADE CUTTING ATTACHMENT (TORO PART NO. 51-1240) TO CUT WOODY PLANTS MORE THAN 1/2" THICK. THE BLADE MAY FRACTURE RESULTING IN PERSONAL INJURY.

DO NOT USE ANY METAL BLADE IF CRACKED, NICKED, DISTORTED OR DAMAGED IN ANY WAY.



## WARNING

DEBRIS THROWN BY CUTTING ATTACHMENTS CAN CAUSE SEVERE INJURY TO OPERATOR'S EYES. ALWAYS WEAR SAFETY GOGGLES OR SAFETY GLASSES WHILE OPERATING TRIMMER/BRUSHCUTTER.



Safety goggles/glasses must comply with the latest ANSI Z 87.1 Standard to assure adequate eye protection. If you do not have appropriate safety goggles/glasses, you are expected to procure them before operating this product. Safety goggles/glasses can be purchased at trimmer/brushcutter dealers, hardware stores and industrial supply companies.



## WARNING

OPERATOR CONTACT WITH ROTATING METAL BLADE WILL CAUSE SEVERE INJURY.

Metal blade spins for up to 30 seconds after shutting engine off. REMAIN AT CONTROLS UNTIL BLADE COMPLETELY STOPS.

**BLADE SPINS  
30 SEC.  
AFTER  
ENGINE  
IS OFF.**



DO NOT OPERATE TRIMMER/BRUSHCUTTER WITHOUT CUTTING HEAD GUARD IN PLACE.

ALWAYS USE SHOULDER HARNESS WHEN USING METAL BLADE CUTTING ATTACHMENT.

## LENGTHENING CUTTING LINE (Fig. 9-10)

Never extend lines more than 6 inches (15 cm) from eyelets or the cutter head RPM will be slowed and cutting efficiency affected.



## WARNING:

Do not use any type of wire or other string-like substance. Use only Toro approved replacement monofilament line. Use of improper monofilament line could result in personal injury.

1. Loosen spool knob until spool teeth are above spool housing (Fig. 9).
2. Slowly pull out desired amount of line (Fig. 10).
3. Align spool teeth with notches in spool housing and tighten knob securely. Make sure spool teeth are in notches before tightening knob (Fig. 9).

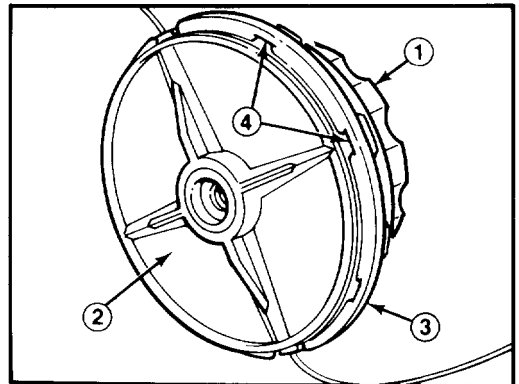


Figure 9

- |          |                  |
|----------|------------------|
| 1. Knob  | 3. Spool Housing |
| 2. Spool | 4. Spool Teeth   |

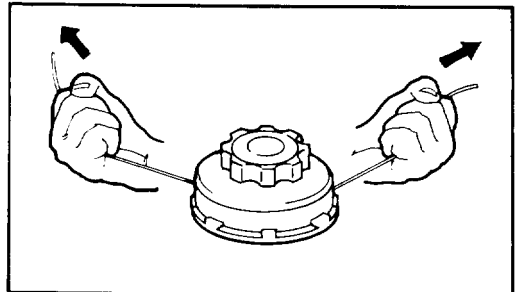


Figure 10



# MAINTENANCE

## REPLACING CUTTING LINE (Fig. 11-12)

1. To replace cutting line when your factory furnished supply runs out, you may purchase replacement line to rewind the empty spool from your Toro Retailer.

The cutter head is designed to use .080", .095", .105" or .130" dia. nylon monofilament cutting line.

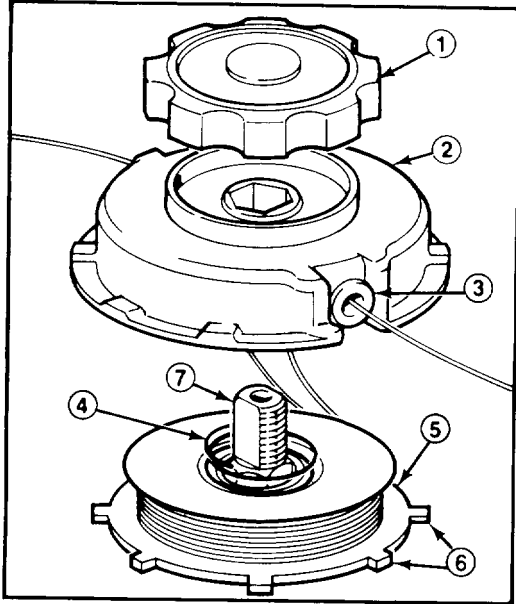


Figure 11

- 1. Knob
- 2. Spool Housing
- 3. Eyelet
- 4. Spring
- 5. Spool
- 6. Teeth
- 7. Shaft

Use .080" dia. line for trimming fine grasses and light weeds.

Use .095" or .105" dia. line for cutting heavy grasses and weeds.

.130" dia. line can be used for cutting very thick, stalky weeds.



### CAUTION

**Shut off engine and be certain cutter head has completely stopped rotating before inverting trimmer.**

2. Loosen spool knob until it can be removed (Fig. 11).

3. Slide spool housing, spring and spool from mounting shaft.

4. To rewind empty spool, use the following steps:

A. Determine correct maximum amount of line to use by using the chart below:

LINE DIA.	LENGTH (Feet)
.080"	38
.095"	24
.105"	20
.130"	12

B. Insert end of line into spool line retainer. Pull line thru so equal amounts of line are on each end (Fig. 12).

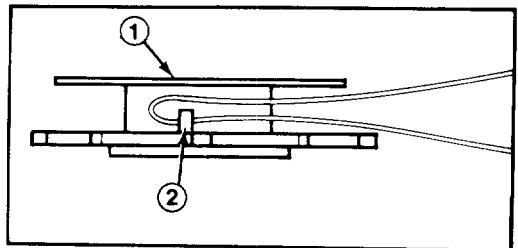


Figure 12

- 1. Spool
- 2. Retainer

C. Wind line in direction of arrows on spool in level rows between spool flanges.

D. Do not wind more than the determining amount of line on spool. Wound line should not extend outside smaller flange on spool.

**Note:** Before reassembly, be sure to thoroughly clean out spool housing and visually inspect for damage or worn parts.

E. Thread ends of line thru eyelets in spool housing while inserting spool and spring into housing. Make sure teeth fit into notches in spool housing.

F. Secure spool and housing to mounting shaft with knob.

G. Trim ends of line to equal lengths. Lines should not extend more than 6 inches (15 cm) from eyelets.

## ADJUSTING CARBURETOR (Fig. 13)

The carburetor has been adjusted at the factory, but an adjustment may be required to compen-

# MAINTENANCE

sate for differences in fuel, temperature, and altitude.

**IMPORTANT:** Correct amount of line must be extended from trimmer head before adjusting carburetor.



## CAUTION

To prevent personal injury, use extreme caution when an adjustment or maintenance procedure must be performed while the engine is running. Pull high tension wire off spark plug if engine does not have to be running while performing adjustment or maintenance procedures.

**IMPORTANT:** Do not adjust screws too tight because the screw and seat will likely be damaged.

1. Fuel Mixture Screw — Close screw by gently rotating it clockwise until a slight seating resistance is felt. Next, rotate screws  $2\frac{1}{2}$  turns counterclockwise.

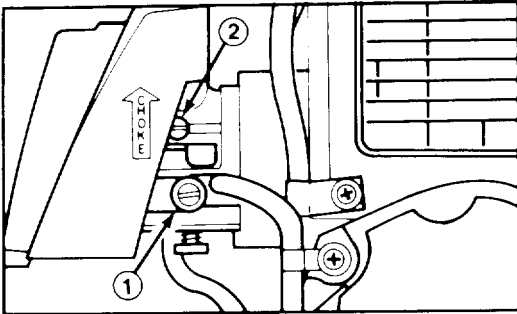


Figure 13

1. Fuel mixture screw 2. Idle speed screw

2. Idle Speed Screw — Close screw by gently rotating it clockwise until spring is compressed. Do not overtighten spring so coils overlap. Next, rotate screw 4-5 turns counterclockwise.

**Note:** These settings are approximate; however, they allow engine to be started so carburetor can be fine tuned — steps 5-8.

3. Start the engine and let it warm up for approximately 3-5 minutes. Do not adjust carburetor when engine is cold. Be sure to perform carburetor adjustments while at a temperature that will be the average outdoor temperature at which the Trimmer will be used. Allow the engine to idle. If necessary, readjust the idle speed to keep the engine from stalling (2700-3100 RPM). Turning screw clockwise increases idle speed, counterclockwise decreases idle speed.



## CAUTION

Engine must be running so final adjustment of the carburetor can be performed. To guard against possible personal injury, keep hands, feet, and face away from concealed, moving, or rotating parts.

**Note:** When making adjustments turn adjustment screws  $1/8$  turn at a time and wait for engine to respond to change.

4. With throttle trigger in the maximum speed position, turn the fuel mixture screw clockwise slowly and note the position at which the engine speed is reduced. Now turn the fuel mixture screw counterclockwise and again note the position when speed is reduced. Set the screw in the midway position.

**Note:** Minor adjustments to the fuel mixture screw may be necessary to produce maximum power when operating under heavy cutting conditions. To increase cutting power, turn the fuel mixture screw counterclockwise  $1/16$  turns at a time. Test cutting power at each setting until the optimum position is found.

5. Recheck idle speed and adjust if necessary to 2700 - 3100 RPM.

**IMPORTANT:** Cutter head should not rotate at idle speed.

**SERVICING MUFFLER (Fig. 14 & 15)**

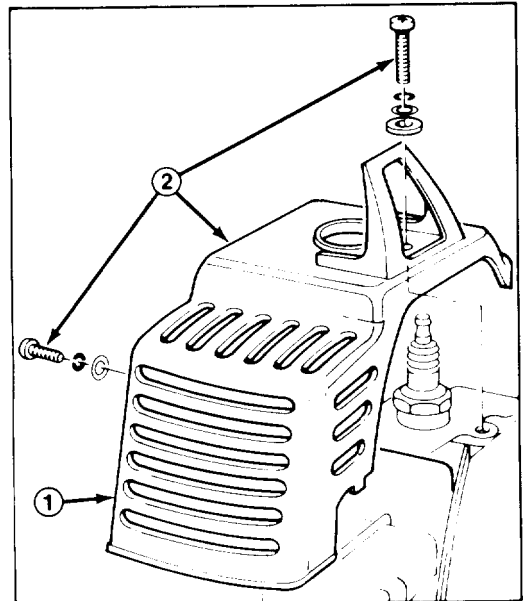


Figure 14

1. Muffler cover 2. Mounting screws (3)

# MAINTENANCE

If engine speed or power decreases drastically, inspect and clean muffler and exhaust port of carbon deposits to relieve back pressure.

1. Remove three (3) screws securing muffler cover to trimmer (Fig. 14).
2. Remove screw securing muffler lid, gasket and baffle to muffler body.
3. Clean any carbon buildup from inside of muffler.
4. Rotate the engine crankshaft until the piston totally covers the exhaust port (Fig. 15). Clean the exhaust port area by using a clean, flat piece of hard wood. Remove all loose particles.

**IMPORTANT: Use extreme care when cleaning exhaust port. Stay clear of the piston so it will not be damaged. Piston damage can cause early engine failure.**

5. Make sure the muffler gasket is still useable (replace, if necessary) and install baffle and muffler lid to body. Tighten all fasteners securely. Reinstall muffler cover.

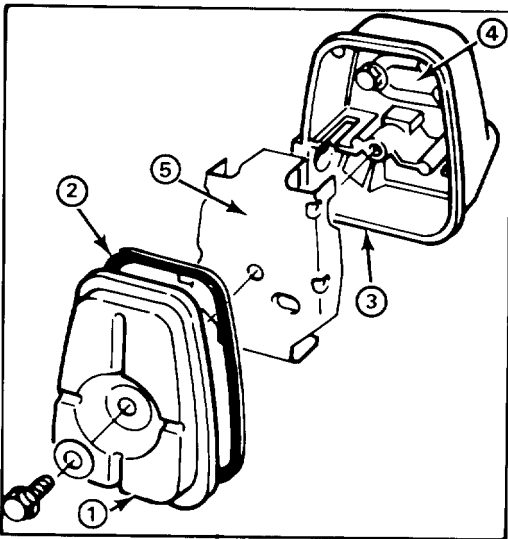


Figure 15

- |                 |                 |
|-----------------|-----------------|
| 1. Muffler lid  | 4. Exhaust port |
| 2. Gasket       | 5. Baffle       |
| 3. Muffler body |                 |

## REPLACING SPARK PLUG (Fig. 16)

Use an NGK BM-6A spark plug or equivalent. Correct air gap is .024 - .028" (0.6 - 0.7 mm). Remove plug after every 25 operating hours and check its condition.

1. Stop engine and pull wire off spark plug.
2. Clean around spark plug and remove plug from cylinder head.

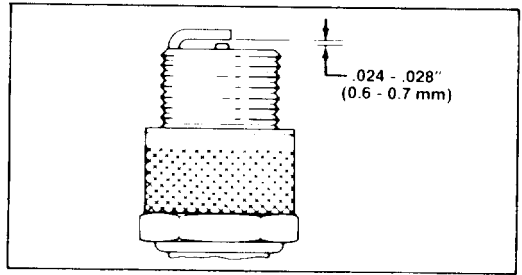


Figure 16

**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 .024 - .028" (0.6 - 0.7 mm). Install correctly gapped spark plug and gasket seal. Tighten plug firmly to 9 ft-lb. (1.2 Kg-m).

## COOLING SYSTEM SERVICE

To avoid overheating and possible engine damage, visually inspect the cooling air inlet for debris obstructing the air passages, muffler, and also the cooling fins around the cylinder after each use. Remove any contamination by using a flat piece of wood shaped so it will pass between the fins.

## SERVICING AIR CLEANER (Fig. 17)

After every 25 hours of operation inspect and clean air cleaner.

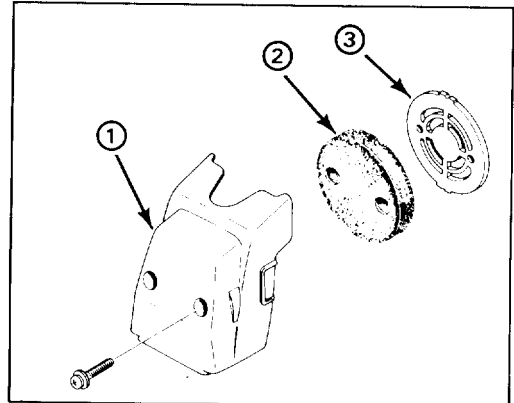


Figure 17

1. Air cleaner cover
2. Foam filter
3. Filter grid

1. Remove two (2) screws securing air cleaner cover to trimmer.
2. Carefully remove filter grid and foam filter.

# MAINTENANCE

3. Wash foam filter in a soap and water solution and thoroughly dry. If filter shows any sign of damage replace it.
4. Saturate the foam filter with one teaspoon (5ml) SAE 30 oil: then squeeze it to distribute oil evenly and to remove excess oil. A damp element is desirable.
5. Wash the filter screen in a clean solvent and air dry. If filter shows any sign of damage replace it.
6. Reinstall air cleaner components as shown in Figure 17.

## REPLACING FUEL FILTER (Fig. 18)

After every 25 hours of operation, remove and replace fuel filter.

1. Drain gasoline from fuel tank. Start engine and let it run at idle speed until it stops and all fuel is expended.
2. Remove fuel tank cap. Invert trimmer and shake until end of suction hose is accessible or passes thru fuel tank opening.

Alternate Method: Insert a clean wire with a hooked end into tank, hook suction hose above weight, and carefully pull hose out fuel tank opening.

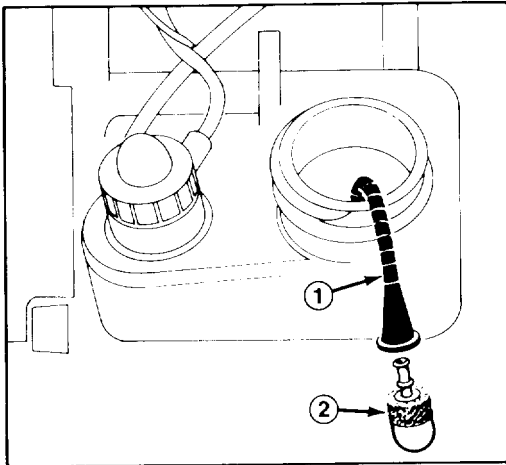


Figure 18

1. Suction hose 2. Fuel filter

3. Replace fuel filter and reinstall suction hose into tank.
4. Reinstall fuel tank cap.

## ADJUSTING THROTTLE CONTROL (Fig. 19)

1. Remove two (2) screws securing air cleaner cover to trimmer.

**NOTE:** When removing air cleaner cover, note sequence in which air cleaner components are installed.

2. Squeeze throttle trigger and note travel of throttle valve in carburetor opening. Throttle valve should travel to top of carburetor opening when trigger is in full throttle position.
3. To adjust, loosen jam nut on throttle cable and rotate turnbuckle to increase or decrease travel of throttle valve.

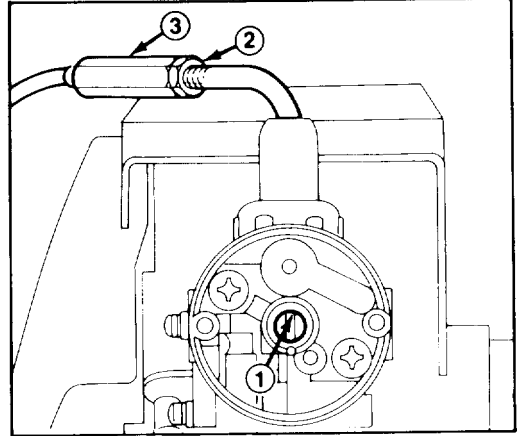


Figure 19

1. Throttle valve (in up position)  
2. Jam nut  
3. Turn buckle

4. Tighten jam nut and check adjustment.
5. Reinstall air cleaner cover and air cleaner components to trimmer. See Servicing Air Cleaner, Figure 17 for component sequence.
6. Recheck idle speed and adjust if necessary. Refer to Adjusting Carburetor, page 9.

## REMOVING CUTTING HEAD (Fig. 20)

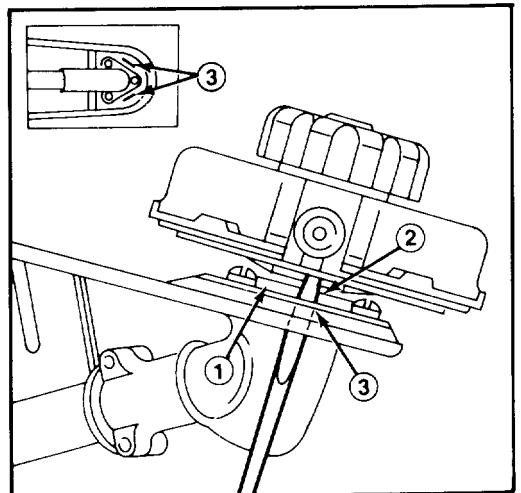


Figure 20

1. Gear case cap  
2. Notch in gear case cap  
3. Slot in shield

# MAINTENANCE

Stringy weeds or other debris may become wound around gear case shaft. Cutter head assembly must be removed and cleaned periodically.

1. Drain gasoline from fuel tank and remove high tension wire from spark plug.



## CAUTION

Stay clear of gear case after operating as it can get hot. Allow adequate time for it to cool before attempting any service procedures.

2. Rotate gear case cap until notch in cap is aligned with slot in shield. Insert medium blade screwdriver thru slot in shield and into notch in gear case cap.

3. Keep shaft from rotating by holding screwdriver as shown and rotating cutter head (Left hand thread).

4. Remove cutter head, and gear case cap.

5. Clean any debris wrapped around gear case shaft or under gear case cap.

6. Reinstall gear case cap and cutter head (left hand thread). Tighten securely.

## LUBRICATE GEAR CASE (Fig. 21)

Every 40 hours of operation, lubricate the gear case.

1. Remove cutter head, and gear case cap from gear case shaft. Refer to Cleaning Trimmer Head.

2. Clean any debris under gear case cap.

3. Using pliers, remove spacer sleeve from gear case shaft.

4. Fill gear case with a good quality multi-purpose Lithium base grease, until grease comes out around gear case shaft.

5. Reinstall spacer sleeve, gear case cap, and cutter head. Tighten cutter head securely.

## PREPARING TRIMMER FOR STORAGE

1. Drain gasoline from fuel tank. Start the engine and let it run at idle speed until it stops and all fuel is expended.

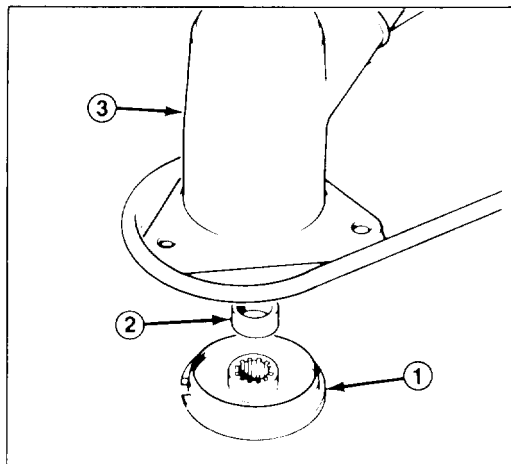


Figure 21

1. Gear case cap
2. Spacer sleeve
3. Grease fitting location

2. Remove dirt and grime from external parts of Trimmer housing. Also clean the cooling system: refer to Cooling System Service.

3. Pull wire off spark plug, clean area around plug so foreign matter cannot fall into cylinder when plug is removed. Remove plug from cylinder head and pour one teaspoon (5 ml) of 2 cycle oil into spark plug hole. Pull recoil starter handle slowly to distribute oil on inside of cylinder. Reinstall spark plug and tighten it to 9 ft-lbs (1.2 Kg-m). If torque wrench is not used, tighten plug firmly. **DO NOT INSTALL WIRE ON SPARK PLUG.**

4. Check condition of cutter head; replace line, if necessary; refer to Replacing Cutting Line.

5. Clean the air cleaner is necessary: refer to Air Cleaner Service.

6. Lubricate Gear Case, if necessary, refer to Lubricate Gear Case.

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

8. Store Trimmer in a clean, dry place. Cover Trimmer to protect it and keep it clean.

## OPTIONAL SPARK ARRESTOR MUFFLER — PART #65-4300

If a spark arrestor muffler is required because of local, state or federal regulations, it may be purchased at your local Authorized TORO Service Dealer. If trimmer is operated on any California forest, brush or grass covered land without a properly operating spark arrestor muffler, the operator is violating state law, Section 4442 Public Resources Code.

## PRODUCT IDENTIFICATION

A model number and a serial number decal is located on drive shaft tube. 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 and 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.

## ACCESSORIES

Part No.	Description
46-2961	Deluxe Harness
46-2810	Fixed Line Cutter Head (Aluminum)
46-2800	Indexing Head (Dual Line)
41-4440	Metal Blade Adaptor Kit
51-1240	8" Blade (8 T.)
51-1230	8" Blade (80 T.)
46-2820	Prewound Spool (2-.080 Dia.)
46-2830	Prewound Spool (.095 Dia.)
43-5000	.080 Line (38 ft.)
46-2710	.080 Line (400 ft.)
41-6820	.095 Line (285 ft.)
41-6830	.095 Line (855 ft.)
47-2250	16" Line-.105 (24 pcs.)
47-2260	16" Line-.105 (100 pcs.)
46-2730	.105 Line (235 ft.)
52-5070	.105 Line (20 ft.)
42-0580	14" Line-.130 (100 pcs.)
46-2740	.130 Line (450 ft.)
61-4540	Cut-off Blade Assembly

# TROUBLESHOOTING CHART

This Troubleshooting Chart is intended as a guide to assist in correcting some of the common problems which may occur. Most of the "Remedies" can be performed with common hand tools. The Chart is not intended as a guide for major overhaul procedures. For problems which are not covered in this Troubleshooting Chart or this Operator's Manual, consult your local Toro Dealer.

Trouble	Possible Cause	Remedy
Engine Won't Start or Hard Starting	A. No Fuel B. Stale Fuel C. Carburetor Maladjusted D. Faulty Spark Plug E. Improper Starting F. Clogged Air Cleaner G. Fuel Filter Plugged H. Carbon Buildup in Exhaust System	A. Fill fuel tank with gasoline, oil mix: refer to Preparation Before Starting. B. Drain fuel tank. Fill with proper fuel. C. Adjust: refer to Adjusting Carburetor. D. Replace spark plug. E. Refer to Starting and Stopping Procedures. F. Refer to Air Cleaner Service. G. Replace Fuel Filter. H. Clean Exhaust System, refer to Servicing Muffler.
Engine RPM Too Slow	A. Wrong Fuel Mix B. Clogged Air Cleaner C. Engine Overheating D. Carbon Build Up in Exhaust System E. Throttle Cable Maladjusted	A. Drain Fuel Tank. Fill with proper gasoline, oil mix. Refer to Before Operation. B. Refer to Air Cleaner Service. C. Refer to Cooling System Service. D. Clean Exhaust System, refer to Servicing Muffler. E. Refer to Adjusting Throttle Control.
Engine Runs Erratically	A. Carburetor Maladjusted B. Contaminated Fuel C. Fuel Filter Plugged	A. Adjust: refer to Adjusting Carburetor. B. Turn High Speed Screw 3 turns counterclockwise, then return to the original positions. Refer to Adjusting Carburetor. C. Replace Fuel Filter.
Engine Stops Running	A. Out of Fuel B. Fuel Filter Plugged	A. Fill fuel tank. B. Replace Fuel Filter.
Trimmer Vibrates Abnormally	A. Line Length Not Even on Both Sides Of Cutter Head B. Cutter Head Cracked or Otherwise Damaged	A. Adjust line lengths. B. Replace damaged part immediately.

# The Toro Promise

## A Two Year Limited Warranty On

Model 51660 -- Gas Trimmer

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

Residential Product . . . . .	2 Years
Residential Products Used Commercially . . . . .	90 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 limitations 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 responsibility 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.

### 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.